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# AMENDED DESCRIPTION OF THE SUMATRAN ENDEMIC *DENDROBIUM BANDII* (ORCHIDACEAE) WITH NOTES ON ITS CONSERVATION STATUS AND ECOLOGY

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**ABSTRACT.** *Dendrobium bandii* is a poorly known species endemic to the island of Sumatra, Indonesia. We studied living specimens and we provide here an amended description of the species, colour photographs, as well as information on distribution, ecology, and its provisional conservation status.

**KEY WORDS:** Dendrobieae, Epidendroideae, Malesian Flora, plant taxonomy, Sumatran biodiversity

**Introduction.** *Dendrobium* Sw., belonging to the tribe Malaxideae, subtribe Dendrobiinae, is the third largest orchid genus encompassing about 1600–1800 species distributed from Sri Lanka throughout tropical Asia and the Pacific region, north to Japan, east to Tahiti and south to New Zealand (Schuiteman & Adams 2014, Chase *et al.* 2015, Ormerod 2017). At present, the number of *Dendrobium* species in Indonesia is around 680 species (Ormerod unpubl. data). In Sumatra, the genus is represented by approximately 140 species and future fieldwork would probably result in the discovery of more species either endemic or as new records from neighbouring countries and islands (Juswara *et al.* 2018).

In the recent floristic survey conducted in the westernmost province of Indonesia by the second and third authors, an unknown *Dendrobium* species was collected in the province of Aceh, Sumatra. Upon detailed morphological examination and comparison to the relevant literature and digitized type specimens of *Dendrobium* from Indonesia and neighbouring countries, the species matches with *D. bandii* Cavestro, a poorly known species recently described.

A careful analysis of our recently collected specimen revealed that the description and line drawing provided by Cavestro (2020) are not entirely accurate: the diagnosis and some morphological characters recorded by the author (e.g. acute to obtuse leaf apex, oblong-triangular

lateral sepals, broadly ovate midlobe of the labellum, column length, among others) are probably more variable than the protologue suggests, and some morphometric features were omitted in the original description (e.g. column foot measurement, claw measurement, stelidia shape and measurement and many more). Thus, to further clarify the identity of this taxon, we present here an amended description of *D. bandii*, a colour photograph to aid accurate identification, ecological notes and its provisional conservation status.

**Materials and methods.** The measurements and descriptions were based on freshly collected material deposited at Herbarium Bogoriense (BO). The general plant descriptive terminology follows Beentje (2016). Informal conservation status category was assessed by range size (B criterion), following IUCN Standards and Petitions Subcommittee (2019) recommendations. The extent of occurrence (EOO) and area of occupancy (AOO) were estimated using GeoCAT (Bachman *et al.* 2011).

## TAXONOMIC TREATMENT

*Dendrobium bandii* Cavestro, Orchidee (Hamburg) 6(120): 176, 2020. TYPE: INDONESIA. North Sumatra: District of Aceh, elev. ca. 1300–1600 m,

