

## NOTES ON SOME TERRESTRIAL ORCHIDS OF THE LONDANI DISTRICT

By R. MORAY GRAHAM

In Kenya few of our smaller flowering plants have common or 'trivial' names, and their official titles are often cumbersome. Furthermore, the botanists, those deceptively serious-looking people responsible for naming plants, have a flippant habit, which they call a system, of changing these names pretty frequently. The writing of a superficial little note like this is then made difficult. A resounding title like *Pteroglossaspis ruwenzoriensis* should really be reserved for a meeting of the Royal Society or for an International Botanical Congress; but in the absence of any other generally accepted name that is the only way in which we can refer to a humble little plant.

During a period of about 15 years I collected specimens of any ground orchids I happened to see in flower in the Londiani district, and had them provisionally identified. Although I never went out deliberately to look for orchids I seem to have met some 30 different species within a radius of about 25 miles from Londiani. Naturally enough, those most commonly noted grew in the open grasslands; but I believe that these were also by far the commonest in actual numbers. Some species preferred the partial shade of the fringe of bush or forest bordering the glades, while a few grew in full shade in the forest itself. Many chose soil which was waterlogged for some months of the year—when they flowered—but which was baked hard at other times. One species was found growing in soil which was waterlogged perpetually.

Many glades near Londiani are of the 'vlei' type—a few inches of leached, whitish soil overlying a thick bank of murrum which is almost impervious to water. These vleis support a dense growth of coarse, tufted grasses and many orchids. Commonly some 30 inches of rain fall between the 1st April and the 15th September, with only about 13 inches spread over the rest of the year. Vleis are annually waterlogged from about May till mid-September. Orchids flower as a rule in June and July. I am not sure what causes a good orchid year in the vleis. The amount and distribution of rainfall is a dominating factor of course; but it is likely that the density of the grass cover at different times of the year is also of the greatest significance. This in turn depends partly on the date and the intensity of the last grass-fire, and partly on the incidence of grazing by cattle.

Grass-fires, if uncontrolled, normally occur in the middle or at the end of the dry season. If the grass has been protected against fire for a season or two, and then dries out thoroughly before being burnt, a very hot fire results and the soil is almost wholly exposed. Most of the existing orchid corms in the area will then probably have a chance to put out strong flowering spikes when the rains break, and much of the seed which is set will reach mineral soil and germinate. However, if the new crop of grass following the burn is immediately grazed over very heavily, few orchids will actually be allowed to flower, although the corm will survive and will be able to make another attempt in the following season. When matted carpets of unburnt and ungrazed grasses accumulate for a few years, it seems that many corms are unable to push their flower spikes through at the onset of the rains and cannot flower and set seed to replenish the stock of corms in the ground.

It is easy to find flower spikes in bud and dig up plants with an undisturbed cube of earth six or eight inches in thickness. Such plants may be put out in a garden and they will flower perfectly normally. At one time or another I moved a hundred

or more of half a dozen different species from the vleis into what appeared to be very similar soil in the garden of the forest station at Londiani. To the best of my knowledge, none of these attempted to flower again in the following season. I am sure that in their natural, undisturbed state, many corms do not flower regularly every year, and it seems likely that in order to allow a rootstock to prepare an embryonic flowering shoot for the next season, conditions must be exactly right. Is the new flower embryo developed immediately after the plant has seeded, before the leaves wilt? Or is this done when the corm is apparently dormant during the long, dry spell, accompanied by grass-fires?

On some rocky hilltops near Londiani a species of 'fan-lily' (*Boöphone*) which looks not unlike a coarse *Haemanthus*, is common. The large bulbs grow in very shallow soil on flat rock outcrops. They are almost wholly exposed to the sun, except for the actual roots. I transferred about 50 of these to my garden, but although they flourished they would not flower. After about three years I reluctantly decided that kindness was wasted on them. I covered them in the height of the dry season to a depth of several inches with chopped, dry grass which I then burnt. Most of the half-baked, and no doubt surprised, bulbs responded by producing flowers as soon as the rains came.

