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NOTICE

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Y. WOOTTON,
General of Titles.

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RURAL AND SUBURBAN

CULTURE, TRAINING AND VARIETIES OF SWEET PEAS

By James Simpson, 1510 Blanchard Ave.
The Sweet Pea as a garden flower has risen to great prominence within the last ten years, and is at present a universal favorite in the garden; but still 95 per cent of the growers of it are much behind the times in their system of growing them, and to such the following remarks are meant to apply, and not to the limited few on Vancouver Island who grow them very near to perfection. The writer has much pleasure in saying that he never saw better Sweet Peas even in Britain than he has seen in Victoria.

To be successful in their growth, you must give them two feet of good soil; see that it is well drained, or at least make certain that it does not get waterlogged.

Give abundance of thoroughly well-rotted manure, especially if any is wanted for seed purposes; if flowers only are wanted, the manure need not be of a nitrogenous nature, as Sweet Peas have the faculty, along with the whole of the natural order leguminosae of extracting nitrogen from the atmosphere, which is left in the ground only if the plants are not allowed to seed. The next point to consider is sowing the seed or planting the plants. As a rule the amateur grower sows the seed much too thick, and does not thin out enough. If sowing seed is preferred, it should be, say, 3 seeds every foot run and thinned out to 1 when the plants are about 2 inches in height. The seed, if the ground is in good order and not too wet, should be sown in February; and most sowers prefer to sow in a cold frame or a warm border and transplant. If this way is preferred, the transplanting must be very carefully done, or the plumula, or growing point of the root, will get broken and the plant will do little or no good. In planting, plant one foot apart in the line; the future culture consists in simply keeping clean, giving abundance of water, after they are two or three feet high, seeing that they are properly fixed on the wires, and, above all, picking the flowers off before they form a seed pod. If everything has been done in first-class order the vines should grow to from 10 to 14 feet in height, and strong accordingly.

Training of the Sweet Pea consists mostly in having a thoroughly good trellis. A very commonly used one is ordinary poultry netting, more or less in height and more or less badly fitted. The writer does not recommend this, as it interferes greatly with the picking. In a long line, for instance, if you happened to see a flower you wished, or an incipient seed pod you wanted picked off, you would have to go round a pretty long line in order to get it. A far better plan, in my opinion, is to erect a trellis of 2 x 1 inch dressed wood; one every 6 feet is close enough; and make them at least 7 feet above the surface; they run horizontally thin galvanized wire every 6 inches and also perpendicularly, the same strength of wire; wind the one round the other where they cross each other. Thus you have a trellis in six inch squares as tight as a fiddle-string, and the size of the mesh allows you to get the hand through anywhere for picking purposes. And last but not least, you can train the young vines backwards and forwards as they grow up, and thus prevent winds tearing them off.

Varieties are now so numerous that the difficulty for the amateur has been what to take; but here the National Sweet Pea Society of Britain has given last October what are the best varieties in their various sections; and as this has been done after very exhaustive trials, their selection may be thoroughly relied on. It must be understood that they deal only with varieties that are in commerce, which are as follows. Those marked with an * are waved types:

- White
- *Etta Dyke, *Nora Unwin, Dorothy Eckford.
- Crimson and Scarlet
- *The King, King Edward, Queen Alexandra.
- Rose and Carmine
- *Prince of Wales, John Ingman, Marjorie Willis.
- Yellow and Buff
- *Clara Curtiss, James Grieve
- Blue
- *A. J. Cook, Lord Nelson.
- Blush
- *Mrs. Hardcastle Sykes.
- Cerise
- *Christie Unwin, Cocinea.
- Pink
- *Countess Spencer, Prima Donna.
- Cream Pink
- *Constance Oliver, *Mrs. Henry Bell, Queen of Spain.
- Orange Shades
- *Helen Lewis, *St. George, Miss Wilmott.
- Lavender
- *Frank Dolby, *Mrs. C. Foster, Lady G. Hamilton.
- Violet and Purple
- *Rosie Adams, Duke of Westminster.
- Magenta
- *Menie Christie.
- Mauve
- *The Marquis, Mrs. Walter Wright.
- Maroon and Bronze
- Black Knight, Hannah Dale.
- Picotée Edged
- *Elsie Herbert, *Mrs. C. W. Breamore.
- Striped and Flaked (Red and Rose)
- *Aurora Spencer, *Yankee, J. Cuthbertson.
- Striped and Flaked (Purple and Blue)
- Prince Olaf.

