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PENSOFT

Boeica multinervia K.Y. Pan (Gesneriaceae): a new record for India

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Abstract
We present the first record of *Boeica multinervia* (Gesneriaceae) for India, based on specimens from Sagalee, Arunachal Pradesh, India. The species is easily recognized due to its short internodes, stoloniferous habit, and glandular pubescent rosette leaves and inflorescence. *Boeica multinervia* is so far known only from (Xizang) China. A brief description along with additional notes and photographs are provided.

Keywords
Arunachal Pradesh, flora of India, Himalayas.

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Introduction

The genus *Boeica* Clarke (Gesneriaceae, tribe Trichosporeae) has its main centre of distribution in the Himalayas (Bhutan, Myanmar, and Nepal), China, and Indochina (Moëller et al. 2017). It is a small genus of 15 taxa, where six of them are present in India: *Boeica clarkei* Hareesh, L. Wu, A.Joe & M.Sabu., *B. filiformis* C.B. Clarke, *B. filiformis* var. *griffithii* Su.Datta, B.K.Sinha & Chakrab., *B. fulva* C.B. Clarke, *B. hirsuta* C.B. Clarke and *B. porosa* C.B. Clarke (Sinha and Datta 2016; Möller et al. 2017; Hareesh et al. 2018). During recent field surveys in Arunachal Pradesh, some interesting specimens of a *Boeica* were collected on the way to Sagalee in Papum Pare and Lower Subansiri districts. These specimens represent new record to the flora of India.

Methods

The specimens were collected on 1 May 2019 from Papum Pare and Lower Subansiri districts of Arunachal Pradesh. The specimens were then processed into mounted herbarium-sheets following the methods of Jain and Rao (1977). For their identification, the plants were compared with images of types present in K and PE, vouchers of related species at ARUN and ASSAM, and also with relevant literature (Clarke 1874, 1885; Pan 1990; Wang et al. 1998; Burtt 2001; Li and Wang 2004; Sinha and Datta 2016; Wen et al. 2016; Hareesh et al. 2018; Quang et al. 2019).

Results

Boeica multinervia K.Y. Pan. Acta Phytotax. Sin. 26 (6): 439–441 (1988)

Type: China, Yunnan province, Yingjiang County, 430 m, 13 August 1980, Daisy Plant Investigation Group 9968, 00032272 (holotype, PE) (available at http://pe.ibcas.ac.cn/).

New records (Fig. 1). India • Arunachal Pradesh, Papum Pare district, on the way to Sagalee; 27°10′21″N, 093°

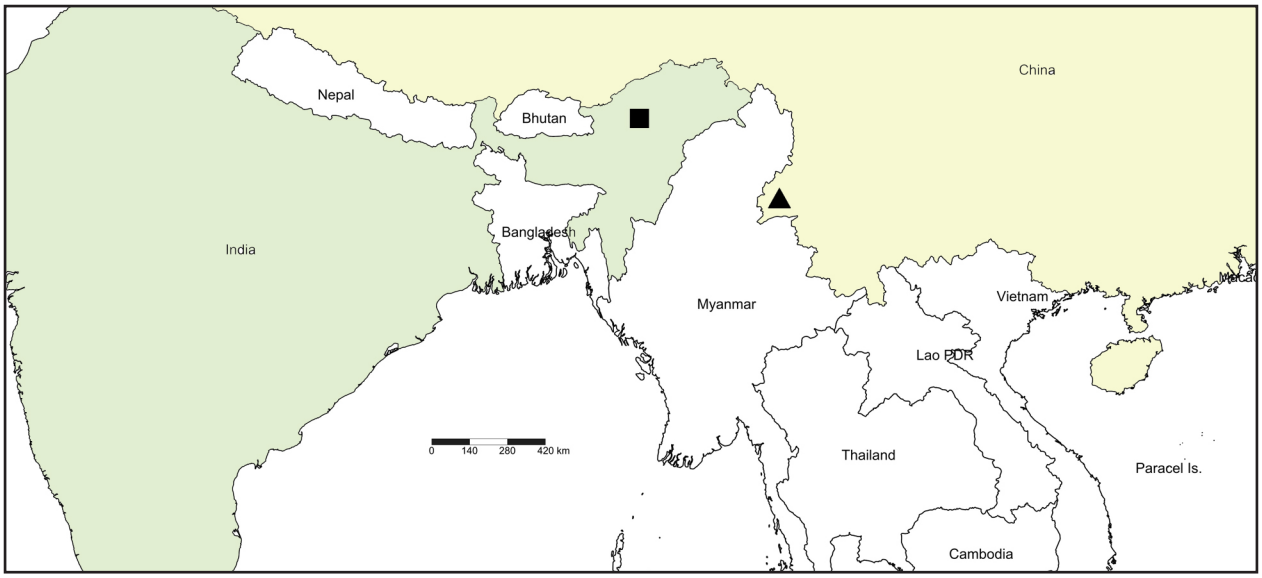

Figure 1. Geographical location and distribution of *Boeica multinervia*. The black solid square indicates the currently reported locality (NE India) and triangle, the earlier record (China).

