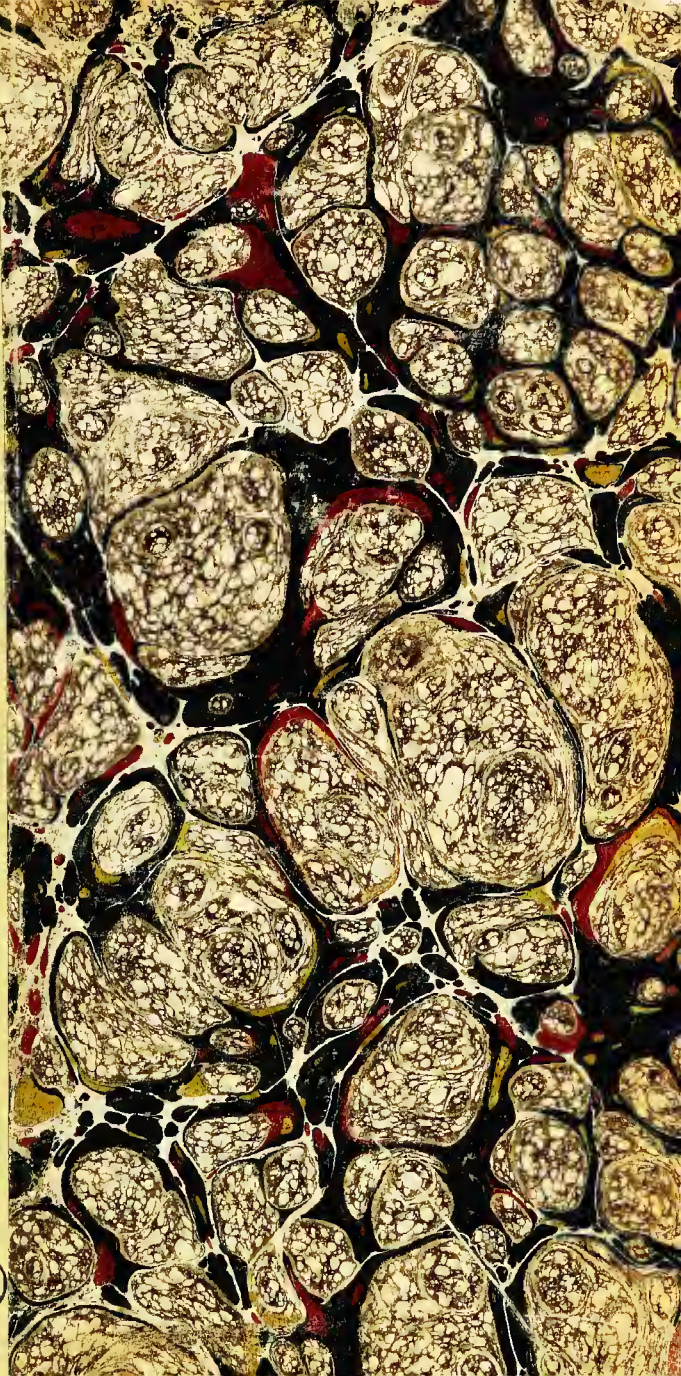


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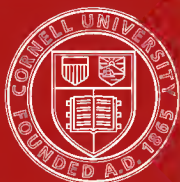
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# HOW TO GROW SWEET PEAS.

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## Introductory.

**T**HAT the evolution which the Sweet Pea has undergone during the last two decades has been upon the right lines requires no further proof than the exceptional amount of interest and popularity which it now sustains. Undoubtedly the improvements made in recent years have wonderfully increased the attractiveness of the subject, the texture of its flowers, the colourings and marking all having undergone a change for the better. The blooms are now clear and refined, far different from the coarse-grained varieties of former days, while the stems are also more lengthy and much stouter. At the present time there is no flower which gives a better return for even the most ordinary attention, and, as it may be cultivated with equal success by all classes, from the nobleman to the cottager, there is no reason why it should not be found in all gardens.

Perhaps the earliest mention of the Sweet Pea is the reference, by Father Cupani, in his book entitled "Hortus Catholicus," published about the year 1695. *Lathyrus odoratus* is here described as a native of Sicily, though some confusion as to this seems to have existed

on account of a number of authorities giving Ceylon as its native habitat. No variety of *Lathyrus*, however, was found, after strict investigation, to be indigenous to the latter country, and consequently we may conclude that Sicily has the honour of being the Sweet Pea's birthplace. From 1695 onwards the Sweet Pea is described in several publications, and in the year 1724 a Benjamin Townsend, who is described as gardener to Lord Middleton, advertised, among other seeds, "Sweet-scented Peas." Later, in 1775, a scarlet Sweet Pea, called *L. o. coccineus*, is mentioned in Weston's "Flora Anglicana," and in 1778 Mr. W. Malcolm, seedsman, of Kennington Turnpike, offered White, Purple, and Painted Lady Sweet Peas. Ten years later (in 1788) a coloured plate appeared in "Curtis's Botanical Magazine"; this, when compared with the blooms of the present day, shows in a very striking manner the wonderful advance to which reference has already been made.

In 1795, Messrs. A. Dickson, of Hawick, N.B., offered Painted Lady, Purple, White, and Black Sweet Peas, and this seems to be the earliest record of a Black variety. Major Trevor Clarke is next credited with raising a blue-edged variety, which is said to have resulted from a cross between the white Sweet Pea and a perennial blue, an association which is very difficult to substantiate, as many attempts have been made to cross the perennial *Lathyrus grandiflorus*



and the carmine Invincible, but without any good results. Up till 1840 there were still only a few distinct varieties, such as the Red, White, Black, Painted Lady,



AGNES ECKFORD.

and Butterfly, the two latter, with Apple Blossom, Primrose, Splendour, and others, being among the first

varieties that I remember growing, and even now I think Splendour, as a rose-coloured variety, wants a lot of beating. I have exhibited it at shows at Weybridge and elsewhere, with four flowers on every spike, and in many instances with five flowers, the latter number being very difficult to obtain, even among the newer varieties; and I am strongly of opinion that many of them at the present time are retrogressive in this respect, though, of course, the colour and size of the flowers are very greatly advanced.

New varieties came very slowly from 1840 till 1878, though between these two dates Mr. Carter, of the firm of Messrs. J. Carter and Co., brought out a few kinds. Notably, in 1865 he raised a variety called Scarlet Invincible, which was very extensively grown for a number of years. In 1878 the same firm introduced the variety Violet Queen, a coloured plate of which was sent out with their catalogue, this being the first Sweet Pea plate that appeared in any catalogue. Violet Queen was practically the forerunner of all the large-flowered varieties now grown, rapid advances following its introduction. Especially notable were such varieties as Laxton's Invincible Carmine, Eckford's Etna, Madame Carnot, and Rising Sun. After 1878 the late Mr. Eckford continued to send out every year varieties which were decided advances on all their predecessors, and I think all lovers of flowers owe him a debt of gratitude for the many beautiful colours and shades which he introduced. At the same time, we must not

forget the good work done by the National Sweet Pea Society, which, since its inauguration, some seven years ago, has given a very great impetus to the culture of this beautiful flower. Before the advent of the society,



THE LATE MR. HENRY ECKFORD, AND MR. J. S. ECKFORD AND HIS SON.

raisers of Sweet Peas were the reverse of numerous, but now there are dozens of nurserymen who specialise in this way, and I suppose there is hardly a summer show held anywhere in the United Kingdom, or in America,

where the Sweet Pea is not one of the leading features, while as an article of commerce it is not without its importance. One nurseryman of my acquaintance claims to have sold over twenty tons of seed in one season, and it was interesting to learn that the demand for Dorothy Eckford was much in advance of that for all others, as of that variety alone the gentleman in question disposed of over half a ton!

