# A coastal species of *Brachystelma* (Asclepiadaceae) from the Eastern Cape: *B. kerzneri* Peckover sp. nov.

Ralph Peckover

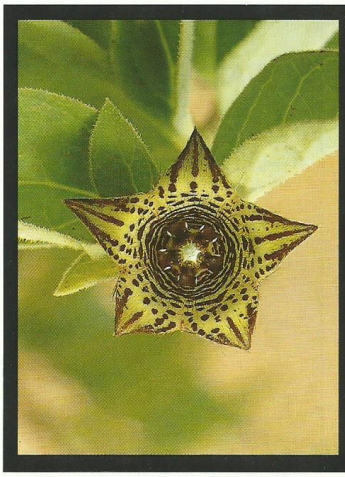

Figure 1. The flower of ***Brachystelma kerzneri.***

Figure 2. Major differences between the coronae of ***Brachystelma kerzneri*** (left) and ***B. campanulatum*** (right). *B. kerzneri* - note the lack of nectar pockets between inner corona appendages and inward-facing white hairs on inner surfaces. *B. campanulatum* - note the obvious nectar pockets and lack of hairs on inner surfaces.

While walking next to the golf course of a holiday resort on the southern bank of the Mtamvuna River, which separates KwaZulu-Natal from the Eastern Cape, I noticed the characteristic opposite leaves of a *Brachystelma* among the grass tufts. The soil was a well-leached, acid greyish sand (Fernwood form) of great depth. The plants in association with this species consisted of various grasses, *Brachystelma sandersonii*, *Sisyranthus* sp. as well as other forbs. The shrubs nearby included *Strelitzia nicolai, Carissa edulis* and *Phoenix reclinata*. The rainfall in this area is approximately 1000 mm per annum and falls mainly in the summer months. The climate is sub-tropical and will thus experience mild temperatures during winter. The species will probably also grow in similar soils and sites along the KwaZulu-Natal coastal belt as well as along the Eastern Cape coast. A hill nearby with a different soil texture revealed a different plant component which suggests that this species is restricted to soils which are well-drained and sandy. The site where *B. kerzneri* was observed was only 100 m from the sea and would be exposed to the salt-laden winds although the sandy composition of the soil would help to leach salts from the top soil. The grass cover was dense due to zero-grazing by cattle and the absence of fire for many years. Most plants had to struggle through 30 cm of dead grass before being exposed to sunlight. Three specimens had produced multiple corms to move underground to a position where more light prevailed. This distance was measured at over 10 cm. At the site examined, plants were rare and only observed on the eastern aspect of the one hill.

The nearest relative to *B. kerzneri* is *B. campanulatum* which occurs south of this locality and is also a resident of the coastal grasslands. The major difference between *B. kerzneri* and *B. campanulatum* lies in the floral structure, with *B. campanulatum* having the outer corona appendages forming nectar pockets whilst in *B. kerzneri* these are totally reduced with the corolla bulb taking over this function. This is also the first case where the author has observed such an adaptation within the *Brachystelma* genus. In *Sisyranthus imberbis* the outer corona appendage is also reduced but here two small nectar pockets are formed from the base of the inner corona appendages. In *B. kerzneri* white hairs are present on the outer surfaces of the inner corona, whereas in *B. campanulatum* these are absent. Another unusual observation in cultivation is that the

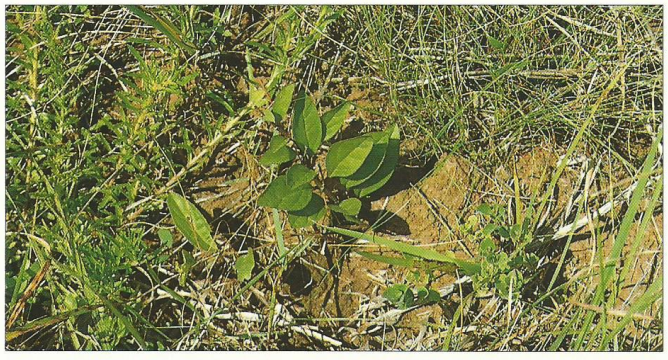

Figure 3. ***Brachystelma kerzneri*** in habitat.



