

***BRACHYSTELMA SESHACHALAMENSE* (APOCYNACEAE), A NEW SPECIES
FROM ANDHRA PRADESH, INDIA**

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Keywords: *Brachystelma seshachalamense*; New species; Asclepiadoideae; Ceropegieae; Seshachalam hills.

Abstract

Brachystelma seshachalamense, a new species belonging to the family Apocynaceae, is described from the Seshachalam hills of Kadapa District of Andhra Pradesh, India. The new species is closely allied to *Brachystelma beddomei* Hook. f., but differs in usually solitary flowers, corolla tube large with a ring of hairs around the corona, corolla lobes spreading with white hairy along the margins and pubescent inside, coronal cup lemon yellow, interstaminal corona shallowly lobed with hairs.

Introduction

Brachystelma Sims is the second largest genus of the tribe *Ceropegieae* with c. 160 species, distributed mainly in the Old World tropics, particularly in sub-Saharan Africa, India, Sri Lanka, South East Asia and Northern Australia (Prasad *et al.*, 2016). In India *Brachystelma* is represented by 23 species and, 22 of them are endemic to the country (Prasad *et al.*, 2016; Venu and Prasad, 2015). The genus is represented by 8 species in Eastern Ghats (Hooker, 1883; Gamble, 1921; Rao *et al.*, 2011; Prasad and Rao, 2013; Rasingam *et al.*, 2013; Swamy *et al.*, 2013). Two species are with twining habit, namely, *Brachystelma beddomei* Hook. f. & *B. volubile* Hook. f., which are endemic to Tamil Nadu and Andhra Pradesh, respectively. These species were recollected by Swamy *et al.* (2012) (*B. volubile*, Kadapa hills, Andhra Pradesh) and Vijayasankar *et al.* (2003) (*B. beddomei*, Thiruvannamalai district, Tamil Nadu).

In botanical explorations in the Kadapa district of the Seshachalam hills, the authors spotted a *Brachystelma* species in the rocky crevices among grasses in dry deciduous forests. A critical study of the specimens, literature (Hooker, 1883; Gamble, 1921; Karthikeyan *et al.*, 2009; Venu and Prasad, 2015; Prasad *et al.*, 2016) and a comparison with herbarium specimens at K, CAL, MH, BSID and SKU, revealed that the collected specimens did not belong to any of the known species of *Brachystelma* in India and elsewhere. Hence, we described here as a new species, *Brachystelma seshachalamense* **sp. nov.**

***Brachystelma seshachalamense* K. Prasad & Prasanna, sp. nov.**

(Figs 1 & 2).

Diagnosis: *Brachystelma seshachalamense* is closely allied to *B. beddomei*, but differs in having flowers usually solitary, rarely 2-flowered; corolla tube 4.5-5.0 mm long, with a ring of hairs around the corona; corolla lobes spreading, 1.4-1.6 cm long, 2-3 mm long white hairy along the margins and pubescent inside; coronal cup shallow, lemon yellow; interstaminal corona shallowly bilobed with hairs.

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Type: India, Andhra Pradesh: Kadapa district, Seshachalam hills, Sanipaya forest range, 14°07'04.7"N, 78°58'09.4"E, 550 m, 27 December 2014, *K. Prasad 6454* (*Holotype:* CAL!, *Isotype:* BSID!)