#### **The Introduction of Countess Spencer.**

Before passing on to the more practical part of the subject, it should be said that the introduction of Countess Spencer, by Mr. Silas Cole, has marked quite an epoch in the history of the Sweet Pea, as not only is the variety very different from all others in character and size of flower, but its sportive propensities have given and are still giving many valuable additions in all shades of colour. As is well known, the variety Countess Spencer originated as a sport from Prima Donna, which for some considerable time was the leading pink variety. When it first appeared it was recognised as a great advance by all who had the pleasure of seeing it, but probably not even the most optimistic lover of the Sweet Pea expected it to prove so valuable as it has shown itself to be. It is not far wrong to say that Countess Spencer practically revolutionised our ideas of the Sweet Pea. It certainly gave additional proof—if that were needed—that we are nearer the beginning than the end of the triumphant progress of

our favourite annual. The most characteristic features of Countess Spencer are its enormous size and beautiful shape. Other points are that the standard has a



MR. SILAS COLE.

crinkle running from the apex to the centre of the flower, which has a wavy appearance; it is also not hooded, but boldly erect, whilst the wings are much more ex-

panded than those of any of the older varieties. In colour, Countess Spencer is a deep rosy-pink. It is named after the lady in whose grounds it was raised, and Mr. Cole, the gardener, received for it the first-class certificate of the National Sweet Pea Society—at that time the highest award given by that body. About the same time that it appeared, Gladys Unwin, another pink variety, also having the magnificent shape and size of the Countess, was secured by Mr. Unwin, of Histon. The colour of this variety, however, is several shades lighter than that of the true Countess Spencer, and it is thought by many to be hardly so beautiful as the latter.

With regard to the “sportive” propensities before mentioned, it may be recorded that both the Countess and Gladys Unwin exhibited the same peculiarity. Such varieties as Helen Lewis, John Ingman, Phyllis Unwin, George Herbert, Mrs. Hardcastle Sykes, and Enchantress were raised from seed of either one or the other, and all exhibited the chief characteristics of their parent. All these varieties are upon the market, and doubtless will be followed in the near future by others of the same class, but as a number of the sports are also worthless, it will be as well if I emphasise at this point the necessity, on the part of those who wish to keep abreast of the times by growing a complete collection of the Spencer type, to purchase seed from those firms alone which have a reputation to sustain. Of Countess Spencer it is quite possible to obtain strains

to be relied upon, but the fixity of a number of its offspring has yet to be demonstrated. At the same time, I venture to predict that in a few years, when sufficient attention in this respect has been paid to the more desirable of these sports, very few others will be grown, as they are of decidedly stronger constitution than the older varieties, though, personally, I very much admire those with good, straight standards, such as King Edward VII., Black Knight, Shasta, Bolton's Pink, and Henry Eckford. Nevertheless, I quite recognise the necessity of keeping up with the times and growing the Spencer type, and I feel somewhat proud to be the introducer of the variety Rosie Adams, which is a decided break in colour, and appears to be quite fixed.

It may also be interesting to add that my first break from Countess Spencer was a very deep blue, with white veins in it, similar to the veinings in Helen Pierce. I naturally kept all the seed from this, and altogether raised about thirty plants, but not one came true to the parent, every plant being quite distinct, and ranging in colour from almost pure white to very deep chocolate. From these I selected five as being very good, of which three served me the same trick, and sported again horribly. One, a dark chocolate, came true to colour, but the form of the flowers was very different, some being of the Spencer, and others of the grandiflora type. This also happened with a fine

bright mauve that I saved. But the variety that I named Rosie Adams came every seed true to colour and type.

#### **The Cultivation.**

A well-known Sweet Pea grower recently wrote saying that his finest blossoms invariably came from autumn-sown seed. While this cannot be set down as the experience of every grower, at the same time there can be no doubt that excellent results have been obtained by this method. Another grower places his confidence in seeds sown under glass during January, February, or March, and yet another dogmatizes on the theory that seeds sown out in the open ground during the first four months of the year will yield the best results. Both these methods have also proved excellent. Seeing that opinions on this important branch of Sweet Pea culture are so varied, I propose to deal only with those methods of which I have personal experience.

Before I proceed further, let me say that, as regards the quality of the blossoms produced, I do not believe that the time of sowing makes much difference. Generally speaking, the earlier the seeds are sown, the earlier do the plants blossom, and, consequently, if properly treated, the longer do they flower. On the other hand, plants raised early require much more attention than those raised later. Although the Sweet Pea is very hardy—far hardier, indeed, than is





SWEET PEAS AS TABLE DECORATIONS.

generally imagined—yet there is little doubt that the coldness and moisture of our winter climate must tell against it. At the same time, however, there are few parts of England or the South of Scotland where autumn sowings cannot be successfully made. For instance, in both Cambridgeshire and Shropshire good results have attended this method.

To ensure success, generally, operations should be commenced in the early autumn or winter. Whether the soil is heavy or light is immaterial, but position has much to do with the eventual welfare of the plants. A piece of ground that is in a fairly sunny position should be chosen, as a rule, though if it can be secured where there is a little shade during the middle of the day, so much the better, as there are very few varieties that do not benefit by a little shade; particularly is this the case with the scarlet and orange varieties. I would advise that the ground be trenched at least three spits deep, laying in a good thickness of manure—either cow, pig, or horse manure, whichever can be best secured—not less than a foot below the surface. If possible, a good sprinkling of soot and bonemeal should also be worked in; and, if the ground is heavy, a little lime and wood ashes will help to make it more porous, besides providing nourishment for the plants in due course.

In heavy soil, even after trenching, I think it is wise to ridge the ground. This exposes a great deal more of the soil to the action of the weather, and when the time comes to plant or sow, whichever the case may be,

it breaks down nice and fine, and the young plants make a much quicker and stronger start. In light soil, where good early flowers are wanted, or even late ones for that matter, an autumn sowing is frequently made, and in such a case very early working of the soil is necessary, say, some time during August, so as to allow the soil to consolidate a little before sowing, which should be done from the first to the third week in September, this allowing the plants to get two or three inches high before the severe weather comes on. If sown earlier than this, the young plants are much more liable to be injured by frost and snow. The greatest drawbacks to autumn sowing are the insect and bird pests, but if the rows are covered with ordinary Pea-guards, or garden netting, as soon as the seedlings appear, and are kept sooted occasionally, these difficulties may be overcome. Another method to protect the plants from the birds is to well cover the rows with black cotton. Some people also steep the seeds in paraffin before sowing, with the idea that insects will not injure them below the ground, nor the birds touch the plants above. Not having tried this, however, I cannot guarantee its efficacy, but I should think it was well worth trying, as it is said to apply equally as well to the culinary Pea.

