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MEMECYLON COORGENSIS (MELASTOMATACEAE), A NEW SPECIES FROM THE CENTRAL WESTERN GHATS OF KARNATAKA, INDIA

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Memecylon coorgensis sp. nov., a small shrubby species from the Kodagu district of Karnataka, India, is described and illustrated. The species is similar to *Memecylon gracile* with respect to its axillary, peduncled inflorescence but differs in having up to six flowers per inflorescence, in addition to the conical shape of its buds, its acute sepals and its acuminate petals. The species is so far known only from the Kodagu district of the state of Karnataka.

Keywords. Endemic, Kodagu district, long-peduncled group.
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Introduction

The genus *Memecylon* L. consists of 402 species distributed in the Old World tropics (POWO, 2024). The most recent taxonomic revision of Indian *Memecylon* has reported 53 species and 7 varieties (Das, 2017). Five new species were subsequently described (Prabhu & Murugan, 2017; Sivu *et al.*, 2018; Radh & Nampy, 2019; Vadhyar, 2020; Rajesh *et al.*, 2021), bringing the total to 58 species and 7 varieties. Of these, approximately 39 species are found in peninsular India (Das, 2017; Sivu *et al.*, 2018), distributed predominantly in the wet forests of the Western Ghats and the isolated dry evergreen and montane forests of the Eastern Ghats. This high species diversity in a relatively small geographical area, overlapping morphological characters, caducous nature of floral parts, and poor characterisation available in earlier literature have collectively proved to be a challenge for resolving the taxonomy of Indian *Memecylon* (Das, 2017). The existing taxonomic keys for diagnosing species of *Memecylon* are largely based on leaf shape and the nature and position of the inflorescence. Based on these characters, the south Indian species of *Memecylon* can be grouped into species that produce flowers in fascicles or on very short peduncles, and those that produce flowers on distinct (≥ 0.5 cm long) peduncles.

Materials and methods

During fieldwork in the Kodagu district of Karnataka state, India, we came across a species of *Memecylon* with a distinctly peduncled inflorescence. When compared with all the peduncled species from peninsular India described in the literature (Clarke, 1879;

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Gamble, 1915; Sivu, 2012; Das, 2017), it was found to be morphologically closely related to *Memecylon gracile* Bedd. in its habit, inflorescence type and leaf shape. Based on comparison of the collected specimens with field observations and the type specimen (lectotype MH 21613) of *Memecylon gracile*, we could identify a number of morphological characters that were unique to the population from Kodagu. It is therefore described here as a species new to science.

Species description

Memecylon coorgensis S.S.Shrotri, T.U.Thackeray & N.V.Page, **sp. nov.**

Memecylon coorgensis is morphologically most closely related to *M. gracile* with respect to its small shrubby habit, long acuminate leaf apex, and long-peduncled axillary inflorescence. *Memecylon coorgensis* differs from *M. gracile* in having up to 2 peduncles in the leaf axils (vs solitary peduncles), up to 5 secondary peduncles (vs secondary peduncles either absent or if present only 1 in number), 1–6(–8) flowers per inflorescence (vs 1–3 flowers per inflorescence), calyx deeply lobed with sepals acute or acuminate at apex (vs calyx shallowly lobed with sepals triangular-obtuse at apex), acuminate petals (vs petals obtuse), and berry 8–11 mm in diameter (vs berry 6 mm in diameter). – Type: India, Karnataka, Kodagu district, Kerti Reserved Forest, 12°06'17.6"N, 75°46'11.3"E, 500 m, 27 ix 2014, *N.V.Page* 103 (holotype MH!, isotype JCB!). **Figures 1 and 2.**

