

# BRACHYSTELMA, AN UNUSUAL AND THREATENED SUCCULENT

Must this endemic plant from the Western Cape become extinct?

by Ralph Peckover

The Western Cape's fynbos is unique and threatened by agriculture and urban sprawl that devours natural habitats. The public's attention has been drawn to the plight of many fynbos plants but one that has been overlooked is *Brachystelma caudatum*\*. This plant is endemic to the Western Cape and was discovered here by Thunberg in 1772 and only re-discovered alive almost 200 years later. It is a relation of the milkweed to which the stapeliads or 'aasblomme' belong. The genus *Brachystelma*, of which there are around 100 species worldwide, appears to be concentrated in southern Africa where 70% of described species are found. The only other species found in the winter rainfall area is *B. occidentale*, which extends its



*Brachystelma caudatum*\* flowering in habitat at Kraaifontein. Photo: P. Bruyns.

loamy soil in grassland and differ from *B. caudatum* in that the flowers are far less hairy, seed follicles are upright and fatter and the plants are more floriferous. It may even turn out that *B. glenense* is a subspecies of *B. caudatum*.

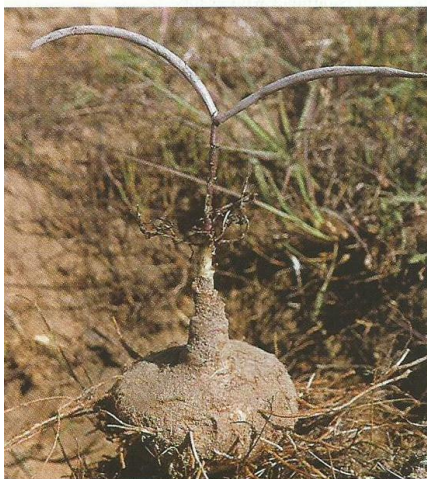
*B. glenense* extends northwards to the Northam platinum mine 600 km away, where an asclepiad enthusiast found plants almost

range eastwards to around Bredasdorp.

The closest relative to *B. caudatum* is *B. glenense* from the Glen Agricultural College near Bloemfontein - a summer rainfall area. A friend of mine found plants of this species a few seasons ago at Glen even though it had been reported only once in 1953. These plants grow in a

identical to those from Glen in a black loam soil.

*B. caudatum* prefers the sandy flats in the area around Cape Town which are also ideal for wheat, vineyards, housing and Australian acacias. At a site near Kraaifontein, the plants grow in sandy soil that is waterlogged for part of the year. Many other bulbous plants grow in association



The distinctive paired seed follicle of *B. caudatum*. Note the caudex (swollen stem) of the dormant plant. Photo: R. Peckover.

## Caudatum or tuberosum?

Having grown and studied, in field as well as in cultivation, around three quarters of all *Brachystelma* species over a period of eight years, I cannot accept Foster's inclusion of *B. caudatum* under *B. tuberosum*. It is, in my opinion, related to *B. glenense* whilst *B. tuberosum* is closely related to *B. meyerianum* and *B. decipiens* (at most sub-species of one another).

Briefly, the main differences between *B. caudatum* and *B. tuberosum* are

- **Florally**, *B. caudatum* has long corolla lobes (about 20 mm) which are thin and reflexed along both margins and have long hairs all over the upper surface. The corolla lobes of *B. tuberosum* are short (7 mm), thicker and only have hairs along the margins. The corona of the flower also lacks the inward facing hairs of the nectar pockets of *B. tuberosum*. Flowers are borne terminally in an umbell of up to four flowers whilst in *B. tuberosum*

flowers are borne laterally at the nodes with up to four flowers per node. If **smell** could be taken into account, *B. caudatum* flowers from Kraaifontein plants do not have a pungent smell as do those of *B. tuberosum*. This could be of importance as cultivated plants of *B. caudatum* in my nursery do not set seed with the flies I have on my plot but *B. tuberosum* plants set many seed follicles.

- **Seed pods** of *B. caudatum* are grey, 100 mm long, thin and contain a few large seeds whilst the greenish purple pods of *B. tuberosum* are thicker and contain many more smaller seeds with pods maturing far sooner (3 months as against 6-7 months for *B. caudatum*).

- There are many other differences including the shape of the caudex and different growing regimes, but I will follow this up in a future issue of *Veld & Flora*.



with this colony of *B. caudatum*, as well as Australian *Acacia cyclops* and eucalyptus trees. This site is unfortunately near a squatter settlement and housing suburb and it is doubtful whether this colony will make it into the twenty-first century only two years away.

