

FABACEAE

ASPALATHUS THERESAE, A NEW SPECIES FROM WESTERN CAPE, SOUTH AFRICA

INTRODUCTION

Aspalathus L., comprising 278 species, is the largest genus endemic to South Africa (Dahlgren 1988). The distribution of the genus lies mainly in the Cape Floristic

Region (CFR), where about 98% of the species occur, and it is the second largest genus in the CFR (Goldblatt & Manning 2002). Important contributions to the taxonomy of *Aspalathus* were published in a series of publications in the 1960s by Dahlgren (1960, 1961, 1963, 1965,

1967, 1968). Since then a single species was described in the mid 1980s (Dahlgren 1984), but since the treatment for the *Flora of southern Africa* (Dahlgren 1988) no new species has been described.

During a field trip in 1997 in the Riviersonderend Mountains, Western Cape, with colleagues Ted and Inge Oliver and John Manning, I collected various legume plants. Numerous attempts to identify an *Aspalathus* species failed. The specimen displays a combination of characters unique in the genus which justify its recognition as a distinct species following the species concept applied by Dahlgren (1960, 1963). He recognized species when the individuals of one or more populations are morphologically distinct from those of other species by a marked discontinuity in several characters. The distribution of the species may or may not overlap with other closely related species (Dahlgren 1960, 1963). This species meets these criteria and it is accordingly described here.

***Aspalathus theresae* C.N.Cupido, sp. nov., *A. aspalathoides* (L.) Rothm. affinis a qua differt carina rostrata, stylo sigmoideo, vexillo ovato-circulari, alis lunatis, ovulis 4.**

TYPE.—Western Cape, 3419 (Caledon): Riviersonderend, Riviersonderend Mtns, Olifantsdoorn, northern head, 1 280 m, (–BB), 7 November 1997, C.N. Cupido 29 (NBG, holo.; PRE). Figure 10.

Erect, branched shrub up to 700 mm high; branches densely leafy, villous or woolly. *Leaves* trifoliolate; leaflets flat, oblong or narrowly elliptic, acute, 5.5–9.0 × 1.5–2.8 mm, coriaceous, green, with long villous hairs on abaxial surface, adaxial surface glabrous. *Inflorescence* a terminal head of 5–20 flowers, subtended by uppermost leaves; pedicel 0.5–3.0 mm long, covered with long villous hairs; bracts unifoliolate, linear, 5.8–8.1 mm long, covered with long villous hairs; bracteoles unifoliolate, similar to bracts, 5.5–5.8 mm long, covered with long villous hairs. *Calyx* campanulate, sericeous; lobes triangular, upper lobes distinctly broader than remaining lobes, 2.2–3.6 mm long. *Corolla* yellow; standard blade ovate-circular, 6.7–9.0 × 6.8–8.0 mm, sericeous on back, apex emarginate, base cordate, claw 3.0–3.4 mm long; wing blade lunate, 6.1–8.0 × 3.1–4.3 mm, sericeous on most of lower parts, with several rows of minute folds, claw ± 2.9 mm long; keel blade rostrate, 6.5–8.1 × 3.5–4.7 mm, upper margin slightly concave, sericeous on lower parts, prominent pouch present, claw 2.8–4.0 mm long. *Stamens* monadelphous; filaments united basally for three quarters, forming a split sheath; anthers 5 short, dorsifixed; 4 long, basifixed; 1 intermediate in size and attachment. *Pistil* sessile, ovary and style base sericeous; ovules 4; style sigmoid, stigma capitate. *Pod* obliquely ovate, rostrate, 5.5–6.0 × 3.2–3.5 mm, one-seeded. *Flowering time*: November. Figure 11.