The case of *Anoiganthus brevifolius* (Harv.) Bak. was somewhat similar. As a rule, we managed to protect from fire the fringe of shrubs growing under the *Acacia lehai* trees which commonly bound all grass glades in this part of the country. This is done by deliberately firing grass in the glades when it is still too green to burn freely. At this stage, early in the dry weather, the grass immediately adjoining the fringe is still so green that it will not burn at all. On one occasion a long unburnt fringe close to the garden of the Forest Station was accidentally fired just before the rains, and a very hot burn resulted. With the rains, scores of the delightful little *Anoiganthus*, not unlike a very bright yellow *Freezia*, came up in the burnt patches. In the following year I carefully burnt over the same area—a slow controlled fire to avoid further damage to the forest fringe. Only a few scattered *Anoiganthus* appeared. Next year, after another very gentle burn, there were none. Did the orchid corms, transferred to my garden not get a harsh enough 'winter'? Does a grass-fire, or exposure through heavy grazing of the soil in which they grow, stimulate flowering?

At least 40 species of ground orchids, belonging to eight or ten genera, could probably be found within 30 miles of Londiani, but of these only about a dozen species are particularly noticeable or attractive—except presumably to the specialist collector. Flowers are borne on upright, unbranched spikes, and in most cases each plant only produces a single spike in a season.

In the following notes, covering very briefly about 30 of the commoner or more interesting species, I have made no attempt to describe plants in such a way as to enable them to be identified in the field. I have merely indicated roughly the types which the casual sightseer might be expected to find during the rains in a normal year. Collectors could doubtless locate many less conspicuous species not mentioned here.

For those who are interested, the botanist in charge at the East African Herbarium, P.O. Box 5166, Nairobi, situated immediately behind the Coryndon Museum, will always be pleased to identify any specimens sent in. Or visitors may ask for permission to see dried specimens or sketches, where these exist, of orchids in the Herbarium itself.

### Genus *Disa*

*Disa erubescens* Rendle. Perhaps the most striking plant of those under review. In some years it was common in vlei land at Londiani. Spikes up to 3 ft. in height normally bear half a dozen flowers. I have counted as many as 13 fully open and perfect blooms on

PLATE I



1. *Disa schimperii*, inflorescence  
2. *Disa schimperii*, flower  
3. *Disa erubescens*, flower

4. *Eulophia orthoplectra*, inflorescence  
5. *Eulophia orthoplectra*, flower  
6. *Eulophia paivzana*, flower

one stem. Individual flowers are about one inch in diameter. The colour is usually a vivid orange with scarlet markings, but occasionally plants bearing clear yellow flowers may be found.

*Disa ochrostachya* Rchb.f. This is another good plant, but in Londiani at least it is very rare. I have heard that it is commoner near Kericho. I found one plant at Londiani in vlei, and one in red soil in grassland in the Lembus Forest Reserve. The spike, 2 ft. or more in height, bears numerous, close-packed flowers, bright canary-yellow in colour, speckled with brownish markings.

*Disa schimperi* N.E.Br. Spikes up to 2 ft. 6 ins. in height found in vlei. Close packed flowers are bright mauve with darker purple markings.

*Disa occultans* Schltr. Very similar to the last. Spikes up to 2 ft., found in grassland. Flowers bright mauve-pink.

*Disa deckenii* Rchb.f. Similar again, but found usually at altitudes over 8,500 ft.

*Disa concinna* N.E.Br. A vlei species to 18 ins. The close-packed flowers, pale and dark purple, are not showy.

*Disa amblypetala* Schltr. Another high-altitude (8,000 ft. or more) type. Spikes to 2 ft., flowers purple and green but not showy.