Shrub to 1.5 m tall; stem greyish brown, young branches terete, glabrous, green. *Leaves* opposite. *Petioles* canaliculate, 4–5 mm long, glabrous. *Lamina* ovate-lanceolate, 5–6.5 × 1.5–2.1 cm, coriaceous, glabrous, base cuneate, apex long acuminate, margin entire; secondary veins inconspicuous, 10–13 pairs, intramarginal veins not prominent. *Inflorescence* axillary, up to 6(–8)-flowered, lax, compound cymes; primary peduncles 1 or 2 per axil, 0.5–1 cm long, terete, secondary peduncles up to 5, terete with central peduncle up to 0.6 cm long and lateral peduncles successively shorter; tertiary peduncle when present, up to 0.25 cm long; bracts rarely present, few around the peduncle, ovate-lanceolate, glabrous; bracteoles ovate-lanceolate, glabrous, persistent, 0.9–1.1 mm. *Flower buds* obconic, 3.5–7 mm long, bluish white or light pink. *Flowers* bisexual, 6–8 mm across; pedicels terete, slender, 4–6 mm long; hypantho-calyx campanulate, 1.5–2 mm across, glabrous, bluish white or pink outside, white inside, disc rays inconspicuous; calyx 4-lobed, triangular, acute, c.1.5 × c.1.5 mm at the base; petals 4, c.4 × 3 mm, ovate, acuminate, glabrous, basal part adaxially pink, middle and apical part adaxially blue, abaxially white throughout. *Stamens* 8, filaments slender, terete; anthers dorsifixed, 3–4 mm long, J-shaped; connective blue, with a centrally placed gland; pollen sacs anterior, white. *Ovary* inferior; style subulate, glabrous, pale blue, 2–3 mm long; stigma acute. *Fruit* a berry, globose, 0.9–1.1 cm across, with persistent style and calyx lobes, green when young, bluish black and often pendulous when mature.

