

Bulbophyllum basiflorum (Orchidaceae) from India - further extension of a recently described species in the East Himalaya Biodiversity Hotspot

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Abstract: *Bulbophyllum basiflorum* M.K.Li, J.D.Deng & Y.Luo (Orchidaceae) is added to the orchid flora of India from Arunachal Pradesh. The species was recently described from China about 300 km apart from the new locations in India. A detailed morphological description, threat status along with photographs of the plant and dissected floral parts are provided. This species has been assessed globally as Endangered.

Keywords: Arunachal Pradesh, *Desmosanthes*, Endangered species, New record, Orchid.

Introduction

Bulbophyllum Thouars is one of the largest genera in the Orchidaceae family with c. 2200 known species broadly distributed in the tropical and subtropical regions of Asia, Africa and America (; Pridgeon *et al.*, 2014; Gyeltshen *et al.*, 2020; Chen & Vermeulen, 2024). Presently, c. 115 species of *Bulbophyllum* are known from India of which c. 60 species occur in Arunachal Pradesh (Tam *et al.*, 2017; Gamisch & Comes, 2019; Singh *et al.*, 2019).

During floristic studies from 2019 to 2021, the first author collected few specimens of *Bulbophyllum* from two different locations in Arunachal Pradesh (East Kameng and West Kameng districts) and transplanted these living plants at the Sessa orchid nursery of the Orchid Research Centre, Tipi. The plants looked morphologically similar to other

members of this section in the eastern Himalayan region, *Bulbophyllum cauliflorum* Hook.f var. *cauliflorum*, *B. cauliflorum* var. *sikkimensis* N.Pearce & P.J.Cribb, *B. protractum* Hook.f., and *B. stenobulbon* C.S.P.Parish & Rchb.f., but appeared different in having shorter racemose inflorescences (shorter than the pseudobulbs) emerging usually from the rhizomes, and bearing 1–3 flowers, with ovate petals, white lip with two longitudinal ridges and a very short column foot. The flowers also look superficially similar to *B. clandestinum* Lindl., but the pseudobulbs are comparatively larger in size. After critical study of specimens and perusal of the relevant literature (Seidenfaden, 1973, 1979; Pearce & Cribb, 2002; Tam *et al.*, 2017; Singh *et al.*, 2019; Jin *et al.*, 2019; Luo *et al.*, 2020; Li *et al.*, 2023) and herbarium specimens housed in ARUN, ASSAM BM, CAL, and digital images of K, E, P and PE, the plant was identified as *Bulbophyllum basiflorum* M.K.Li, J.P.Deng & Y.Luo, based on possession of a short dense racemose inflorescence with up to 2 flowers, narrowly lanceolate lateral sepals, ovate petals, and the presence of subulate stelia on the column (Fig. 1). The species, belonging to *Bulbophyllum* sect. *Desmosanthes*, (Blume) J.J.Sm has been recently described from Southeastern Xizang in China (Tibet) (Li *et al.*, 2023). Therefore, the present study reports *B. basiflorum* as an addition to the orchid flora of India from Arunachal Pradesh.

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Taxonomic Treatment

Bulbophyllum basiflorum M.K.Li, J.P.Deng & Y.Luo, *Taiwania* 68(2): 143–147. 2023. *Type*: CHINA, **Xizang**, Medog county, Dexing village, N 95°14'26.49", E 29°14'21.92", 1159 m, epiphyte on tree trunks in evergreen broad-leaved forest, 06.05.2020, M.K. Li 2020233 (holo, [HITBC 0083564]; para [HITBC 0083565, XZE 016070]). **Figs. 1 & 2**

