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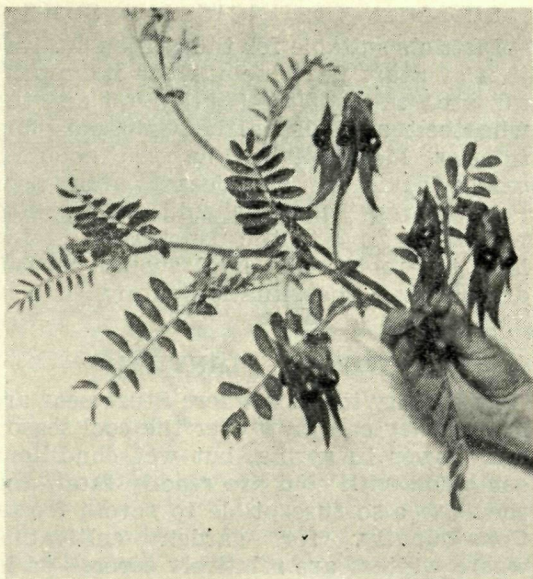
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STURT PEAS FOR YOUR GARDEN

By F. BRIDGMAN, B.Sc. (Agric.)



DURING recent years, many home gardeners have shown increasing interest in our unique and highly attractive native plants. This is understandable, for many of our indigenous plants such as the Sturt pea, Leschenaultia and kangaroo paw have a beauty of form and colouration which compares more than favourably with many richly prized importations. Contrary to popular belief, cultivation can, and does improve the flowering qualities of many native plants.

Among the native plants that can be cultivated without any great trouble—note the words “without any great trouble”—there is the Sturt pea. In my own garden in the outer metropolitan area on sandy loam to clay loam soils, I have personally grown Sturt peas for over eight years—without failing to secure some flowering plants each season. As a guide to those people who would like to try this striking flower in their gardens, the following notes on its cultivation are given.

The Sturt desert pea which is botanically called *Clianthus formosus* and which has also been called *C. Dampierii*, is found growing naturally over wide areas of the semi-arid and arid interior of Australia. While there is considerable variation in the habit of the plants from prostrate to erect, characteristically the Sturt pea has long stems which lie on the surface of the ground—a somewhat similar habit to melons and cucumbers though this is only a rough comparison. Sturt pea stems in garden conditions can cover six feet of ground or more. When planted thickly, however, Sturt peas make considerable

upward growth to two or three feet in height. Plants can be trained to grow up a trellis or other support, but tying is required. Under natural conditions, Sturt peas are possibly perennials (their life span is actually doubtful) but in any case, under cultivation in the wetter areas, they are best treated as annuals.

VARIETIES AND AVAILABILITY OF SEED

Besides the flaming scarlet flowers with the commonly known shining black centres, various gradations to a light red with claret centres also occur fairly frequently. These kinds can often be found in ordinary commercial seed that may be purchased in small packets from most seed merchants. Rarer variations of Sturt peas occur in the interior regions, including a pinkish-white and a pink and white mottled kind. Even white flowers occur, but seeds of these cannot be obtained readily, nor indeed is it known for certain whether these types are really hereditary “sports” or the effect of some environmental influence.

SUITABLE DISTRICTS AND SOILS

Districts suitable for the garden cultivation of Sturt peas include the metropolitan area, most of the South-West and the wheatbelt as well as the Goldfields and interior. Most soils can be used including sandy loams to clay loams, even poor Perth sands. The soil should be deep with no obstructions to the penetration of the long tap-roots. The land should be well drained and the situation sunny.

TIME OF PLANTING

In the dry interior where Sturt peas are native they can grow over the cool season and flower in spring, but wet conditions combined with cold are readily fatal, and they are also susceptible to severe frosts. Consequently, for garden cultivation where winters are relatively severe—as in the metropolitan area, the South-West and parts of the wheatbelt, Sturt peas are best treated as summer annuals like zinnias or asters. The sowing time in most of these areas should be spring to summer—starting when the soil is warm enough for germinating zinnias, for instance, which will vary from September to late November according to the locality. Sowing can be continued until as late as February. I have found January quite a good month for sowing for autumn flowers. In areas near Perth, Sturt peas can continue flowering until June, after which weather conditions usually spell finis to the plants.