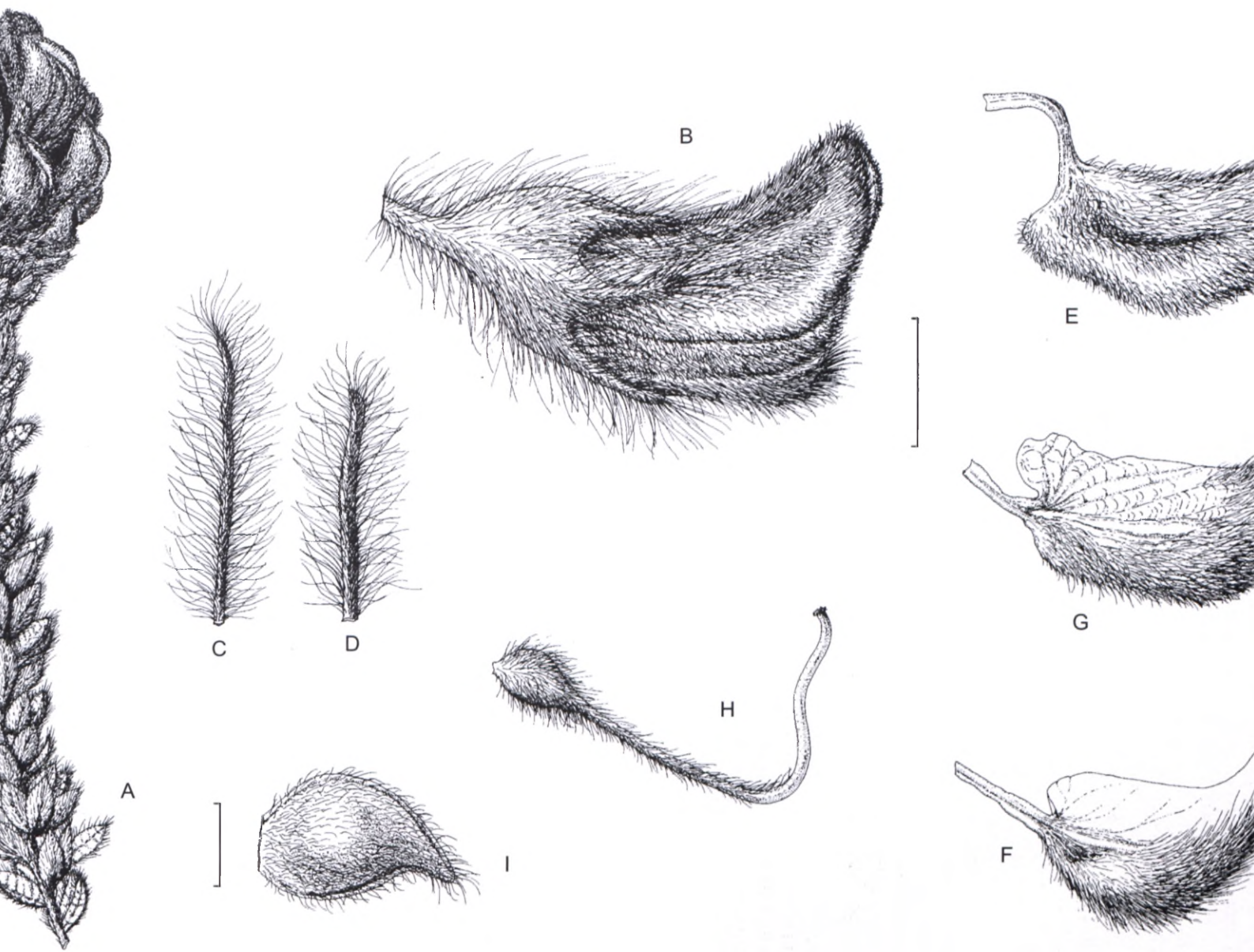
Conservation status: known from a single small population on the Riviersonderend Mountains and is not under threat. It must be considered as Vulnerable [D2, World Conservation Union (IUCN) 2001].

Diagnostic features and affinities: no phylogeny for *Aspalathus* exists to provide evidence for relationships within the genus. However, Dahlgren (1988) established



FIGURE 10.—Holotype of *Aspalathus theresae*.

informal groups to give recognition to morphological similarities between supposedly related species. The placement of *A. theresae* is uncertain, but a combination of several characters can be used to suggest possible affinity. The flat, trifoliolate leaves and capitate inflorescence place *A. theresae* in the group Cephalanthae, one of 34 groups recognized by Dahlgren (1988). The name Cephalanthae is derived from the capitate inflorescence characteristic of species in this group. Species in other groups, particularly in the Sericeae may have these characters. Within the Cephalanthae, *A. theresae* superficially resembles *A. aspalathoides* (L.) Rothm. The two species are similar in general appearance, the number of flowers in the inflorescence and the cordate shape of the standard base. *A. theresae* differs from it in having a rostrate keel, sigmoid style, ovate-circular standard, lunate wing blades and four ovules. In contrast, the keel in *A. aspalathoides* is obtuse, the style upcurved, the standard elliptic, the wings oblong and the ovules two. In addition to the differences in morphological features, *A. aspalathoides* is not known from the Riviersonderend Mountains. It occurs mainly on coastal mountains from the Cape Peninsula to Bredasdorp, as well as along the Langeberg Mountain range in Swellendam, Riversdale and Montagu, Rooiberg Mountains south of Ladismith and Keurkloof northwest of Barrydale. Within the Cephalanthae, the rostrate keel and sigmoid style are unique to *A. theresae*. A rostrate keel and sigmoid style are characteristic of the groups Rostratae and



thus theresae, Cupido 29. A, flowering branch; B, flower; C, bract; D, bracteole. E–G, petal: E, standard (folded); F, keel; G, wing. H, pistil; I, pod. Scale bars: A, 10 mm; B–H, 3 mm.