Fancy
Sybil Eckford.

Bicolor
Ireland, Jeannie Gordon.
Marbled

Helen Pierce.
Of course there is besides these many very good newer sorts, such as Winnifred Deal, Giant Cream Asta Ohn, Mrs. A. Malcom, Mrs. Simpson, Mrs. Biederstedt, Quennie, Apple Blossom, Andrey Crier, Evelyn Hemus, all of which can be got at a reasonable price. One sort in England last year, the owner wanted twenty-five dollars a seed for it and would not sell less than ten seeds at that. Growers would need to be very careful about the seeds they put in as sweet peas are very variable, often coming as they grow from five to fifteen per cent slightly different from type, but to show where a little knowledge is a dangerous thing. Some foolish Virgins I knew last year picked out only the largest seeds, which any seedsmen knows though they give the strongest plans are most liable to come untrue. More or less, often 25 per cent and then the poor seedsmen gets the blame for what is entirely due to their own ignorance. Careful observers will also notice several shades on one vine, caused by flowers being too old.

THE CHRYSANTHEMUM

There are two totally different kinds of chrysanthemums. The one that is best known to the amateur, the old-fashioned, hardy one that in its many colors adorns the gardens about many an old farmhouse, is small-flowered, seldom exceeding an inch and a half in diameter even under the best of conditions. These were known to our grandparents as artemisias, perhaps because the bruised leaf has an odor very like that of the true artemisia or wormwood. These hardy, small-flowered or pom-pom kinds have been almost eclipsed by the large-flowered or tender florists' kinds that are grown in the greenhouse and over the perfection of which the contests of the exhibitions centre.

The Leading Flowered Types

These large-flowered kinds are of several types, but practically only two main sections are recognized on the tables: the incurved and the so-called Japanese. The first named are characterized by the graceful, regularly incurved petals; broadly, all flowers that do not thus incurve are classed Japanese. By far the greatest number of the popular favorites of the day are of this variety. Among connoisseurs, varieties of this section are further subdivided according to the twist of the individual petals, as the Japanese incurved, the Japanese reflexed, and so on.

The chief interest of the exhibitor is always centred on the large-flowered types because they make by far the most impressive display. These are grown usually for exhibition purposes, one flower only to each plant. Single-stemmed flowers, as these are called, are grown in pots when they are to be used primarily for decorative purposes on the plant (for instance, grouping with foliage plants); benches in the greenhouse when they are to be used cut. You cannot produce the largest flower of which any variety is capable by any other means.

The single chrysanthemum, charming for table decoration and for cut flowers to be used as table centerpieces, while not a large factor in the flower shows, maintains a position of steady favor among those who regard flowers purely for their artistic qualities. There are single varieties of the hardy, or pom-pom, type as well as the large-flowered. A curious development of the single flowers is seen in the anemone, in which the disc florets are somewhat enlarged but have not been produced into rays as are those of the margin. There are only two or three varieties of this section commonly in cultivation.

Trials of Patience

The greatest skill of the cultivator, and certainly the greatest amount of patience, is displayed in the production of specimen plants, each one of which has to be given individual attention and nursed with most solicitous care from the time cuttings are taken in January. The plants that attract so much attention in the exhibition halls are always one-year-old plants. For exhibition blooms only, cuttings may be taken as late as May, the plant being carefully grown in from that time until November. Some varieties will not yield their best blooms unless they are propagated as early as February, but that is exceptional. The care of the chrysanthemum plant from the time the cutting is rooted until the bud begins to show a tendency to burst or to open its scales, is merely one of careful attention to conditions which will ensure a continuous growth. This will usually be in September, when all syringing is discontinued to avoid all chance of rotting of the delicate petals.

If water by any chance gets into the top at the opening of the bloom, there is danger of damping or scalding, thus disfiguring the tips of the petals. Whenever the opening flower shows browned or discolored petals, it is a sure indication that water has accumulated in the bud. Even drip from the roof, caused by the condensation of the moisture in the air, is sometimes responsible for this. So it means that the cultivator must be very careful in handling water during the last month or two of the plant's growth.