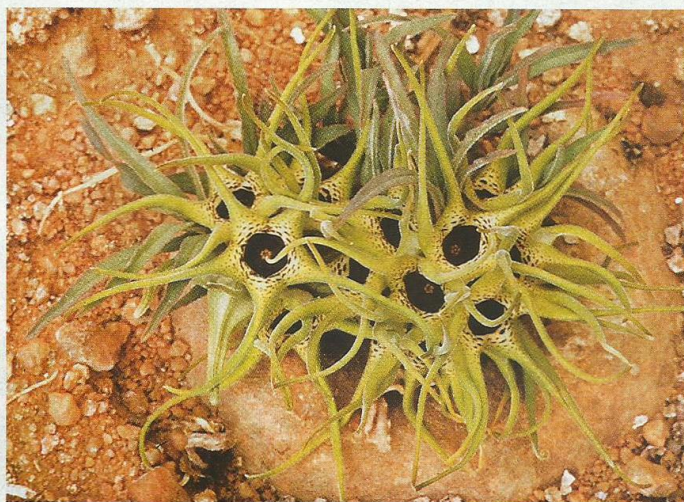
*B. caudatum* has a swollen tuber which can grow up to 150 mm in diameter and 30 mm thick. It is perennial and the above-ground stems appear in autumn and winter and the clusters of flowers are borne in spring. The leaves are small, opposite and the plant itself is insignificant without its flowers. The green flowers, up to four per cluster, are covered in white hairs and measure up to 80 mm across.

They remain open for a week or so. Pollination is by flies attracted by the flower's scent, which, unlike other species of this genus, is not repugnant. After pollination, the paired grey seed follicles develop rapidly and by November are fully formed and resemble the horns of a buck.

The seed follicle contains around ten seeds each with a tuft of hair at one end. The tuft facilitates distribution in the typical Cape winds and a lucky seed lands in a suitable niche to germinate when the rains begin in winter.

There have been only a half-

should be saved is determined by the emotional feelings of the majority of mankind. This is perhaps why a rhino attracts far more attention than a fynbos plant which is definitely not as impressive to look at (for the majority that is). In my mind, extinction of any organism from this planet because of humans just reinforces the fact that humankind cannot live in peaceful co-existence with other species and we have become poor guardians of planet Earth. ☹



The flowers of *Brachystelma glenense* are less hairy than those of *B. caudatum*.

Photo: R. Peckover.

dozen or so sightings of this species and at the rate with which urban sprawl and farming activities expand, its future in the Western Cape looks very bleak indeed. What effort should be made to prevent a species of plant or animal from extinction? Perhaps the worth of whatever

*Brachystelma caudatum* has been placed in *B. tuberosum* (Meerburg) R. Br. Ex Sims. The author does not agree with this change and wishes to keep the original name. (See accompanying box.)

Editor

Ralph Peckover is writing a book on the genus *Brachystelma* which will be published in a year or so.

## PROPAGATION OF *BRACHYSTELMA*

Artificial propagation is relatively easy. I obtained a plant in November 1994 from the Kraaifontein site, which I found only because of the distinctive paired seed follicles. (At this time of the year, plants are dormant with no above-ground parts.) The seed follicles matured on the plant which then shed its seed during April 1995. The seed was sown in a commercial seedling mixture and within a season the seedlings had produced a carrot shaped root. The mother plant sent out stems and leaves during winter and flowered in September 1995. Seven flowers were produced and they opened simultaneously.

Many brachystelmas are self-incompatible and will not set seed when self-pollinated, but having only the one plant, I took a chance and self-pollinated six of the seven flowers by using a stereomicroscope and a pair of pointed tweezers. The pollination was successful and fertilization took place

resulting in six pairs of seed follicles. After the follicles had matured, around 200 seeds were collected and sown in January 1996 in the same seedling medium as before. There are around 150 seedlings at present. During September 1997, a dozen or so seedlings began to flower and one set seed follicles after being artificially pollinated.

A problem with the brachystelmas is that the swollen tuber, rich in starch, is easy prey to a wide

range of pests and diseases – especially the fungus, fusarium. One day the mother plant was fine, the next it was a sodden mess. Luckily the numerous offspring flowered within a year and a half and, if deemed important and if a suitable habitat could be identified, re-establishment of these plants is possible. ☹

A bed of seedlings of *B. caudatum* that flowered 21 months after sowing the seed.

Photo: R. Peckover.

