

Wild orchids

veld-health indicators



1



2

1. *Eulophia petersii*, a vigorous bushveld species that attains heights of up to 2m.

2. *Disa cornuta* is widespread, occurring throughout South Africa and as far north as Zimbabwe.

Knowing orchids that occur on a farm and monitoring them regularly can be invaluable in rangeland management, writes **Cameron McMaster**.

MOST PEOPLE WILL BE FAMILIAR with the flamboyant, exotic orchid species, but there's a wealth of wild orchids in SA which, although perhaps less spectacular than the tropical species, are nevertheless important, fascinating indigenous flora.

The best-known wild orchid in SA is *Disa uniflora*, or "the Pride of Table Mountain". This beautiful red *Disa*, found along stream banks, wet ledges and rock faces in the mountains of the Western Cape, is the floral emblem of the Province and the Stormers Rugby team.

Orchids occur worldwide and are scientifically placed in the family Orchidaceae, one of the largest families

'Orchids are valuable indicators of the condition of the veld.'

of flowering plants with an estimated 25 000 species. While most are found in the tropics, particularly in rainforests, they're very well-represented in temperate regions, with about 470 species recorded in Southern Africa. Very few of these have familiar common names, so it's necessary to refer to them by their scientific names.

Within the Orchidaceae, is a large number of genera, such as *Disa*, which is the largest genus, *Eulophia*, *Satyrium*, *Habenaria*, *Corycium*, etc. When looking for orchids in the veld and using the many field guides available, these complicated names soon become familiar.

Searching for, recording and photographing wild orchids is fascinating, and challenging. Many orchids are rare



Disa uniflora, the floral emblem of the Western Cape and the Stormers Rugby Team, is found on stream banks and damp cliffs in the Western Cape mountains.

PHOTO: GRAHAM DUNCAN

or endangered, and the information we contribute about the status and distribution of the many different species is invaluable when deciding on conservation strategies.

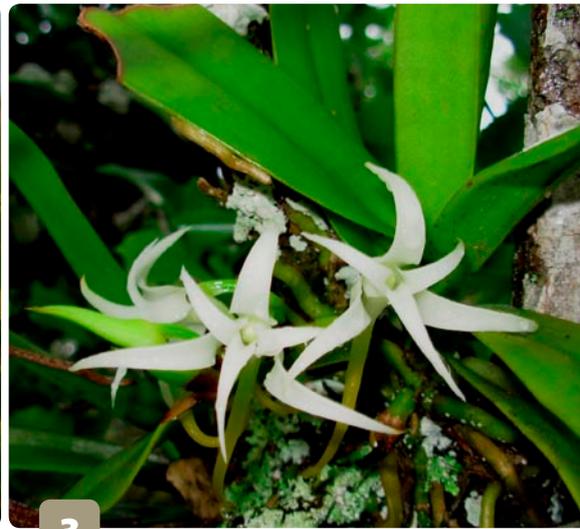
As far as farmers and landowners are concerned, orchids are some of the most valuable indicators of the condition and status of the veld.

In general, orchids occur in pristine environments and are sensitive to environmental change. They're the first plants to be affected by such malpractices as excessive stocking and grazing. Knowing and monitoring the orchids on a property can therefore be invaluable in rangeland management.

Orchids' most prominent feature is their extremely complicated, intricate and sometimes bizarre flower structure. Flowers vary enormously in shape, size and colour in the various species, differences that

- Southern Africa has 470 recorded orchid species.
- Different pollination strategies prevent cross-pollination.
- Orchids can be difficult to cultivate because they rely on fire and mycorrhiza fungi.





have developed to facilitate complicated pollination strategies. Pollinators cover the full range of insects, birds, mammals and other strategies. Closely related orchids often have different pollinators, preventing cross-pollination between species.

Some flowers are highly scented and produce nectar to attract moths and beetles. Others rely on colour to attract butterflies such as the Table Mountain Beauty (*Aerpetes tulbaghia*) which is a sucker for red flowers and is the main pollinator of *Disa uniflora*. Some even resort to mimicry, taking on the colour and shape of another flower to trick insects into visiting them. A prime example is *Disa ferruginea* from the Western Cape, which mimics *Tritoniopsis triticea*, a bulbous flower that occurs in the same habitat, in order to attract *Tritoniopsis triticea* pollinators.

