

Two new Additions to the Orchid Flora of the Western Ghats, India

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भारत के पश्चिमी घाट के ऑर्किड फ्लोरा में दो नवीन संकलन

सहाना विश्वनाथ, ए.एन. श्रुंगेश्वरा एवं के.टी. प्रसन्ना

सारांश

बल्बोफायलम क्रैसिपीस हुक. एफ., एवं ओडिशा क्लैस्टान्था एस. मिश्रा पहली बार भारत के पश्चिमी घाट से संग्रहित किया गया है। सुगम पहचान हेतु विवरण, आवास संबंधी सूचनाएं, पुष्पन एवं फलन, सवितरण, फोटो एवं संबंधी विवरण प्रदान किए गए हैं।

ABSTRACT

Bulbophyllum crassipes Hook.f., and *Odisha cleistantha* S.Misra are herewith reported for the first time from the Western Ghats, India. Description, information on the habitat, flowering and fruiting, distribution, photographs, and relevant notes have been provided for easy identification.

Keywords: Orchidaceae, Western Ghats, Karnataka, Kerala

INTRODUCTION

Orchidaceae is the largest family of flowering plants with 28,000 taxa and 736 genera worldwide (Christenhusz & Byng, 2016). In India, it is represented by 1263 taxa in 155 genera (Singh & al., 2019), of which 306 taxa under 82 genera are found distributed in Western Ghats (Nayar & al., 2014). During the survey of orchids in Karnataka and adjoining areas, we came across two interesting species of orchids, and upon critical observations of the specimens, they were identified as *Bulbophyllum crassipes* Hook.f. and *Odisha cleistantha* S. Misra. Review on the relevant literature (Sharma & al., 1984; Kumar & Manilal, 1994; Rao & Sridhar, 2007; Nayar & al., 2014; Diwakar, 2019; Hoque & al., 2019; Singh & al., 2019; Sanjappa & Sringswara, 2019) revealed that these species have not been reported from the Western Ghats, India. The present collection thus forms the first report of these species from the Western Ghats. We are herewith providing nomenclature, description, phenology, specimen examined, illustrations, and other relevant notes on the species for easy identification of them. The two species

have been conserved *ex situ* in the orchidarium, and the voucher specimens have been deposited in the herbarium UASB of Mahatma Gandhi Botanical Garden, University of Agricultural Sciences, GKVK Campus, Bengaluru.

TAXONOMIC TREATMENT

Bulbophyllum crassipes Hook.f., Fl. Brit. India 5: 760. 1890; P. Kumar & al., Check List 3(4): 301. 2007; H.J. Chowdhery & al., Materials Fl. Arunachal Pradesh 3: 16. 2009; R. Kumar & al., Keanean J. Sci. 2: 19. 2013; S. Misra, Orchids Orissa: 310. 2014; Karthigeyan & al., Richardiana 15: 28. 2014; Murugesan & al. NeBio 8(3), 193. 2017; Hoque & al., J. Orchid Soc. India 33: 92. 2019; Prasad & al., Orchids Eastern Ghats: 50. 2019; Baro & al., Asian J. Cons. Bio. 143. 2019; Mitra & al., Plant Archives: 3955. 2020. *Bulbophyllum careyanum* var. *crassipes* (Hook.f.) Pradhan, Indian Orchids: Guide Identif. & Cult. 2: 713. 1979. *Phyllorkis crassipes* (Hook.f.) Kuntze, Revis. Gen. Pl. 2: 677. 1891.

Types: India: Sikkim, Terai, Dulkajhar, Clarke 36904

(syntype: K); Myanmar, Martabania, 1827, *Wallich* 1990.2 (syntype: K, image!); Arracan Hooker (syntype: K); Malaysia: Kerr s.n. (syntype: K).

Epiphytic herbs. Rhizome creeping, woody, branched. Pseudobulbs greenish, ribbed, narrowly ovoid or conic, erect, 3–4 cm long. Leaf solitary, terminal, coriaceous, oblong, obtuse, shortly mucronate, *ca* 12 × 3.5 cm. Inflorescence erect, cylindrical, lateral from pseudobulb base, shorter than the pseudobulb, densely many-flowered, 2–7 cm long; floral bracts longer than ovary, yellowish, sheathing, oblong-lanceolate, 3-veined. Flowers yellowish-orange with densely spotted maroon or red. Dorsal sepal concave, oblong, apex obtuse-rounded, 5-veined, warted on outer surface, 3 × 2.5 mm; lateral sepals much longer than dorsal sepal, 4-veined, ovate-lanceolate, warted on outer surface, their lower edges connate and upper edges incurved near apex to form an ovoid sac or boat-shaped structure, apex acute, 5 × 3 mm; petals erect, obliquely triangular, decurrent to column foot, margins sparingly and feebly dentate, apex shortly caudate, 1-veined; labellum mobile, curved, oblong-ovate, margin finely papillate, grooved at adaxial base, base with two recurved auricles on both basal sides, 3–4 × 2–2.5 mm; column pale yellow to marron, oblong, winged, 3–4 mm; stigma oblong-orbicular; pollinia 4, oblong-ovoid, waxy, 0.7 × 0.6 mm. Capsules ellipsoid, 1.2 cm long (Fig. 1).