Mice and slugs are other pests which give great annoyance. The former frequently take the seeds from the soil, and the latter, of course, know no better meal than is provided by the tips of the young plants as they come through the ground. One of the firms most pro-

minently identified with the Sweet Pea is reported to red-lead every seed sown in their ground, with very satisfactory results as regards mice, and my own ex-



GLADYS UNWIN—THE SPENCER TYPE.

perience is to the same effect. Slugs require to be hunted out, or watched for toward evening and in the early morning. A dusting of lime over the plot of

ground is an excellent precautionary measure, also, doing this before sowing, while protection of the young plants may be afforded by a circle of lime around the



MR. W. J. UNWIN.

clump or along the row, while the young plants may be sprinkled with soot, but not too heavily.

Reverting to the matter of position, it may be laid down that, for the first sowing, whether it be in the autumn or in early spring, a dry, sunny border, exposed to the south, should be selected. The second sowing, which should be made not later than the first week in May, ought to be on a bed which is open to the morning and afternoon sun, and partially shaded from the sun at noon, where the flowers will last much longer, and not show so much distress as they sometimes do when almost baked in the midsummer days. The last sowing should be made on a south border again, in the first week in June. Flowers will be obtainable from these as late as November in mild autumns.

#### **The Autumn Sowing.**

I have already said that, where autumn sowing is adopted, the seed should be got in during September, and I have detailed the preparation of the ground for all purposes. As the young plants will have to stand the winter, the seeds should be sown more thickly than in spring; two inches apart is a good distance. If, in spring, the plants appear to be too thick, they should be thinned out to from eight to ten inches apart. It is advisable to sow the seeds in trenches six inches deep, and to replace only about two inches of soil. Being thus several inches below the level of the surrounding ground, the young plants will be somewhat protected from the cold. Further protection can be afforded by placing evergreen branches at the north or east of the rows or clumps, while the various pests may be guarded

against in the manner already indicated. Progress will be slow at first, but the young plants will begin to fill out in the early days of spring, sturdy side branches will grow, and eventually the individual character of each plant will be lost, and the result will be a grand row of haulm. Sticks should be put to the plants when they are three inches high; place small ones first, and taller sticks afterwards. When well grown, the haulm will attain to a height of from six to eight feet. Other general details of treatment will be found in the following pages, succeeding the notes on sowing in pots. I may add, however, that, in the case of autumn sowing, I advise sowing in rows, by reason of it being easier to look after a row or two than, say, two or three dozen clumps. By this autumn sowing, also, the roots get well down among the manure, and are better able to withstand the drought in light soils; but the great majority of growers, myself included, do not sow for the main crop till the spring, and I may say at once that for this practically all my plants are sown in pots.

#### **Sowing in Pots.**

For general purposes, I think a very good time to sow in pots is the first week in February. I use "32"-size pots, putting nine seeds in a pot, as many of them round the sides of the pots as I can get. The soil I use is a mixture of old Chrysanthemum soil and leaf-mould, making it only moderately firm, as the roots, when splitting up for planting out, retain more of the

soil than when potted more firmly. After sowing, the pots are placed on a shelf in a cold Peach-case, where they remain till the young plants appear, when the whole are transferred to a cold frame until the plants are fit to go into the ground, keeping the lights off as much as possible when weather permits, and entirely removing them two or three days before planting out.

The advantage of this method is, of course, that the plants are in a very forward state when put out into the ground. Those, however, who possess no form of glass at all may, nevertheless, still sow their seeds in pots or boxes, say, towards the end of March for all localities. The seeds need be no more than pressed beneath the soil with the index finger; but either pots or boxes should be filled with soil to within an inch of their tops. Stood on a bed of ashes in a sheltered spot in the open, or upon a window-sill, each pot or box covered with a sheet of clean glass, they will give no trouble at all, except watering twice or thrice a week. The pots, by the way, should be well drained, and the bigger and deeper they are, the better. When the seedling plants appear, turn the glass each morning without fail, giving a little air all day, and finally completely remove the glass when the plants are found to be touching it, which will be in two or three days. As soon as the plants are four inches high, they must be set out in the prepared ground, giving protection and support as already advised in the case of autumn sowing. Always remember that deep pots give space for lengthy roots, and the



growth of the plants when they are set out will be in accord with the length and strength of the roots.

For quite a number of years I have grown Sweet Peas in clumps, but I have found that, from an exhibitor's point of view, they do better in rows. In this way they



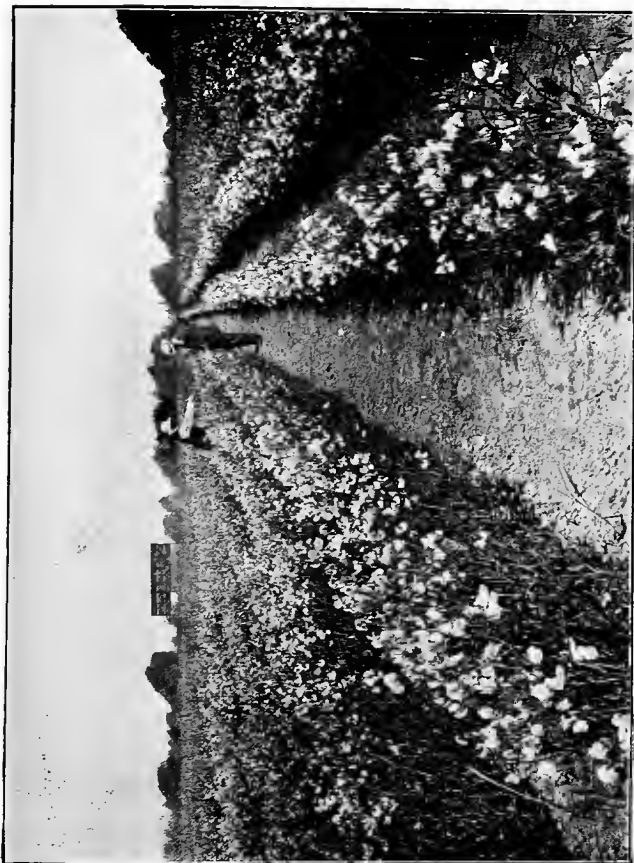
MR. H. ECKFORD.

seem to afford each other a little shade, which I am sure is beneficial; also, it is much handier to stretch a piece of tiffany or garden netting over one side of any row, than to have to put it round several clumps. But,

from a decorative point of view, clumps are much to be preferred, being ornaments to the herbaceous border or to beds in any position.

