

A new species of *Brachystelma* (Apocynaceae) from Chitipa District, Malawi

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A new species, *Brachystelma malawiensis*, is described from Malawi. All photographs by the author except where otherwise indicated.

Introduction

Members of *Brachystelma* are characterised by leaves that are opposite, linear to elongated, with wavy, sinuate to entire straight margins. These are bright green to greyish and glabrous to very hairy. The flowers are borne in the axils of the leaves or terminal in panicles. Each flower has five corolla lobes which can be united at their tips or free. The corona contains the gynostegium with the paired pollinia and the stigmatic surfaces. The paired follicles develop after fertilisation and can be upright, decumbent, thin or very fat. When mature these fruits split longitudinally to release the tufted seeds which are dispersed by the wind. There may be a few seeds to many in each follicle. The tubers of some species of *Brachystelma* have, according to the literature, been used as a food plant with the Bushmen in particular utilising them as a food source (Allen Dyer, 1983).

During a visit to the nursery of Ernst Specks in Germany in February 2015, the plant which is the



Fig. 1 The compact plant form and fine hairy leaves of *B. malawiensis* (Photo: Ernst Specks)

subject of this article (Fig. 1) was observed amongst other succulents and I was asked to propagate this species for him. The plant was labelled as *Brachystelma* sp nov aff. *lancasteri* 21332 and it



Fig. 2 Two plants of *B. dinteri* depicting different mottling of flowers, and also showing more elongated growth form



Fig. 3 The small black flowers of *B. malawiensis* with distinctive ribbon-like tufts from the corolla lobes and a whitish corona



Fig. 4 The small black flowers of *B. malawiensis* without the ribbon-like tufts



Fig. 5 Close-up of *B. dinteri* flower showing red mottling of the flower



Fig. 6 Twin seed pods of *B. malawiensis* which are green with red longitudinal striping

originated from Malawi. Some small tubers (1–2cm diameter) were brought back and last year two plants were cross-pollinated under a microscope. Four seed follicles set and developed (Fig. 6), and the resulting seed was then sown in the second half of 2018 (Fig. 7).

It was difficult to accept that this species had an affinity to *B. lancasteri*, a species depicted and poorly illustrated in *Excelsa* (Boele, 1989, 1993) and this new species does not seem to be closely related at all. After further study of the morphological and floral characters, the closest species was determined to be *B. dinteri*, a species found in Zimbabwe as well as in northern Namibia.

Taxonomic treatment

Brachystelma malawiensis* Peckover *sp. nov. resembles *B. dinteri* in having a similar underground caudex but is easily distinguished from that species by its broader leaves and it is a much smaller compact plant. The flowers of *B. malawiensis* are a different colour, being overall black, with black filament-tipped corolla lobes, as against the overall greenish colour with some red mottling of *B. dinteri*. The inner and outer corona lobes also differ. In *B. malawiensis* the outer lobes with the nectar pouches are half open to the base whilst in *B. dinteri* these are continuous and extend upwards into small bilobed structures. The inner lobes of *B. malawiensis* are green and pressed on the staminal column whilst in *B. dinteri* these are yellow. TYPE: Malawi, Northern Region, Chitipa District, 12 January 2000, Peckover 247 (holotype: PRU).

Description

Plant a perennial herb up to 100mm high: single, deciduous, the basal organ a below-ground caudex, up to 40mm diameter and 20mm thick, with numerous fusiform roots from the lower surface. **Leaves** up to 40mm long, 25mm wide, linear, slightly undulating in the horizontal plane, hairy on upper and lower surfaces. **Flowers** 6mm diameter, black on outside and inside; **corolla lobes** ovate, triangular, black, 2mm long and 1.5mm wide at the base, glabrous, mostly having black terminal filaments; **corolla** bowl very reduced and not evident; **corona** 3mm diameter, whitish with outer lobes of nectar pouch blackish and others purple. **Nectar pouch** open half to the base. **Fruit** 50×5mm upright, greenish with reddish markings, thin-walled. **Seeds** dark brown with a lighter margin, 13×4mm up to 14 per follicle.

