

TWO NEW RECORDS OF THE GENUS *BULBOPHYLLUM* THOU. (ORCHIDACEAE) FOR BANGLADESH

M M Hoque, M K Huda, and M O Alam

Department of Botany, University of Chittagong, Chattogram- 4331, Bangladesh

Abstract

Bulbophyllum rufinum Rchb.f., and *Bulbophyllum crassipes* J. D. Hooker of the family Orchidaceae have been reported here as new angiospermic record for Bangladesh flora. Detailed examination with description, flowering time, ecology, and geological distribution of the species has been provided here with illustration and photographs.

Introduction

ORCHIDACEAE REPRESENTS the highly evolved family comprising 25,000-35,000 species and 600-800 genera (Dressler, 1993). The largest number of orchids is found in tropical America comprising 360 genera and 8,266 species while tropical Asia comes second with 250 genera and 6800 species (Dressler, 1990). In Indian flora, this is the second largest family represented with 130 genera and over 880 species distributed mainly in Eastern Himalayas, Western Ghats, and Khasia Hills (Sharma, 2000). Bangladesh is also rich in orchids with 179 taxa under 70 genera (Huda, 2008). Now the family is recognized to be represented in the flora by 72 genera and 188 species; of these, 117 species under 41 genera are epiphytic in nature and 71 species under 33 genera are terrestrial (Rahman *et al.*, 2017). Most of the orchid species are distributed mainly in the hilly areas of greater Sylhet, Chittagong, Chittagong Hill Tract, and Mymensingh district (Alam *et al.*, 1993; Zaman and Sultana, 1983).

The largest genus *Bulbophyllum* Thou. of orchids with about 2000 species is widely distributed throughout the tropics and sub tropics of the globe, particularly in Asia and Africa. According to Hooker (1890), there are about 79 species under the genus in India. Later Grant (1895) reported 41 species from the region of Burma, adjacent to Bangladesh. Holttum (1964) recorded 127 species from Malaya, Jayaweera (1981) reported only 11 species from Sri Lanka, and 62 species of the genus have been reported from India by Pradhan (1979). Only two species *B. lilacinum* Ridley and *B. lobbi* Lindl. have been reported from Bangladesh by Hooker (1890), Khan and Halim (1987), from Cox's Bazar and Chittagong. Ahmed *et al.* (1993) reported four species from Bangladesh *i.e.* *B. lilacinum* Ridley., *B. lobbi* Lindl., *B. neilgherrense* Wight., and *B. sessile* (Koen.) J.J.S., ten species and one variety have also been reported to occur in Bangladesh by Huda (2008).

In the present study, two species of the *Bulbophyllum* Thou. have been identified as new record from Bangladesh. The vegetative plants of these two species were collected from Chattogram and Bandarban district of Bangladesh. The collected plants were grown at the orchidarium. After flowering of the both species, the flowers of each species were dissected and critically examined under microscope and then identified with the consultation of the relevant literature (Heinig, 1925; Hooker, 1890; Lindley, 1830-40; Pearce and Cribb, 2002; Prain, 1903; Seidenfaden, 1982; Sinclair, 1956). The voucher specimens of each species have been deposited at the Herbarium of Chittagong University (HCU).