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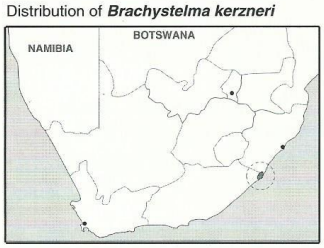
## Differences between *Brachystelma kerzneri* and *B. campanulatum*

| | *B. kerzneri* | *B. campanulatum* |
|---|---|---|
| **Stems** | 150 mm long, internodes ± 15 mm apart | 75 mm long, internodes ± 5 mm apart |
| **Leaves** | Margin linear in the vertical plane, 60 mm x 30 mm | Margin vertically undulate, 45 mm x 30 mm |
| **Flowers** | Flowers face upwards | Flowers usually face downwards |
| **Corolla** | - corolla lobes reflexed or at right-angles to the corolla bulb<br>- corolla bulb 9 mm diam. and 4 mm deep<br>- three lines orientated longitudinally on corolla lobes | - corolla lobes erect<br>- corolla bulb 15 mm in diam. and 10-13 mm deep<br>-- five lines orientated longitudinally on corolla lobes |
| **Corona** | - outer appendages totally reduced<br>-inner appendages each having two sets of white hairs present on outer surfaces<br>- on top of staminal column, inner appendages not touching and not covering pollinia | - outer appendages forming orange-coloured nectar pockets<br>- no hairs present<br>- inner appendages touching on top of staminal column and covering pollinia |

first flowering node on the stem gives rise to two flower buds instead of the normal one, formed later on the developing stems. This phenomenon can only be confirmed if plants are studied *in situ* at the beginning of the growing season.

In many brachystelmas, including *B. campanulatum,* inner corona appendages enclose and cover part of the pollinia, whereas in *B. kerzneri* these are not covered. Other differences observed are included in the table and the major differences are illustrated in Fig. 2.

Distribution of ***Brachystelma kerzneri***




## Diagnosis

***Brachystelma kerzneri* Peckover sp. nov.** *Brachystelma campanulatum* N.E.Br. affinis, sed floribus minoribus, corollae lobis reflexis, coronae appendicibus exterioribus omnino redactis corollae bulbo velut sacculus nectareus fungenti, appendicibus interioribus non dorsis antherarum tegentibus differt.

## Description

Perennial herb. *Tuber* 50 - 70 mm thick. *Stem* single, decumbent, 150 mm long, 4 mm diameter at base, slightly hirsute, reddish purple, internodes 12 - 15 mm apart. *Leaves* arranged on opposite sides of the stem, obovate to elliptic 20 - 60 mm x 10-30 mm, smallest leaves at stem tip, sparingly hirsute on upper and lower surface, margin entire, both surfaces light green. Petiole 5 - 7 mm x 2-3 mm, green and sparingly hirsute. *Flowers* borne singly at the nodes, axillary. Bracts 1 - 2 mm long, linear. Pedicels 5 - 8 mm long and 1,5 mm in diameter, sparingly hirsute. Calyx lobes erect, 4,5 mm long, green, linear-lanceolate and sparingly hirsute. *Corolla* 20 mm diameter, greenish yellow with dark red lines and spots; lobes triangular 7 mm x 7 mm, at right angles or reflexed at an angle of 45° to the corolla bulb, in the middle a dark red line together with a dark red line along both margins, oriented longitudinally, 1 mm dark red hairs present on margin and inner surface; bulb 9 mm diameter and 4 mm deep, bowl-shaped, greenish yellow with basal markings of circles and spots being subcircular, a few reddish hairs present on the inner surface. *Corona* 5 mm diameter and 2 mm high, blackish red. Outer corona appendages totally reduced to the base, leaving a noticeable gap. Inner corona appendages blackish red and having inward-pointing white hairs on the two outer surfaces, lying on top of the staminal column but not enclosing the backs of the anthers. The inner appendages are fused at the base of the corolla bulb with the nectar pocket being formed from its base. *Seed* follicles two, upright, greenish red, 120 mm x 7 mm, surface of a rough texture. Seed dark grey with lighter margins, 3,5 mm x 8 mm, tufted hairs 25 mm long, 30 - 36 seeds per follicle.

## Name

Named after the originator of the pleasure resort where the species was discovered, Mr Sol Kerzner.

## Type

Eastern Cape Province, 3130AA (Port Edward) *R.G. Peckover 1722* (holotypus, PRE)

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