EULOPHIA HORSFALLII

by ***Graham Duncan****, Kirstenbosch*

AT KIRSTENBOSCH

The orchid genus *Eulophia* consists of about 200 species which are very widely distributed in Africa, and also occur in Central America, India and South-East Asia. The genus is particularly well represented in South Africa where its distribution is centred in the Eastern Cape, KwaZulu-Natal, Mpumalanga and the Northern Province. While many eulophias are endemic to this country, the distribution range of several species found here extends into Central and West Africa. *Eulophia horsfallii* is such an example and it is a most spectacular, large-flowered evergreen plant that grows in the dappled shade of swamp forest margins in KwaZulu-Natal, eastern Mpumalanga and the Northern Province. Its range extends much further north as far as southern Sudan, west to Angola, Congo and along the coastal parts of West Africa. The species honours Mr J.B. Horsfall, a British horticulturist who flowered the type material collected in West Africa in his glasshouse in England, and which was beautifully illustrated in *Curtis's Botanical Magazine* in 1865.

Claire Linder Smith's accompanying water-colour of *Eulophia horsfallii* was painted in 1986 from a specimen found growing near Kampala in southern Uganda, while she was accompanying her husband, Peter Linder on a trans-Africa trip.

About ten years ago, a single plant of *Eulophia horsfallii* was donated to Kirsten-bosch from the Constantia, Cape Town garden of Miss Selma Bock, a most enthusiastic and successful grower of all manner of garden plants. Miss Bock, who had an eye for the bizarre and the beautiful, received her original plant from an employee of the local Constantia Catholic Church, but no further details regarding its origin are known. I carefully cultivated it in a large plastic pot in the Kirstenbosch bulb nursery and after two years the first inflo-rescence appeared, which rapidly grew to 2.3 m in height and flowered for many weeks. The plant multiplied and flowered consistently every year in early summer, and has often been displayed in the bulb house in the Botanical Society Conservatory. Although a few seed capsules formed quite readily and produced large quantities of typically fine, dust-like seed, I paid little attention to these as the plants were growing extremely well and multiplying rapidly.

Some years later, I noticed several clumps of very healthy-looking plants with broad, pleated leaves growing in three different locations in between the partially buried retaining logs which form the terraces in the Camphor Avenue at Kirstenbosch. At a distance, the leaves looked similar to those of *Wachendorfia thyrsiflora*, but closer inspection of the leaves and rootstock revealed that they belonged to an orchid. The clumps continued to flourish in dappled shade and poorly drained soil, and remained evergreen throughout the winter months. Finally one of the largest plants sent up a strong inflores-cence in midsummer which proved to be *E. horsfallii*. Since then, several other clumps of this species have appeared and flowered in widely separated parts of the Kirsten-bosch estate, such as at the Gold Fields Educational Centre, and at the Harry Molteno Library, as well as just outside Kirstenbosch in the grounds of the Church of the Good Shepherd near the main entrance to Kirstenbosch.

The major reason that most orchids cannot be raised success-fully from seed sown under non-sterile conditions (as one would normally sow a tray of *Lachenalia* seeds, for example) is that the seedlings of most of them are dependent for survival on a symbiotic association with a specific fungus. The fungus penetrates the roots of the orchid seedling and through the exchange of nutrients, nutritional benefit is obtained by the seedling, and in some cases, by the fungus as well. It is especially during seed germination and subsequent growth of the seedling that the orchid's dependence on its associated fungus is greatest. In addition, further requirements for germination of viable seeds such as sufficient moisture, favourable temperature and light levels also have to be present. The tiny dust-like seeds of orchids are very well adapted for wind dispersal, and this undoubtedly accounted for the appearance of plants of *E. horsfallii* in the Camphor Avenue, as well as those which appeared relatively long distances away from the bulb nursery. It is remarkable that optimum conditions of specific fungus, (present in the soil or on the bark of retaining logs) as well as moisture, temperature and light conditions prevailed at the locations where the seed of *E. horsfallii* landed, and success-fully germinated. Similarly, volunteer seedlings of both *Bonatea speciosa* and *Eulophia petersii* have also appeared in various parts of the bulb nursery.

GROWING EULOPHIAS

Eulophias are probably the most easily cultivated of all the geophytic southern African orchids, and they are generally most suitably grown in shallow containers in a very well drained medium such as equal parts of coarse river-sand, milled bark and well-rotted compost. The evergreen species are usually easier to grow than the deciduous ones, and evergreens like *E. horsfallii, E. streptopetala, E. speciosa* and *E. petersii* can also be successfully grown in gardens under optimum conditions. At Kirstenbosch, *E. horsfallii* has proved to be a most useful subject for slightly acid, poorly drained loam in dappled shade. It can also be grown in pots, but due to its robust nature, containers need to be deep (a 35 cm diameter plastic pot is ideal) in order to accommodate its vigorous root system. Regular heavy waterings are required every few days during the summer months. The plants remain evergreen when grown in dappled shade, but undergo a very short dormant period in mid-winter when grown in sunny situations. New leaf shoots form in early spring, and flowerbuds may appear at any time during spring and summer. The plants require plenty of organic matter incorporated into the growing medium, and when grown in containers, they benefit greatly from regular applications of seaweed-based liquid fertilizer during summer. Heavy winter rainfall appears to have no ill effect on the plants.

Division of *E. horsfallii* clumps (as well as of all other *Eulophia* species) is currently the only feasible method of propagation for the home gardener. Thick clumps are best divided in early spring, just before the new leaf shoots begin to develop. The rhizomatous rootstock of *E. horsfallii* consists of persistent pseudobulbs which are usually entirely subterranean, and linked by short cylindrical stems. The rootstock forms branches with age, and these branches can be separated, ensuring that each branch is removed with a growing point. Separated branches must be replanted immediately and kept well watered, and will require a year or two of good growth before flowering commences again.

As with all the other *Eulophia* species with pleated leaves, the foliage of *E. horsfallii* is very susceptible to attack by red spider mite during the hot summer months, and aphids can also severely damage the developing flowerbuds. Both these pests can be controlled with Bio Kill Garden Spray. To date, no fungal diseases have been noted on *E. horsfallii* at Kirstenbosch.

As far as I know, propagative material of *E. horsfallii* is not available anywhere in South Africa, but once our stocks at Kirstenbosch have increased sufficiently, material will become available via the Kirstenbosch Garden Centre and the Botanical Society's annual Garden Fair.

***Eulophia horsfallii* flowering near the Harry Molteno Library at Kirstenbosch.** Photo: G.D. Duncan.

Further reading

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