

may ; but it is more woody and shrub-like in its growth. It is not worth cultivating, except in very northern and exposed situations, as it is very hardy, and will stand more rigorous winters than perhaps any of the other varieties.

USEFUL HINTS ON SEED-SOWING.

BY JAMES CALVERT.



Over-estimate the importance of sowing vegetable and flower seeds at the right moment and in the proper manner would be difficult, and I feel that no apology is needful for offering a few suggestions which cannot prove otherwise than useful. It is, however, not only necessary to sow the seed properly, but it is of the utmost importance to buy it early in the season, so that it will be at hand when required for sowing. Very frequently the seed is not ordered until a day or so before it is wanted, and owing to the great pressure upon the seed houses at that particular moment, the order is not executed until the opportunity for sowing it is lost. The English climate is so changeable during the early part of the year, that if a favourable opportunity is lost it may not, perhaps, occur again for some weeks, or perhaps not until it is too late to sow that particular seed, and the chances of a crop lost. The main order should be handed to the seedman early in February, so that if there is a few days' delay it will not be of much consequence.

On the subject of purchasing seeds much might be said, but space will only allow me to give a few plain directions, and the first of these is—Buy of a respectable house, if you have to pay a few shillings more for your annual supply ; better by far to do this than to buy cheap seeds, and have nothing but failures and vexations hereafter. Some people do not attach sufficient importance to the subject of buying good seed, and consequently they are sufferers in the end, for it often happens that a crop fails ; and, lastly, I would say, buy enough. I am not an advocate for an extravagant seed order, but for all ordinary outdoor crops every packet should be large enough to make two sowings if only one is wanted ; and then, should the first fail, which is sometimes the case, the remainder will serve, and perhaps save the loss of a crop altogether ; whereas, if the amateur has to wait two or three days or a week for a fresh packet of seed, the season for sowing will be past, and the crop for that year lost. These are serious considerations, when we consider the difficulties which attend the raising of seeds out of doors in early spring.

The observations I am about to make on the subject of seed-sowing will I hope be acceptable to all readers, for it is an important operation, and when injudiciously performed leads to many disappointments. Perhaps the first consideration in connection with seed-sowing is that all should understand that both heat and moisture

are essential for the germination of seeds, as well as an absence of light. The absence of light is not perhaps so important a point as the others, but for a quick growth it is essential that it should be excluded—and, indeed, as a rule it must be done. Then as heat and moisture are the two principal agents in exciting vegetation, we should, when contemplating seed-sowing, also consider what means we have at hand, if the season does not furnish it, of supplying these agencies in all outdoor crops. These considerations are not so serious, but it is very certain that, for the majority of our kitchen garden seeds, we must wait till the earth is sufficiently warm before we commence seed-sowing, or from the want of sufficient heat many of them will perish.

To the too early sowing of small seeds in a cold, uncongenial soil, must be attributed many of the failures of which we hear, if the seeds are in the first instance good. The uninitiated are too often misled by a few warm spring days which usually occur in February and March; and they set to work in earnest, prompted by an anxious desire to be early with their work, and so commit one of the greatest mistakes by sowing large batches of seeds, which would have been better kept in the drawers for at least a fortnight longer. In their enthusiasm, they forget for the time that frost and snow may yet visit us severely, and not only destroy many of the subjects committed to the tender mercies of the elements, but also blight all their hopes and anticipations of future success.

March is usually considered to be a month of seed-sowing, but how much of this work is there not left till April by all those who have learnt to distrust so changeable a season as the month of March; for the majority of our springs are cold, and even well-established subjects have usually to submit to a severe trial. How much more so must it be to the tender cotyledons of early-sown seeds. I think if we give the subject a little serious consideration, we cannot fail to be convinced that it is a mistake to commit to a cold damp soil thus early choice seeds; for even if the season should be moderately favourable, the advantages to be gained are but few. We must, however, not lose sight of the naturally-favoured positions of some few gardens; and at the same time we must make an allowance, or make for ourselves a distinction between light and heavy soils. But in all such cases the anxious cultivator will soon learn from observation what is applicable to his own case.

Of the very few crops which belong to the kitchen garden that are actually benefited by early sowing, I can only instance the parsnip and the onion; these want less warmth to excite them, and they are all the better if they can become well established before the summer sets in. But as to the more ornamental subjects of the flower garden, I am convinced the month of March is too early for even the hardiest of them; the second week in April is soon enough for all reasonable people, and by deferring the general sowing till that time, they will have less to say about dead seeds. What pleasure can it be to any one to see a few straggling plants here and there, struggling for an existence against the storms and cutting winds of a cold April day, and what are they if they do survive it?