Twining herbs, c. 2.5 m high. Tubers depressed-globose, 2.0–2.5 x 3.0–3.5 cm, dirty brownish without, white when cut open. Stem unbranched, slender, cylindric, glabrous. Leaves opposite-deccussate, petiolate; petiole 2–5 mm long, puberulous; lamina linear or linear-lanceolate, 4–7 x 0.2–0.6 cm, acute at apex, cuneate at base, margin hairy; midrib prominent below, puberulous, glabrous above. Inflorescence extra-axillary, reduced cymes, usually solitary, rarely 2-flowered; peduncle pinkish-green, terete, 2.6–3.0 mm long, pubescent. Flowers drooping; floral bract linear, c. 1 mm long, acute, glabrous; bracteoles 2, linear, less than 1 mm long, acute, glabrous; pedicels terete, 6–8 mm long, pubescent. Calyx pinkish, glabrous; lobes linear, 2.0–2.4 x 0.8–1.0 mm, acute. Corolla spreading; corolla tube campanulate, 4.5–5.0 mm long, a ring of hairs around the corona and pubescent inside, green with pink tinge outside, yellow between the lobes inside; corolla lobes greenish-yellow outside and dark pink inside, broad at base, narrowed progressively towards tip, 1.4–1.8 cm long, acute at apex, pubescent inside, densely white hairy along the margins; hairs 2–3 mm long. Corona yellow, biseriate, c. 4 mm in diameter, staminal and interstaminal parts fused to a shallow cup shaped structure; interstaminal corona cupular, 5 angled, c. 0.6 mm long, shallowly bilobed with few hairs; staminal corona lobes 5, incumbent, overlapping the anther lobes, lemon yellow, ovate-oblong, 1.5 mm long, glabrous. Pollinia yellow, obovate-oblong, c. 0.2 x 0.1 mm, with pellucid margin and basally attached light-brown, tubular caudicles to a brown corpusculum. Carpels 2, c. 1 mm long, narrow, free; style absent; stigma head pentangular, discoid.

Flowering: December–January.

Habitat: Rarely distributed in red or black soils of grass dominated dry deciduous open forests, at an of 400–600 m altitude.

Distribution: The Seshachalam hills of Kadapa district of Andhra Pradesh.

Etymology: The new species is named after the type locality, the Seshachalam hills of Eastern Ghats, Andhra Pradesh.

Notes: *Brachystelma seshachalamense* is closely allied to *B. beddomei* but differs from the latter which are appended in Table 1.

Table 1. Comparison of characters of *Brachystelma seshachalamense* sp. nov. and *B. beddomei*.

| Characters | <i>Brachystelma seshachalamense</i> sp. nov. | <i>B. beddomei</i> |
|------------------------|--|--|
| Inflorescence | Usually solitary, rarely 2-flowered | Usually 3-4-flowered, rarely 1-flowered |
| Corolla tube | 4.5-5.0 mm long, a ring of hairs around the corona and pubescent inside, green with pink tinge outside yellow between the lobes | c. 3 mm long, glabrous, greenish yellow without and within |
| Corolla lobe | Spreading, 1.4-1.8 cm long, with broad base, 2-3 mm long white hairs along the margins and pubescent inside, greenish-yellow outside and dark pinkish inside | Cohering at apex, 2-3.5.0 cm long, without broad base, glabrous, greenish-yellow outside and purple-brown inside |
| Coronal cup | Shallow | Deep |
| Interstaminal corona | Shallowly bilobed, with hairs | Deeply bilobed, glabrous |
| Staminal corona colour | Lemon yellow | Pinkish-cream |

