

Three New Records of Orchid Species for Bangladesh

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Abstract

Exploration of orchid diversity in two floristically rich areas of Bangladesh e.g. Chittagong Hill Tracts and Sylhet resulted good number of orchid specimens. Collected specimens were critically examined and identified following taxonomic procedures. Among them three species, *Dendrobium capillipes* Rchb. f., *Panisea tricallosa* Rolfe. and *Pholidota articulata* Lindl., of the family Orchidaceae are being reported here as new angiosperm records for Bangladesh flora. Detailed description, flowering time, ecology, and geographical distribution of the newly reported orchid species have been provided with illustrations and photographs.

Keywords: *Dendrobium capillipes*, *Panisea tricallosa*, *Pholidota articulata*, New records, Bangladesh.

Introduction

Orchids are the most diverse group among the angiosperms. They are nature's most extravagant group of flowering plants distributed throughout the world from tropics to high alpine¹⁹. According to various estimates, about 25,000-35,000 orchid species under 600-800 genera have been recorded under Orchidaceae family^{4,8,10}. Most of the orchids are found in tropical America which estimate 8,266 species under 306 genera, while tropical Asia comes second with 250 genera and 6,800 species³. In Indian flora, this is the second largest family representing about 130 genera and over 880 species distributed mainly in Eastern Himalayas, Western Ghats and Khasia Hills.¹⁷ Later on the family is recognized to be represented in the flora 188 species under 72 genera, of which 117 species under 41 genera are epiphytic in nature and 71 species under 33 genera are terrestrial¹³. These species are distributed mainly in the hilly areas of greater Sylhet, Chattogram, Chittagong Hill Tract and Mymensingh district^{1,5-9,11-16,18,20}. Orchid flora of Bangladesh has not been studied completely and it is important to explore the orchid diversity of Bangladesh to complete the orchid flora of the country. The present work is aimed

to discover unexplored orchids from the remote areas of Bangladesh and to publish orchid flora of Bangladesh.

Materials and Methods

Orchid species were collected from Bandarban (Figure 1) and Sylhet (Figure 2) districts of Bangladesh.

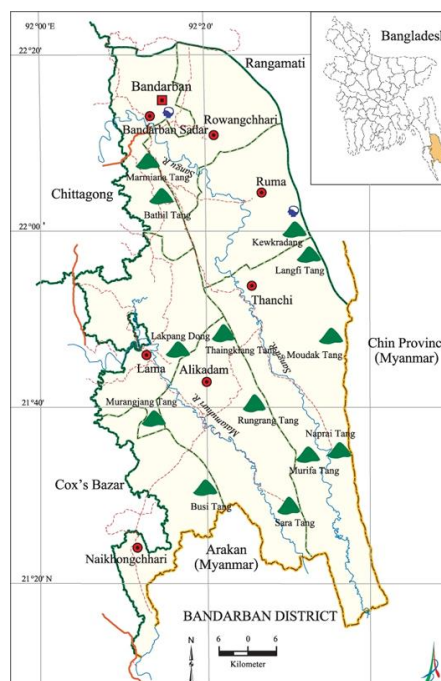


Figure 1. Location of Chittagong Hill Tracts, Bandarban, Bangladesh.

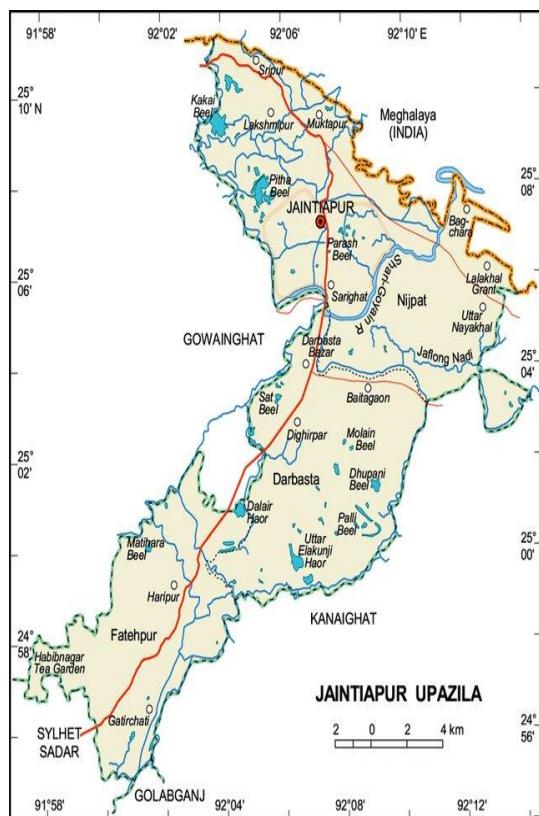


Figure 2. Location of Jaintiapur, Sylhet, Bangladesh.