#### **Planting-out from Pots.**

About the middle of April is the best time to plant out from the early-sown pots, but it is advisable to wait a little longer if the weather is unfavourable or the ground wet. For exhibition I would advise that they be planted in double rows about a foot apart, and the plants from six inches to a foot and a half apart in the rows, for, even if planted at the latter distance, when the plants do well it is necessary to thin out some of the shoots before they come in to flower. I shake out each plant separately, taking care not to injure the roots, and plant with a long trowel, so as to get the main root straight down, this being very essential, as the deeper the root-run the less risk of drought, which, of course, means a prolonged flowering period. At the time of planting, I usually give a sprinkling of superphosphate in the rows. Another essential is to have the rows in a rather shallow trench, where all water can drain towards the plants, and not away, as it is not usual to have a superabundance of rain, but this trench is not so important on very heavy soils. After planting as described, each plant must be carefully staked with two or three twigs of birch, or whatever small twigs are to be had, and if greenfinches or any other bird pests are troublesome, it is best to cover the whole patch with a



MR. ECKFORD'S TRIAL GROUNDS AT WEM.

garden net, as previously advised. I find that it is not safe to leave them uncovered for even half an hour, as one planting experience of mine was the spoiling by birds of several pots that were left out during the breakfast hour.

After planting, very little visible progress is made for two or three weeks, but if the ground is at all warm, the roots will be active, and as the nights get warmer the plants will soon begin to grow.

#### **Staking, Tying, and Thinning.**

Further staking should be done as soon as the plants are growing freely, and for this there is nothing better than good hazel stakes from six to nine feet high. I prefer to stake rather thinly, keeping the stakes as upright as possible, but, if anything, sloping them out a little at the top, rather than inwards. In this way, the haulm does not grow through and hang down. When the plants are from one to two feet high, I spread out the shoots a little, giving a tie where necessary, and if too thick, I thin a few of them out. When planted as advised, they make a great many shoots from the base.

From now till the flowers begin to show there is not much to do, except to keep the soil well hoed. If the weather is very hot and dry, however, a good syringing overhead of an evening will greatly benefit the plants, especially if well-diluted soot water is used, which keeps down the yellow thrip. If this pest obtains a

hold of the plants, it soon weakens them, and eventually very badly marks the flowers, particularly the darker varieties. After the flower buds begin to show, it is time to give the roots a good mulching, preferably with fresh horse manure. If this is well watered in, the roots will receive immediate benefit, while the ground will remain in a nice moist condition. Some people prefer to mulch very much earlier than this—in fact, as soon as staked—but I think the better practice is to keep the ground well hoed, as the warmer the ground gets before mulching, the longer will be the flower spike, and the better the flowers.

#### **Spring Sowing Outdoors.**

I suppose that the majority of Sweet Peas are sown in the open ground in the spring. This method is certainly the simplest, if not the safest. The most successful method of spring sowing is similar to that advised for autumn sowing. It is unnecessary, however, to protect with evergreens, nor need the seeds be sown quite so thickly, for if sown from two to three inches apart an ample number of plants will be obtained. I do not, however, advise meanness with seed, for although to overcrowd is to court failure, yet it is well to insure against loss. If too many plants are reared, the weakest can always be destroyed; and they should never be left less than eight inches apart. Here I would emphasise once more the necessity for properly preparing and enriching the ground before planting or

sowing. Any neglect of this important point spells entire failure, or, at any rate, the production of very



MRS. KNIGHTS-SMITH  
(Pink bloom).

inferior blooms. If the seeds or plants are put in any-  
how, too thickly, and afterwards allow to grow as they

will, with no further attention than the placing of a number of stakes to the rows, small blooms of poor colour, and few in number, may be expected, and the row or clump will be very short-lived.

#### **Points for Exhibitors.**

If growing for exhibition, it is usual to keep the early flowers picked off, and where the plants are inclined to be weak, the practice is undoubtedly beneficial; but where they are growing strongly it is not quite so necessary, my experience being that the very best flowers, in respect of colour, size, shape, and substance, come after the plants have been flowering two or three weeks. Some varieties, such as Navy Blue, Triumph, Jeannie Gordon, Lady G. Hamilton, and others, if growing too rank, or are given too much water, are apt to produce very washy flowers, and in some cases quite striped and splashed, but after the first picking or two, or as soon as a little of the surplus strength is gone, I find they revert more to their true character.

#### **Feeding the Plants.**

After it is decided to let the plants continue flowering at will, it is as well to commence feeding them, either with farmyard liquid or artificial manure, or a little of both, but not with too strong doses. I have found cow manure and soot as good as anything for the purpose, whilst, if a little extra fillip is necessary, a couple of waterings with nitrate of soda or nitrate of potash at the rate of half an ounce to the gallon of water, or a few

applications of patent manure, will do all that is required.

Some few varieties will require shading if required for exhibition. This need not be done till three or four days before the show, my usual practice being to cut all flowers that are showing colour six or seven days beforehand, so that all the vigour is thrown into the young and opening flowers. I then shade all those varieties that I think require it, as soon as they begin to open their flowers, these varieties being:—Miss Willmot, Navy Blue, Helen Lewis, Evelyn Byatt, 'Gorgeous, Prince Edward of York, George Gordon, and Scarlet Gem. For this purpose I use fish-netting and tiffany.

When growing especially for exhibition, it is not advisable to grow too many varieties, though, with so many new varieties being brought out, one is very apt to overdo one's self in this respect. If it is not proposed, however, to enter classes with more than twelve or eighteen varieties, I would strongly urge growers to restrict the number of varieties, and grow more plants of each of the best, especially those from which good flowers are difficult to obtain. In this way, one is able to exhibit more strongly than by growing an unlimited number of varieties.

#### **Gathering Blooms for Exhibition.**

When cutting for exhibition, aim at getting quite young flowers, of good size and colour, that will im-



prove when put in water, and, if possible, gather them on the morning of the show. If taking them any distance to exhibit, the flowers must be cut when perfectly dry, or bruising will result. Cut them some time during the morning preceding the show, putting each bunch separately in a vase or jar, placing same in a cool shed, and leaving them there till just before the time to travel with them. If they are packed for any length of time, they are very apt to sweat, and subsequently spot. In this case the flowers ought to be cut with one flower not quite open, and this will be fully expanded by the next day.

In arranging them in vases, see that they are lightly disposed, giving each flower room to show itself off, and if they are possessed of good stems take as much advantage of it as possible. In arranging the vases, put those colours near together which produce the best and most pleasing contrast, avoiding as much as possible getting two or three vases of one colour near together, or running in a direct line when looking at them from any point of the exhibit. I think there is no foliage equal to their own to show them off, as if grasses or *Gypsophila* is used, it lessens rather than adds to the effect of the flowers.

#### **An Exhibition Selection.**

A published selection of Mr. Eckford, of twenty-four varieties especially for exhibition, and which I can heartily endorse, though it does not contain some

newer varieties to be presently mentioned, is as follows :  
—Agnes Johnston (blush), Black Knight (maroon),  
Countess Spencer (pink), Dorothy Eckford (white),



MR. THOS. STEVENSON, ADDLESTONE.