Too high temperature, which results from the sun's heat in the early fall, is very likely to add to the troubles of the chrysanthemum grower, and all his ingenuity has to be exercised to secure abundant evaporation in order to reduce the temperature. Once the buds are formed the ideal temperature is between 40 de-

Brightness in Reds and Pinks

It is not equally easy to produce good flowers in all colors. The yellows most people can succeed with and the whites are not especially troublesome to bring to perfection, but the red, crimson and claret-colored varieties are easily burned, and particularly so if strong fertilizers have been given to the plant after the buds have shown a trace of color. It is an anxious moment for the grower. In his anxiety to produce the best and largest flowers, there is a great temptation to stimulate greatly. These colored varieties are benefited by light shading. The observant visitor will notice a great degree of difference in the brilliancy of coloring of the various pink varieties, but shading which greatly improves the brilliancy of the color is not always beneficial to the growth of the plant. The art of the cultivator lies in striking the proper balance.

Freshness of the bloom, as it stands on the exhibition table, counts for much, and this depends largely on the manner in which it is handled after it has been cut, provided every little cultural detail has been attended to from the very first. Naturally, the strongest, best bloom, but no matter how well it has been grown it can be ruined between the time it is cut and the time it is placed before the public. The best exhibitors cut the blooms twenty-four hours before they are to be packed for shipment. They are then placed in water and placed in a cool, dark corner away from draughts, and each flower is carefully wrapped in tissue paper before being packed. In wrapping the incurved blossoms, the paper is tied around the stem just below the flower and pulled up over the top, where it is tied. For the drooping, or reflexed form, the paper is placed on the top of the bloom, drawn downward and tied carefully around the stem below the bloom. The essential part of this tying is to draw the paper around so that it holds the petals firmly. Otherwise they will get bruised and damaged in the handling.

The wrapped blossoms are then laid lengthwise in boxes six feet long, two feet wide and about one and a half feet deep. These boxes are lined with a thickness of heavy glazed wrapping-paper, lapped over so as to exclude the air, and held in places by tacks. Inside this are about half a dozen thicknesses of newspaper, according to the condition of the weather and the distance the box has to travel. If the weather is likely to be warm, some lumps of ice are placed inside the box about the stems of the flowers.

The tied blooms are laid lengthwise, with the blooms towards one end of the box, a roll of excelsior having previously been put into position to support the neck of the bloom so that the petals will not be crushed against the bottom of the box. Two or three rows of blossoms may thus be placed in the box, and cross strips of wood are then nailed in to keep everything tight, a roll of excelsior being placed in for each layer of blossoms. As each roll is put in, the foliage should be watered lightly, or better still, a sheet of wet paper placed over it.

MARKETING POULTRY.

The holiday trade for poultry will soon be here, and farmers will be shipping in their surplus stock of birds. One of the most important details in connection with the poultry business is to put everything, eggs and birds on the market as fresh as possible, and in the most attractive condition. By this time the fowls should be fattened and ready for market. They should always be well fattened and well dressed because there is no profit in marketing an inferior product.

Before killing, all fowls should be kept away from food for at least one day and night, even thirty-six hours being better than twenty-four. If this is not done, the food will decompose in the crop and intestines, and injure the quality of the meat. It will be stale before it gets to the market.

There are different methods of killing, but when the birds are for local, or immediate consumption it is usually considered the better plan to kill by dislocating the neck and pulling the head out a short way. This is done by and at the same time stretching the neck, when it will be immediately dislocated; pull the head out about 1 1/2 inches from the neck. The head is thus held to the body by only the thin skin of the neck. Allow the head to hang down, so that the blood can collect in the neck and not discolor the body.

They can be immediately dry picked and care should be taken to remove all the pin feathers. Old fowls are more easily dressed by scalding in hot water just below the boiling point and then dipping them quickly into cold water before picking. This makes the feathers stick together so they can be removed much quicker. It also keeps the outside thin skin from peeling off. If scalded, however, the price is one to two cents lower than if dry picked.

Just as soon as picked the chickens should be thoroughly cooled, packed in boxes, and marketed as soon as possible. Pack the birds so that their backs will be up when the box is opened, and line the boxes and cover each layer with plain paper.

After the birds are packed it is not a good plan to hang them up by their legs as that will stretch them out and make them look long and lean. The better plan is to keep them doubled up, or if many birds are handled use a "pressing box." This is simply a V-shaped trough in which the birds are put after being picked. They are placed in this box breast down and weighted. This moulds them into a compact form and as soon as they are cold they will remain that way, making a plumper and more pleasing looking article for the buyer.—North-west Farmer.