### Genus *Eulophia*

Not so very long ago many East African orchids were assigned to the genus *Lissochilus*, but I understand that all of these have, for the moment at least, been transferred to *Eulophia*. There is one morsel of comfort in this, *Lissochilus* may be pronounced in several different ways, and I have tried them all! Botanists of my acquaintance have always been in favour of a pronunciation other than the one in current use by me.

As it happens, although some of the most spectacular ground orchids in East Africa belong to this genus, the Londiani representatives are, with one exception, rather insignificant.

*Eulophia orthoplectra* (Rchb. f.) Summerh., previously known as *E. bella*, is a charming plant. The spikes stand about 3 ft. high and are found in grassland from Kedowa to Fort Ternan and beyond. Individual flowers may be an inch and a half or more in diameter. The outsides of the larger petals are a very bright yellow. The insides are closely striped with a rich Indian red or crimson. Flowers glisten as though they have been dipped in a thin varnish.

*Eulophia paivaeana* (Rchb. f.) Summerh. subspecies *borealis* Summerh. This ponderous title seems to be necessary for a plant which is one of the very few local ground orchids to retain leaves permanently. Several flowering spikes, up to 5 ft. in height, may be borne simultaneously by one plant. Deeply veined leaves, resembling the ornamental 'pampas-grass', are several feet long. Flowers are yellow with dull purplish streaks and blotches, and are not striking. Found in bush near Kedowa.

*Eulophia* sp. near *E. crinata* Rolfe. A Kedowa grass-land species. Six or eight half-open drooping flowers, pale mauve and green and about one inch long, are borne on a stem about 15 ins. in height.

*Eulophia pyrophila* (Rchb.f.) Summerh. Another small species, found in bush, with a 12-inch stem bearing a few striped, dull purplish-brown flowers each half an inch or less in diameter.

### Genus *Brachycorythis*

*Brachycorythis pubescens* Harvey. This locally uncommon little plant is worth noting as the mauve coloured flowers have a scent resembling that of heliotrope (cherry-pie). It is found in grasslands and stands some 18 ins. in height.

### Genus *Pteroglossaspis*

*Pteroglossaspis ruwenzoriensis* Rolfe. In spite of its rather awe-inspiring title, this common little vlei orchid is rather attractive when examined. The flowers are white with a maroon or dark purple mark in the throat, eight or ten of them grow in a very tight little corkscrew whorl at the top of the flowering spike giving the plant a characteristic appearance. Spikes may be 2 ft. or more in height.

### Genus *Habenaria*

This genus is undergoing critical revision at Kew which, I fear, may mean that the majority of specific names mentioned here will be out of commission by the end of the year! On present indications up to a dozen species of the genus occur

PLATE II



1. *Satyrium speciosum*, inflorescence.  
2. *Satyrium speciosum*, flower.  
3. *Satyrium fimbriatum*, flower.

4. *Habenaria filicornis*, inflorescence.  
5. *Habenaria keniensis*, flower.

near Londiani. Flowers of all are green, yellowish-green, or white and green. But although they lack colour, many of them are of interest because of their odd shapes, due to narrow, pointed petals and long spurs.

*Habenaria lykipiensis* Rolfe. This is perhaps the commonest species in the Londiani vleis. It grows to a height of a couple of feet and has loose heads of up to 20 delicate, spidery flowers with  $\frac{3}{4}$ -in. spurs, borne on pedicels which come away at right angles from the stem.