Taxonomic Description

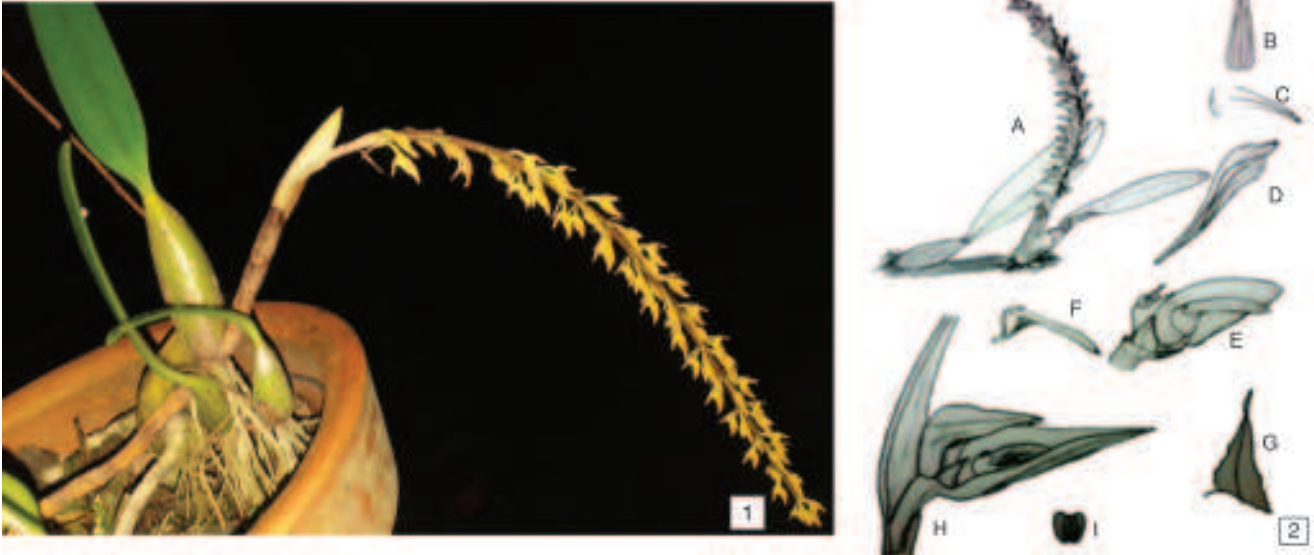
Bulbophyllum rufinum Rchb.f., Xenia Orchid. 3: 45 (1881)

Phyllorkis rufina (Rchb.f.) Kuntze, Revis. Gen. Pl. 2: 677 (1891)

Rhizome stout, 5-6 mm in diameter, with scale like sheaths, rooting from base of pseudobulbs. *Pseudobulbs* 8 cm apart on rhizome, pale yellow when dried, ovoid-conic, 2.5-4 cm, 1.5-2 cm in diameter, with a terminal leaf. *Petiole* 1 cm; leaf blade oblong, 11-20.5 cm × 3 cm, fleshy or thick leathery, base contracted into petiole, apex obtuse, and slightly emarginate. *Scape* from base of pseudobulb, slightly arching, 10 cm, often slender; raceme 8 cm, sparsely many flowered; *peduncle* with several sheaths at base; *floral bracts* narrowly oblong-lanceolate, 7-20 mm, apex obtuse. *Flowers* yellow, thinly textured. *Dorsal sepal* ovate-lanceolate, 6 × 2 mm, apex acuminate; *lateral sepals* ovate-lanceolate, 9 mm × 2.2 mm, their lower edges connate to each other, upper edges incurved, apex acute. *Petals* obliquely ovate-lanceolate, 2 mm × 0.9 mm, apex caudate; *lip* ligulate, 3 mm × 1 mm, margins finely papillate, grooved at adaxial base, with 2 auricles on both basal sides, apex obtuse;

auricles falcate, 0.5 mm, apex acute. *Column* 1.8 mm; *steliidia* subulate, 1 mm; foot 1.5 mm, with free part 0.5 mm. (Figs. 1-2).

of pseudobulbs. *Pseudobulbs* 2-30 cm apart from each other, ovoid or conic, 3-4 cm, 1.5-2.5 cm in diameter, usually 4- or 5-veined, with a terminal leaf. *Petiole*



Figs. 1-2. *Bulbophyllum rufinum* Rchb. f.: 1, Plant in the natural habitat; 2, A-I, A, Habit; B, Dorsal Sepal; C, Petal; D, Lateral sepal; E, Lip; F, Central part of flower; G, Petal; H, Flower; I, Anther.

Flowering Period

October to November.

Ecology

This epiphytic orchid was collected in vegetative stage from *Gmelina arborea* (Roxb.) DC. tree at high altitude.

Distribution

Bangladesh, Nepal, NorthEast India, Myanmar, and Thailand. In Bangladesh, the species found to occur in Bogalake, Bandarban.

Specimen Examined

Bandarban; Ruma, Bogalake, 10.04.2019, M. M. Hoque, M. K. Huda, and M. O. Alam 210 (HCU).