Helen Pierce (striped), Hon. Mrs. E. Kenyon (pale yellow), Janet Scott (pink), Lady Grisel Hamilton (lavender), Marchioness of Cholmondeley (tinted creamy ground), Mrs. Walter Wright (mauve), King Edward

VII. (crimson), Queen Alexandra (scarlet), Royal Rose (rose), Triumph (orange), America (striped), Coccinea (cerise), Dainty (picotee-edged), Duke of Westminster (claret), Henry Eckford (orange-salmon), Helen Lewis (rose), Jeanie Gordon (tinted creamy ground), Lottie Eckford (picotee-edged), Miss Willmott (orange), John Ingman (plum), Prince of Wales (rose), Romolo Piazani (blue), Sybil Eckford (blush), and the dark blue Horace Wright. There are more than twenty-four varieties in this list, but exhibitors must bear in mind that it is necessary to grow a few extra kinds to replace possible failures.

#### **How to Ensure a Long Succession of Bloom.**

To ensure a succession of bloom over a lengthy period it is absolutely essential to gather all flowers before they become properly "set." On no account must they remain on the plants sufficiently long to allow of the seed-pods commencing to swell. Gather the flowers regularly, say, two or three times a week. A very good system by which to ensure a succession of bloom is to cut back part of the stock of plants to about two feet from the ground; say, about the middle of July. These, if kept syringed for a few days, will soon break away strongly, and will give much better flowers late in the season than those not so treated. In the year 1905 I commenced cutting the first week in June, and gathered the last lot of bloom from the same plants during the third week in October. This cannot be done, however,

in all seasons or with all varieties, but it does show what a lengthy flowering season is possible where the plants receive the treatment indicated.

#### **A Critical Review.**

Having visited a good many Sweet Pea trials, as a member of the newly-constructed Floral Committee of the National Sweet Pea Society, I might almost claim to have seen nearly all the Sweet Peas that are in commerce, and will now endeavour to give a comparison and criticism of the varieties under their different colour headings, commencing with Whites. Of these there are several, and I still think pride of place must be given to Dorothy Eckford, though it is a trifle short of stem and difficult to grow with more than three flowers to each spike, yet it is of such substance and size, and looks so well in the bunch, that it must stand first. Nora Unwin (a sport from Gladys Unwin), with a slightly serrated standard, is very fine, while Etta Dyke, a sport from Countess Spencer, is also good. Shasta is a very fine white, particularly as a garden variety, and with a little more substance in the flowers it would probably beat Dorothy Eckford.

As a Crimson, King Edward stands quite alone, and is a grand type of flower, its only rival being one called Bath's Crimson. This latter variety is not in commerce, and, personally, I think it too near King Edward to be classed as distinct. Salopian and Mars are good crimsons, but are both second-rate after King

Edward. Of Scarlets, we have Queen Alexandra and Scarlet 'Gem, Queen Alexandra being by far the best flower; it also stands the sun well, which is a great point in its favour.



MR. J. GREEN (HOBBIES, LTD.), DEREHAM.

Pinks are very numerous, but as a true self pink the variety known as Bolton's Pink wants beating. It is a trifle addicted to burning, but is quite A1 when grown

with a small amount of shade. There are very many of the various shades of pink among the Spencers, but the two most distinct and true types are blush-pink. Mrs. Hardcastle Sykes is the best, and quite fixed, as is also Paradise, the latter variety, for colour, size, and form of flower, being very fine indeed, and much better than the original Countess Spencer. Probably a score of other pinks will be sent out in 1908, but I do not know of any to surpass the two I have selected.

As a Dark Blue, Lord Nelson is good, and very far in front of Navy Blue. Amongst the Light Blues, Romolo Piazzani and A. J. Cook are two very good varieties. Both are alike in colour, but the latter is of the Spencer type, and likely to become very popular.

Rose-coloured varieties.—As a plain standard variety, Prince of Wales is by far the best; but of the Spencer type it is really difficult to make a selection, though, in my own opinion, John Ingman should stand first, it being a true self colour, which is not the case with either George Herbert or E. J. Castle, in both of which a shade of orange runs through the standard.

Orange shades.—Henry Eckford, though very subject to burning, is a really fine variety, and quite distinct; when well grown, a bunch of this is more striking than any other Sweet Pea. Helen Lewis is the best Orange among those of the Spencer type at present on the market, and is a particularly fine flower, but it cannot be relied upon, owing to its sporting proclivities.

There are one or two others in this colour which should be heard of in the future.

In the Purples and Violets, Duke of Westminster is the best at present, but I think my own variety, Rosie Adams, if it remains true, will take its place in a season or two.

Among the Bronzes and Maroons, Black Knight is the best, though Dudley Lees and Silas Cole, which are of the Spencer type, should prove much better when fixed, both having larger flowers and better stems.

A good many Yellows have been placed on the market recently, and, of these, Mrs. Collier is of good substance, with four flowers on a stem, but it is not better in colour than the Hon. Mrs. Kenyon. James Grieve, a variety shown at Vincent Square, and a sport from Sybil Eckford, will, I think, when sent out, surpass all others. Clara Curtis, as a yellow of the Spencer type, ought not to be overlooked.

Of Lavenders there are three which I think stand out from all the others. These are Lady Cooper, Frank Dolby, and Lady Grisel Hamilton, the two former being very fine new varieties, for which Lady Hamilton will have to make way.

Of Mauves there are also a great number, but it will be difficult to beat Mrs. Walter Wright, though The Marquis and Doris Stevenson, both sports from Countess Spencer, are very good. In Magentas, George Gordon and Captivation are the only two worth classifying, but even these are hardly deserving of attention.

Of Red Stripes there are several, but America and the Old Pink Fryer are the two best, Jessie Cuthbertson, which is usually shown in this class, being more of a "Fancy" than a Stripe. A decided advance has been made during the past year or so among the Blue Stripes, Sutton's Marble Blue and Prince Olaf easily displacing Princess of Wales and others in this class. Helen Pierce, by the way, is not exactly a "Stripe," but a Marbled variety, of unusual merit.

Of Picotees, Phenomenal is a very fine blue-edged variety, Dainty (pink-edged) being also good, but Elsie Herbert and Evelyn Hemus will no doubt (when sent out) displace Dainty.

Among the Bicolours, Jeannie Gordon is really very fine, and I consider it the best and hardiest grower of all Sweet Peas, while Prince Edward of York and Beacon are both very distinct and decorative.

There are a great many varieties which do not come under the various colour headings here dealt with. These are termed "Fancies," and among them are the following fine decorative varieties:—Sybil Eckford, Gracie Greenwood, Blush Queen, Agnes Johnson, and Sutton's Queen. These have quite a charm of their own, and at the various shows one often sees one or other of them taking prizes in the Table Decoration classes.

