

ORCHIDACEAE

NOTES ON A RARE CAPE DISA

Although the southern African ground orchids have received extensive taxonomic study over the past two decades, there are still some rare species which are only known from a few poorly preserved herbarium specimens. Consequently, critical details of the gynostemium structure of these species are not known and often it is not clear whether these 'species' are mutants of some common species, or in fact real, albeit rare, evolutionary species. One such species is *Disa neglecta* Sond. The nomenclatural and taxonomic confusion surrounding this species was clarified by Linder (1981), but the two collections (one the type, the second consisting of one specimen from a mixed collection) were too poor to study the detailed structure of the flower. Recently, Miss Margaret Burger located a population, and brought in fresh material which allowed me to make the following observations.

The plants are 100–180 mm tall; leaves spirally arranged, more or less U-shaped with rounded backs in cross section, longest near base of plant, 90×8 mm, narrowing to the point of insertion, imbricate, reaching halfway up inflorescence, apices curved inwards. *Inflorescence* dense, 90–150 mm long, 30 mm in diameter at the base and tapering upwards; lowermost bracts leaf-like, much overtopping flowers, the uppermost bracts much shorter and only marginally overtopping flowers; ovary and pedicel 8–10 mm long and twisted, resupinating the flower. *Flowers* facing downwards, galea brownish purple, or densely brownish purple mottled, conspicuous; sepals and lip lime green with faint mottling on margins. *Sepals* unequal; dorsal sepal deeply galeate, 6×4 mm and 5 mm deep, apex slightly emarginate, subacute, base with two shallow sacs less than 0,5 mm deep; laterals patent, fleshy, concave above and apically very shortly apiculate, 3-nerved, 5×2 mm. *Petals* lunate, horizontal, 2×1 mm, basal anticus lobe thin, main body of petal reduced to basal portion, fleshy, with a posterior fleshy, downward pointing lobe or tooth seated in sacs of galea. *Lip* linear, pendent, fleshy, apex blunt, 4×1 mm. *Anther* erect with a fleshy, tapering connective, 1 mm tall, connective 0,5 mm deep; anther cells obovate, 0,5 mm in diameter. *Stigma* pulvinate, sessile, with three equal lobes. *Rostellum* three-lobed, erect; central lobe conical, fleshy, 0,5 mm tall, penetrating between anther cells; lateral lobes spreading horn-like, terete, as tall as central lobe but more slender, not canaliculate, bearing hemispherical viscidia at apices, Figure 4.

Growing in full sun on a well drained, rocky sandstone ridge, between 1 500 and 1 800 m altitude above sea level, in association with *Disa micropetala* Schltr., *D. vaginata* Harv. ex Lindl. and *Satyrium pygmaeum* Sond. Flowering at the beginning of December, in the first year after fire.

The general structure of the plant and the detailed flower structure of *Disa neglecta* agree closely with those characteristic for *Disa* section *Disella* Lindl., which is where the species was placed by Linder (1981). The two sacs at the base of the galea could represent the remnants of

the galea spur plus the dorsal groove characteristic of part of section *Disella*. It is easy to imagine that reduction under these circumstances would lead to such a structure, which superficially approaches the double spur of *Satyrium*.

However, in detailed structure the species shows several features which are unique in the genus. The high degree of petal reduction is not found in any other species of the subtribe, and the presence of a tooth that penetrates into the spur (or in this case, the sacs) is only known in *Disa longicornis* L. f. These petal teeth completely fill the spur, and it is difficult to imagine their function. The erect anther is equally strange and *D. neglecta* is the only species in section *Disella* that has it. Erect anthers, however, do occur occasionally in other members of the genus (commonly in *Disa* section *Micranthae*, rarely in section *Disa*). In *D. neglecta* the anther shows no evidence at all of resupination. The rostellum structure is also unique within the section. Although the rostellum is typically three-lobed in the section, only in *D. neglecta* and in one population of *D. obtusa* subsp. *obtusa* (also in section