The collected plants were grown at the Orchidarium of Chittagong University and flower of each species was dissected and critically examined under microscope and identified with consultation of relevant literature and orchid experts. The voucher specimens of all the studied species have been deposited at the Herbarium of Chittagong University (HCU).

Results and Discussion

In the present study *Panisea tricallosa* Rolfe, *Pholidota articulata* Lindl. and *Dendrobium capillipes* H.G. Reich. have been reported as new records for Bangladesh. The detailed description with enumeration, flowering time, habit, distribution and illustration of the each species has been provided.

1. *Dendrobium capillipes* Rchb. f., Gard. Chron. 1867: 997 (1867).

Synonyms: *Callista capillipes* (Rchb.f.) Kuntze, Revis. Gen. Pl. 2: 654 (1891); *Dendrobium acrobaticum* Rchb.f., Gard. Chron. 1871: 802 (1871); *Callista acrobatica* (Rchb.f.) Kuntze, Revis. Gen. Pl. 2: 654 (1891).

Description: Stems nearly compressed fusiform, 8–15 cm, at middle ca. 1.5 cm in diam., fleshy, unbranched, with many obtuse longitudinal ridges and few internodes. Leaves 2–4, near apex of stem, narrowly oblong, usually 10–12 × 1–1.5 cm, leathery, base dilated into clasping sheaths, apex slightly obtuse and obliquely emarginate. Inflorescences from old leafless stems, suberect, 12–15 cm, laxly 2- to several flowered; peduncle with 2 or 3 sheaths at base, membranous; floral bracts pale white, ovate, small, ca. 5 × 3 mm, apex acute. Pedicel and ovary pale yellowish green, ca. 2 cm. Flowers spreading; sepals and petals golden yellow, lip a deeper hue, with purplish red stripes, column golden yellow. Dorsal sepals ovate-lanceolate, ca. 12 mm, ca. 5 mm wide at middle, 3-veined, apex acute; lateral sepals nearly equal in size to dorsal sepal; mentum oblong, ca. 4 mm, obtuse-rounded. Petals ovate-elliptic, ca. 15 × 9 mm, 4-veined, apex slightly obtuse; lip subsensiform, ca. 20 × 25 mm, both surfaces densely pubescent, embracing column on both sides at base, margin undulate, apex emarginate. Column ca. 4 mm; anther cap ± tower-shaped, front margin subtruncate and notched; clinandrium broad, both lateral upper margins irregularly notched (Plate 1 and Figure 3).



Plate 1. *Dendrobium capillipes* Rchb. f.

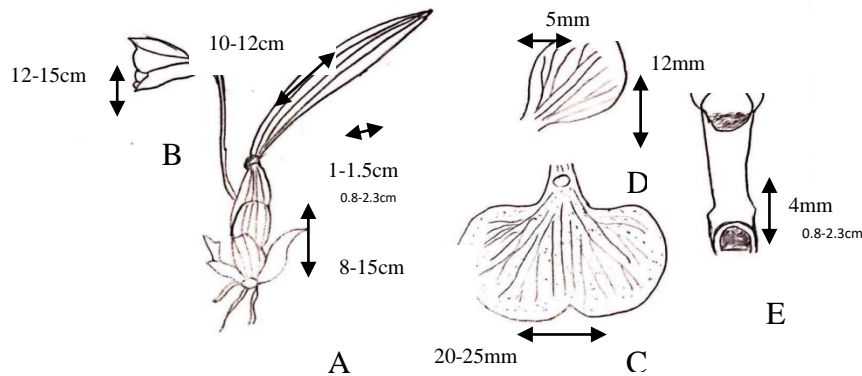


Figure 3. *Dendrobium capillipes* Rchb. f.: A. Plant; B. Flower; C. Lip; D. Sepals; E. Column

Flowering period: April

Ecology: This epiphytic orchid was collected at vegetative stage from a medium sized Jeolbhadi tree (*Garuga piñata*) (Gaertn.) Roxb. at high altitude in Keokaradong Hill.

Distribution: Bangladesh, India, Bhutan, Myanmar, Nepal, Thailand.² In Bangladesh the species occurs in Keokaradung, Bandarban.