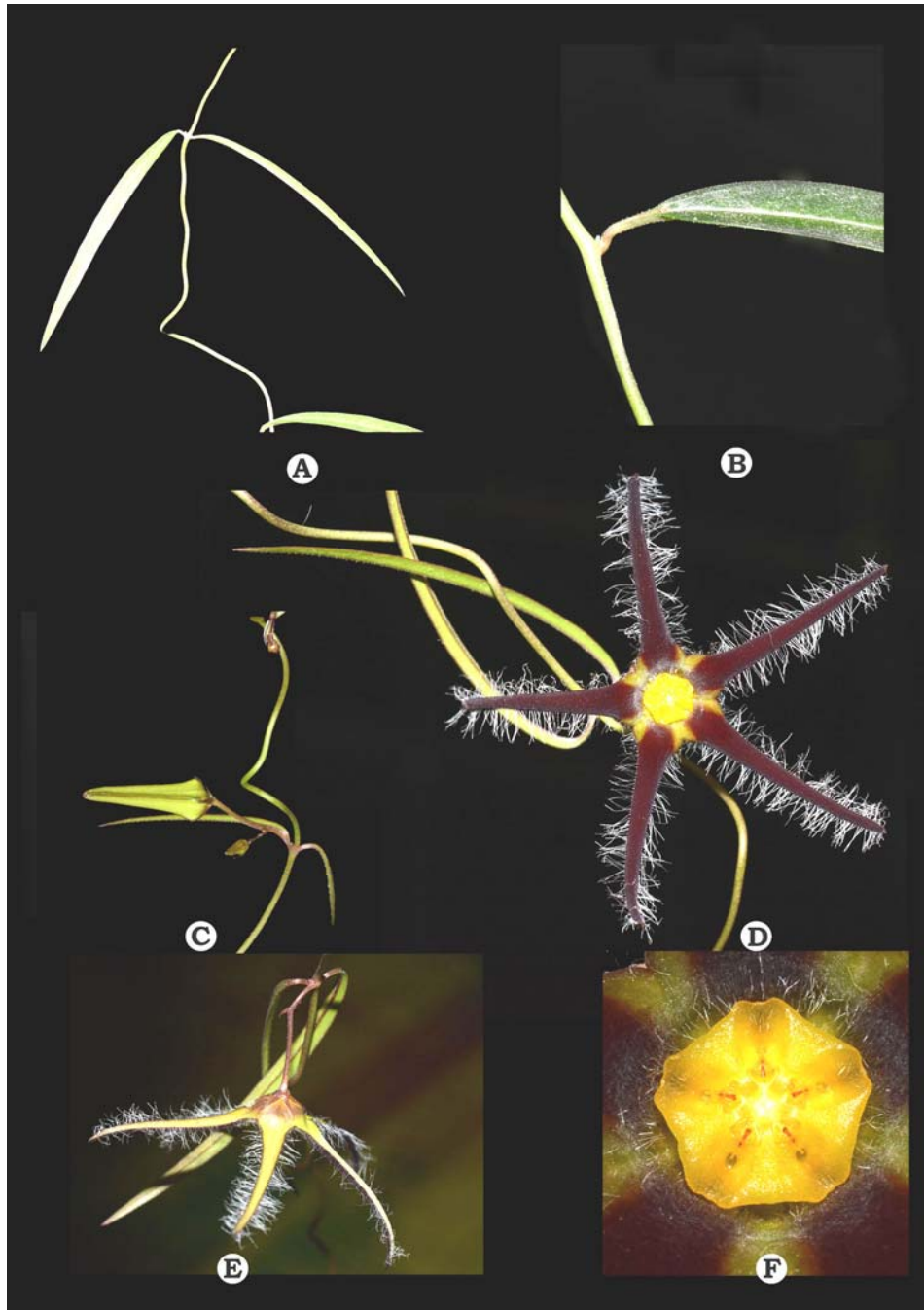


Fig. 1. *Brachystelma seshachalamense* K. Prasad & Prasanna, **sp. nov.** A. Leaves; B. Hairs on petiole and margins (close up); C. Flower bud; D & E. Flower; F. Corona (top view).