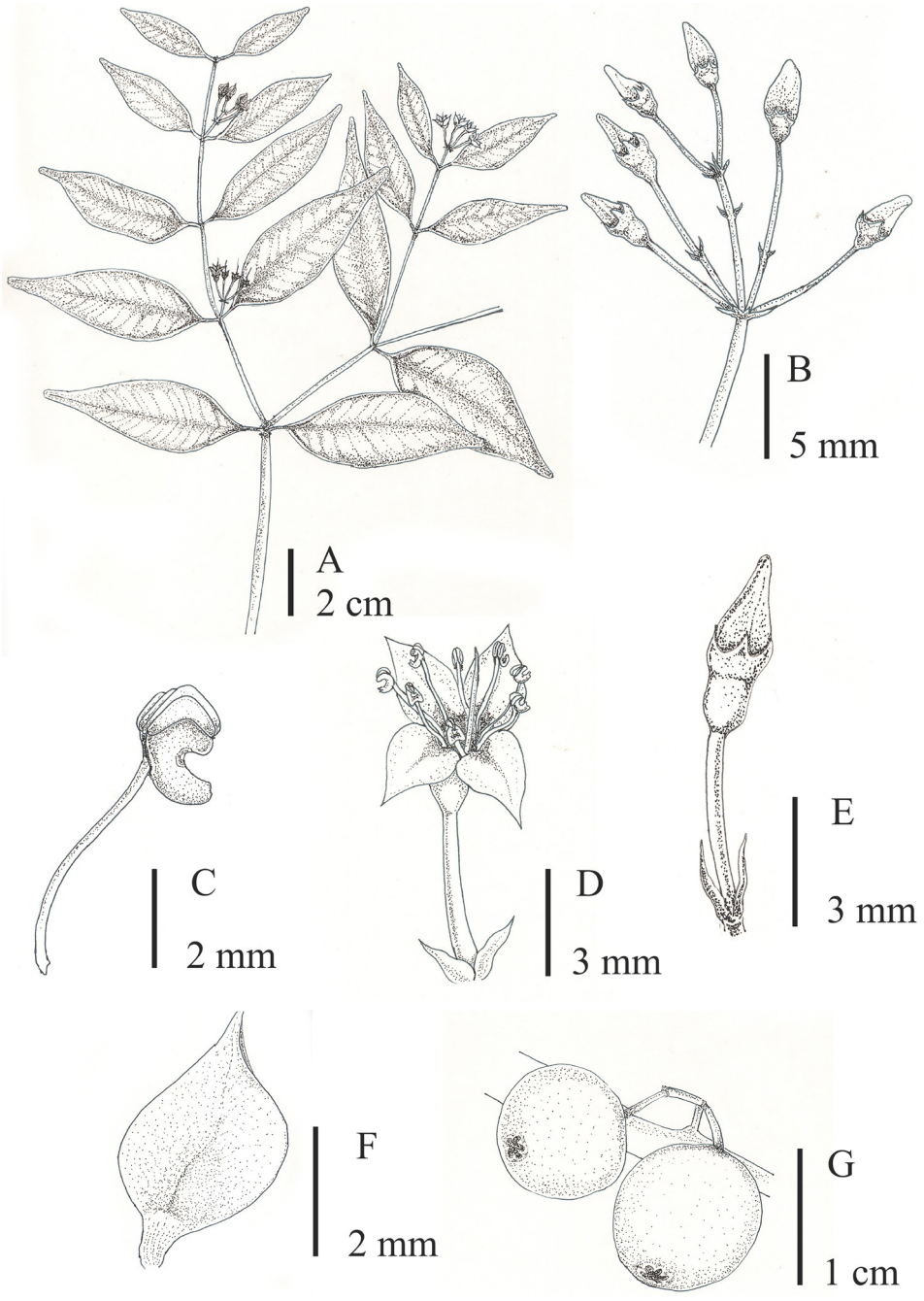

Figure 1. *Memecylon coorgensis* S.S.Shrotri, T.U.Thackeray & N.V.Page, sp. nov. A, Habit; B, inflorescence; C, stamen; D, flower; E, mature flower bud; F, petal; G, fruits. Drawn from the holotype, *N.V.Page* 103, by Geetha Ramaswami.