Crotalariaiiformes, but in these groups the inflorescences are unifloral and situated on reduced lateral shoots or in terminal groups of two to four flowers. The leaves are also described as subterete or somewhat angular or flat (Dahlgren 1988). In the Carnosae, *A. theresae* shares the rostrate keel, sigmoid style and capitate inflorescence with the Cape Peninsula endemic species, *A. capitata* L. However, this species differs from *A. theresae* in having clusters of linear-pinoid leaves, elliptic to narrowly obovate bracts, longer pedicels and two ovules.

Distribution and habitat: *Aspalathus theresae* is only known from a single collection from the northern head of Olifantsdoorn in the Riviersonderend Mountains (Figure 12). It grows in sand on an exposed rocky Table Mountain Sandstone slope at an altitude of 1 280 m.

Etymology: the specific epithet is derived from my mother's forename, Theresa, in acknowledgement of her love for plants, which she also instilled in me.

ACKNOWLEDGEMENTS

I wish to thank Ferozah Conrad for the Latin translation and Dr John Manning for valuable comments on the final draft of the manuscript. Deshni Pillay assisted with determining the conservation status and Tracey Nowell is thanked for the line drawings.

REFERENCES

- DAHLGREN, R. 1960. Revision of the genus *Aspalathus* I. The species with flat leaflets. *Opera Botanica* 4: 1–393.
 DAHLGREN, R. 1961. Revision of the genus *Aspalathus* II. The species with ericoid and pinoid leaflets 1. *Opera Botanica* 6: 1–69.
 DAHLGREN, R. 1963. Studies on *Aspalathus* and some related genera in South Africa. *Opera Botanica* 9: 5–301.
 DAHLGREN, R. 1965. Revision of the genus *Aspalathus* II. The species with ericoid and pinoid leaflets 4. *Opera Botanica* 10: 1–231.
 DAHLGREN, R. 1967. Some new and rediscovered species of

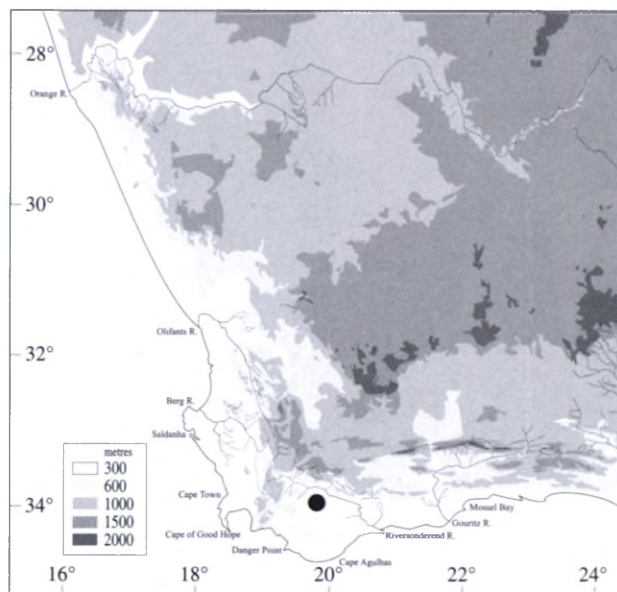


FIGURE 12.—Known distribution of *Aspalathus theresae*.

- Aspalathus* (Leguminosae). *Botaniska Notiser* 120: 26–40.
 DAHLGREN, R. 1968. Revision of the genus *Aspalathus* II. The species with ericoid and pinoid leaflets 6. *Opera Botanica* 21: 1–309.
 DAHLGREN, R. 1984. A new species of *Aspalathus* (Fabaceae) from the Prince Albert District. *South African Journal of Botany* 3: 259–261.
 DAHLGREN, R. 1988. Crotalariaeae (*Aspalathus*). *Flora of southern Africa* 16, part 3, fasc. 6: 1–423.
 GOLDBLATT, P. & MANNING, J.C. 2002. Plant diversity of the Cape region of southern Africa. *Annals of the Missouri Botanical Garden* 89: 281–302.
 WORLD CONSERVATION UNION (IUCN) 2001. *IUCN Red List categories and criteria: version 3.1*. IUCN Species Survival Commission. IUCN, Gland, Switzerland and Cambridge, UK.

C.N. CUPIDO*

* Compton Herbarium, South African National Biodiversity Institute, Private Bag X7, 7735 Claremont, Cape Town. Cupidoen@sanbi.org.
 MS. received: 2005-12-19.