Stylidium pulviniforme (Stylidiaceae), a new species of triggerplant from south-west Western Australia

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Abstract

Lowrie, Allen and Kenneally, Kevin F. *Stylidium pulviniforme* (Stylidiaceae), a new species of triggerplant from south-west Western Australia. Nuytsia 9 (3): 369-373 (1994). A new species of *Stylidium* (Stylidiaceae) endemic to south-west Western Australia, *S. pulviniforme* Lowrie and Kenneally, is described and illustrated.

Introduction

Stylidium pulviniforme described in this paper is endemic to the south-west of the state where it appears to be confined to white sand on the margins of winter freshwater pools and in salt-free soils above the high water line of salt lakes. It belongs to subgenus *Nitrangium* Endl., section *Sonderella* Mildbr. (Mildbraed 1908) and is most closely related to *S. corymbosum* R. Br. and *S. lepidum* Benth.

Taxonomy

Stylidium pulviniforme Lowrie and Kenneally, sp. nov. (Figures 1 and 2)

Herba perennis parvula, caudice caespitoso, ramoso pulviniformi. Folia omnia radicalia, linearilanceolata, margine hyalino, ad apicem serrata, infra carinata, mucronata, 3mm longa, 0.9 mm lata, glabra. Inflorescentia dense glandulosa, 2.5-4.5 cm alta. Flores 3-5 in cyma parva. Inflorescentiae bracteae lineares, 1-2 mm longae; bracteolae 0.6 mm longae. Calycis tubus glanduloso-pubescens, 4.5 mm longus; calycis lobi 2 mm longi, obtusi, glandulosi, albomarginati. Corolla alba; tubo lobos calycis aequans. Corollae laciniae 2 posteriores obovato-ellipticae, 7 mm longae, 2 anteriores ellipticae 6 mm longae, 2.7 mm latae, e basi roseomaculatae. Labellum minutum, 0.9 mm longum, ovatum, 2 basi appendiculis instructum. Appendices faucis 2, pegmatimorphae, in tubo paulo infra lacinias posteriores instructae. Capsula ellipsoidea, 6 mm longa, 2 mm lata.

Typus: near Mt Madden, 40 km N of Ravensthorpe, 33° 15'S, 119° 50'E, Western Australia, 28 November 1974, *E. Wittwer* 1507 (holo: PERTH 02991357; iso: CANB, K, KPBG, MEL, NSW).

