

Dicliptera srisailamica (Acanthaceae) - a new species from the Eastern Ghats of India

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Abstract: A new species, *Dicliptera srisailamica* (Acanthaceae) is described and illustrated from the Eastern Ghats of Andhra Pradesh and Telangana. This species is closely related to *Dicliptera beddomei* C.B.Clarke but considerably differs in many characters. Detailed description, distribution and photo plates are provided for easy identification of the new species.

Keywords: Andhra Pradesh, Deciduous forests, *Justiciinae*, Nallamala hills, Telangana, Tiger Reserve.

Introduction

The genus *Dicliptera* Juss. is one of the most species-rich genera in the subtribe *Justiciinae* of Acanthaceae and is distributed in the tropics and subtropics of the Old and New Worlds (POWO, 2023). The genus can be easily recognized by a combination of characters of umbellately arranged or rarely solitary cymose inflorescence units (cymules) subtended by conspicuous paired bracts, anthers with two partially or completely superposed thecae and resupinate corollas lacking a rugula (Darbyshire & Vollesen, 2007). The genus *Peristrophe* Nees is closely related to *Dicliptera* but differs in the mechanism of the dehiscence of the capsule (Balkwill *et al.*, 1996). While revising the genus *Dicliptera* for Africa, Darbyshire and Vollesen (2007) amalgamated the genus *Peristrophe* with *Dicliptera* and proposed four new combinations. Presently the genus is represented by 223 accepted species (POWO, 2023). In India, the genus is represented by 27 taxa, of which eight are endemic (Singh *et al.*, 2015; Dash & Mao, 2020). Pullaiah *et al.* (2018) reported seven species from Andhra Pradesh.

While working on the flora of the Eastern Ghats of Andhra Pradesh and Telangana states, the authors

noticed some specimens of *Dicliptera* identified as *Dicliptera cuneata* Nees collected from different parts of Andhra Pradesh and Telangana states at BSID, MH and CAL herbaria (Thiers, continuously updated). The tertiary bracts of the specimens are dissimilar, linear-spathulate, single-nerved, whereas *D. cuneata* has unequal, obovate-oblong, 3-nerved tertiary bracts. Critical examination of all the specimens at BSID, MH and CAL and relevant literature (Clarke, 1885; Gamble, 1924; Pullaiah *et al.*, 2018; Sankara Rao *et al.*, 2019) revealed that the specimens are very similar to the Eastern Ghats endemic *D. beddomei* C.B.Clarke. On a thorough examination of specimens deposited in the Indian herbaria and the lecto and isolectotype images of *D. beddomei* available at online herbaria (BM, K), it was observed that the shape of the tertiary bracts and the indumentum on the stem and tertiary bracts are consistently different from the specimens that had been identified as *D. cuneata* (Table 1). Further, we could not find any specimens with intermediate tertiary bracts and indumentum. Hence, the collections from the Eastern Ghats of Andhra Pradesh and Telangana are described here as new to science.

Taxonomic Treatment

Dicliptera srisailamica Rasingam, K.Nethaji & G.Susmitha, *sp. nov.* **Figs. 1 & 2**

Dicliptera srisailamica is closely related to *D. beddomei* but considerably differs by its short, deflexed hairs on the stem, peduncle, tertiary bracts (hirsute and straight in *D. beddomei*), dissimilar, linear-spathulate, tertiary bracts (unequal, oblong-elliptic to spathulate in *D. beddomei*), and capsule covered with simple hairs intermixed with few glandular hairs (capsule with glandular hairs intermixed with few simple hairs in *D. beddomei*).

Type: INDIA, **Andhra Pradesh**, Nagarjunasagar Srisailam Tiger Reserve, Srisailam, Phaladhara and