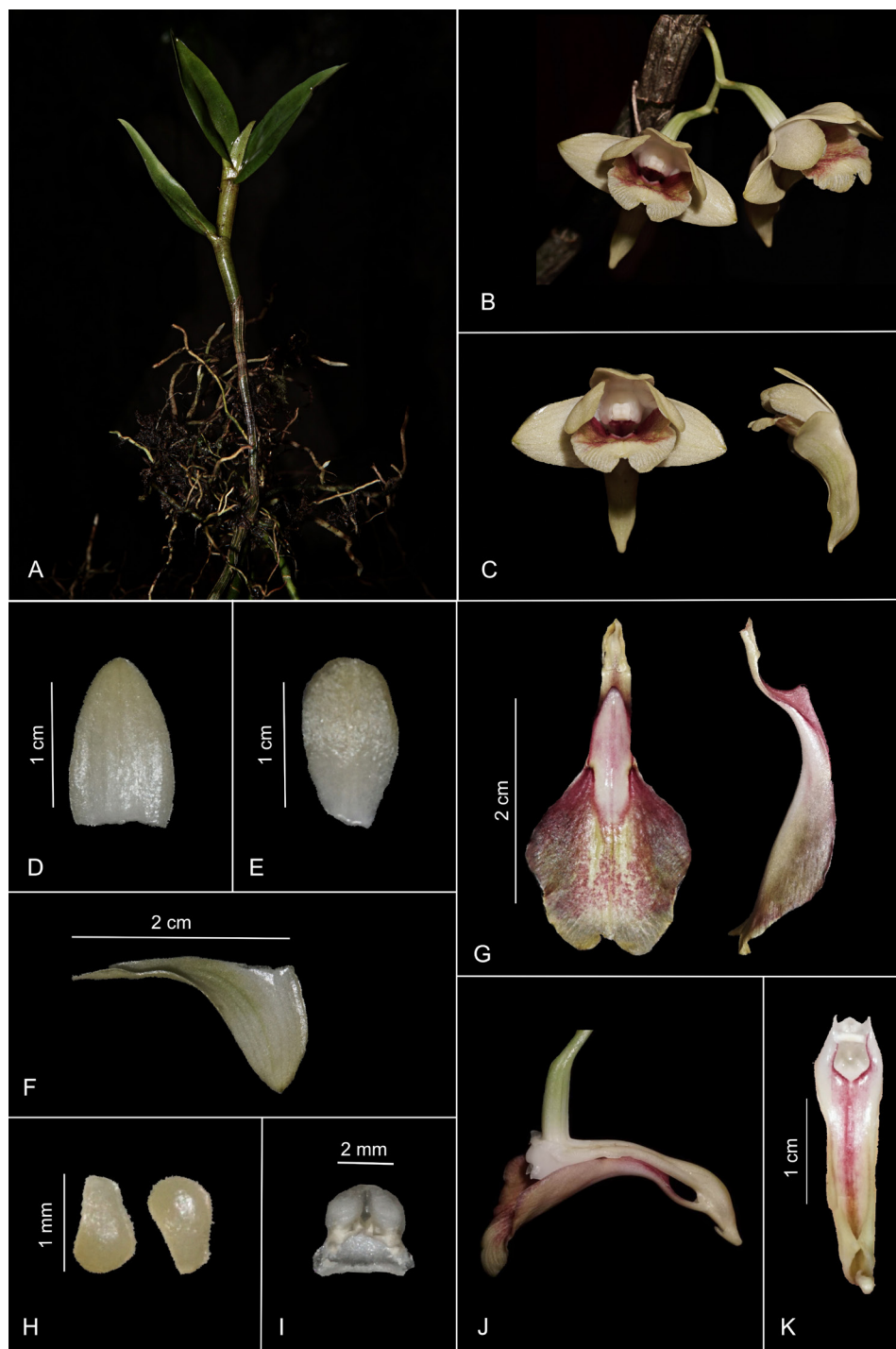


FIGURE 1. *Dendrobium bandii* Cavestro. **A.** Habit. **B.** Inflorescence. **C.** Flower (left, front view; right, profile view). **D.** Dorsal sepal. **E.** Petal. **F.** Lateral sepal. **G.** Labellum (left, top view; right, profile view). **H.** Pollinia. **I.** Anther cap. **J.** Pedicel with ovary, profile view of column, column foot and labellum. **K.** Ventral view of column and column foot. Photos by Y. R. Yudistira.