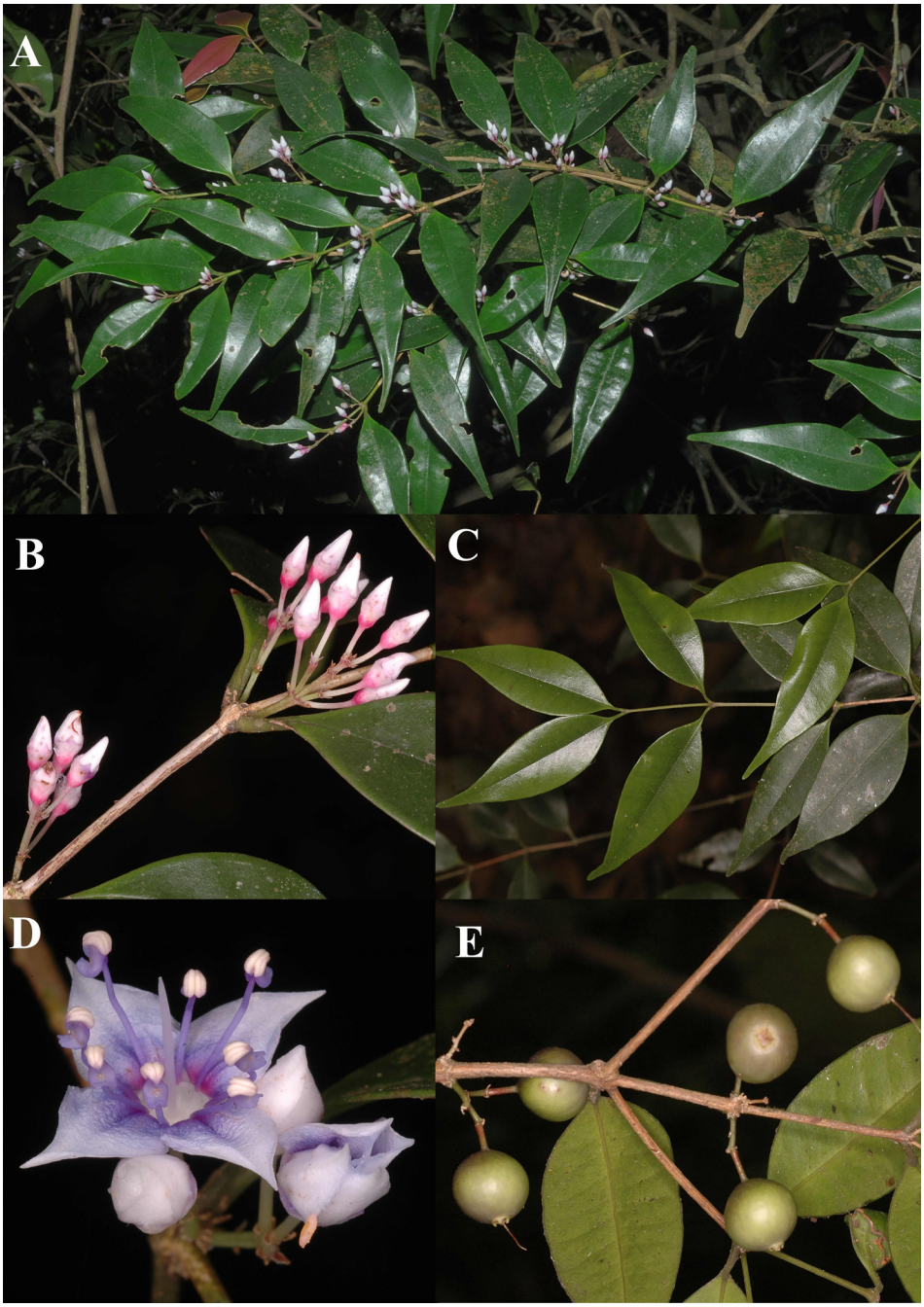

Figure 2. *Memecylon coorgensis* S.S.Shrotri, T.U.Thackeray & N.V.Page, sp. nov. A, Habit; B, inflorescences; C, terminal part of a twig with young and mature leaves; D, close-up view of flower; E, branch with immature fruits. Photographs: Navendu Page.

Distribution. Recorded from three locations: Kerti Reserved Forest adjacent to Bramhagiri Wildlife Sanctuary, Talakaveri Wildlife Sanctuary, and Pushpagiri Wildlife Sanctuary. However, this species is likely to occur in the adjoining evergreen forests of the state of Kerala in the Kannur and Wayanad districts.

Habitat and ecology. Distributed in the mid-elevation (400–1100 m a.s.l.) evergreen forest of Kodagu district, Karnataka. The population in Kerti Reserved Forest is large, and this species is fairly common in the forest understorey between 400 and 600 m. The other populations observed in Talakaveri and Pushpagiri Wildlife Sanctuaries were much smaller, and only a handful of individuals were observed at an elevation between 900 and 1100 m. Individuals of this species were found to be flowering between November and December, and fruits were observed until April.

Etymology. The specific epithet refers to the Coorg (Kodagu) district of the state of Karnataka, where the species is described from and hitherto geographically restricted to.

Proposed IUCN conservation category. The species is currently known from three locations. Following the IUCN guidelines, applying criterion B2, the area of occupancy (AOO) is estimated to be 12 km^2. Because the number of locations is below five, it meets condition a as well as the AOO threshold for the Endangered category. However, there is no evidence to infer continuing decline in range size or number of populations (condition b), nor any evidence to suggest extreme fluctuations in range size, number of locations, or number of mature individuals (condition c). Hence, the additional condition required to assign a species to one of the three Threatened categories is not met. This species is therefore provisionally assessed as Near Threatened until more information on its population and distribution range is documented.