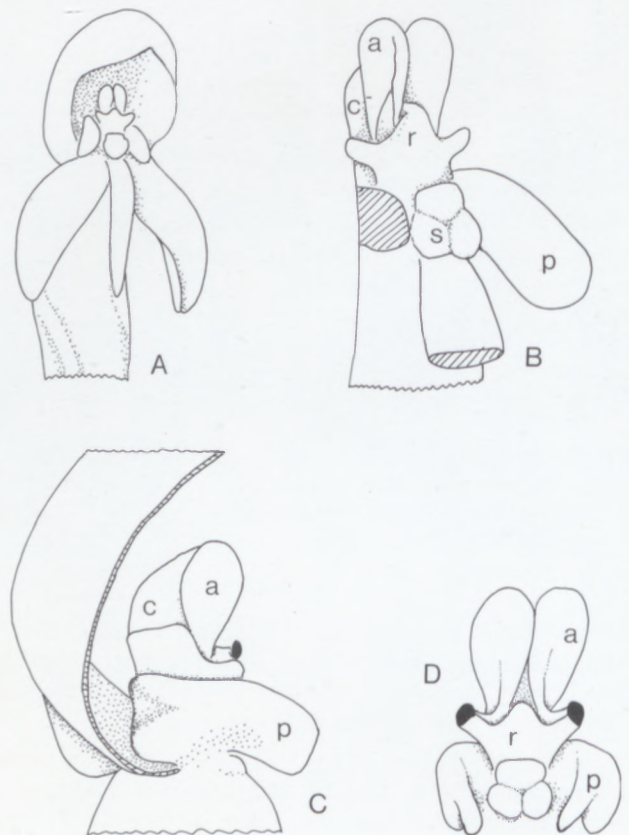


FIGURE 4.—The structure of the flower of *Disa neglecta*, all from Burger. A, whole flower in front view, $\times 2,5$; B, flower with sepals and one petal removed, in side-on front view, $\times 6$; C, flower in side view, with galea cut away, and lateral sepals and lip removed, $\times 6$; D, gynostemium and petals in front view, $\times 6$. Cut surfaces shown hatched, viscidia black, s = stigma, a = anther cell, c = connective, r = rostellum, p = petal.

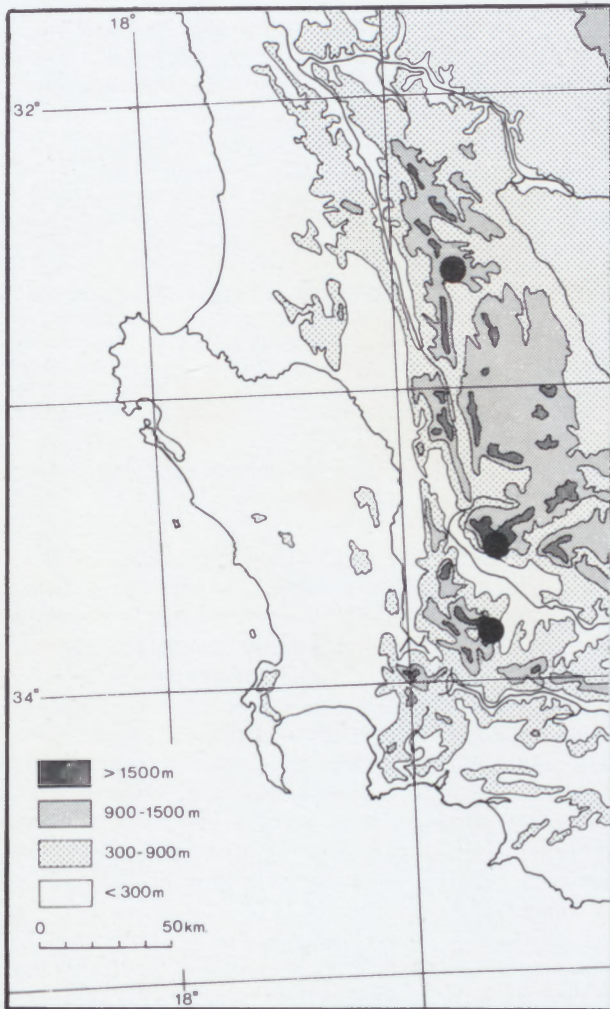


FIGURE 5.—Distribution of *Disa neglecta*.

Disella) from the summit of Table Mountain is the central lobe taller than the lateral lobes. However, in *D. neglecta* the lateral lobes are terete, rather than canaliculate as is typical for the rest of the section.

The known distribution of the species is indicated in Figure 5. The distribution range covers the mountains from

Worcester to the Cedarberg, but the species has only been collected at the extremes of the range. Either this is a remarkably disjunct distribution, or the species occurs in the intervening Koue Bokkeveld Mountains, but has not been collected there. As the Koue Bokkeveld Mountains are generally poorly collected, the latter hypothesis is more likely.

It is surprising how many rare species are found in section *Disella*. Of the ten species, seven (*D. neglecta* Sond., *D. longifolia* Lindl., *D. brevipetala* Linder, *D. telipogonis* Reichb. f., *D. micropetala* Schltr., *D. subtenuicornis* Linder, *D. ocellata* H. Bol. and *D. lineata* H. Bol.) are seen but rarely. Some of this rarity is clearly caused by these species only appearing after fire. In addition, they are usually of local occurrence, being restricted to moist, black soils near the summits of mountains where they receive moisture from the south-easter clouds during the otherwise dry summer months. However, some of the species (*D. neglecta*, *D. subtenuicornis* and *D. longifolia*) appear to be genuinely rare, and are known from a single, or very few populations. Clearly there is still scope for an intensive botanical survey of the higher, more inaccessible mountain ridges and peaks.

SPECIMENS EXAMINED

CAPE.—3219 (Wuppertal): between Breekkrans Twins and Apex Peak, 1 360–1 160 m (–CA), 20 December 1989, *Burger 9* (BOL!). 3319 (Worcester): Waaihoekskloof, below and south of Sybasberg, 1 500–1 800 m (–CB), 3 December 1989, *Burger 8* (BOL!); Louwshoek Peak (–CD), 17 December 1944, *Esterhuysen III93B* (BOL!); Tulbagh Mountains, November, *Ecklon & Zeyher s.n.* (S!).

REFERENCE

LINDER, H.P. 1981. Taxonomic studies on the Disinae. III. A revision of *Disa* Berg, excluding sect. *Micranthae* Lindl. *Contributions from the Bolus Herbarium* 9: 1–370.

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