

Brachystelma bikitaensis Peckover (Asclepiadaceae), a new brachystelma from Bikita Mine, Zimbabwe

Ralph Peckover

The Bikita Mine in south-east Zimbabwe is well known amongst mineralogists as the type locality of the rare lithium-bearing mineral bikitaite. This mineral forms dull white crystals and when the opportunity arose during March 1995, the author together with Roger Dixon and Lars Pihl visited the mine to see whether we could find some of these rare crystals. A few good crystal specimens were discovered and it was then decided to explore the surrounding area for *Ceropegias* and *brachystelmas*.

Under the sparse canopy of a typical miombo woodland with a north-facing aspect, *Ceropegia stenantha*, *Brachystelma dinteri* and the tall thin unnamed *brachystelma* were observed. This new species was carrying seed follicles and resembled *Tenaris chlorantha* from the Pretoria area. *T. chlorantha* grows in exposed areas, usually on rocky ridges in a sandy red loam, whilst the new species grows in a

greyish sandy loam in dappled sunshine. The species is relatively common in this area.

Diagnosis

Brachystelma bikitaensis Peckover sp. nov., *Tenaris chlorantha* Schlechter affinis, sed lobis duobus rectis utrinque sacculorum nectareorum exteriorium, papillis albis intus corollae bulbi et protuberantione distincta basi corollae lobis differt.

Description

Plant a perennial herb. *Tuber* 30–50 mm in diameter and up to 20 mm thick. *Stem* single, upright, to 500 mm tall, 2 mm broad at the base, glabrous, green, internodes up to 100 mm apart. *Leaves* arranged on opposite sides of the stem, linear-lanceolate 70–90 mm x 2–3 mm, decreasing in size towards the tip, glabrous, margin entire, bright green. *Petioles* reduced and not distinguishable from the leaves, glabrous. *Flowers* borne laterally at the upper nodes, usually after the sixth set of leaves, 2–10 flowers, opening successively at each node without noticeable scent. *Bracts* 2 mm x 0.3 mm, glabrous, green. *Pedicels* 20–30 mm x 0.5 mm, glabrous, reddish green, with a basal bract. *Calyx lobes* erect 3 mm x 0.8 mm, glabrous, reddish green, linear-lanceolate. *Corolla* 30 mm diameter, light green and brownish; lobes 13 mm long and 0.8 mm wide, brownish green with closely