With the exception of very arid and desert regions, orchids occur in a wide range of habitats. Some are widespread, occurring in a number of different habitats. Others are very particular and found only in specific areas like grassland, fynbos, forest, seeps or stream banks.

Most species are terrestrial – they grow in the soil – and are called ground orchids. About 10% of SA orchids are epiphytic or lithophytic – they grow on trees or on rocks, often in the moss and lichen.

Most ground orchids are deciduous and lose their leaves after the growing season, going dormant in the dry season. However, some species are evergreen, particularly those that occur in wet or damp environments or have hard, leathery leaves that can withstand dry

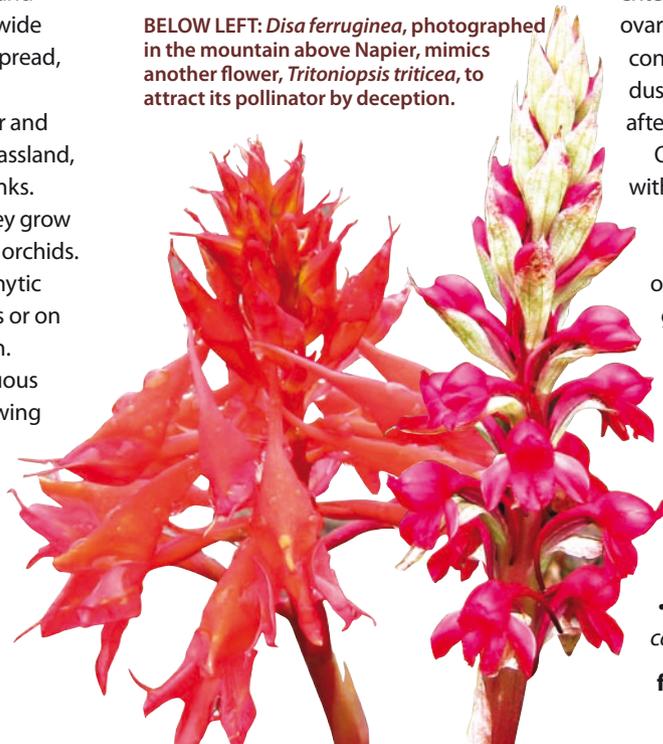
conditions, such as the epiphytes and species in the genus *Acrolophia*.

Most species occur in either the winter or the summer rainfall regions, but a few are found throughout both. The majority occur in the winter rainfall region, and most of these are endemic. However, there are many species in the summer rainfall areas, particularly the Drakensberg region, many of which are endemic. Many specialised species are adapted to very specific habitats and have a very limited distribution range.

Orchids vary greatly in size, from only a few centimetres high with small flowers to tall and striking. As underground storage organs, most have root tubers replaced annually during the growing

BELOW RIGHT: *Satyrium princeps*, a rare species threatened by housing development and alien vegetation near Knysna.

BELOW LEFT: *Disa ferruginea*, photographed in the mountain above Napier, mimics another flower, *Tritoniopsis triticea*, to attract its pollinator by deception.



1. *Satyrium longicolle*, a beautifully marked pink orchid from Greenbushes near Port Elizabeth.

2. *Eulophia ensata*, a striking yellow orchid from the Seven Fountains area in the Grahamstown district.

3. *Tridactyle tridentata* is typical of numerous epiphytic orchids, showing how these plants grow on the bark of trees. This specimen was photographed in dune forest at Kei Mouth.

season. The next season the new growth sprouts from the last year's tuber. If plants are dug up during the growing season, the new and developing tubers are often both present. Their appearance gives the family Orchidaceae its name, derived from the Greek word *orchis* meaning testicle.

In some genera, like *Eulophia*, the underground storage organs are swollen creeping rhizomes, which give rise to extensive colonies. After pollination, the ovaries develop into a six-ribbed capsule containing thousands of fine, almost dust-like seeds, which are wind distributed after the capsule ripens and splits.

Orchids have a symbiotic relationship with the mycorrhiza fungi living in their roots. The fungi supply the plant with nutrients they obtain from decaying organic matter. Orchids, particularly germinating, and young plants, require the fungi for survival which is why most terrestrial orchids are so difficult to cultivate. Fire is also essential. Most ground orchids flower after fire and some depend on it entirely. The next two articles in this series will deal with the winter and summer rainfall species of this complex family.

• E-mail Cameron McMaster at cameron@haznet.co.za. |fw