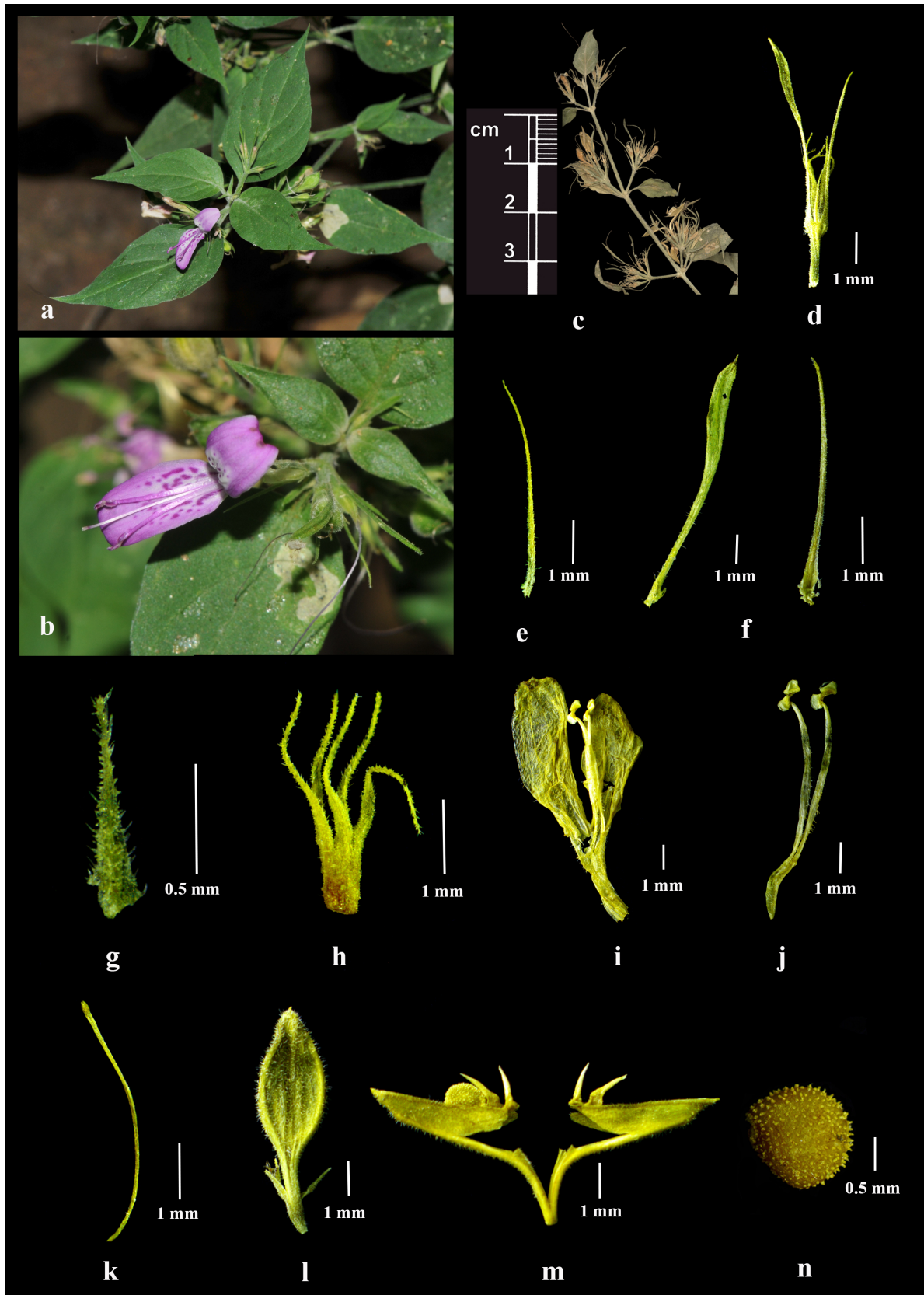


Fig. 1. *Dicliptera srisailamica* Rasingam, K.Nethaji & G.Susmitha: **a-c.** Habit; **d.** Single inflorescence unit; **e.** Secondary bract; **f.** Tertiary bracts; **g.** Bracteole; **h.** Calyx; **i.** Corolla; **j.** Stamens; **k.** Style; **l-m.** Capsule; **n.** Seed (from Rasingam & M. Sankara Rao 3183; photos by L. Rasingam).