Brachystelma malawiensis appears to be most closely related to *B. dinteri* (Fig. 2). Both species have a

swollen below-ground caudex and fusiform roots. However, the two species differ in several floral and morphological features. The flowers of *B. malawiensis* are black in colour with black corolla lobes (Figs. 1, 3 & 4) whilst those of *B. dinteri* are predominantly greenish with reddish markings (Fig. 5). In *B. malawiensis* the corolla lobes mostly have terminal black filamentous ribbon-like hairs (Fig. 3) as against none for *B. dinteri* (Fig. 5). The corolla lobes in *B. malawiensis* are forward-facing whilst in *B. dinteri* (Fig. 5), these are reflexed. Diagnostic features to distinguish between *B. malawiensis* and *B. dinteri* are provided in Table 1.

Brachystelma malawiensis is known from only one site in Malawi, near Chipita at an altitude of 835m on rocky outcrops in miombo woodland in the Northern region. Associated plants include *Euphorbia echinulata*, *Adenia goetzei*, *Trochomeria polymorpha*, *Ceropegia* sp. and *Dorstenia cuspidata*.



Fig. 7 Young seedlings of *B. malawiensis* two months after sowing

Boele, C (1989) *Brachystelma* Sims (Asclepiadaceae); Introduction and case study of the 13 Zimbabwean species. *Excelsa* 14: 45–53.
 - (1993) Three new species of *Brachystelma* Sims (Asclepiadaceae) from Zimbabwe. *Excelsa* 16: 29–33.

LITERATURE:

Allen Dyer, R (1983) *Ceropegia, Brachystelma and Riocreuxia in Southern Africa*. A.A. Balkema, Rotterdam.

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Table 1 Diagnostic features of *B. malawiensis* and *B. dinteri*

	<i>B. malawiensis</i>	<i>B. dinteri</i>
Distribution	Malawi	Zimbabwe and Namibia
Plant Form	Disc-shaped caudex up to 40×20mm, fusiform roots below	Disc-shaped caudex up to 50×20mm, fusiform roots below
Stem	Mostly single, upright, up to 100mm, very densely covered with fine hairs	Mostly single up to 300mm tall, slightly hairy
Leaves	Blade up to 40×25mm Elliptic, undulating margin on horizontal plane, finely hairy on the upper and lower surfaces	Blade from 20–40×10mm Spear-shaped, entire, hairy on upper and lower surfaces
Pedicle	Up to 9 flowers axillary to the leaf node on the stem Perpendicular to stem, 1mm, hairy	Up to 20 flowers from one leaf axil, axillary to stem Perpendicular to stem, 2mm, hairy
Corolla bulb	3mm, almost non-detectable bulb with corona inside	3mm, almost non-detectable bulb with corona inside
Corona	Whitish 3mm diameter with pointed blackish extremities on outer lobes Outer lobe nectar pouch wall is half open to the base of flower, others purple and pressed on the inner lobes Inner lobes pressed on the staminal column, green	Yellowish to greenish, mottled, 4mm diameter with black bilobed backs to the outer lobe nectar pouches, others mottled and pressed on the inner lobes Nectar pouch wall not open and raised high above the staminal column, inner lobes pressed on the staminal column, yellow
Corolla lobes	Ovate triangular in shape, black, 2×1.5mm at base, usually tipped by a few flat filamentous ribbon hairs, all facing forward	Ovate triangular in shape, greenish and with red markings, some plants having minimal spotting, slightly reflexed
Seed follicles	Upright green and flecked with reddish markings 50×5mm at maturity. Seed brown with a lighter margin, up to 14 seeds per follicle, seed 13×4mm	Upright green and flecked with reddish markings 100×5mm at maturity. Seed brown with a lighter margin, up to 30 seeds per follicle, seed 12×4mm