

Burmannia decurrens (Burmanniaceae): a new record for India

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Abstract: *Burmannia decurrens* Xiao J.Li & D.X.Zhang, a mycoheterotrophic species recently described from China is reported here as a new addition to the flora of India from Khasi Hills, Meghalaya. A detailed description, photo plate, and notes are provided for easy identification.

Keywords: *Burmannia nepalensis*, Khasi hills, Meghalaya, Mycoheterotrophic herb.

Introduction

Burmannia L., the largest genus in the family Burmanniaceae comprising about 61 species (Nuraliev *et al.*, 2018, 2022; POWO, 2023), is distributed in tropical, subtropical as well as in warm temperate regions of the World (Ma *et al.*, 2018). It is an intriguing plant group characterised by a peculiar appearance and floral morphology with autotrophic or mycoheterotrophic forms (Zhang, 1999; Wu *et al.*, 2010). The genus is represented by nine species in India, including recently described taxa from the Western Ghats (Jonker 1938; Francis *et al.*, 2021).

During a botanical expedition in the Khasi hills of Meghalaya, Northeast India, the authors collected a mycoheterotrophic specimen of *Burmannia*. Upon critical comparison of the specimen with pertinent literature (Miers, 1841; Hooker, 1888; Jonker 1938; Hajra, 1988; Wu *et al.*, 2010; Li *et al.*, 2020), it was identified as *B. decurrens* Xiao J.Li & D.X.Zhang, a recently described species from Guangdong province, China (Li *et al.*, *l.c.*). India harbours four mycoheterotrophic species of *Burmannia* viz., *B. candelabrum* Gagnep., *B. championii* Thwaites, *B. nepalensis* Hook.f., and *B. wallichii* (Miers) Hook.f.

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(Hooker, 1888; Hajra, 1988; Francis *et al.*, 2021). Though *B. nepalensis* has a wider distribution, from Nepal, China, Thailand, Indonesia, Philippines and Japan (Wu *et al.*, 2010), in India it was only reported from the Khasi hills of Meghalaya, and has not been recollected after its first collection there. *Burmannia nepalensis* is morphologically similar to *B. decurrens*, but differs mainly by the wings of the outer perianth lobes decurrent to the middle or base of the pedicel and fusiform seeds with thumbnail tapering poles (Zhang, 1999; Nuraliev *et al.*, 2018; Li *et al.*, 2020). *Burmannia decurrens* is reported here as a new addition to the flora of India. A detailed description, photo plate, and notes are provided here. A distribution map was created with QGIS ver. 3.28.7 (QGIS, 2023) using the coordinates taken from the field and Li *et al.* (2020). The voucher specimens were deposited at Calicut University Herbarium (CALI).

Taxonomic Treatment

Burmannia decurrens Xiao J.Li & D.X.Zhang, Nordic J. Bot. 38(9)-e02718:3. 2020. *Type:* CHINA, Guangdong, Gaozhou, N 22°15'08.11", E 111°11'05.46", 1010 m, 09.09.2019, X.J. Li, K. Zhang, G. Zeng & M.S. Wu 01210 (holo IBSC). **Fig. 1**

Annual, erect, achlorophyllous holomycoheterotrophic herbs, 6–11 cm tall. Roots thick, tuberous, 0.3–0.6 mm long. Rhizome absent. Stem filiform, simple or branched, white, glabrous. Radical leaves absent. Cauline leaves appressed to stem, scale-like, triangular, 1–2 × 0.2–0.8 mm, acute at apex, keeled at base, white, glabrous. Bracts lanceolate, 1–1.8 × 0.2–0.5 mm, white, glabrous. Flowers solitary or 2–5 in a double cincinni, bisexual, 6–7 × 4–6 mm, 3-winged; pedicels 0.5–3 mm long, slightly winged; glabrous; wings 0.05–0.1 mm broad. Perianth wings semi-elliptical,

trapezoidal or bow-like, 1.8–2 mm wide, white, running from the base of outer perianth lobes to the base of pedicel, acute, obtuse or truncate at apex, acuminate and decurrent along the pedicel, glabrous; tube angular, 2–3 mm long; outer perianth lobes 3, triangular, 0.4–0.6 × 0.3–0.4 mm, acute at apex, recurved, lateral margins thickened and involute at middle, yellow; inner perianth lobes 3, semi-elliptic or ovate, c. 0.1 × 0.2 mm, rounded at apex, yellow. Stamens 3, sessile, below the inner lobes; connective Y-shaped, with two short lateral

arms bearing thecae, two apical divergent crests covered by stigmas, and a basal acute or truncate pendant spur. Gynoecium tricarPELLARY, 4–6 mm long; ovary sub-globose or ellipsoid, 2–3 × 1.5–2.5 mm, glabrous; style filiform, c. 2 mm long, glabrous; stigma trifid, elliptic or oblong. Capsules sub-globose, dehiscing by transverse slits. Seeds numerous, 0.3–0.4 mm long, yellow, fusiform with thumbnail tapering poles.

Flowering & fruiting: July to October.