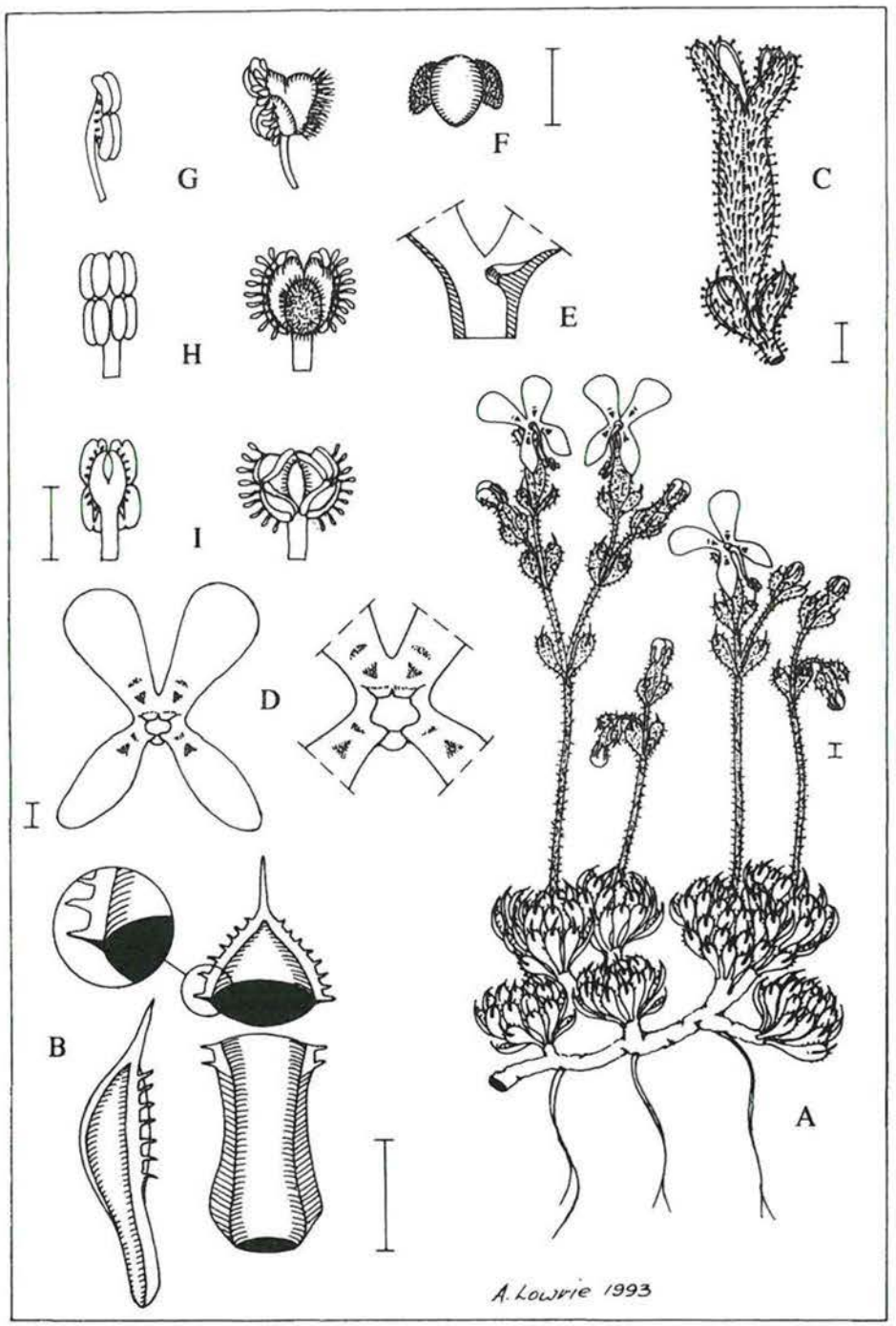

Figure 1. *Stylidium pulviniforme*. A - flowering plant; B - leaf of basal rosette showing adaxial view (right) and lateral view (left); C - hypanthium showing indumentum of glandular hairs; D - corolla (left) showing detail of throat (right); E - enlarged section of the corolla tube showing ledge-like appendage in throat; F - labellum; G - lateral view of column (left), with the stigma grown out (right); H - adaxial view of column and anthers (left), with the stigma grown out (right); I - abaxial view of column showing anther stage (left) and stigma stage (right). Scale bar = 1 mm. Drawn from *Lowrie* 121 (PERTH).

Small caespitose perennial, branched so as to form a dense flat-topped hard cushion up to c. 30 cm diameter. *Leaves* silvery grey, all basal, linear-lanceolate, glabrous, 3 mm long, 0.6 mm wide, with a white hyaline margin, serrate near apex; lower surface carinate, the ridge hyaline like the margins. *Inflorescences* cymose, 3-5 flowered, 2.5-4.5 cm high, densely glandular; bracts linear, 1-2 mm long; bracteoles 0.6 mm long. *Hypanthium* narrow-cylindrical 4.5 mm long, glandular-pubescent. *Sepals* 2 mm long, free to base, obtuse, glandular-pubescent, hyaline-margined. *Corolla* white, vertically paired; tube equal in length to sepals; two anterior lobes elliptic, 6 mm long, 2.7 mm wide with red marks at the base of each lobe; two posterior lobes obovate-elliptic, 7 mm long, 4 mm wide. *Labellum* minute, ovate, 0.9 mm long, with two basal appendages, positioned on a small keel-like ridge attached along the length of the corolla tube. *Throat* with 2 appendages in the form of minute ledges deep in throat below posterior lobes. *Capsule* ellipsoid, 6 mm long and 2 mm wide. *Seeds* pale, densely papillate.

Figure 2. *Stylidium pulviniforme*. Photograph of flowering material cultivated at the Western Australian Herbarium, grown from plants collected at the type locality by E. Wittwer, November 1974.

