



Gymnostachyum mundanthuraiensis (Acanthaceae), a new species from the Western Ghats, India

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ABSTRACT: A new species of *Gymnostachyum* Nees (Acanthaceae), *G. mundanthuraiensis* K.M.P.Kumar & Diksha, sp. nov. from the evergreen forests of Mundanthurai Tiger Reserve, Tamil Nadu, southern part of Western Ghats, India is described here.

KEY WORDS: *Gymnostachyum latifolium*, *Gymnostachyum pubescens*, Mundanthurai Tiger Reserve, south India, Tamil Nadu.

INTRODUCTION

The genus *Gymnostachyum* Nees (Acanthaceae: Andrographideae) comprises 30–50 species, distributed mainly in tropical Asia (Prabhukumar *et al.*, 2015; Deng *et al.*, 2020). In India, a total of 11 species and 4 varieties have been identified across different regions including south, central, north, and northeast India (Karthikeyan *et al.*, 2009; Prabhukumar *et al.*, 2015). The evergreen forests of the Western Ghats are recognized for the high diversity of the genus encompassing 12 distinct taxa. (Karthikeyan *et al.*, 2009; Shameer, 2020).

During the field exploration surveys in the Western Ghats, the authors got an interesting specimen of *Gymnostachyum*, thriving within the lush evergreen forest of the Mundanthurai Tiger Reserve in Tirunelveli District, Tamil Nadu. Extensive examination of the specimens indicated similarities to *G. pubescens* (Lam.) M.R. Almeida and *G. latifolium* (Dalzell) T. Anderson but also revealed distinctive characteristics that set it apart (discussed in the Table 1). The comprehensive studies on the specimen conducted through taxonomic analysis and review of relevant literature (Clarke, 1886; Gamble, 1924; Mohanan *et al.*, 2002; Nayar *et al.*, 2006; Sasidharan, 2013; Mascarenhas and Janarthanam, 2009; Prabhukumar *et al.*, 2015, Shameer *et al.* 2017, Shameer 2020) proved that, the species is quite distinct from the so far described species, hence described here as *Gymnostachyum mundanthuraiensis* sp. nov.

TAXONOMIC TREATMENT

Gymnostachyum mundanthuraiensis K.M.P.Kumar & Diksha, sp. nov. Fig. 1

Type: INDIA. Tamil Nadu, Tirunelveli District, Ambasamudram, Mundanthurai Tiger Reserve, ±547 m,

8.627717° N, 77.29798° E, 15 November 2022, K. M. Prabhukumar & C. Satheshkumar 345230 (holotype LWG; isotypes, LWG, MH).

Diagnosis: *Gymnostachyum mundanthuraiensis* sp. nov. shows morphological resemblance with *G. pubescens* by having quadrangular pubescent stem, leaves puberulent on both sides, pubescent bract and bracteoles, stamens held within the corolla lobe, glabrous filament, ovary with glandular hairs and hairy seeds. But is distinct from the *G. pubescens* by means of lamina with margin entire (vs. serrate to serrulate), purple flower (vs. creamy yellow with blue blotch on the throat), glandular hairy anthers (vs. glabrous) and glabrous style (vs. hairy). More detailed characters are provided in Table 1.

Description: Erect sub-shrubs, 1.5–2 m high. Stem quadrangular, puberulent. Leaves opposite, sub-sessile to petiolate; petiole 0.5–2.5 cm long, green, pubescent; lamina obovate, elliptic, 2.5–17 x 1.1–7 cm, apex acuminate, rarely mucronate (only seen in obovate young leaves), margin entire, base decurrent on petiole, dark green adaxially, pale abaxially, pubescent on both surfaces; lateral nerves 4–15 in pairs. Inflorescence axillary and branched, 3.5–9.0 cm long, quadrangular, pubescent, spike of many flowered cymes. Bract lanceolate, 2.0–2.2 mm long, glandular pubescent. Flower 1–1.5 cm long, purple, glandular pubescent, subsessile densely packed, bracteolate. Bracteole linear to linear-lanceolate, 1.5–1.7 mm long, glandular pubescent. Calyx 5-lobed, lobes equal, gamosepalous, persistent, linear-lanceolate, 5.0–5.6 mm long, apex acute, green, glandular pubescent. Corolla tubular below and bi-lipped above; upper lip 2-lobed, lobes c. 2 mm long, purple; lower lip 3-lobed, lobes c. 4 mm long; tube 1.1–1.2 cm long, glandular pubescent. Stamens 2, inserted within lip; filaments 8–10 mm long, glabrous; anthers basifixed with scattered glandular hairs at back. Ovary oblong, 1.7–1.8