They are weak, puny things, giving but a scanty display of flower, while their near neighbours a month younger are stout and healthy in appearance, and will outlive the others some considerable time.

But perhaps it is not in those instances which I have referred to where the greatest failures have been; however, this much we know, that seeds sown out of doors are less dependent on our attention than tender subjects which require the heat and protection of a house to vegetate in, and it is here that extra care and vigilance are required; and from what I have learnt from observation, I can pretty well define an amateur's position when using such appliances for the purpose, and with a view to assist them I will give a few useful hints which ought to be acted upon when sowing choice and tender seeds.

Seed-pans are generally in use for this purpose, which must be securely drained with crocks, upon these a layer of rough soil, and then some fine sifted earth, with a fourth part of sand mixed with it. The proper depth of soil being put in the pan, it should be well watered before sowing, so that when the seed is sown and covered in with a very light sprinkling of fine earth, a gentle dew from the syringe will make it sufficiently damp. In whatever position it is placed, it should be shaded from bright sunshine till the seedlings show themselves. We have known individuals put up a slight hot-bed for the purpose, and immediately the pans are in the bed they cover the whole with a mat over the glass. But this is an erroneous practice, for by so doing they shut out the heat of the sun, which if allowed to shine upon the glass, the internal heat is much greater, and a quicker growth must necessarily follow. The better plan by far is to push down the lights, and put over the whole batch of pans a covering of old newspaper. This will be an effectual shading, and at the same time greatly arrest evaporation, so the less watering will be required, and no impediment will be thrown in the way of the solar heat penetrating and heating the internal air of the frame.

The plan of earthing all young seedling plants at intervals previous to their removal from the pan or bed is unquestionably a good one, and no doubt it is a point too often neglected by many of us, but its utility is nevertheless the same. It is well known that very many of our productions, when raised from seed, in the first stage of their growth incline to be weak and long-legged, especially those which are raised in heat. Now there is no better way of strengthening the plants, and at the same time preventing this tendency to long-leggedness, than to give them a gentle earthing. For very small and tender plants, there is nothing equal to clean dry silver-sand shaken lightly over them when the plants are dry; this should be repeated every fifth or sixth day till the whole are pricked off. For all out-door subjects, such as all the Brassica tribe, a much coarser material will do. I generally use charred earth; but in this earthing system there is an important point to bear in mind, and that is, never begin to do it unless you can keep up the supply—at least till the third time, for as soon as you commence earthing fresh root action begins, and the young rootlets will come to the top for this extra nourishment, and if these are not frequently and repeatedly covered

over by the application of fresh material, the first few hours' scorching sun will dry them up. The same rule holds good about applying the earthing when the leaves of the plants are dry, as in the in-door subjects. It is a good plan first to give the seedlings a soaking of water before this dusting is given, and it is a good prevention, too, against mildew, also against the attacks of vermin; and, lastly, it is a sure and certain method to obtain short-legged, stocky plants, with a mass of fibrous roots, which, if carefully preserved, will allow them to be removed with little or no injury.

ACHIMENES FOR CONSERVATORY DECORATION.

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AMONGST the large number of beautiful flowering plants adapted for the embellishment of the conservatory during the latter end of the summer season, the Achimenes deservedly hold a high place. They are not, however, grown so generally as they might be, because of the belief which exists that they cannot be grown successfully without the assistance of a stove. It is true they require a higher temperature during the earlier stages of growth than the ordinary greenhouse affords, but they do exceedingly well in a cucumber or melon pit, or in a vinery or peach-house started early. There are, therefore, few gardens in which they may not be well grown, as nearly every one who has a garden at all tries to have a few cucumbers or melons. There is one important point worth noticing when speaking of their cultivation in either of the above-mentioned structures, and that is—they are very accommodating as to the time they are started into growth, and provided the roots are kept in a comparatively cool temperature, they need not be started until it is quite convenient to give them the temperature suitable for insuring a vigorous growth.

The compost to obtain a free growth from the first must be rather light and rich, and to insure these essential conditions, well incorporate together two parts turfy loam, one part fibrous peat, one part leaf-mould, one part well-decayed manure, and a sixth part of silver sand. If the loam should happen to be deficient in fibrous matter, a small portion of cocoa-nut fibre refuse may be mixed with the soil to keep it more open than it would otherwise be; it is also a very good plan to add a small proportion of clean crocks well broken up, or a few nodules of charcoal. The peat and loam must be chopped up rather fine, but only the large woody roots occasionally met with in the peat must be removed from it. The compost when used should be moderately moist, to prevent the necessity of applying water for some time after the roots are buried in the soil; and it will be of considerable assistance in promoting an early growth if the soil is warmed, by placing it in the structure in which the roots are