Fig. 1. *Burmannia decurrens* Xiao J.Li & D.X.Zhang: a. Habitat; b. Inflorescence; c. Cauline leaf; d. Root; e. Flower—split open; f. Outer perianth lobes; g. Perianth tube—split open showing inner perianth lobes and stamens; h. Stamen; i. Style and stigma; j. Seeds (from Krishnapriya M.P., Akhil M.K. & K.H. Harishma 175857; photos by Krishnapriya).

Habitat: Grows on humus-rich soil or moss-covered rocks under evergreen forest ± 1300 m above sea level. It is often associated with species of *Impatiens* (Balsaminaceae).

Distribution: China and India (Fig. 2).

Specimen examined: INDIA, Meghalaya, East Khasi Hills district, near Tikuz view point, N $25^{\circ}18'08.6''$, E $91^{\circ}55'43.3''$, ± 1300 m, 20.09.2021, Krishnapriya M.P., Akhil M.K. & K.H. Harishma 175857 (CALI).

Notes: *Burmammia decurrens* is morphologically allied to *B. nepalensis*, by the mycoheterotrophic habit, shape of cauline leaves, bracts and yellow seeds, but differs by the wings of outer perianth lobes decurrent to the middle or base of pedicel, semi-elliptic, trapezoidal or bow-like perianth wings, triangular outer perianth lobes with middle thickened lateral margins, semi-elliptic inner perianth lobes and fusiform seeds with thumbnail tapering poles (Li et al., 2020).

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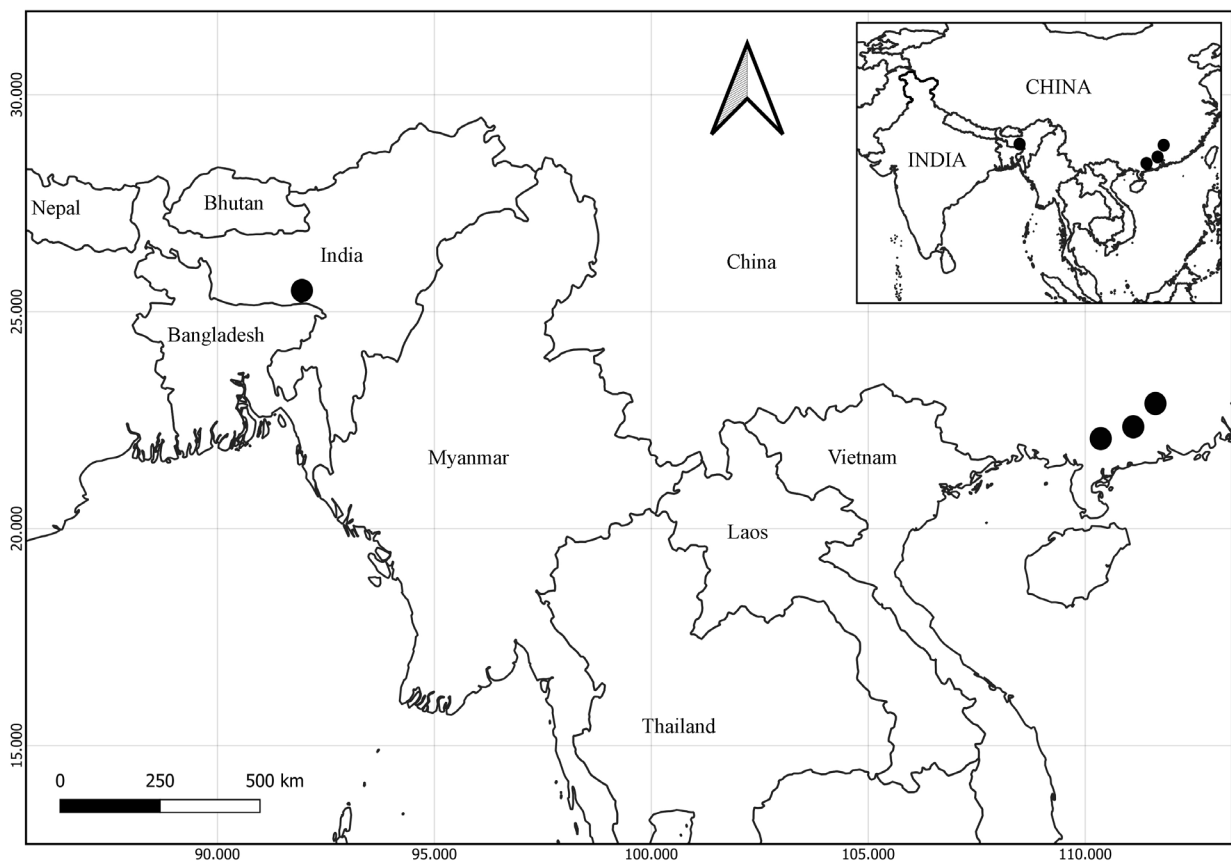


Fig. 2. Distribution map of *Burmammia decurrens* Xiao J.Li & D.X.Zhang

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