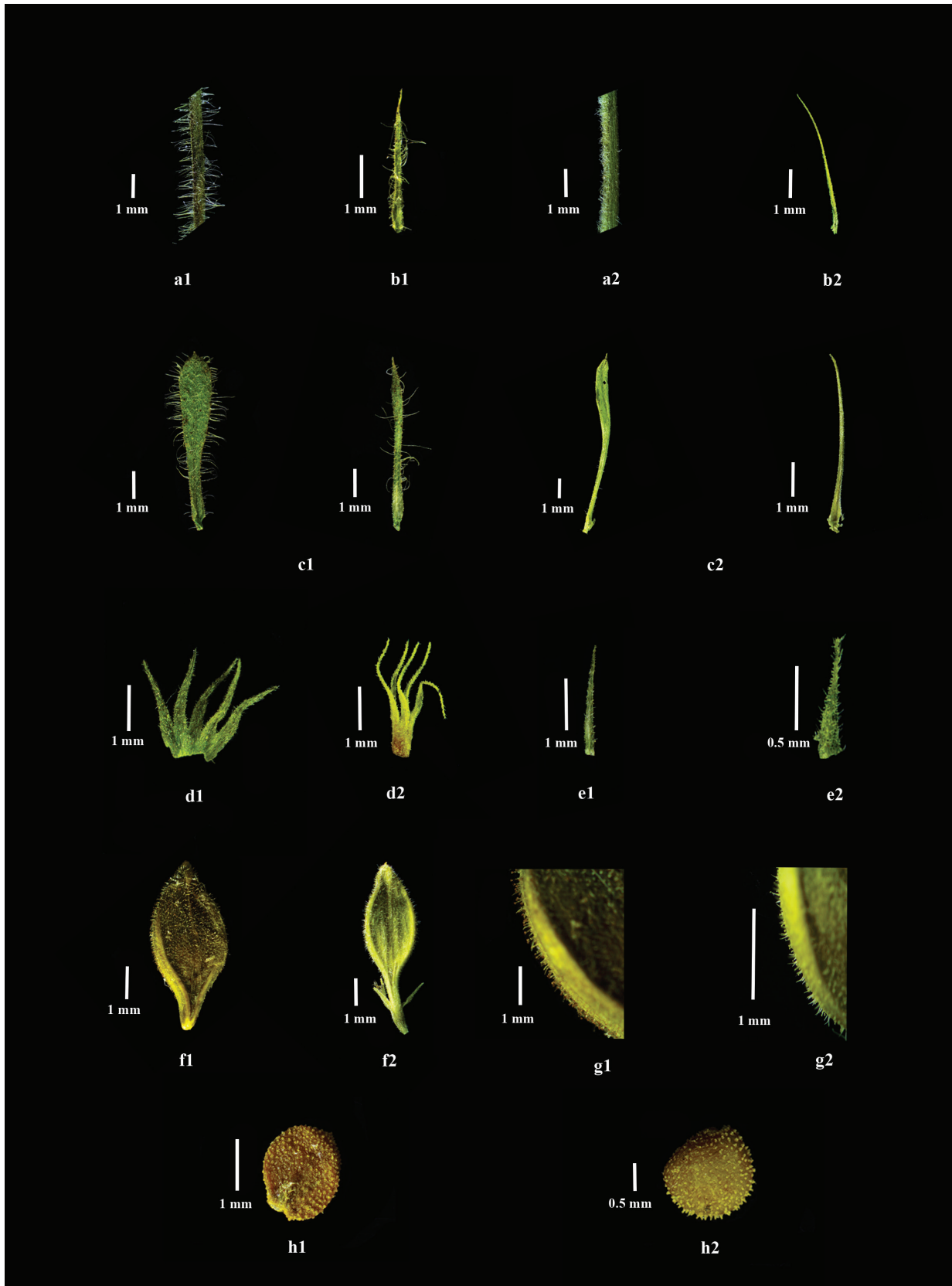


Fig. 2. *Dicliptera beddomei* C.B.Clarke: **a1-h1** from *B.Sadasivaiah & Khadar Basha* 34063 (BSID0005127); *Dicliptera srisailamica* Rasingam, K.Nethaji & G.Susmitha: **a2-h2** from *L. Rasingam & M. Sankara Rao* 3183 (BSID0016287). **a1-a2.** Stems; **b1-b2.** Secondary bracts; **c1-c2.** Tertiary bracts; **d1-d2.** Calyces; **e1-e2.** Bracteoles; **f1-f2.** Capsules; **g1-g2.** Capsule surfaces with hairs; **h1-h2.** Seeds.

Panchadhara, 20.03.2013, *L. Rasingam* & *M. Sankara Rao* 3183 (holo CAL [BSID0016287!]; iso BSID!).