45′16″E; 328 m a.s.l.; 1 May 2019; M.Taram & D.Borah 312 (HAU 32065) • Arunachal Pradesh, Lower Subansiri district, Potin; 27°33′92″N, 093°79′85″; 328 m a.s.l.; 1 May 2019; M.Taram & D.Borah 343 (HAU 32066).

Description. Stoloniferous herbs (Figs 2, 3). Stems 1–2 cm high, unbranched, pubescent. Leaves dark green with a purplish tinge, alternate, sub sessile to sessile; internodes 1–5 mm long; petiole if present 1–5 mm long, glandular pubescent, green; lamina ovate to ovate elliptic, oblique, 8–12 × 4.5–5.5 cm, acute, serrate, cunneate, adaxially densely glandular pubescent, abaxially glabrous, pubescent on veins; lateral veins 12–15 on each side, opposite to alternate, impressed above, prominent below. Cymes axillary, one from each axil, up to 13 flowered or more; peduncles 3.5–4.5 cm, pale purple to purplish white, glandular pubescent; bracts 2, linear to linear lanceolate, 4–5 × 0.5–1 mm, dark purple, acute, entire, adaxially glandular pubescent, abaxially glabrous; pedicel 2–5 mm long, white, glandular pubescent. Calyx divided to base, 5-lobed; lobes linear lanceolate, acute, 2–3 × 0.8–1 mm, dark purple, glandular pubescent adaxially, glabrous abaxially. Corolla pale purple to dark purple, 5–6 mm long, pubescent outside, glabrous inside, limb inconspicuously 2-lipped; tube 1.8–2.2 mm long; adaxial lip 2-lobed, lobes 3–4 × 2–3 mm, ovate acute with two prominent green to dark purple dots outside; abaxial lip 3-lobed, ovate to oblong, obtuse to round at apex, lobes 3–4 × 2–2.5 mm. Stamens 4, free; filaments white, ca 1 mm long, glabrous, adnate to the base of corolla; anthers pale pink, ca 1 mm long, 1.0 mm in diameter, dehiscing transversely; staminodes apparently absent. Disc inconspicuous or nearly absent. Ovary ovoid, 1.5–2.0 mm long, 1–1.2 mm in diameter, pubescent, creamy-white; style 5–6 mm long, glabrous above, glandular pubescent below, white. Stigma single, truncate at apex, pale pink. Capsule not seen. Flowering April to May.

Discussion

Diagnosis. *Boeica multinervia* is easily recognized from most of its congeners by its stoloniferous habit (Fig. 2, 3), short internodes, and rosette of densely glandular pubescent leaves, but can be distinguished from *Boeica clarkei*, which is reported from the same region, by a very short stem 1–2 cm (vs 8–14 cm long), sessile to subsessile leaves up to 0.5 cm (vs 2.5–6.5 cm long), purplish tinged dark green, glandular pubescent leaves (vs light green, non glandular pubescent), lateral veins 12–15 pairs (vs 8–12), pedicels 2–5 mm (vs 0.5–1.5 mm), and adaxial limb lobes apex acute (vs rounded).

Ecology. It prefers damp and shady areas in the roadsides and near streams and grows along with *Stauranthera umbrosa* (Griff.) C.B.Clarke (Gesneriaceae), *Phrynium pubinerve* Blume (Marantaceae), *Begonia aborensis* Dunn (Begoniaceae), *Elatostema* sp. (Urticaceae), *Arisaema* sp. (Araceae), *Peliosanthes* sp. (Asparagaceae), and other plant species (Fig. 2).

Taxonomic comments. The population growing in Arunachal Pradesh differs from the Chinese population by its restricted, shorter stem, shorter petiole, and less flowered inflorescences. However, these differences are mostly quantitative and may have been caused by different edaphic factors, and these characters are of no taxonomic value. In the key to Indian *Boeica* species by Hareesh et al. (2018), *B. multinervia* would key to couplet 5 with *B. clarkei*. It can be distinguished from *Boeica clarkei* by characters given in the diagnosis above.