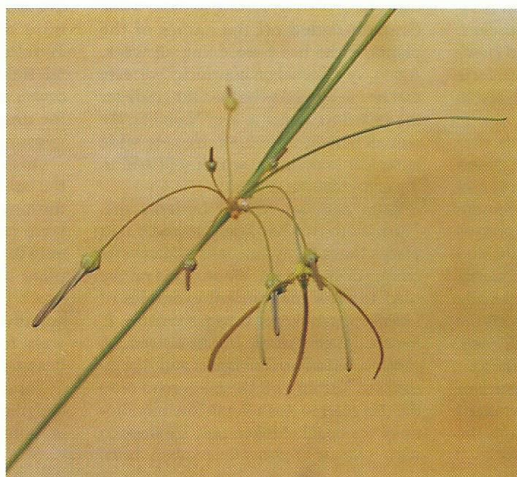


Figure 1. The flower cluster with flowers at different stages of development

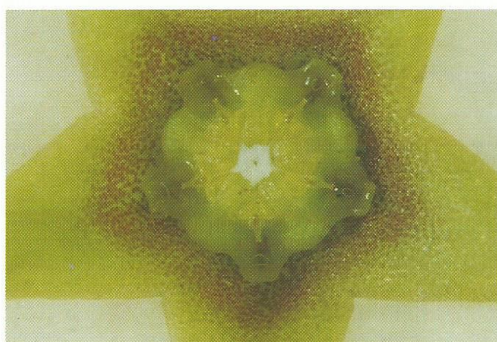


Figure 2a. Corona of *Brachystelma bikitaensis*. Photo: Roger Dixon



Figure 2b. Corona of *Tenaris chlorantha*. Photo: Roger Dixon

ferred to Mrs Koch who lives on a farm in the vicinity, and who very kindly showed us the flora on her farm. We were delighted and astounded by the variety of plants which were to be seen in the mountains. The site is another of the rare localities where *Lithops karasmontana* subsp. *bella* and *L. schwantesii* grow socially. In addition we were shown *Cotyledon orbiculata*, *Euphorbia spinea* and *E. virosa*, *Ruschia*, *Eberlanzia*, *Adromischus*, *Sarcocaulon crassicaule*, *Stapelia* and *Hoodia*. The bushman paintings and artefacts on the farm will no doubt be of interest to the tour group.

During the long drive to Lüderitz after sunset, we experienced a typical desert sandstorm. The wind from the Sperrgebiet in the south blows northwards through the various wind corridors, in the process depositing sand on the railway line and road. We were fortunate to get to Lüderitz while the road was still open. Occasionally we drove over heavy bumps where the sand had already drifted onto the road. Finding hotel accommodation for the tour in the picturesque German resort of Lüderitz is problematic, but we managed to book accommodation, although the party will be split up for the night.

The following morning we drove a few kilometres out of town on the coast road and spent two hours at a little plant paradise formed in a depression in the coastal dunes. There are many species to be seen, their miniaturisation being a function of their habitat. To the delight of us all, Ronnie Uijts yet again found the first lithops, *Lithops optica* cv. *Rubra*! We all once again had a long photographing session, while Graham reeled off the names of the plants, as he has been doing all week. Again we reflected on how lucky we were that he has agreed to be the tour guide for the 1996 Succulenta tour of Namibia. We will all benefit from his extremely wide botanical knowledge which will add to the enjoyment of the tour.

Reluctantly we left the Lüderitz site. The road to Aus had been cleared but in places the railway line was still several metres deep in sand. We stopped on the road to view magnificent examples of *Lithops karasmontana* subsp. *eberlanzii*, *L. francisci*, *Commiphora*, *Hoodia alstonii*, *H. gordonii*, *Juttadinteria simpsonii* and *Aloe dichotoma*. Turning off the main road onto the dirt road to Rosh Pinah, the monotony of the heat is broken only by stops to view *Lithops karasmontana* subsp. *bella*,

Hoodia gordonii and *Sarcocaulon peniculinum*. The accommodation at the mine guest house at Rosh Pinah is adequate: basic but clean, and the food is wholesome. They can accommodate the numbers of the tour.

The following morning we embarked on the long journey on the dirt road running next to the Orange River to Noordoewer. On the way we stopped to admire and photograph the amazing *Portulacaria armiana* with their five metre tall inflorescences and also to see *Sarcocaulon crassicaule*, *Hermannia stricta* and the desert roses, rosette-like crystals of gypsum and calcium sulphate salts.

On the return journey we reflected on the last few days and we all agreed that the long distances between the localities were really worth travelling to experience the wonders of Namibian succulent plant life. We enjoyed the country as much for its vast expanses, its scenery and diversity as for the plants which we were fortunate enough to find in the deserts, the mountains and the sea fogs.

Those joining the Succulenta 96 pre-congress tour can surely look forward to an unforgettable experience.

All photographs by Graham Williamson, except for the picture of *Euphorbia spinea* on page 75, which was taken by Alex Fick.



Welwitschia mirabilis in the Welwitschia plains, with sedimentary mountains in the background.

distributed brownish bumps with papillae, at their base a distinctive protrusion with brownish papillae; *bulb* light green with white papillae on inner surfaces. *Corona* greenish, 3 mm x 1 mm high. *Outer corona appendages* forming the outer walls of the five nectar pouches, each having two erect pointed lobes 1 mm apart on either side of these pouches, green. *Inner corona appendages* thin, lying on top of the staminal column, green. *Follicles* paired divergent 45 degrees at the base, 40–75 mm x 2 mm, greyish green; follicular walls thin, each containing 15–20 seeds. *Seed* almost black 6–7 mm x 1.5 mm; tuft 15–20 mm.