Bulbophyllum crassipes J. D. Hooker, Fl. Brit. India 5: 760. (1890)

Bulbophyllum careyanum (Hook.) Spreng., Syst. Veg. 3: 732 (1826); *Bulbophyllum careyanum* var. *crassipes* (Hook.f.) Pradhan, Indian Orchids: Guide Identif. & Cult. 2: 713 (1979); *Bulbophyllum careyanum* var. *ochracea* Hook.f., Fl. Brit. India 5: 710 (1890); *Bulbophyllum careyanum* var. *sikkimense* Lucksom, Orchids Sikkim NorthEast Himalaya: 700 (2007).

Rhizome stout, 3-4 mm in diameter, rooting from base

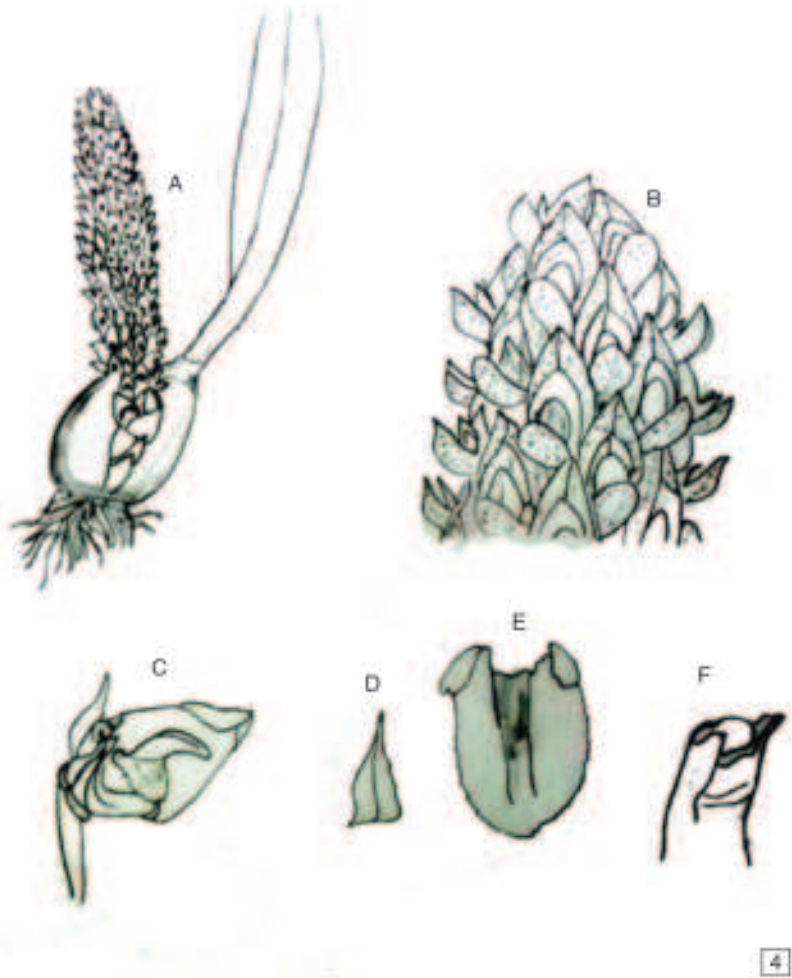
1-2 cm; *leaf* blade oblong, 12-17 cm × 2-3.5 cm, fleshy or thickly leathery, apex obtuse, and slightly emarginate. *Scape* from base of pseudobulb, arching, 4-17 cm; *raceme* 2-7 cm, densely many flowered; *peduncle* stout, base with 3 or 4 sheaths; *floral bracts* pale brown, ovate-lanceolate, 5-7 mm, apex acute. *Pedicel* and *ovary* 4-5 mm. *Flowers* yellowish brown. *Dorsal sepal* oblong, concave, ca. 6 mm × 3 mm, apex obtuse-rounded; *lateral sepals* ovate-lanceolate, much longer than dorsal sepal, base ca. 3.5 mm wide, their lower edges connate and upper edges incurved near apex to form an ovoid sac, apex acute. *Petals* obliquely triangular, 2.5-3 mm × ca. 2 mm, decurrent to column foot, margins often irregularly denticulate, apex shortly caudate; *lip* ligulate, longer than petals, fleshy, margin finely papillate, grooved at adaxial base, with 2 auricles on both basal sides; *auricles* subsquare, ca. 1 mm, apex truncate, and slightly retuse. *Column* ca. 2 mm; *steliidia* deltoid, ca. 1 mm, apex acute; *foot* ca. 2 mm, with free part ca. 1 mm; *anther* cap glabrous (Figs. 3-4).

