

The cultivation of *Brachystelmas* from seed

Ralph Peckover

Most plants of this genus sold until fairly recently (about 5 years ago) were wild collected plants originating mainly from South Africa. The reason for this is probably that it was too much trouble to grow these plants from seed and, in any case, seed did not appear on the normal seed lists. Many of the wild collected plants did not live long enough to produce seed and what seed was produced in cultivation was of doubtful parentage as the plants are pollinated by small and large flies which do not discriminate between different species.

One of the main reasons for cultivation of these plants from seed is to try to lower the pressure on wild plants, especially those that exist as rare populations.

Plants grown from seed are also better able to survive in pots than wild collected plants. These seed-grown plants appear to adapt better to the local climatic conditions of the cultivator.

Another important reason is to observe the development of a very rare plant from seed to a flowering plant within 12 months and then having a chance to propagate it further by pollinating the flowers.

The beginner should start with the easy-to-grow species as these are more resistant to rotting. Those collectors who feel brave enough may tackle the sandveld species and, with patience and by gaining knowledge of these species' soil, watering and nutrient requirements, success can be achieved.

For the last 5 years or so I have been growing thousands of these plants from seed, with limited to good success which appears to depend on the species concerned. The species from high rainfall areas, i.e. the species such as *Brachystelma coddii*, *B. tenellum*, *B. pygmaeum*, *B. australe*, *B. tuberosum*, *B. thunbergii* and *B. caffrum* do not present problems with the greatest enemy, namely *Fusarium* sp. which is an aggressive pathogen of this genus and causes rotting of the tuber. The very susceptible species include *B. gymnopodium*, *B. stenophyllum*, *B. brevipedicellatum*, *B. tenue* and *B. incanum*. These as well as other sandveld species appear to be far more susceptible to *Fusarium* rot than the aforementioned species. Out of about 500 seedlings of *B. incanum* which at one stage were 0.5–1 cm in diameter, only a handful were alive after transplanting. The fungus just roared through the seedlings, leaving thin tuber husks behind.

Seedling mixture

A well-drained acid mixture appears to give the best results; a mixture of Canadian peat, fine pine-bark chips, sand, vermiculite and perlite which has been sterilised beforehand at about 90°C



Brachystelma minor, at one year from seed, resembles a violet plant.

for 45 minutes is used. The seedling mixture should also not be too deep so that aeration is enhanced and waterlogged conditions do not occur. An ideal depth being 10 cm.

Fertilisation

To one cubic metre of the seedling mixture, a balanced water-soluble commercial fertiliser is added together with a handful of gypsum and superphosphate to counter toxic minerals produced due to the high temperatures of sterilisation.

At monthly intervals, a spray with the water-soluble fertiliser is given to produce healthy growth.

Seed for planting

The seed, which is produced after the flowers have been pollinated under a microscope or collected from the nursery, are sown on the surface of the seedling mixture from October till February in the Southern Hemisphere. The seed is covered with about 1 cm of the seedling mixture and then kept moist for 2–3 weeks when all seedlings should have germinated.

Care after germination

The main problem encountered is the rotting of seedlings as damping-off fungi spores arrive via wind. A careful watch should be kept to treat any occurrence of this disease. A whole range of fungi and bacteria are responsible for damping-off, although waterlogged conditions enhance the chance of seedling loss.

Many commercial fungicides have been used and not one appears to control all various fungi species. The best is to find a soil mixture best suited to your conditions. Success has been achieved using benomyl and propamocarb hydrochloride and thiabendazole. Thiram has also helped to prevent the spread of damping-off.

Pests

As these are indigenous plants, there is a vast range of pests in South Africa which attack the plants as a source of food.

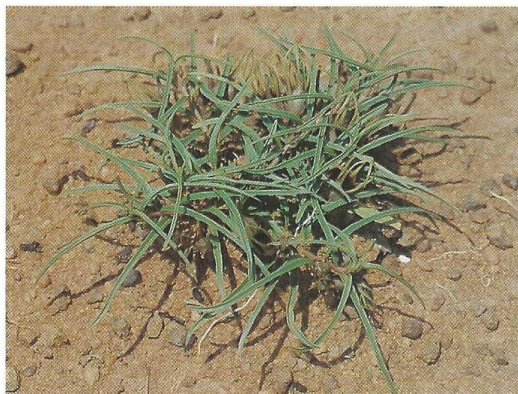
The pests range from microscopic mites through to parasitic flies, beetles and the monarch butterfly larvae. Mites can be controlled with commercial miticides, the parasitic flies whose larvae hollow out the tuber controlled with Lebaycid (fenthion).



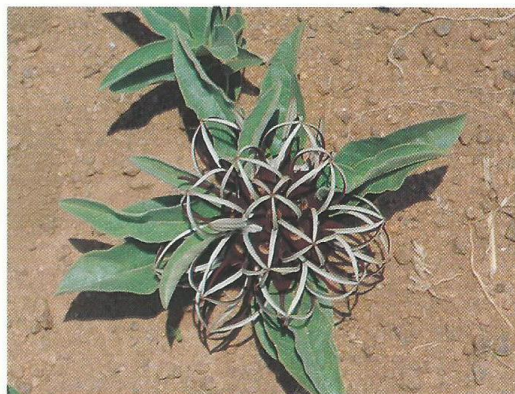
Brachystelma gymnopodum, previously known as *Ceropegia pygmaea*.



Brachystelma foetidum can have pretty yellow-green corolla lobes.



Brachystelma stenophyllum is a widespread species growing from Namibia to around Pietersburg.



Brachystelma barberae has always been a favourite among succulent enthusiasts.



Brachystelma circinatum is a variable species and flowers can be small, 5 mm long, or larger, up to 25 mm, depending on where it grows.

The beetle which looks similar to the ladybird can only be controlled by diligent hand picking. The same can be said about the caterpillars of the monarch butterfly.

Transplanting

During the spring of the next growing season, the seedlings are planted out either into containers or into beds for further development. The best procedure to follow when transplanting seedlings is to first ensure that seedlings are not wilted; cut off the stems to 30 mm above the tuber; lightly trim the roots and transplant the seedlings immediately into moist soil. The trans-

planted seedlings will probably show no transplanting shock and should send out shoots almost immediately.

The seedlings appear to grow far faster under free root-run conditions as the accompanying slides depict. Nearly all species will flower after a year from planting the seed and will set seed within this year as well. These growth rates will probably not be attainable in Europe and America as the climatic conditions are not as favourable as those in South Africa.

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