Name: For the area where it was discovered.

Type: Zimbabwe 2031 BA R. G. Peckover 242 (holotypus, PRE).

Discussion

The nearest relative to *B. bikitaensis* is *Tenaris chlorantha* from South Africa. The major difference between the two lies in the floral structure with *B. bikitaensis* having pointed upright lobes encountered in many *Brachystelma* species whereas in *T. chlorantha* these are absent. An interesting observation is that the lobes secrete droplets which may attract suitable pollinators.

The distinctive protrusion at the base of the corolla lobes is also an important character not found in *T. chlorantha*. The brown as well as white papillae found respectively on the inside of the lobes and the bulb of the corolla are very distinctive and not found on the other *Tenaris* species. The major floral differences may be seen in Figures 2a and 2b where the papillae as well as upright lobes are shown.

Acknowledgements

Thanks are extended to Dr D J B Killick for the Latin diagnosis, and to Roger Dixon for the close-up photographs.

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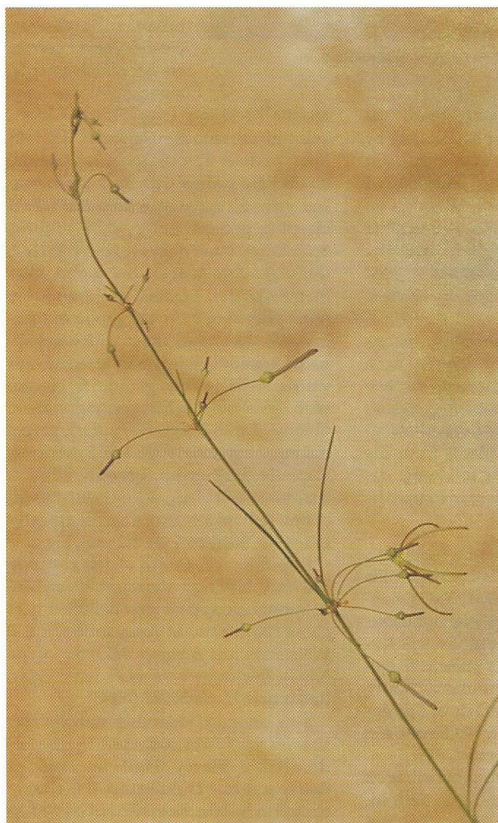


Figure 3. *Brachystelma bikitaensis*, apical flowering section

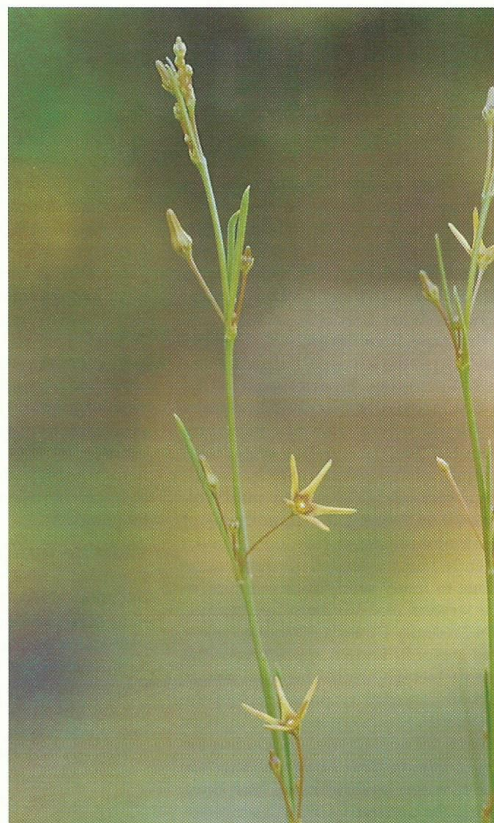


Figure 4. *Tenaris chlorantha*, apical flowering section