Specimen examined: Bandarban; Keokaradung, 10. 04. 2018, M.K. Huda, M.M. Hoque, and M.O. Alam 217 (HCU).

2. *Panisea tricallosa* Rolfe, Bull. Misc. Inform. Kew 1901: 148 (1901).

Synonyms: *Sigmatogyne tricallosa* (Rolfe) Pfitzer in H. G. A. Engler (ed.), Pflanzenr., IV, 50(32): 133 (1907); *Sigmatogyne pantlingii* Pfitzer in H. G. A. Engler (ed.), Pflanzenr., IV, 50(32): 134 (1907); *Panisea pantlingii* (Pfitzer) Schltr., Orchideen Beschreib. Kult. Zücht.: 155 (1914); *Sigmatogyne bia* Kerr, J. Siam Soc., Nat. Hist. Suppl. 9: 236 (1933); *Panisea bia* (Kerr) Tang & Wang, Acta Phytotax. Sin. 1: 79 (1951); *Panisea unifolia* S. C. Chen, Acta Bot. Yunnan. 2: 304 (1980).

Description: Rhizome, 2–3 mm in diam., branched, rooting on nodes, with membranous sheaths. Pseudobulbs rather dense, often tufted, erect or suberect, brown when

dry, narrowly ovoid or subellipsoid, 7–20 × 4–10 mm, wrinkled when dry, base conspicuously contracted, apex 1- or 2-leaved. Leaf blades narrowly elliptic or suboblong, 3–6 × (0.5–) 0.8–2.3 cm, acute or obtuse; petiole 4–13 cm. Inflorescence proteranthous, 1-flowered; peduncles 2–3 cm; floral bracts ovate, 3–5 mm, scarious. Flowers pale yellow or greenish, 2–2.5 cm in diam., lip with 3 small spots at base, calli on disk orange, column pale yellow; pedicel including ovary ca. 1 cm. Sepals narrowly ovate, oblong-ovate, or broadly lanceolate, 12–19 × ca. 5 mm, dorsally carinate, 5-veined, acuminate; lateral sepals slightly oblique. Petals ovate oblong or nearly broadly lanceolate, 13–18 × ca. 4 mm, 3-veined, acute to acuminate; lip obovate-oblong to spatulate, 10–20 × 6–7 mm, sigmoid at base, entire, inconspicuously undulate lip obovate-oblong, 16–22 × 7–12 mm, narrowed into a claw from middle to base, concave or shallowly saccate at base, entire, upper margin often irregularly denticulate or ± crisped, apex subtruncate and apiculate, upper part with 2 short longitudinal lamellae; Column 5–7 mm, winged; wings very narrow in lower part, upper part wider, 1.5–2 mm wide on one side, apex surrounding column and slightly 3-lobed and irregularly denticulate (Plate 2 and Figure 4).



Plate 2. *Panisea tricallosa* Rolfe

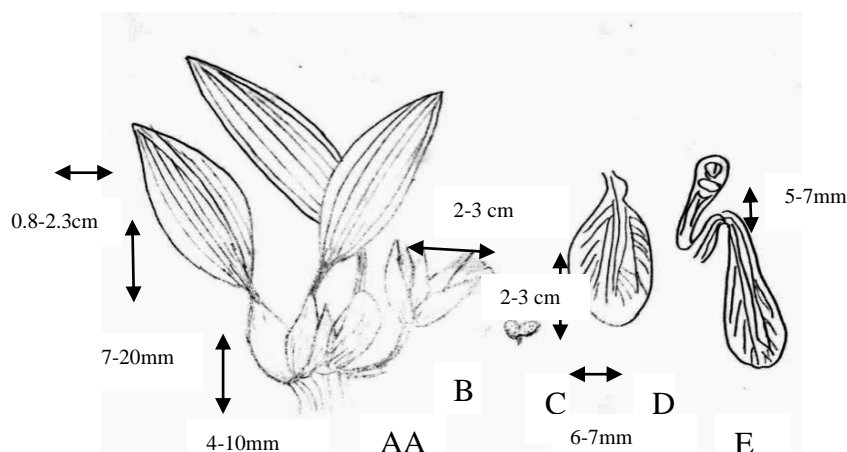


Figure 4. *Panisea tricallosa* Rolfe.: A. Plant; B. Flower; C. Pollinia; D. Lip; E. Column.

Flowering period: October to November.

Ecology: This epiphytic orchid grows on Gamar (*Gmelina arborea*) (Roxb.) DC tree at high altitude of Bandarban.