Notes. Among the species of *Memecylon* distributed in peninsular India, 16 previously described species have inflorescence peduncles exceeding or equal to 0.5 cm long. *Memecylon coorgensis* is added to this group, because its peduncles reach up to 1 cm long. The new species can be easily distinguished from 14 of the 16 long-peduncled species, in having fewer than 10 (1–6) flowers per inflorescence. Only two other species from the long-peduncled group have fewer flowers per inflorescence, namely *Memecylon gracile* (1–3 flowers) and *Memecylon agastyamalaianum* E.S.S.Kumar *et al.* (2–5 flowers). Differences in the morphological characters of the new species compared with its morphologically most closely related species, *Memecylon gracile*, are summarised in Table 1. Major diagnostic characters for the 17 long-peduncled species from the Western Ghats, including the one described here, are presented in Table 2. Photographs highlighting the morphological characters of *Memecylon gracile* (Figure 3) are provided for comparison with those of the new species.

Table 1. Key characters that distinguish *Memecylon coorgensis* sp. nov. from the morphologically closely related species *M. gracile*

Character	*M. coorgensis*	*M. gracile*
Leaves	Ovate-lanceolate, 5–6.5 × 1.5–2.1 cm, base always cuneate	Ovate-lanceolate, 2–5 × 0.7–2 cm, base subrounded to cuneate
Secondary nerves	Inconspicuous, up to 13 pairs	Inconspicuous, 10–12 pairs
Primary peduncles	Up to 2 per axil, 5–10 mm	One per axil, 6–12 mm
Secondary peduncles	Up to 5, up to 6 mm long	Absent, or if present, only one in number, up to 2 mm long
No. of flowers	Up to 6(–8)	Up to 3
Petal apex	Acuminate	Obtuse
Hypanthocalyx	Deeply lobed, sepals triangular-acute at apex	Shallowly lobed, sepals triangular-obtuse at apex
Berry	8–11 mm across, often pendulous at maturity, with persistent stigma	6 mm across, erect even at maturity, stigma not persistent
Distribution	Central Western Ghats: Nilgiri Biosphere Reserve	Southern Western Ghats: Agasthyamalai Biosphere reserve

Table 2. Comparison of major morphological characters of the peduncled (≥ 0.5 cm long) species of *Memecylon* from the Western Ghats and South India

Species	Leaf lamina	Peduncle length	Peduncle axis	Inflorescence position	No. of flowers
M. agastyamalaianum	Elliptic, 0.8–2.5 × 0.5–1 cm; base cuneate or attenuate	0.5 cm	Terete	Leaf axils	2–5
M. angustifolium	Narrow lanceolate, 3.2–11.7 × 0.6–2 cm; base cuneate or attenuate	Up to 1 cm	Quadrangular	Leaf axils and leafless axils	> 10 (12–15)
M. capitellatum	Ovate-elliptic, 3.5–5.5 × 2–2.7 cm; base cuneate	0.5–1 cm	Quadrangular	Leaf axils and leafless axils	5–15
M. coorgensis	Ovate-lanceolate, 5–6.5 × 1.5–2.1 cm; base always cuneate	0.5–1 cm	Terete	Leaf axils	1–6(–8)
M. edule	Acute or obstuse	0.4–0.9(–2) cm	Subterete	Leaf axils	> 10
M. gracile	Ovate-lanceolate, 2–5 × 0.7–2 cm; base subrounded to cuneate	0.6–1.2 cm	Quadrangular	Leaf axils	1–3
M. macrocarpum	Ovate-elliptic, or suborbicular, 5.5–11 × 3.5–5 cm; base cuneate	0.4–0.6 cm	Subterete	Leafless axils	> 10
M. manickamii	Elliptic-lanceolate, 1.6–4 × 1.2–1.5 cm; base cuneate	4 cm	Quadrangular	Terminal or subterminal	> 10
M. ovatum	Ovate to ovate-elliptic, 6–9 × 3–4.5 cm; base rounded to subrounded, rarely cuneate	Up to 1.5 cm	–	Old leafless nodes	> 10
M. ponmudianum	Ovate or oblong-ovate, 8–12 × 4–6 cm; base cordate and amplexicaul	1–1.5 cm	Terete to subterete	Terminal	> 10

Table 2 (*continued*)