Where winters are mild and fairly dry as in the Geraldton area, Sturt peas would be worth while trying with autumn sowing to flower in spring, but I have had no personal experience under these conditions.

SOIL PREPARATION AND FERTILISERS

The soil should be dug in the usual manner, no special methods being needed.

There is some misapprehension about the use of artificial fertiliser on native plants. However, Sturt peas like some other native plants definitely appreciate and respond to superphosphate. A maximum of up to 2 oz. per square yard of superphosphate can be used, but usually

about 1 oz. per square yard will be sufficient, especially where fertilisers have been used previously for other plants. Part of this superphosphate should be worked into the surface—it may even be sprinkled quite near, but not in contact with the seeds—while part should also be worked into the full depth of the soil dug.

On poor sandy soils, potash can be beneficial—up to $\frac{1}{2}$ oz. per square yard of muriate or sulphate of potash being applied so as to avoid direct contact with the seed. Animal manures and compost are not necessary. Trace elements should not be required in ordinary circumstances—only where a proven deficiency of any such factor is known to exist, and such a deficiency has not been remedied by previous garden manuring, should they be considered. Regarding lime, the position is not very clear, but I have grown Sturt peas without lime on soils with a fairly acid pH of 5.2. Generally lime does not appear necessary.

NITROGEN-FIXING BACTERIA

Sturt peas belong to the legume family, like peas, clover and beans, and as such they can carry nitrogen-fixing bacteria in nodules on their roots. But unlike the nitrogen-fixing bacteria of clover, very little is known about Sturt peas in this regard, and no bacterial cultures specifically suited to Sturt peas are available. One method is to rely on the accidental introduction of the bacteria by way of the seeds obtained, another is to scatter on the proposed bed, some soil from a site where nodulated Sturt peas have been successfully grown previously.

These methods of course are rather uncertain, but even complete lack of nitrogen-fixing bacteria may not prevent good growth of Sturt peas in garden conditions, and I have grown good Sturt peas without nodules. Where the garden has been well manured in the past for other plants so that the soil nitrogen level is high, successful growth can usually be achieved without further treatment. If the soil is poor, no nitrogen need be added at planting, but if the seedling plants should become pale and yellowish with no nodules on the dug-up roots (such symptoms not being due to disease as described later) nitrogen in the form of sulphate of

ammonia should be applied lightly at approximately three weekly intervals, according to the growth and flowering of the Sturt peas. Blood and bone can be used as a slower-acting source of nitrogen.

SEED TREATMENT OR SCARIFICATION

This is very important with Sturt peas. The seed purchased in packets or collected in its native haunts, usually contains a high percentage of so called "hard" seeds which, because of an impervious coating, cannot readily absorb the water necessary for germination. Among the methods that can be used to break this impervious coat and give a high percentage of germination, there is the scarification of the seed by rubbing it lightly for no more than one to two minutes between two sheets of sandpaper or emery cloth. This treatment should not be so drastic however, as to cause visible damage or disintegration of the seeds. Another rather more tedious but excellent method is to lightly file each seed with one or two strokes (a nail file will do), or to lightly nick them (without penetration beyond the outside coat) with a razor blade. Both these operations should be performed away from the scar on the seed where it was originally attached to the pod. If you desire to check on the effectiveness of these treatments—it is not strictly necessary—soak the seed afterwards in cold water overnight. Seed, properly treated, will swell but show no sign of damage.

Other pretreatment measures may also be used—for instance soaking the seed in hot (not boiling) water—though personally I prefer the previously mentioned methods as there is difficulty in getting the right control of temperature with the hot water soaking.