Londiani is cold during the rains and one usually lights a fire every evening. By 1932 the old Forest Station had already been on the condemned list for about 15 years, as it had been badly built to a shocking design, but in the best Government tradition it remained in use until 1952. In the minute sitting-room, once the fire had been lit one could sit in a smoky fug with the windows shut, or in a smoky cold gale with the windows open. One afternoon we brought a bunch of ground orchids into this room and in due course the fire was lit and the usual evening fug developed. It so happened that we had just taken over a puppy. After a while, although we could find no direct evidence of misconduct, we reckoned that it would not be unreasonable to banish the animal to a store, where he howled miserably. Soon the smell became worse; but a careful search of the whole house failed to implicate the dog, the cat or any other animal. Eventually, of course, the mischief was traced to *H. lykipiensis*. The flowers were cast out and the puppy was returned to the hearth, where he was sick at once; but all else was well. The scent is not noticeable in a fresh-cut flower, but it brews up in a warm fug. The plant could be described as a natural for the practical joker.

*Habenaria cavatibractea* Summerh. Found in grassland, growing to height of about 2 ft. The flowers are remarkable for spurs which may be 4 ins. long. A single plant, possibly of this species, found growing in forest in Kedowa was about 6 ins. tall with crab-like flowers 2 ins. in diameter carrying spurs over 5 ins. long. It was labelled at the time, *Habenaria* species near *decorata* Hochst.

*Habenaria filicornis* Lindley. Found in vlei, to a height of 2 ft. Flowers resemble those of *H. lykipiensis* but are only half the size and are practically sessile.

*Habenaria petitiana* Dur. & Schinz. A very dull little plant in bush or grass, bearing yellowish green flowers, scarcely one eighth of an inch in diameter, close to the stem which may be 18 ins. high.

*Habenaria peristyloides* A. Rich. This, growing to a height of about 2 ft. in damp grasslands, has yellowish-green flowers which are not unpleasantly scented. The flowers are not spider-like but are close packed on the stem. Usually found at 8,000 ft. or over.

*Habenaria cornuta* Lindley. This grassland species has odd-looking green flowers which, when mature, bear a pair of upright horn-like appendages about  $1\frac{1}{2}$  ins. long. Longish pedicels take off upwards from the stem at an angle of about 45°.

*Habenaria keniensis* Summerh. Similar and prefers scrub. Flowers about twice the size of those of *H. lykipiensis*.

*Habenaria genuiflexa*, *H. keiliana*, *H. praestans*, *H. schimperiana*, *H. ruwenzoriensis* and *H. rendlei* are names which have been given to other specimens sent in. They are probably synonyms of others mentioned above. All are green-flowered, grassland types.

### Genus *Satyrium*

The last genus worth noting here is *Satyrium* which boasts of several species.

*Satyrium coriophoroides* A. Rich and *S. schimperi* Hochst. These may be synonymous. They are very dull, grass or vlei species with two-foot spikes of close packed green flowers. The lower pair of leaves are usually roundish, coming off the stem at right angles at ground level.

*Satyrium sacculatum* (Rendle) Rolfe. A common vlei or grassland species. Flowers are orange red or a bright clear scarlet, fairly close-packed on spikes up to  $2\frac{1}{2}$  ft. high.

*Satyrium sceptrum* Schltr. Very similar to the last but the flowers are less numerous, more lax, and often a dull or rather dirty orange. Wanderobo children are said to eat the corms.

*Satyrium crassicaule* Rendle. This occurs on permanently waterlogged semi-floating islands on Lake Narasha at Timboroa (9,000 ft.). It will grow in running water in upland swamps. The spikes of handsome, close-packed deep pink or purplish mauve flowers are 30 ins. high or more. An attractive plant, with a superficial resemblance to *Disa schimperi* or *D. occultans*.

*Satyrium speciosum* Rolfe. This is found commonly in damp depressions on rocky outcrops or in grass on the fringe of bush. It is a pretty little plant standing about 9 ins. to 12 ins. high as a rule. At a little distance the clear, bright pink flowers resemble a hyacinth spike.

*Satyrium fimbriatum* Summerh. This occurs in grasslands usually at altitudes over 8,500 ft. and is somewhat similar to the last. The colour is generally more of a rosy-red and the petals have distinctly frilled margins. The whole effect is still hyacinth-like, but this is a more attractive and delicate-looking plant than the last.