Species	Leaf lamina	Peduncle length	Peduncle axis	Inflorescence position	No. of flowers
M. rivulare	Narrowly elliptic to lanceolate, 4.5–7.5 × 0.7–1.2 cm; base cuneate	0.5 cm	–	Leaf axils and leafless axils	> 10 (12–15)
M. royenii	Broadly lanceolate, 8.0–11.5 × 2.0–4.0 cm; base cuneate	0.5–2 cm	Ridged	Axillary or infrafoliar	> 20
M. subramanii	Elliptic-lanceolate, 19.0–40.0 × 6.5–14.0 cm; base rounded or subcordate	4–12 cm	4-winged	Axillary	> 10
M. terminale	Ovate-lanceolate, 2.8–12.5 × 0.8–3.3 cm; base rounded or subcordate	1–3 cm	Terete	Axillary and terminal	> 10
M. tirunelvelicum	Elliptic-lanceolate, 4.5–7.0 × 1.8–3.0 cm; base cuneate	4 cm	Quadrangular	Leaf axils	5–20
M. umbellatum	Elliptic-ovate, obovate or suborbicular, 2.5–6 × 1.6–4.2 cm; base cuneate	0.3–1(–3) cm	Quadrangular	Leaf axils	> 10
M. wayanadense	Narrowly lanceolate, 5–8 × 0.7–1.3 cm; base acute	0.8–1 cm	–	Leaf axils and old leafless nodes	3–12

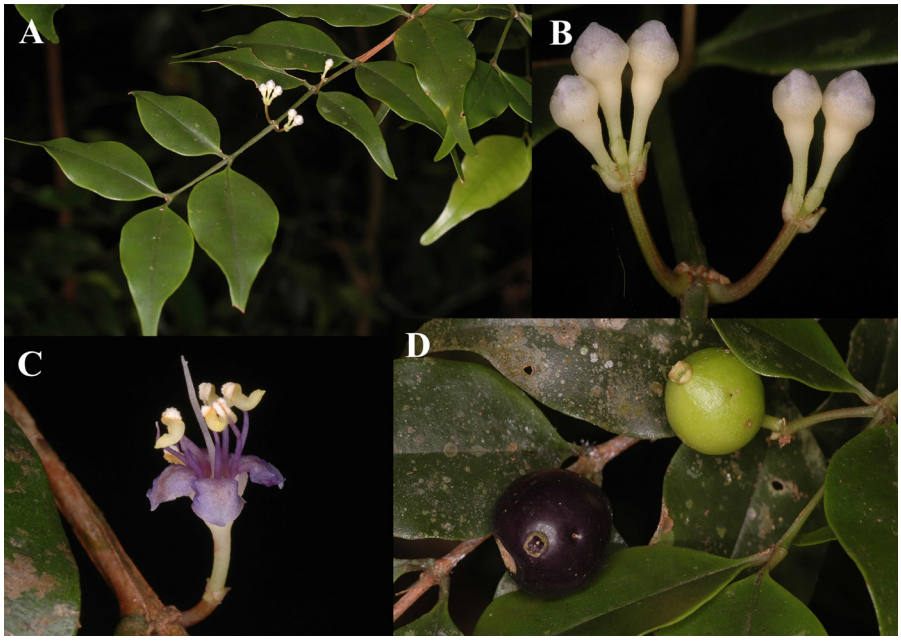

Figure 3. *Memecylon gracile*. A, Branch; B, inflorescence with mature buds; C, close-up view of flower; D, young and mature fruit. Photographs: Navendu Page.

Additional specimens examined. *Memecylon gracile*: India. Kerala (Travancore), without precise locality, accession number MH00002124 (lectotype, MH); Tamil Nadu, Tirunelveli district, Ambasamudram, Walaiyar Estate, 08°43'N, 77°14'E, 13 vii 1976, *C. E. Ridsdale*, accession number 12805 (HIFP); Tirunelveli district, 1985, *R. H. Beddome*, accession number BM000944525 (BM); Tirunelveli district, 1 iii 1872, *R. H. Beddome*, accession number K00035781 (K).

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