Distribution: Bangladesh, Bhutan, Nepal, North East India, Laos, Myanmar and Thailand.² In Bangladesh the species occurs in Bandarban.

Specimen examined: Bandarban: Nilgiri, 10. 04. 2018, M.K. Huda, M.M. Hoque, and M.O. Alam 207 (HCU).

3. *Pholidota articulata* Lindley, Gen. Sp. Orchid. Pl. 38 (1830).

Synonyms: *Coelogyne articulata* (Lindl.) Rchb.f. in W.G.Walpers, Ann. Bot. Syst. 6: 238 (1862); *Pholidota khasyana* Rchb.f., Bonplandia (Hannover) 4: 329

(1856); *Coelogyne khasyana* (Rchb.f.) Rchb.f. in W.G.Walpers, Ann. Bot. Syst. 6: 238 (1862); *Pholidota griffithii* Hook.f., Hooker's Icon. Pl. 19: t. 1881 (1889); *Pholidota obovata* Hook.f., Fl. Brit. India 5: 845 (1890); *Pholidota repens* Rolfe, Bull. Misc. Inform. Kew 1891: 199 (1891); *Pholidota lugardii* Rolfe, Bull. Misc. Inform. Kew 1893: 6 (1893); *Pholidota decurva* Ridl., J. Linn. Soc., Bot. 32: 328 (1896); *Pholidota articulata* var. *griffithii* (Hook.f.) King and Pantl., Ann. Roy. Bot. Gard. (Calcutta) 8: 147 (1898); *Pholidota minahassae* Schltr., Repert. Spec. Nov. Regni Veg. 10: 20 (1911); *Pholidota articulata* var. *obovata* (Hook.f.) Tang and F.T.Wang, Acta Phytotax. Sin. 1: 40. 79 (1951).

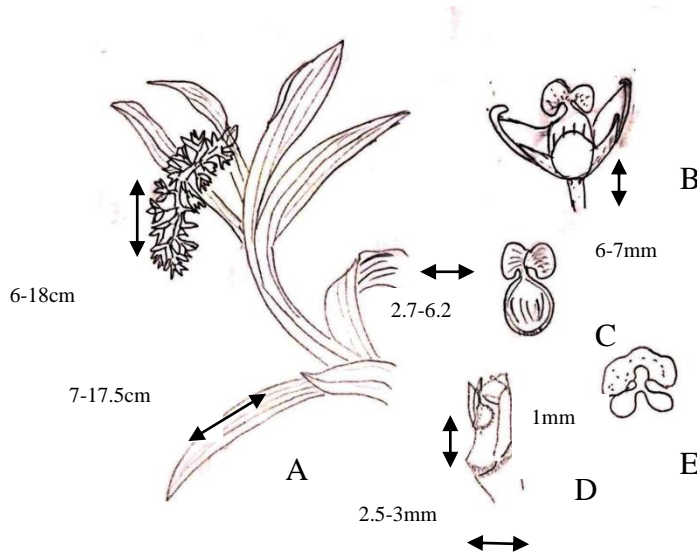


Figure 5. *Pholidota articulata* Lindl.: A. Plant; B. Flower; C. Lip; D. Column; E. Pollinia

4-5 mm, dorsally carinate, 5-veined; lateral sepals ovate, oblique, slightly wider than dorsal sepal. Petals oblong-lanceolate or suboblanceolate, ca. $7 \times 2-2.5$ mm, 5-veined; lip broadly oblong in outline, contracted at apical $1/4-1/3$ into epichile and hypochile; hypochile cymbiform, slightly wider than epichile, with 5 longitudinal lamellae near base; epichile transversely elliptic, 3-4 mm wide, margin crisped. Column 2.5-3 mm, ca. 1 mm wide, stout, apex winged; rostellum broadly ovate, 1.4-1.8 mm. Capsule ellipsoid to obovoid-ellipsoid, 1.8-2 cm, slightly 3- ridged; fruiting pedicel ca. 2.5 mm (Plate 3 and Figure 5).



Plate 3. *Pholidota articulata* Lindl.

Flowering period: June -August

Ecology: A large clump of this epiphytic orchid was collected from Gamar (*Gmelina arborea*) (Roxb.) DC tree.

Distribution: Bangladesh, Bhutan, Laos, Malaysia, Cambodia, India, Indonesia, Nepal, Myanmar and Thailand.² In Bangladesh the species occurs in Jaintapur, Sylhet.

Specimen examined: Sylhet: Jaintapur, 11.10.2018 M. K. Huda, M. M. Hoque, and M.O. Alam 236 (HCU).

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