

THE ORCHIDS OF PROTEA HILL FARM

Observations over 30 years

Part 2 – The grassland species

The list of orchid species recorded in the 1985-'86 season, consisted almost exclusively of grassland orchids, and the first two chapters of our story is devoted to these.

Recorded in the 1985-'86 season were:

Brachycorythis tenuior
Disa welwitschii / roeperocharoides
Eulophia cucullata
Habenaria macrura
H. njamnjamica
H. sochensis

The situation with *Habenaria* spp. is confused as I was unable to identify some of the species in the early years (and to tell the truth I still have difficulty with them). There was almost certainly one, possibly two, additional species of the group with numerous small flowers. These might have been *H. sochensis*, but the early flowering date of one, suggests a different species. More will be said under the listed species.

Eulophia cucullata, the best known of all our terrestrial orchids, a scrubland species, is dealt with in the chapter 3 – The scrubland orchids.

The grassland habitat

Terms like 'woodland' and 'grassland' are used somewhat differently by foresters and grassland scientists. The area at Protea Hill Farm which I call *grassland* would be called *wooded grassland* or *open woodland* by foresters. The terrain is flat, overlying dolomite, at the northern edge of a flat plain which was once the Lusaka South Forest Reserve (Local Forest No. 26), with well drained sandy clay loam of varying depth, and outcropping rock in a few places. Drainage is perfect. There has been no grazing certainly since 1970. The scarcity of trees and shrubs, and their small size, is the result of frequent fires.

The grassland consists of an area of primary grassland, and a smaller area of secondary grassland which was cultivated briefly in the 1980s. The primary grassland comprises a rich variety of perennial grasses and herbs, in which *Andropogon chinensis* is a common component, while the secondary grassland was until recently strongly dominated by *Hyparrhenia filipendula*, with little diversity. In recent years more robust species, *H. rufa* and *H. cymbaria* seem poised to take over bad news for the orchids. The exotic creeping papilionoid legume, *Desmodium uncinatum* ('Silverleaf desmodium' to pasture specialists) is also part of the takeover.

Photographs are all taken at Protea Hill Farm unless otherwise stated.

Brachycorythis tenuior Rchb. f.



Figure 1 – *Brachycorythis tenuior*, Protea Hill, 15th January 2010

This species was recorded in each of the four seasons 1985-'86 to 1988-'89. It was not recorded again until 21 Dec 2000. The disappearance of the species was not unexpected as the period 1991-'95 saw the worst drought on record in much of the country. Discouraged, I probably was less conscientious in searching for the orchids in the latter 1990s, but on 27 Dec 2000 I recorded *B. tenuior* as abundant. On 7 Feb 2012 I recorded it again, but it was difficult to find in the tall grass. None has been found in the past two seasons. There were no prolonged drought periods after 1995 and I believe the absence of the orchids is associated with the increasing dominance of tall thatch grasses.

Figure 2 – The stems are leafy, the leaves grading into bracts subtending the flowers.



Satyrium carsonii Rolfe



Figure 3 – *Satyrium carsonii*, Protea Hill, 31 December 2000

The rises and falls in the population of this species roughly parallel those of the previous species. Having taken note of its presence during the first two seasons, my first record was on 8 Feb 1989. On 27 Dec 1995 I recorded the appearance of the first leaves, at a time when the flowers would normally be at the bud stage – at least a few individuals had survived the drought. No more were seen until the 1999-2000 season, when a group of 5 was recorded under a small tree. In the following season I recorded the species as abundant. In the current season (2013-'14) I found a single flowering plant, and no sterile (leaves only) specimens.



Figure 4 – The pair of basal leaves are roughly circular in outline, pressed against the ground. 28 Dec 2000



Figure 5 – The stem emerging between the leaf bases. 6 Dec 2009

Habenaria macrura Kraenzl.



Figure 6 – *Habenaria macrura*, December 2001



Figure 7 - There is a single leaf, occasionally two, adpressed to the ground, oblong in shape. 29 Dec 2000

Many were recorded in bloom in the 1985-'86 season, when it was also recorded in the northern sector of the farm. There were no further records until 9 Jan 1999 when two flowering plants were seen. On 27 Dec 2000, a few plants were found, mostly sterile. A single flowering specimen was recorded on 31 Dec 2000 and three on 30 Dec 2001, more recorded on 14 Jan 2003; by 15 Feb 2003 the capsules had not yet matured. One individual each seen on 28 Dec 2004 and Jan 2011. There have been no further appearances.



Figure 8 – Note the long spurs tucked into the bracts. The pollinator will be a hawkmoth or a long-tongued fly, with a proboscis long enough to reach the nectar at the tip of the spur. 14 Dec 2003

Habenaria njamnjamica Kraenzl.



Figure 9 – *Habenaria njamnjamica*, 29 December 2006

This species tends to occur in small groups of 2-14. They grow in more dense grass than the previous three species, and are easily overlooked, especially as the flowers are green. A flowering specimen was recorded in Jan 2001, after a long gap when none was recorded (since Jan 1987). Thereafter I recorded it every season from two localities. The last records from these localities were in Jan 2012. A group of three plants was found on a new site on 22 Jan 2013. None was found in the current season.

The loss of plants from the two sites I'd been following over the years was associated with a thickening of the vegetation. The vegetation at the new site in Jan 2013 was still relatively open. It is quite possible that there were plants I'd missed, but the vegetation had become so dense that it was difficult to find small plants in the undergrowth. There is no doubt, however, that the low growing orchids cannot survive in tall grass.

Cultivation of the species in nursery pots revealed that the plants readily produce more than one daughter tuber, which probably accounts for the occurrence of the plants in groups, in fact in clones.

Disa welwitschii Rchb. f.



Figure 10 – *Disa welwitschii*, Jellis's Lazy-J Ranch, Lusaka SE, 27.i.2002

Disa welwitschii (or possibly *D. roeperocharoides*, the difference is a vanishing small distinction in the shape of a tiny petal) is typically a dambo grassland species, where the soil remains damp throughout the dry season, and is inundated most rainy seasons. Its appearance at Protea Hill was quite unexpected, and the single plant flowered just once during the 1985-'86 season. The site, at the margin of woodland, was soon to be encroached by the expanding woodland, where the reappearance of the orchid is unlikely.

In Jan 2001 John Jellis kindly allowed me to take a plant from a well-established colony of the species in a sandy dambo on his farm. My aim was to see how it adapted, or otherwise, to the drier habitat. I planted it in a patch of grass (mostly *Andropogon gayanus*) in the northern sector of Protea Hill where I'd been recording a population of *Habenaria sochensis*. In the following season, 2001-'02, it produced a small inflorescence, the first flowers opening on 26th January. The rains had failed that month; I watered the plant to keep it alive, but it did not recover.