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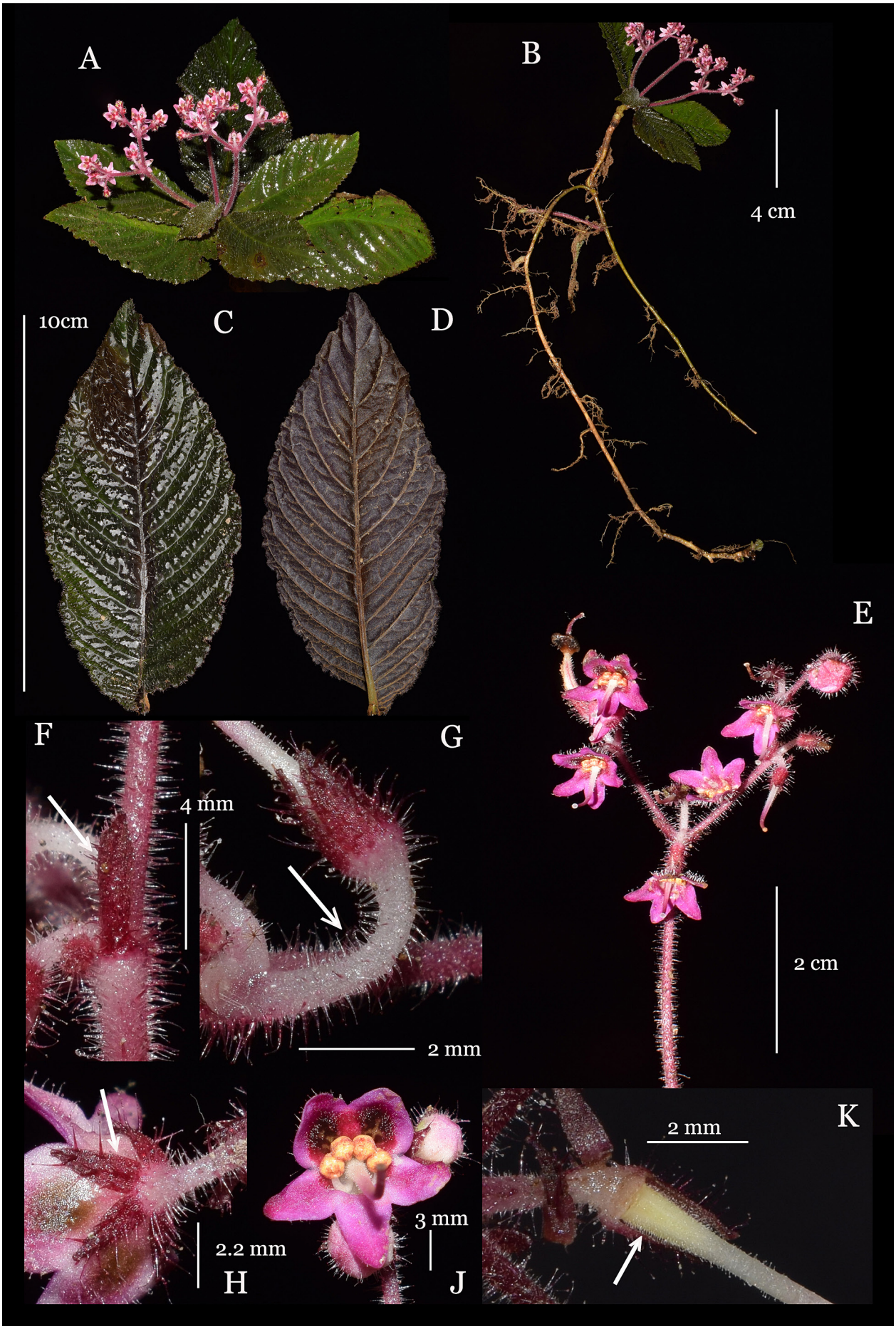

Figure 1. *Boeica multinervia*. **A.** Habit. **B.** Habit showing stolons. **C.** Leaf adaxial surface. **D.** Leaf abaxial surface. **E.** Inflorescence. **F.** Bract. **G.** Pedicel. **H.** Calyx. **J.** Corolla. **K.** Ovary.

Figure 2. A. Growth habit of *Boeica multinervia*. **B.** Natural habitat of *Boeica multinervia* a narrow Himalayan valley in Sagalee, Arunachal Pradesh.

logistics, and cooperation. We are also thankful to the Department of Botany, Rajiv Gandhi University, for providing the necessary facilities.

Authors' Contributions

MT collected the samples; DB identified the specimens and drafted the manuscript; SN revised the manuscript and made necessary changes. All the authors have checked and approved the final content.

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