Rhizomes creeping, 1–1.5 mm thick. Pseudobulbs cylindrical to narrowly ovoid, 1–2 × 0.5–0.8 cm, longitudinally grooved, placed 1.5–5.0 cm apart on rhizome. Leaf 1, oblong-ovate, borne on the apex of the pseudobulb, 1.5–4.0 × 0.8–1.3 cm, shortly petiolate, apex minutely two lobed or retuse. Scape erect or stout, arising from base of pseudobulbs or from nodes of rhizome, shorter than pseudobulbs, 4–10 mm long, peduncle erect, with tubular sheaths; racemose, usually 2-flowered or sometimes 3-flowered. Flowers 5–7 mm across, not so widely open, light yellowish; floral bract ovate-triangular, 4–5 × 3–4 mm long, acuminate, longer than pedicel and ovary, light brown when dry; pedicel plus ovary 2.5–3.0 mm long. Dorsal sepal narrowly lanceolate, twisted, 6–8 × 1.4–1.5 mm,

acuminate at apex; lateral sepals narrowly lanceolate, 8–10 × 1.4–1.5 mm, acuminate, adnate to base of column foot; petals ovate, 1.6–2.1 × 0.9–1.1 mm, acute at apex; lip oblong or tongue shaped, slightly recurved, 1.5–2.5 × 0.9–1.1 mm, entire, pale yellowish, fleshy, with two ridges along a median furrow, obtuse at apex. Column 1–1.4 mm long, stout, stelia subulate, c. 0.5 mm long, projecting forwards; column foot 0.3–0.5 mm long, curved upwards; anther cap sub globose, 0.4–0.5 mm long, rounded at apex. Pollinia 4, in two pairs, c. 3 mm long.

Flowering & fruiting: Flowering from April to May; fruiting not observed.

Habitat: Found growing on branches of medium sized trees in sub-tropical areas at 1100 to 1270 m elevation.

Distribution: China, and now India.

Specimens examined: INDIA, **Arunachal Pradesh**, East Kameng, Sachung, N 27°33'27", E 92°46'48"; J. Tsering 50180 (Orchid Herbarium Tipi); West Kameng, Sessa Orchid Sanctuary, Sessa, N 27°6'14", E 92°31'30"; J. Tsering 50186, 50187 (Orchid Herbarium Tipi).



Fig. 1. *Bulbophyllum basiflorum* M.K.Li, J.P.Deng & Y.Luo: Plants in Sessa Orchid Nursery.