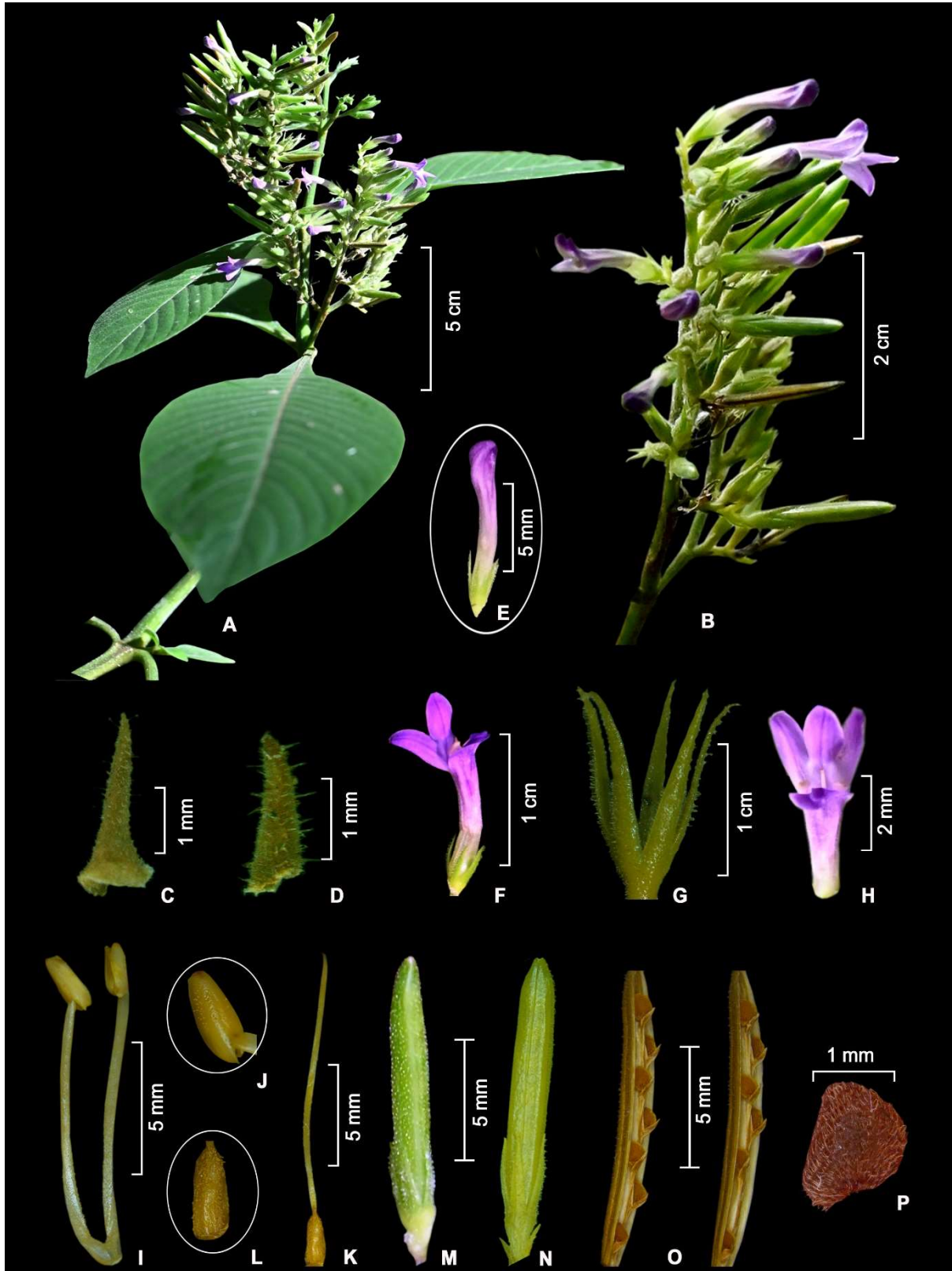


Fig. 1. *Gymnostachyum mundanthuraiensis* K.M.P.Kumar & Diksha, *sp. nov.* **A.** Flowering twig; **B.** Inflorescence; **C.** Bract; **D.** Bracteole; **E.** Bud; **F.** Flower; **G.** Calyx; **H.** Corolla; **I.** Androecium; **J.** Anther (insight: anther with glandular hairs); **K.** Gynoecium; **L.** Ovary (insight: showing the glandular hairs); **M.** Capsule: young; **N.** Capsule: mature; **O.** Dehisced capsule showing seeds and retinacula; **P.** Seeds (Photos: KM Prabhukumar & Diksha Kumari).

**Table 1.** Delineating characters of *Gymnostachyum mundanthuraiensis* sp. nov. with its allied taxa

Characters	<i>G. pubescens</i>	<i>G. latifolium</i>	<i>G. mundanthuraiensis</i>
Petiole	round, pubescent	quadangular, glabrous	quadangular, pubescent
Leaves	pubescent	glabrous	pubescent
Leaf margin	serrate to serrulate	dentate	entire
Flower	creamy yellow with blue blotch at throat, 1.4-1.5 cm long	light yellow, 3.5-3.6 cm long	purple, 1-1.5 cm long
Stamen	inserted within the corolla lobe	exserted from the corolla lobe	inserted within the corolla lobe
Filament	7-8 mm long, glabrous	14-15.5 mm long, puberulent	8-10 mm long, glabrous
Anther	glabrous	glandular hairy	glandular hairy
Ovary	glandular hairy	glabrous	glandular hairy
Style	hairy	hairy	glabrous

mm long, covered with glandular hairs throughout; style 9.4-9.6 mm long; stigma brown tip. Capsule 1.1-1.4 cm long, linear, green, glandular pubescent. Seeds 12-16 per capsule c. 1.3 x 1 mm, brown, densely pubescent.

Etymology: The new species is named after its type locality Mundanthurai Tiger Reserve, Tamil Nadu, India.

Phenology: The flowering and fruiting observed from August to December.

Habitat and Distribution: The new species was collected only from the type locality, the evergreen forests of Mundanthurai Tiger Reserve, Tamil Nadu, India. Very few plants (10-15 individuals) were observed in the entire forest region. The species is growing as a subshrub in the patches of evergreen forests at an elevation of \pm 547 m, along with *Hedyotis viscida* Bedd. (Rubiaceae), *Impatiens grandis* B. Heyne (Balsaminaceae), *Glycosmis albicarpa* Sujana & Vadhyar (Rutaceae) and *Eugenia singampattiana* Bedd. (Myrtaceae).

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