A number of other novelties that have come under my notice are not mentioned in the foregoing paragraphs, owing to the fact that many of them are



very far from being fixed; but one that ought not to be omitted is St. George (late Hurst's Queen of Spain). This variety is a particularly fine orange shade, and received the N.S.P.S. medal as the best new variety of the year 1907.

#### **Sweet Peas in Pots.**

To ensure success in growing and flowering Sweet Peas in pots, a start should be made in the early autumn, sowing the seeds from the middle of September to, say, the middle of October. Five or six seeds are about right for a 5-in. pot, while the compost should be fairly light, but not too rich, say, one part each of loam, leaf-soil, and sand, with the addition of a "48"-pot of bonemeal to each barrowload of the mixture. After sowing, the pots should be placed in a cold frame, where the lights can be removed on warm days.

In a very few days, if the seed is new, the young plants will make their appearance, and a sharp look-out must be kept to prevent slugs, birds, or mice eating off the young tops. All these pests seem very partial to Sweet Peas, so steps must be taken to cope with them at the outset. The best practice to combat the ravages of slugs is to stand the pots on a layer of ashes well sprinkled with soot, and if a few young Lettuce leaves are scattered about when the pots are placed in the frame, these will attract the slugs, when they may be killed before the Peas are up. In the case of birds, a garden net placed right over the frame will be

found very effective. Mice are the worst enemies, as they take the young tops off as soon as they appear



SCARLET GEM.

above the soil. A very good plan is to place a few small pieces of bread and butter covered with phos-

phorus paste among or on the pots as soon as they are put in the frame, and the chances are that you will have poisoned any mice there are in the neighbourhood before the seeds have germinated.

When the weather gets very cold and damp, it is as well to remove the pots to a shelf near the roof in a quite cool house, where they can remain till it is time for the plants to be moved into their flowering pots—some time during January, or early in February. The size of pot to use at this time must be governed by the amount of head-room you are eventually able to give the plants, as the smaller the pots used the less they will grow; but for general purposes 12-in. pots, from which a great quantity of bloom can be gathered, will be found to give good results. The size of pot mentioned may contain from seven to twelve plants.

#### **The Flowering Pots.**

The soil for this potting should be of a more holding nature than before, though, again, not too rich, while the great aim should be to get the plants to start flowering as low down as possible. If potted into a rich compost, they are apt to grow very tall, and in some instances drop their flower-buds, which, of course, considerably delays the date of blooming.

When potting, I prefer to shake the plants right out of the old soil, placing each one out separately at some distance apart, and about an inch from the side of the

pot, and potting them pretty firmly with a rammer. This may appear likely to cause a check to the young plants, but as there is not a great amount of sun at this time of the year they soon make a fresh start, and the growth is all the more sturdy by reason of the plants being placed well apart.

Till the middle or end of February the plants will not make a great deal of growth, so that up till then their requirements as to water will be very moderate, and it is not wise to overdo them in this respect, though at the same time it is not advisable to let them get too dry. As the days get longer, however, growth will be more rapid, and the plants may be put in a house where the night temperature is about fifty degrees. Up till this time, a few Birch twigs only will be required to support the plants, but as they get taller some good long Bamboos must be used. Put five of these round a pot, and tie them at the top to a good stout wire ring about fifteen inches in diameter. This arrangement will keep the plants quite rigid in the pots, while a few strings of matting tied round them as they make growth will keep them perfectly tidy.

Commence feeding after the first few blooms have opened. For this there is nothing much better than cow-manure water, but an occasional light sprinkling of artificial manure will help the size of the flower, and also prolong the season of growth. At all times the plants must be kept steadily growing, remembering that they resent any undue forcing or great variations of

temperature. They must also be given all the light and air possible, never crowding them together in any way. A little green-fly may at times make their appearance in the points of the shoots, but if the plants are well syringed occasionally, this can easily be kept under.

By carefully following these directions, good flowers can be obtained towards the end of April or early in May, and as this is a time when many of the indoor bulbs and other forcing plants are going out of bloom, a picking of Sweet Peas for the house and table decorations is especially welcome, while the plants will continue to bloom well up to the time that the outside ones come in; in fact, when the weather is warm enough, and the plants are in good condition, they may be planted out of doors, and will continue flowering there for some considerable time.

A few good and useful varieties for pot culture are Paradise, John Ingman, Dorothy Eckford, Gracie Greenwood (this especially good), King Edward, and Lady Grisel Hamilton.

T. S.

#### **The New Winter-Flowering Varieties.**

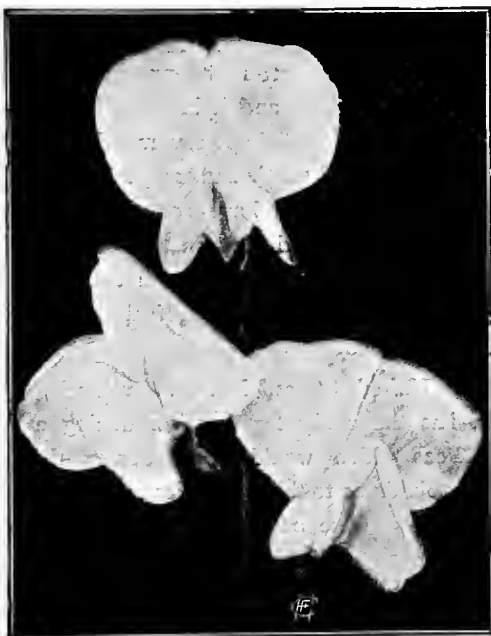
Sweet Peas at Christmas! The suggestion is pleasantly startling, and will appeal unfailingly to all lovers of the most beautiful of the summer annuals. Therefore it is with much satisfaction that I draw attention to the new hybrids to which the title "winter-flowering" has been given, and to the evidence which amply justifies our looking forward to the time when

we shall indeed be able at Christmas to make a gathering of "the sweetest flower that grows." As a matter of fact, this has already been accomplished in several directions, both at home and abroad; and though, of course, perfection has by no means been reached, yet the strides already made are of such a nature that we may look forward, after a shorter or longer process of selection and re-selection, as may prove necessary, to considerable improvement, and finally to the fullest measure of success.

"But surely not out of doors?" the reader will reasonably inquire. Well, no—not at present, at any rate; for although the writer has of a certainty gathered Sweet Pea blossoms out of doors at Christmas, both the position and the season were exceptional in the extreme, while the plants which yielded a few straggling flowers were very late-sown. They were, however, of the ordinary type; whereas the new hybrids which are to give us winter flowers are the outcome of special selection and crossing with the said purpose in view. Thus, from Egypt and the United States, and from Saffron Walden at home, come reports of various experiments, all of which have met with more or less success.