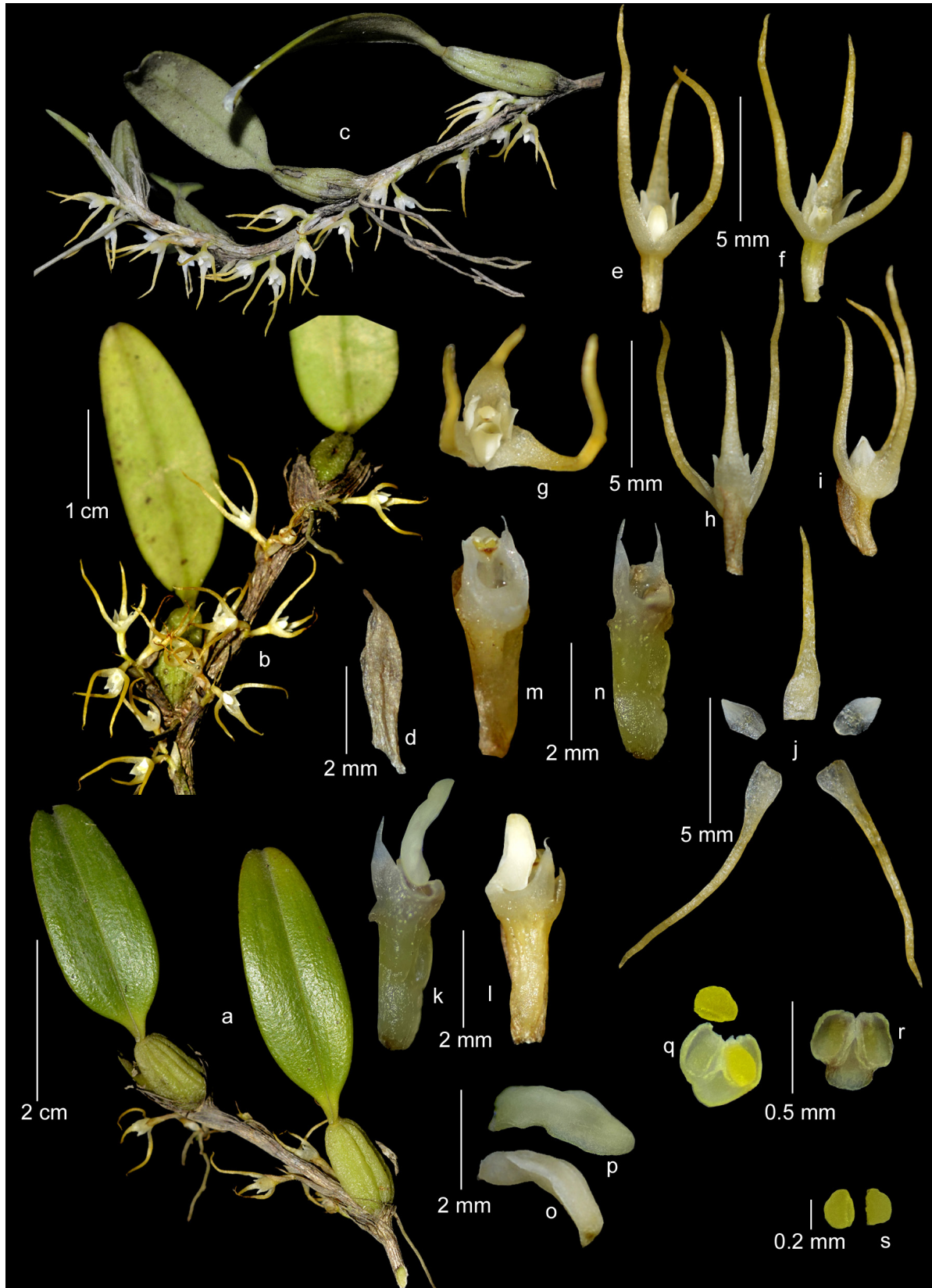


Fig. 2. *Bulbophyllum basiflorum* M.K.Li, J.P.Deng & Y.Luo: a–c. Habit; d. Floral bract; e–i. Flower from different angles; j. Dissected flower (dorsal sepal, lateral sepals and petals); k–l. Column with lip, ovary and pedicel; m–n. Column with ovary and pedicel; o–p. Lip; q. Anther cap with pollinia; r. Anther cap; s. Pollinia (from *J. Tsering* 50186; photos by J. Tsering).

Conservation status: *Bulbophyllum basiflorum* was originally described as a Data Deficient (DD) species from China (Li *et al.*, 2023). This species is now known from three different sites, one in Xizang, China with around 20 mature individuals, and two in Arunachal Pradesh, India with 100 and 80 mature individuals. The total number of known mature individuals for this species is 200. The Area of Occupancy (AOO) is estimated as 12 km² and Extend of Occurrence (EOO) is estimated as 719 km². All the three known sites are located near human settlement areas and hence, at least in India, anthropogenic threats are suspected owing to which, a decline in number of mature individuals is projected. Therefore, this species can now be provisionally assessed as Endangered [EN B1ab(iii,v)+ B2ab(iii,v); C2a(i); D] following the guidelines for the IUCN Red List Categories and Criteria (IUCN, 2022). However, further studies on population size, distribution and population trends and threats are encouraged and it should be reassessed if more information becomes available.

Notes: The specimens of *B. basiflorum* from India exhibited few minor variations from the type description, such as an inflorescence with 1–3 flowers (*vs.* 1–2-flowered in the original description), leaves broader, up to 1.3 cm wide (*vs.* narrower, up to 0.7 cm wide) and broader pseudobulbs, up to 0.8 mm wide (*vs.* narrower, up to 0.6 mm wide). However, we consider this as natural variation in the species across its distributional range.

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