18 February 2020, *W. Cavestro and A. Marup s.n.* (holotype, ANDA). Fig. 1.

Epiphytic, pendent, *herb.* *Roots* elongate, *ca.* 1.5 mm long, glabrous. *Stem* slightly flexuous, 15–40 cm long by 0.3–1.2 cm in diameter, terete at the base, slightly flattened in  $\frac{2}{3}$  of the upper part, young stem rounded, green; *internodes ca.* 1.5–4 cm long. *Leaves* distichous, deciduous; *sheaths* tubular, clasping the entire internode, brown; *leaf blades* lanceolate-elliptic, 9.5 cm long by 3.0 cm wide, with 4 veins, chartaceous, green, glabrous, margin entire, apex subacuminate to acuminate. *Inflorescence* 2- or 3-flowered, arising from the older, leafless stems; *peduncle* 10–11 mm long, terete, glabrous. *Flower* 2.5 cm across, apricot or orange pink to yellow or greenish yellow with crimson spots on the labellum and the ventral side of the column foot. *Pedicel and ovary* 13 mm long, corrugated, glabrous, pale green, whitish near apex. *Dorsal sepal* 3-veined, incurved, nodding, ovate, 15 mm long by 8–9 mm wide, glabrous, covering the column, margin entire, apex obtuse. *Lateral sepals* 7-veined, spreading, broadly falcate, 15–16 mm long by 20–23 mm wide, glabrous, forming a mentum with the column foot 20–21 mm long, margin entire, apex acute, cucullate. *Petals* 1-veined, pointing forward, obovate, 15 mm long by 5–7 mm wide, glabrous, covering the column, margin entire, apex rounded. *Lip* 3.2 cm long by 1.8 cm wide; *claw* ligulate-oblong, subsigmoid in lateral view, basal 2–3 mm excavate and joined to column foot, free part *ca.* 7–8 mm long, in total *ca.* 10 mm long by 2–3 mm wide; *blade* weakly trilobed, broadly rhombic, 13–15 mm long by 12–14 mm wide, glabrous, margins slightly undulate to entire, fleshy, apex broadly, obtusely bilobed; *callus* oblong, shallowly canaliculate, base raised, obtuse, slightly retrorse, beginning midway on the claw and terminating on the basal quarter of the blade; *mentum* narrowly-conical, 2.0–2.1 cm long, curved, acute. *Column* stout, 3–4 mm long, with a crimson stripe on the underside; *column foot* 20–21 mm long; *stelia* triangular, 1.0–1.5 mm long; *pollinia* 2, each pair can be divided into two parts, 1 mm long by 1.3 mm across, yellowish; *anther-cap* cucullate, 3 mm across, subhyaline. *Capsule* not seen.

**DISTRIBUTION:** Restricted to four localities, including its type locality and the highlands of Aceh Province at an

elevation of 800–1600 m a.s.l., from Aceh Tengah to Bener Meriah and Nagan Raya.

**HABITAT:** Growing epiphytically on trees in primary forests and secondary forests, and also found thriving in coffee plantations.

**PHENOLOGY:** Flowering almost all year round.

**EPONYMY:** The specific epithet was derived after the discoverer of the species, Subandi Bandi.

**PROVISIONAL CONSERVATION STATUS:** There are four localities known for this species, including the type locality. Each locality has a few populations in a limited area, giving an approximate Area of Occupancy (AOO) of 12 km<sup>2</sup> when calculated in the GeoCAT system (Bachman *et al.* 2011). Following the Red List criteria of the IUCN Standards and Petitions Subcommittee (2019), the species would fall into the IUCN category of Endangered [EN B2ab(ii)].

**SPECIMEN EXAMINED:** INDONESIA. Sumatra: Aceh Province, Aceh Tengah Regency, Jagong Jeget, elev. 1500 m, 20 January 2020, *Victori 004* (BO!, including spirit collection).

*Dendrobium bandii* was originally compared to another Sumatran species, *D. transtilliferum* J.J.Sm., but the latter taxon differs in having a broader, more open mentum, a cuneate (not clawed) labellum, and a flat, truncate suprabasal (*vs.* a raised rounded) callus. *Dendrobium bandii* is closer to *D. sanguinolentum* Lindl., sharing with it a similar mentum shape, and similar labellum shape with the callus placed in about the same area on the claw. However, *D. bandii* differs significantly in having forward-pointing, obovate petals (*vs.* spreading, spatulate petals in *D. sanguinolentum*), a narrowly conical, subacute mentum (*vs.* oblongoid, truncate mentum in *D. sanguinolentum*), and a labellum with an obtuse, slightly retrorse callus base (*vs.* acute, strongly retrorse, spine-like callus base in *D. sanguinolentum*). It also differs in having an apricot to yellow or greenish-yellow coloured flowers with crimson spots or colouration in the labellum, whereas *D. sanguinolentum* has a yellow ochre or buff flower colour with or without a variable amount of rose-red colour on the tips of sepals, petals, and lip.

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