In December of 1906, Mr. C. Engelmann, of Saffron Walden, exhibited at the annual meeting of the National Sweet Pea Society a number of blooms in full perfection, which were the outcome of the selection

of a sport from Captain of the Blues. Mr. Engelmann noted that one plant in a row of the variety named, though bearing a flower in every way true, was at the



HEINEMANN'S WINTER-FLOWERING SWEET PEA.

same time of distinctly dwarfer habit, though by no means bushy, as it kept, on the other hand, to a single stem. Seed from this, sown in October, flowered under glass about Christmas, and yielded more seed,

of which about seventy-five per cent. came true to the sport. Mr. Engelmann has since reported similar sports from Dorothy Eckford, Miss Willmott, and Lady Grisel Hamilton, as well as a number of crosses between these and the ordinary type of Sweet Pea, so that nearly all colours are now represented. A unique feature of these sports and hybrids is that they commence blooming within about two months from sowing the seed, and the gentleman responsible for their introduction claims to have sown in August and September, and flowered them in the last three months of the year, while he is of opinion that they should continue blooming until plants of the ordinary type are well advanced.

In the United States, Mr. A. Zvolanek, of New Jersey, has the credit for first introducing a race of Sweet Peas which would flower during the winter. General opinion as to these varieties is to the effect that sportive plants have been selected and re-selected for several seasons until the flowering season was completely changed. This would seem to be the case with all the winter-flowering varieties, while it is also a fact that the difference between the American varieties and those from Saffron Walden is by no means of a marked description. Other winter-flowering varieties have been introduced from Télemly, in Algiers, where an English clergyman has been successful in selecting seed of some plants which displayed a tendency to



flower unusually early. He discovered that these varieties, when sown in the autumn, would bloom in December, and by careful selection he evolved the *Télemly* strain, which now includes a great number of the ordinary varieties. The American variety, *Blanche Ferry*, was the forerunner of the new varieties in this case, and first attracted the reverend gentleman's attention by blooming in March, and then in February.

Seed of winter-flowering varieties is now in commerce, but in this country, at any rate, the amateur grower will find it wisest at present to rely upon this seed to furnish him with early flowers out of doors. It is admitted that though the winter-flowering varieties do, indeed, fulfil what is claimed for them, and furnish blooms under glass during the dull days, yet they are certainly not all that we should like to see them. They are an earnest of what the future may hold in store for us—good evidence of the work which is going on in the evolution of our favourite subject; but they need the sunnier skies of other climates to attain to fullest beauty in the winter months. Here the blooms open badly, as a rule, and usually small, so that they do not reach to the full value of the summer type; but such faults as these may be eliminated in the very near future, as they are not altogether insuperable. Meanwhile, we may sow our winter-flowering seed in January or February, and gather blooms, as has been

demonstrated in the 1907 trials of the National Sweet Pea Society, fully fourteen days in advance of the ordinary type grown under the same conditions.

**A Note on the Inoculation of Sweet Pea Seed.**

More particularly to those readers whose misfortune it is to have to cope with poor soil, a brief note on the sowing of seed inoculated with the new nitro-bacterine culture should prove of especial interest. In the first place, it must be understood that the Sweet Pea is a member of the Natural Order, Leguminosæ, any crop of which improves the soil for the succeeding crop, a teaching dating back to the beginning of the Christian era, but which scientific research has only succeeded in placing upon a practical basis during recent years. In early days it was believed that plants were able to assimilate atmospheric nitrogen just as they do carbon, but in the middle of the last century it was demonstrated that the opposite was the fact, and that plants obtained nitrogen in the form of nitrates from the soil. Leguminous plants, however, were considered an exception to this rule, it being shown that the presence of the nodules on their roots was necessary for the absorption of atmospheric nitrogen. These nodules were next discovered to contain bacteria-like bodies, of which a cultivation was obtained, in consequence of which Professor Nobbé commenced his experiments in soil inoculation.

These experiments were not attended initially with much success, the culture material which was dis-

tributed by Professor Nobbé having been grown, it is surmised, in an unsatisfactory medium. However, the American Government eventually took the matter in



PROFESSOR W. B. BOTTOMLEY.

hand, and in 1902 and 1903 a number of trials were made in the United States, and these were so successful that in the autumn of 1903 many thousands of samples

were distributed throughout America for different kinds of Leguminous crops. Reports on these samples proved that seventy-five per cent. of the inoculations were successful, but the same culture used in England, either through being applied to too rich a soil, or through not being quite fresh, was quite ineffective. This was the position when Professor W. B. Bottomley, of King's College, who was conducting research work on some unsolved points in the life history of the "bacteroids," found himself in the spring of 1906 in a position to distribute a small quantity of culture material.

The reports sent to Professor Bottomley proved without a doubt that poor soil, when inoculated with fresh culture material, will give just as successful results in England as in America. Culinary Peas grown on inoculated soil were reported as three weeks earlier and fifty per cent. more prolific than those grown on uninoculated soil; another grower reported that twelve ounces of inoculated seed gave better results, both in yield and quality, than a pound and a half of seed not inoculated; while with Clover, and especially with Runner Beans and Sweet Peas, the inoculated seed was the cause of numerous similar and enthusiastic reports.

One recipient of the culture sowed four rows, thirty feet long, of inoculated Sweet Pea seed; the plants did remarkably well, nurserymen and private gardeners

travelled long distances to see them, the blooms carried off first prizes wherever exhibited, and very high prices were paid for the cut flowers. In another instance, where the plants were grown in inoculated soil in window boxes, they reached to a height of four to six feet, and carried a profusion of blooms, while



THE CENTRE PLANT WAS GROWN IN INOCULATED SOIL.

side by side with them were others, grown under the same conditions in uninoculated soil, which reached only from two to four feet high, and bore a very meagre quantity of blooms.

The method of seed inoculation is exceedingly simple once the bacteria culture has been reduced to solution according to the directions which are sent out with each package. Enough of the solution is taken to moisten the seed, which may be accomplished either by placing the seed in the solution, or by sprinkling the solution on the seed, and turning until all the seeds are moistened. The seeds should then be spread out in a shady place—never in direct sunshine—until they are perfectly dry. If thoroughly dried, the inoculated seed will keep for several weeks, but the culture solution must always be used fresh, as it will not keep, after it is ready for use, more than a day or two. With regard to the inoculation of soil, enough soil should be taken in a dry state to be merely moistened by the solution, but it must be thoroughly mixed, to ensure that every particle of soil is moistened. The moistened soil should next be mixed with from four or five times its bulk of soil, the whole being spread thinly and evenly over the prepared ground, and afterwards raked or harrowed in.

The object of making a solution of the bacteria culture is really to liberate or resurrect the bacteria, which do their work by attacking the roots of leguminous plants, and causing the formation of the nodular growths shown in the illustration, and which, as has been stated already, are necessary for the absorption of atmospheric nitrogen, so all-important to the

welfare of the plant. Professor Bottomley has declared that the results afforded in the case of Sweet Peas are sufficient to justify the belief that we are



THE ROOT ON THE LEFT SHOWS THE NODULAR GROWTH ON A LEGUMINOUS PLANT.

at the beginning of a revolution in the treatment of plant life, for his further experiments point to the fact that it is by no means impossible to cause the forma-

tion of the wonder-working nodules on other than leguminous crops.