Other specimens examined. WESTERN AUSTRALIA: Lake Johnston, 17 October 1984, *H. Demarz* 10354 (KPBG); where the Phillips River crosses the Hyden-Ravensthorpe road, c. 4 km N of the junction of Fitzgerald and Beatty Roads, 17 October 1990, *Allen Lowrie* 121 (PERTH, MEL) and 7 December 1990, *Allen Lowrie* 220 (PERTH); 2 miles east of Duladgin Rocks (31°10'S 119°41'E) north of Yellowdine, 2 September 1966, *A.R. Main s.n.* (PERTH).

Distribution. Coolgardie District of the South-western Interzone and the Roe District of South-west Botanical Province (Beard 1980), extending from Yellowdine in the north to Mt Madden in the south and eastwards to Lake Johnston.

Ecology. This species occurs in white sand on the margins of winter freshwater pools and in salt-free soils above the high water line of salt lakes. The associated vegetation is a shrubland of *Melaleuca thyoides* Turcz. and *Darwinia diosmoides* (DC.) Benth.

Flowering period. September-November.

Conservation status. CALM Conservation Code for Western Australian Flora: Priority One - Poorly Known Taxa - known from one or a few (generally <5) populations which are under threat.

Chromosome number. n=14.

Etymology. The specific epithet alludes to the habit of the new species in forming colonies of cushion-like plants.

Discussion

The new species is distinctive, although clearly related to *S. corymbosum* R. Br. and *S. lepidum* Benth. These three species are similar in having small, cymose inflorescences (not racemes), and ledge-like throat appendages borne well down in the throat (Erickson 1958). *Stylidium pulviniforme* differs from *S. corymbosum* and *S. lepidum* in having a very short glandular scape, very short leaves with white hyaline margins (serrate near the apex) and a carinate ridge on their abaxial surface; white corolla lobes, which are marked red at base, and a short ovary. The column of *S. pulviniforme* is similar to that of *S. lepidum* in that they both work from below, the pollen or stigma touching the lower side of an insect's abdomen.

Key to *Stylidium pulviniforme* and related species

1. Leaf margins entire ..... *S.corymbosum*
1. Leaf margins serrate
   2. Scape glabrous; labellum with apical point ..... *S. lepidum*
   2. Scape densely glandular hairy; labellum without apical point ..... *S. pulviniforme*

The seed coats of *Stylidium* species appear to provide a useful taxonomic character for identification, and it is our intention to examine this feature in forthcoming publications. *S. pulviniforme* has a seed coat with a densely papillate surface. (Figure 3)

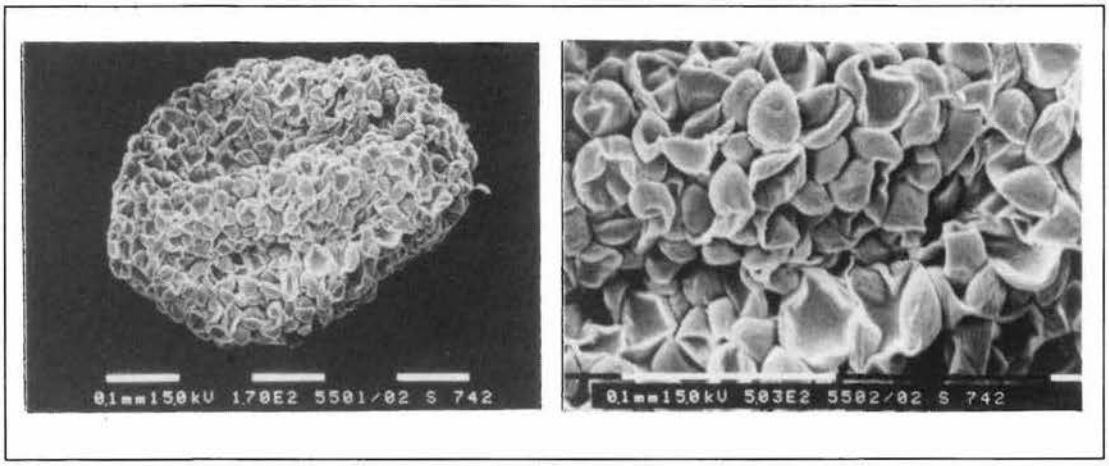

Figure 3. SEM photographs of a seed of *S. pulviniforme* showing the densely papillate surface. From *Lowrie* 220(PERTH).

Acknowledgements

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