Erect herbs, up to 90 cm high. Stems branched, obtusely 4-angled, adpressedly hairy with deflexed hairs when young, later glabrescent, hairs *c.* 0.2 mm long. Leaves simple; petiole 4–7.5 cm long, adpressed pubescent with deflexed hairs; blades ovate-lanceolate, 2–8 × 1–5 cm; base acute-rounded; apex sharply acuminate; margins entire, densely pubescent when young, then glabrescent; lateral nerves up to 6 pairs, prominent on both surfaces, pubescent. Inflorescence in axillary cymes, 3–5 in sub-capitate clusters; peduncle slender, up to 2.4 cm long, adpressed pubescent with deflexed hairs; secondary bracts 2, acicular, 3–5.3 mm long, acuminate at apex, puberulous; tertiary bracts 2, dissimilar, shortly petiolate, larger one linear-spathulate, 7–10 × 0.7–1 mm, acuminate at apex, hirtellous, 1-nerved, smaller one linear, 4–5.8 × 0.2–0.3 mm, hirtellous; bracteoles 2, linear, hairy, up to 1 mm long. Calyx 3–3.5 mm long; lobes 5, linear-lanceolate, equal, 1.7–2.1 mm long, acuminate, basally jointed; tube 0.9 × 0.53 mm, hirtellous. Corolla pink, bi-lipped; upper lip oblong, 6–7 mm long, slightly tridentate at apex; lower lip oblong-obovate, 5–7.6 mm long, obtuse at apex; tube twisted, 4.5–7 mm long, pubescent without. Stamens 2, inserted in corolla tube, filaments 5–7 mm long, ciliate; anther lobes superposed, *c.* 0.55 mm long. Style linear, 1 cm long, stigma shortly bifid. Capsule obovoid to ellipsoid, 6–7.5 × 2–3 mm, apiculate at apex, pubescent with simple hairs intermixed with few glandular hairs, placentas separating elastically

from the valves from the base upwards; seeds 4, orbicular, *c.* 1.5 × 1.64 mm, tuberculate.

Flowering & fruiting: Flowering from October to January; fruiting from November to March.

Habitat: Rare, along stream banks and edges of rocks near waterfalls.

Distribution: India.

Etymology: The specific epithet '*srisailamica*' refers to the type locality Srisailam, a famous temple town in the Eastern Ghats of Andhra Pradesh.

Specimens examined: INDIA, **Andhra Pradesh**, Nallamalais, Kurnool district, Srisailam, Phaladhara and Panchadhara, 26.03.1965, *J.L. Ellis* 23779 (MH). Nellore district, 06.08.1999, *P. Venu* 111149 (MH, BSID). **Telangana**, Mahabubnagar district, Malleelatheertham, 31.03.1997, *S.R. Srinivasan* 108984 (MH, BSID); *Ibid.*, 24.10.2016, *J. Swamy & L. Rasingam* 009143; Mallayalodhi, 27.02.2014, *L. Rasingam* 004611 (BSID).

Notes: Beddome collected a few specimens of *Dicliptera* from the Nallamala forest of Kurnool district, Andhra Pradesh, in 1885. The specimens were then described by Clarke (1885) as *Dicliptera beddomei* based on their broadly ovate leaves and linear-oblong, ciliate tertiary bracts. After a thorough examination of specimens available at foreign and Indian herbaria, the authors found that the species was not recollected until 2009. Sadasivaiah and Khadar Basha (Coll. No. 34063; BSID0005127)

Table 1. Morphological comparison of *Dicliptera srisailamica* with *D. beddomei*.

Characters	<i>Dicliptera srisailamica</i> Rasingam, K.Nethaji & G.Susmitha	<i>Dicliptera beddomei</i> C.B. Clarke
Stem	Adpressed deflexed hairy when young, later glabrescent; hairs <i>c.</i> 0.2 mm long	Long hirsute hairy throughout; hairs <i>c.</i> 1.2 mm long
Inflorescence	Sub-capitate clusters, each pair of bracts shortly petiolate	Panicle, each pair of bracts long petiolate
Secondary bracts	Acicular, 3–5.3 mm long, acuminate at apex, puberulous	Linear, 3–4 mm long, long acuminate at apex, hirsute
Tertiary bracts	Larger one linear-spathulate, acuminate at apex, 1-nerved, smaller one linear, hirtellous	Larger one oblong-elliptic to spatulate, shortly acuminate at apex, smaller one linear-oblong, hirsute
Capsule	Densely covered with simple hairs intermixed with few glandular hairs	Densely covered with glandular hairs intermixed with few simple hairs

recollected the species from Velgode to Motta areas of Nallamala forest, Kurnool district, in 2009. It is the only specimen that matches well with the description of *D. beddomei*. The other specimens collected from Andhra Pradesh and Telangana states (see specimens examined section) were wrongly identified as either *Dicliptera cuneata* or *D. beddomei* and belong to the new species *D. srisailamica*. Further, *D. cuneata* differs from the new species by its glabrous to glabrescent stem, unequal, obovate-oblong, 3-nerved tertiary bracts and obovoid capsule with glandular hairs.

Acknowledgements

The authors are grateful to Dr. A.A. Mao, Director, Botanical Survey of India, Kolkata for facilities and the officials of Andhra Pradesh State Forest Department for forest permission and logistic support.

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