SOIL CULTURE IN DRY BELT.

One of the men who has made a name for himself in the agricultural world of today is Prof. H. W. Campbell, of Lincoln, Nebraska, the elaborator of what is known as the "Campbell system" of farming, a system which is based on sound scientific principles and is designed for the "dry belt." Recently Prof. Campbell has been addressing farmers gatherings in Alberta, and the following points in connection with his system, gleaned partly from his addresses in the west, and partly from his presentation of it in other form, will be of particular interest at this time.

Prof. Campbell is one of the pioneers of the western States, and has seen both sides of farming life in his agricultural career. "Necessity is the mother of invention," and it was the darker side of crop raising that made him seek for a method of culture which would enable farmers in the semi-arid belt to raise profitable crops independent of either weather conditions or irrigation; and after fifteen years' research, Prof. Campbell is now anxious to demonstrate to western farmers the value of the system which he has elaborated. During the first three years on his homestead in South Dakota, he had splendid crops, and not until the fourth, fifth and sixth crops had failed, owing to drought, did he turn his attention to the movement of soil water and its relation to agriculture. He tried different seasons and depths of ploughing and found that each succeeding season gave him different results. In the early days, even in the irrigated districts of Kansas and Nebraska, after several crops had been taken from land that was abundantly supplied with moisture, the yield grew steadily less and the settlers found that the idea that water was the only element necessary was entirely erroneous. Besides this, trouble arose in these districts owing to the farmers quarrelling among themselves as to the amount of water received by each, everyone thinking that his neighbor received more than his just share. Prof. Campbell's system, however, does away with irrigation, even in the most arid districts.

Thorough understanding of his system and its adaptation to varying conditions, he claims produces larger yields with one quarter the amount of water used formerly, proving conclusively that it is not a question of water alone, even with the most fertile soil.

To raise crops according to this system the soil must be brought into that condition in which it contains an ideal quantity of air and water, and then, with heat and light, fertility is developed. Perhaps we should not be very far wrong if we should say that Prof. Campbell's system is almost entirely built up around these two points; thorough tillage and conservation of soil moisture. To be sure, there are very many other related considerations, and there are many diverse roads leading to these main points. Great stress is put upon those forms of cultivation that constantly forestall the evaporation of water from the surface of the soil, or that prevent its being drawn off by weeds; and the frequent stirring of the upper layer has a large place in the system. The scientific principles involved are much the same as those underlying the method of summer fallow that has for so many years been recommended by Angus Mackay, of Indian Head: only Prof. Campbell has given the same principles wider application, and has elaborated what may very rightly be termed a "system" of cultivation.

It is impossible in a short article even to summarize his methods, but a few salient points may perhaps be touched.

Prof. Campbell claims that there is no tool that the farmer can own that can be used in as many ways and under as many different conditions as the disk harrow. Its great value lies in its adaptability to the protection of moisture, the preparation of the surface soil, for the encouragement of rapid percolation of the rain water, and in its thoroughly pulverizing a somewhat cloddy field and getting an improved physical or mechanical condition of the soil. It has been used on thousands of acres instead of ploughing when it should have been used to precede the plough, in which connection its work is most valuable. The smallest size of disk is recommended on account of its greater pulverizing and reversionary power. The proper use of the disk harrow at the proper time may double the crop, and its use is advised early in the spring on all stubble ground or old fields intended for spring crops; also immediately after the binder. This latter procedure may come as a surprise to many, but Prof. Campbell gives strong reasons for his advice as follows:

"In still another season of the year, we find the disk of equal value, that is immediately after the small grain or any other crop is removed. It is advised, whenever possible, to follow behind the harvester, and not allow the soil to be exposed a single day to the sun's rays after the crop is gathered. It is very difficult to explain the value and importance of this work in sufficiently strong terms to permit the reader to grasp its full force and meaning.

First: There is no time in the year when water held in the soil near the surface in sufficient quantities will bring about so many chemical changes as during the months of July and August. This is the season of the year when a vast amount of nitrates and bacteria may be developed; in other words, the fertility—the very elements that start your wheat off early with dark green color, and that have very much to do with its staling.

The fact that the farmer loses sight of the real scientific or necessary physical condition of the soil in the plowing of his field for another crop, accounts for the failure of so many plowed fields to yield as much in dry seasons as fields that were simply disked with a disk

drill and not plowed. How often have we heard farmers say: 'I plowed my ground and fitted it thoroughly, and my neighbor hogged his wheat in with a disk and my crop was better than I did. In fact the man with the disk had produced a more scientific condition of the soil.'