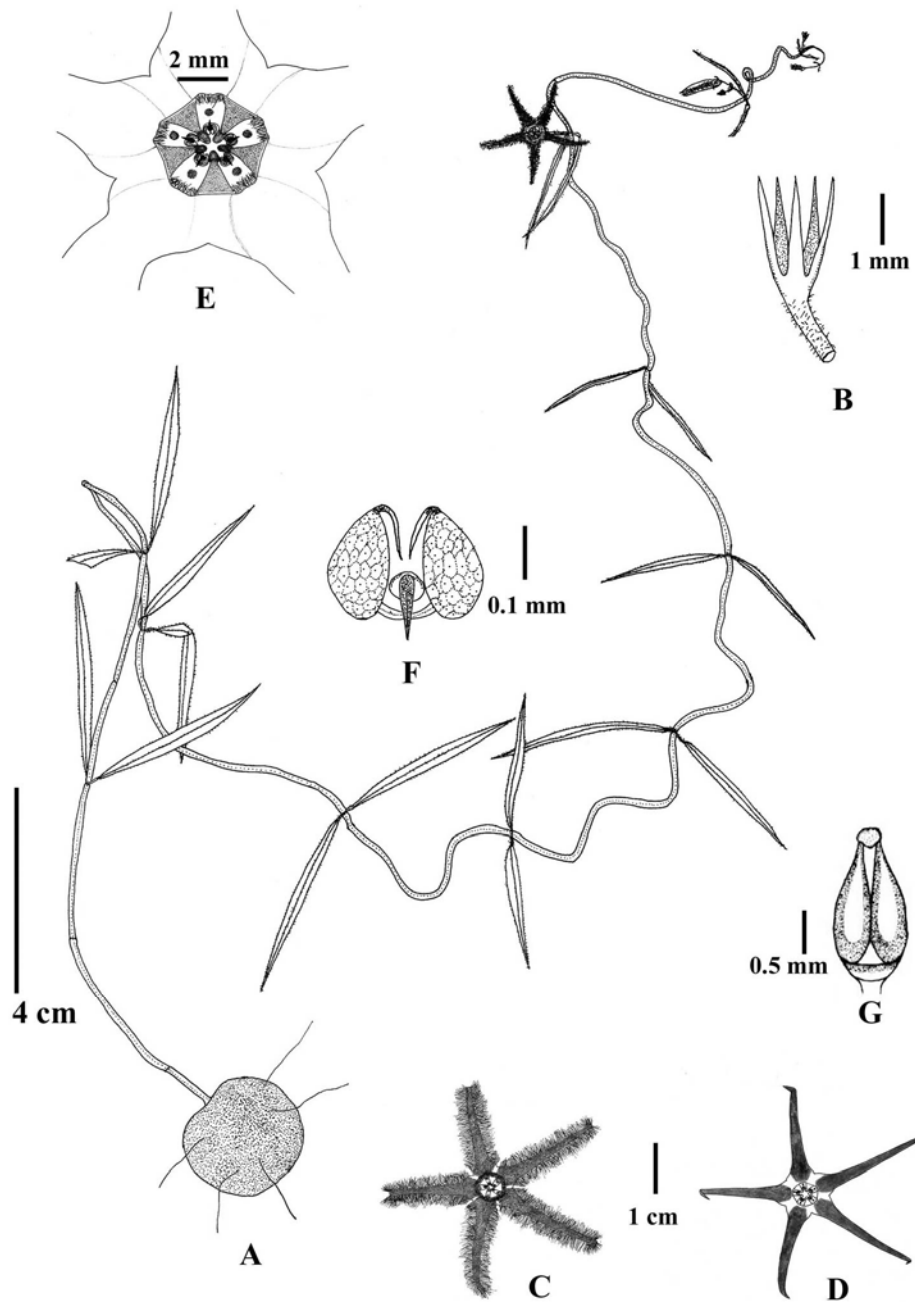


Fig. 2. *Brachystelma seshachalamense* K. Prasad & Prasanna, **sp. nov.** A. Habit; B. Calyx; C. Flower; D. Flower without hairs; E. Corona; F. Pollinia; G. Gynostegium.

Key to the twining *Brachystelma* species in India

1. Corolla tube base quite flat, bulging limitedly with a constricted neck and in near urceolate shape, more than 1 cm long ***B. volubile***
- Corolla tube campanulate, less than 5 mm long 2
2. Corolla tube glabrous; lobes connate at apex, glabrous; interstaminal corona glabrous; staminal corona flesh coloured ***B. beddomei***
- Corolla tube with a ring of hairs around the corona and pubescent inside; lobes spreading, hairy; interstaminal corona with hairs; staminal corona lemon yellow ***B. seshachalamense***

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