METHOD OF SOWING

After the seed has been treated for germination, sowing can be done directly into the beds where the Sturt peas are to flower. The actual distance apart for sowing can be quite variable—for on one hand Sturt peas can individually occupy a large area with carpet-like growth or, when closely planted, make much upward growth. Therefore, seed can be placed up



Sturt peas grown in author's garden at Maddington

to 18in. apart—possibly with groups of a few seeds at each 18in., with subsequent thinning after germination to give one plant in each position. Or, to get a thick stand, the sowing can be done by dribbling in seeds three to four inches apart in rows about one foot wide, with later thinning if necessary. Thinning can be left until plants seem to be definitely interfering with one another's growth. The depth of sowing should be about $\frac{1}{2}$ in. Germination is rapid and should take place within about a week to ten days. Sturt peas do not like any form of transplanting because of their long tap roots, and only direct sowing where they are to flower is advisable.

WATERING

Though Sturt peas are desert plants, they often do better when suitably watered, and where grown during the hot dry summer, some watering is essential. The land should be moist, at least immediately under the surface, during germination, and about one watering after planting will be necessary for this. After germination is completed, less moisture is needed, but a good watering can be given about once a week on light soils, or about once fortnight on heavy soils, and even less frequently when cool conditions prevail. Watering can be done by sprinkler if desired, but if signs of leaf burning occur, the water can be more safely applied by running it around the plants in little furrows or holes so that there is no splashing on the foliage.

Overwatering should be avoided, as Sturt peas once germinated, only require moisture in the depth of the soil and there is no need to keep the top surface itself moist continually.

WEEDS

Weeds of any sort should be carefully hoed out as, like other native plants, Sturt peas do not appreciate exotic competition. Care should be taken to avoid damaging the base of the plant as this may encourage diseases.

DISEASES

Sturt peas are not subject to many diseases, but there are some troubles, associated with yellowing and paling of the leaves and general unthriftiness, that sometimes occur. When yellowing or any sudden deaths occur, plants should be dug up and examined. A number of causes can be responsible. If plants are just pale and non-vigorous this may be due to lack of nitrogen-fixing bacteria, which can be confirmed by the absence of nodules on the roots. Application of nitrogen in the form of sulphate of ammonia will help to alleviate this.

At the same time roots should be examined for any further troubles. Yellowing, combined with withering and death of young seedlings, may point to damping-off due to a variety of fungus infections, in which case the base of the plant will be found to be damaged or decayed right through. Over-watering can

be a contributory cause to this. Plants already attacked cannot be saved but further progress of the disease can be prevented by watering with a fungicide like Thiram. If the attack is very bad, replanting, preferably on a fresh site, is advisable. If this trouble is persistent, the bed for replanting can be partly sterilised by fire, by Thiram drenching, or by using in the soil various proprietary fungicides which can be purchased for preventing damping-off.

Sturt peas at a later stage are also attacked by the *Rhizoctonia* fungus which may also be involved in the early seedling damping-off. Symptoms are similar to early damping-off with a root or crown root developing as well as severe yellowing of the foliage, with plants wilting rapidly and dying. On examination the base of the stem or part of the roots near ground level shows decay and "ring-barking." Control is similar to seedling damping-off. Excessive watering and poor drainage encourages both these types of complaints.

Finally, there seems to be another form of yellowing and wilting of Sturt peas that occurs in well-grown plants occasionally. It does not seem exactly the same as troubles previously described and no direct reason can be seen in the examination of the roots. Usually plants remain alive, but buds fall off and flowering is reduced. The cause and control of this type of trouble seems obscure, but usually enough plants remain healthy to give a gardener sufficient satisfaction in at least securing some flowers of the beautiful, if sometimes elusive, Sturt peas grown right in his own garden.

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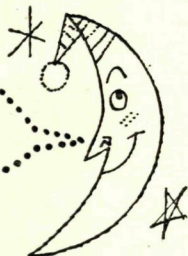
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