Habitat: Growing epiphytic on *Hopea parviflora* Bedd. in evergreen forests at an elevation of 300 – 700 m.

Flowering & Fruiting: February–April.

Distribution: INDIA: Andaman and Nicobar Islands, Arunachal Pradesh, Assam, Jharkhand, Karnataka (present report), Meghalaya, Mizoram, Odisha, Sikkim, West Bengal. BANGLADESH, BHUTAN, CHINA, LAOS, MALAYSIA, MYANMAR, THAILAND, VIETNAM.

Specimen examined: INDIA, Karnataka, Shivamogga, Agumbe – Barkana road, 19 February 2019, *Sahana* & *A.N.Sringeswara* S59 (UASB!).

Notes: *Bulbophyllum* Thouars is one of the largest genera of the family Orchidaceae, comprising about 2093 species and distributed widely in the tropical and subtropical regions (WCSP, 2020). In India, it is represented by 137 taxa (Singh & al., 2019), of which 23 species are reported from Western Ghats (Nayar & al., 2014). *B. crassipes* can be distinguished by its stout scape shorter than the pseudobulb with dense, compact flowers.

Odisha cleistantha S.Misra, Orchids India: 252. 2007; S.Misra, Orchids Orissa: 238. 2014; Misra & al., Bull. Bot. Surv. India, 50: 141. 2008; Prasad & al., Orchids Eastern Ghats: 213. 2019.

Types: India, Odisha, Mayurbhanj District, Simlipal forest, *S.Misra* 2434 (holotype, CAL); Kabataghai, *S.Misra* 2435, 2436 (paratypes, CAL).

Terrestrial herbs with two tuberoids. Leaves cauline, elliptic-lanceolate, 8.5 – 13 × 3–4.5 cm, 3–4 aggregated in basal part of the stem with sheathing base, margin translucent. Inflorescence 20–40 cm long with 3–6 sterile clasping bracts 2–4 cm long; rachis 5–8 cm long with 5–10 flowers arranged spirally; floral bracts 12–20 × 3–4.5 cm, oblong-lanceolate, acuminate, green, 3-veined. Flowers green with greenish white center, inodorous, partially opened. Sepals erect, fleshy, prominently ridged outside, margin incurved apically; dorsal sepal ovate-lanceolate, 10.5–13.5 × 3.5–5.5 mm; lateral sepals slightly oblique with acute tip, 10–12 × 3–5 mm; petals, oblong-lanceolate, 9–13 × 3–4 mm; labellum erect, 3-lobed, enclosed by the lateral sepals, ovate, 12–18 × 5–7 mm, edges incurved; lateral lobes erect, mid-lobe oblong-lanceolate, spur short, 1 mm; column short, erect; stigma at the base of the column; rostellum tongue-like, elongate, erect, white, 2.5–3 × 1.25 mm, 3-lobed, lateral lobes short, falcate, not connected with the anther, without projections, midlobe incurved; anthers 2-loculed, well separated; pollinaria 2, pollinia with a minute basal caudicle, light yellow. Capsule robust, sessile, obliquely fusiform, strongly ribbed, 20–25 × 4–5 mm. (Fig. 2)

Habitat: In open grassy patches at an elevation of 600 – 700 m.

Flowering & Fruiting: October – December.

Distribution: INDIA: Andhra Pradesh, Chhattisgarh, Jharkhand, Karnataka (present report), Manipur, Odisha, ENDEMIC.

Specimens examined: INDIA, Karnataka, Chikkamagaluru: Alugodu, 6 km from Sringeri, 30 November 2011, *A.N.Sringeswara* & *Sahana* 218; Hebbse gudda, 10 km from Sringeri, 30 November 2011, *A.N. Sringeswara* & *Sahana* 218a (UASB!).