"Secondly: If there is any moisture in the soil below, by preparing this fine mulch of a liberal thickness, this moisture will accumulate in the firm soil just beneath. If no rains come, your ground is in perfect condition to plow, because of the moisture you have retained by the early disking.

"Third: If you do not wish to plow in the soil, this moisture can be carried over until the next spring when in case of a dry spring, yourself, if properly handled, can be planted, and the seed will immediately germinate and grow, while your neighbor is worrying about a dry country and may harvest nothing.

"Fourth: Sometimes you may have teams and time to do some fall plowing for spring crops. If your soil is dry it is folly to plow, but if you have held the moisture in the soil, it is wise to fall-plow, providing you follow the plow with the surface packer, firming the lower portion of the furrow slice while the soil is still moist, holding the moisture below, instead of allowing the furrow to dry out, as it will if left loose by the plow."

Another implement which finds a large place in the Campbell system is the sub-surface packer. The implement serves the purpose of crushing down the loose soil of the under portion of the furrow slice, breaking up the large lumps, and so compacting the whole that the particles of soil lie closer together and form a more perfect connection between the unbroken earth beneath and the loosened soil of the furrow, also forming a more compact seed-bed and drawing the water by capillary attraction into the stratum where the roots of the plants begin their growths.

We have compared Prof. Campbell's system to Mr. Mackay's method of summer fallowing, but Prof. Campbell anxiously insists that what he terms "summer tilling" is quite different from an ordinary summer fallow. We therefore give his own account of

How Summer Tilling Should Be Done

"Begin the work as early in the spring as the frost is sufficiently out of the ground, and the surface dry enough to permit the use of the disk harrow without the soil adhering to the disk, going over the ground twice by lapping the disk one-half. This produces a mulch which prevents evaporation; also loosens and opens the surface, so that the later rains readily and quickly percolate into the soil, hardening the soil after each subsequent rain. If the rain is too heavy, so as to dissolve and pack the surface, a second disking may be necessary, especially so if the season is advanced far enough for weeds to start freely. Don't at all hazards, permit the weeds to grow or the surface to become crusted. A little carelessness here may, and often does, make ten or twenty bushels less yield of wheat and proportionately similar losses to other crops.

"Bear in mind that there are three objects in conducting this work with great care. First is to retain all the moisture possible that may be then in the soil, for the evaporation in early spring is very great from both the strong rays of the sun and in most localities the high spring winds take up much moisture. Second is to loosen up the surface that it may more readily and more surely take in all the water from the spring rains. Third, but by no means least, to admit the warm spring air that nature's laboratory may be put early to work preparing the way for large quantities of available fertility or plant elements. Plow late in June or early July, seven to eight inches deep. Do not leave the field at noon until that which has been plowed during the forenoon has been gone over with the sub-surface packer. Then at night the same, and if you use the packer, follow it with some kind of harrow, or cultivator that will leave the surface with a light, loose mulch, breaking the larger clods, and leveling, so far as it may be possible, the top of the firm soil beneath.

"The common lever harrow produces very fair conditions. There are, however three or four much improved devices for this work being perfected, which will doubtless be found on the market very soon.

Keep Ahead of the Weeds

"In June and July weeds are quite persistent, and great care should be taken not to let them get the start. In fact, there is but little danger of weeds if you take care to lose no water by evaporation. All weeds are easily killed when small, but after the tap root has gone down and become firmly imbedded, it is not easy to destroy them. Watch the conditions of your field, going after it as soon after heavy rain as the soil will permit, using the tool which you use to keep your mulch open and loose; care should be taken to keep the mulch from two and one half to three inches deep. Remember, it is not desirable to have this mulch too fine, and never a dust blanket. It will be found very much easier to secure a mulch of desirable coarseness if the cultivating is done after rain, when the surface soil has reached the moist condition, not wet, and yet before it gets dry. Continue this persistent care through the season; in case of extreme heat more frequent cultivation is necessary. Our rule is to watch carefully the firm soil just beneath the mulch and gauge our time of cultivation during continued dry periods by the quantity of moisture, observed at the top of the firm soil beneath the mulch, or if we move the loose soil away and find that there is ample moisture, the protection is all right. If the top is beginning to show dry, then it is time to cultivate again."