It ought to be understood, however, that inoculation is useless when the leguminous crop is already producing up to the average, where the plants show plenty of root nodules, where the soil is already rich in nitrogenous material, or where it is deficient in lime and phosphates. Finally, inoculation either of seed or of soil will not overcome the drawbacks of improper cultivation of the ground, adverse weather conditions, or bad seed. So that, as I stated at the outset, the matter of soil or seed inoculation is of importance particularly to those whose misfortune it is to have to cope with a very poor soil; while I may conclude with the suggestion that nevertheless, since inoculated seed is now a commercial commodity, all lovers of the Sweet Pea with a taste for experiment should devote a couple of plots for comparative purposes to both treated and untreated seed, and carefully note results.

**The Everlasting Pea.—*Lathyrus latifolius albus*.**

Although perhaps not so useful in an all-round sense as the annual form, to which the major part of this manual is devoted, nevertheless, the Everlasting Pea is a very beautiful subject, and has so much to recommend it that a brief reference to it here will not be out of place. While we often have to bewail the loss of seedling Sweet Peas—from the results of too early sowing, or the ravages of slugs, or birds, frost, and so



on—this perennial species keeps on the “even tenor of its way,” regardless of its various enemies, and, being as hardy as the proverbial doornail, it comes successfully



PERENNIAL PEA—DEREHAM.

through the severest winter without any protection whatever, luxuriating in almost any corner where an average amount of light can reach it.

For covering arches, trellises, and pergolas, it has

few equals. It is not even out of place in the herbaceous border, providing it be placed in the back row, and a few neat stakes be provided for support. These will quickly be hid by a wealth of flowers and foliage. A few such clumps will add greatly to the effectiveness of a border, particularly if the white variety be selected, as we have none too many white perennials, even during the summer months.

Generally speaking, the plants may be raised from seed (with one exception), and, perhaps, the best and quickest way to grow a large clump is to place three or four seeds round the side of a 3-in. pot. If this is placed in the greenhouse for a short time during March, germination will soon take place, and with a position close to the glass, sturdy little plants will quickly be formed. Allow them to remain in the pots as sown, and, if carefully hardened off, preparatory to planting out early in June, they will form fine specimens before the autumn, most of which will flower the same year.

In planting, it is well to remember that the work is being done for an indefinite period, and that there is nothing this plant dislikes more than disturbance at the root. All it asks for is to be allowed to push its thong-like roots down into the subsoil, where they may be out of the reach of drought, and, once in this position, they will reward the cultivator with sheaves of blossoms, often at a time when the Sweet Peas are "burnt up." Therefore, break up the subsoil for at least three feet, enriching it, if possible, with old turf or

potting-bench refuse; this is much to be preferred to stable manure, as a too rich soil is not conducive to the best results. Drainage is of far more importance; luxuriating in a light, gravelly soil, as this plant does,



A VASE OF "EVERLASTING PEAS."

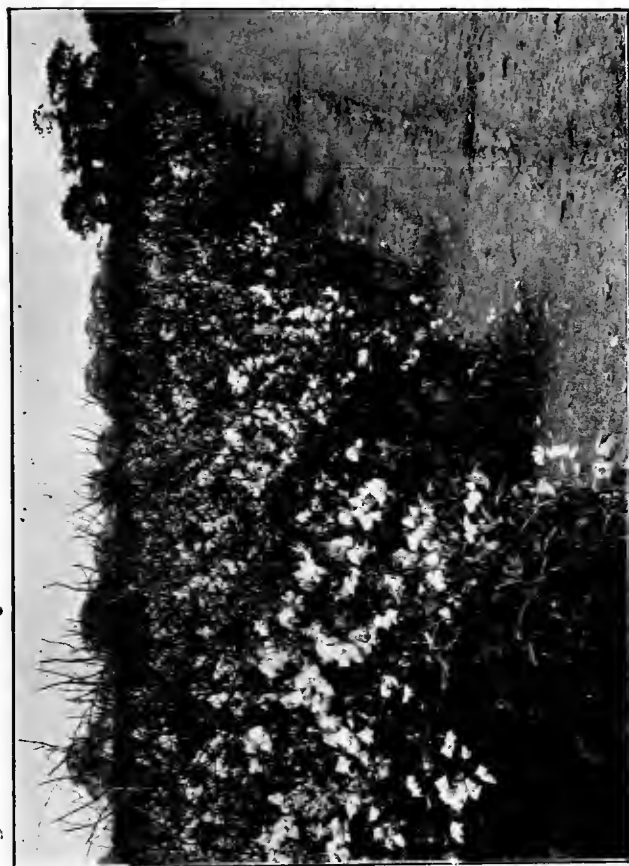
anything like stagnation at the root is fatal; therefore, when planting in stiff ground, place at least a foot of broken bricks, or other open material, as a base for the plants. When planting, do not divide the

plants up singly, but plant as sown, in clumps of three or four; they will then grow quickly away, without apparently receiving any check.

It should be added that the white variety does not always come true from seed, sometimes reverting back to the pink form, however carefully the seed may be selected; therefore, where it is possible to procure cuttings from a good stock plant, this mode of propagation is to be preferred. Although not one of the easiest subjects to strike, a little care and attention will usually result in a sufficient number of plants, providing a few extra cuttings are inserted. The best time to take the stock of cuttings is during the early spring, when the young growths are about three inches long, and, if taken with a portion of the old wood—or root-stock—and placed round the sides of a pot, in a compost of light, sandy soil, there will be very few failures; a bell-glass placed over the pot will materially assist in the formation of roots. An ordinary greenhouse temperature is quite high enough; care should be taken to wipe the moisture off the inside of the bell-glass each morning, as the cuttings are very liable to damp off.

During very hot and dry summers a mulch of littery manure, placed on old-established plants, will assist in the development of both flowers and foliage, and when planted where partial shade at noonday is afforded, the blossoms will last much longer than where more fully exposed to the sun's rays.

One of the latest garden types is *L. latifolius grandis*.



A FIELD OF SWEET PEAS IN A NORFOLK NURSERY.

florus albus, which produces from twenty to twenty-four large white blossoms on one stem, but the price is somewhat high. However, those whose means are limited may purchase, at a trifling cost, a packet of *L. latifolius albus*, and, if treated on the lines indicated above, from twelve to fifteen fine blossoms may easily be grown on one stem, and a succession of flowers may be kept up from July until frost puts an end to further growth. Who does not know the broad-leaved Everlasting Pea (*L. latifolius*) of our country cottage gardens, climbing everywhere, and hiding everything? So luxuriantly does it grow that it often takes full possession, and clothes everything in a raiment of beauty. Then we have the large-flowered *Lathyrus grandiflorus*, of which the flowers are deep cerise in colour; this is a vigorous-habited variety, of great beauty, sometimes named *L. biflorus*. *L. Drummondii* should also find a place, because of coming into flower before any of the above-mentioned varieties, and being much the same in colour as *L. grandiflorus*.

THE END.