Notes: The genus *Odisha* S. Misra is endemic to India and previously known only from the states of Odisha, Chhattisgarh, Jharkhand, Manipur, and Andhra Pradesh. It closely resembles the genus *Habenaria* Willd., but differs from it in having a tongue-like, erect, and apically lobed rostellum with reduced lateral lobes, which is not connected to the anther. *Odisha cleistantha* S. Misra is related to *Habenaria pelorioides* C.S.P.Parish & Rchb.f. but differs by having rather closed flowers, 3-lobed labellum, and tongue-shaped apically 3-lobed rostellum, which is not connected to the anthers. Kumar & al. (2018) synonymized this species under *Habenaria malintana* (Blanco) Merr. However, Misra (2019) reinstated the

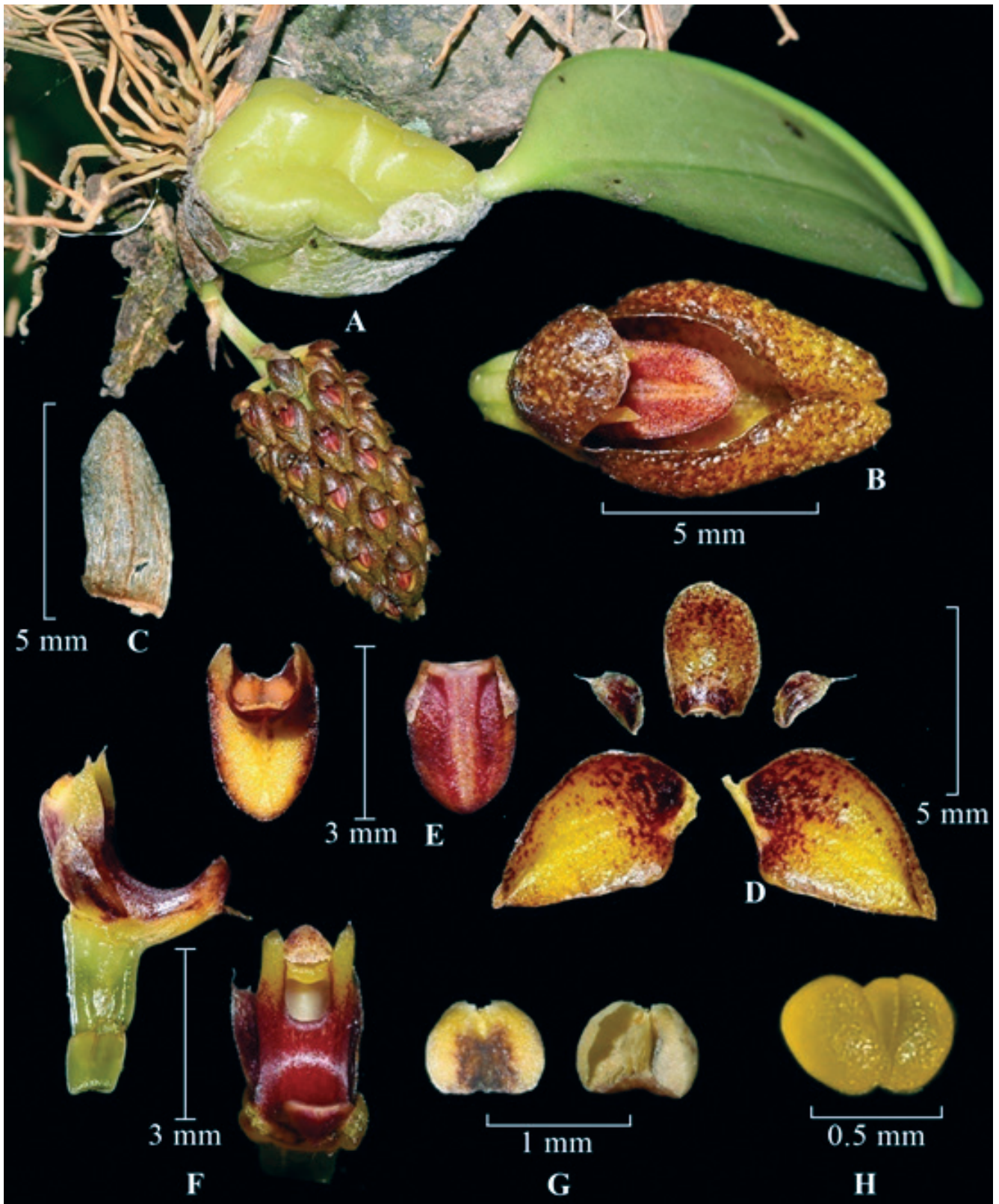


Fig. 1. *Bulbophyllum crassipes*. A. Whole plant; B. Flower; C. Floral bract; D. Flower dissection; E. Dorsal and ventral view of Lip; F. Side and front view of the Column; G. Anther cap; H. Pollinaria (Sahana & A.N.Sringswara S59, UASB). Illustration by A.N.Sringswara.

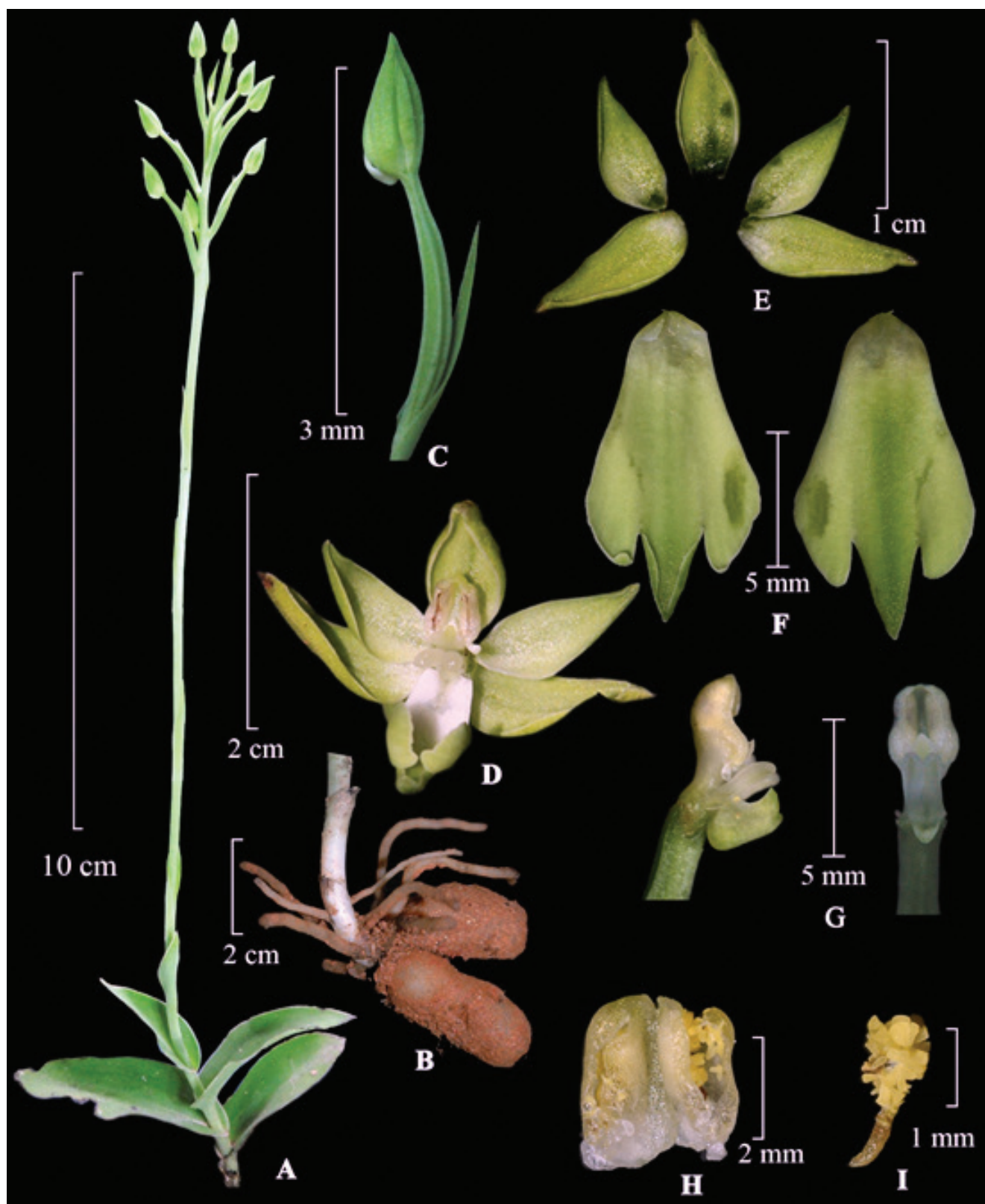


Fig. 2. *Odisha cleistantha*. **A.** Whole plant; **B.** Tuber; **C.** unopened flower; **D.** Flower (opened forcefully); **E.** Flower dissection; **F.** Lip (upper & lower surface); **G.** Column (Side & Front view); **H.** Anther cap covering pollinia; **I.** Pollinarium (A.N.Sringeswara & Sahana 218, UASB). Illustration by A.N.Sringeswara.

species giving sufficient characters by which it can be easily distinguished from the genus *Habenaria*. All earlier records of this species was from the Eastern Ghats and North-East India. The present collection about 1000 km southwest from the known nearest location forms the first report of this species from the Western Ghats.

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