Flowering Period

October.

Ecology

This epiphytic orchid was collected in vegetative stage from *Diterocarpus turbinatus* Gaertn.f. tree at high altitude.



Figs. 3-4. *Bulbophyllum crassipes* J. D. Hook.: 3, Plant in natural habitat; 4, A-F, A, Habit; B, Inflorescences; C, Central part of flower; D, Petal; E, Lip; F, Column.

Distribution

Bangladesh, Bhutan, NorthEast India, Malaysia (Penang), Myanmar, and Thailand. In Bangladesh, the species found to occur in Dudhpukuria-Dhopachari Wildlife Sanctuary.

Specimen Examined

Chattogram; Dhopachari Beat, Dudhpukuria-Dhopachari Wildlife Sanctuary, 28.07.2019, M. M. Hoque, M. K. Huda, and M. O. Alam 212 (HCU).

Acknowledgement

The authors gratefully acknowledge the Chittagong University research and publication section, Chattogram, Bangladesh for the financial support during the present

investigation and Department of Botany, University of Chittagong for logistic support.

References

- Ahmed, M., M. K. Pasha, and M. A. Aziz Khan. 1993. A taxonomic account of *Bulbophyllum* Thou. (Orchidaceae) from Bangladesh. *J. Bom. Nat. Hist. Soc.*, **91**(1): 78-85.
- Alam, Sk. S., K. Kondo, and R. Tanaka. 1993. A Chromosome study of eight orchid species in Bangladesh. *La Kromosome II*, **71**(72): 2456-64.
- Dressler, R. L. 1990. *The Orchids Natural History and Classification* (2nd ed.), Harvard University Press, London, U.K.
- Dressler, R. L. 1993. *Phylogeny and Classification of the Orchid Family*. Cambridge University Press, Cambridge, U.K.
- Grant, B. 1895. *The Orchid of Burma*. Hanthawaddy Press, Rangoon, Myanmar.

- Heinig, R. L. 1925. *List of Plant of Chittagong Collectorate and Hill Tracts*. Darjeeling, India.
- Hooker, J. D. 1890. *The Flora of British India*. Vol 5. L. Reeve and Co. Ltd., Kent, England.
- Holttum, R. E. 1964. *Orchids of Malaya, A Revised Flora of Malaya* Vol. 1 (3rd ed.). Botanic Gardens, Singapore.
- Huda, M. K. 2008. Orchidaceae. In: *Encyclopedia of Flora and Fauna of Bangladesh* (eds. Z. U. Ahmed, M. A. Hassan, Z. N. T. Begum, M. Khondker, S. M. H. Kabir, M. Ahmad, A. T. A. Ahmed, A. K. A. Rahman, and E. U. Haque) pp. 1-149. Asiatic Society of Bangladesh, Dhaka, Bangladesh.
- Jayaweera, D. M. A. 1981. Orchidaceae. In: *A Revised Hand Book to the Flora of Ceylon* (eds. M. D. Dassanayake and F. R. Fosberg) pp. 92-113. Amerind Publishing Co. Pvt. Ltd. New Delhi, India.
- Khan, M. S. and M. Halim. 1987. *Bulbophyllum lilacinum* Redley- A new angiospermic record for Bangladesh. *Bangladesh J. Bot.*, **16**(2): 203-05.
- Lindley, J. 1830-1840. *The Genera and Species of Orchidaceous Plants*. Ridgways, London, U.K.
- Pearce, N. R. and P. J. Cribb. 2002. *The Orchids of Bhutan*. Royal Botanic Garden, Edinburgh, U.K.
- Prain, D. 1903. *Bengal Plants*. India reprint (1966). *Botanical Survey of India, Calcutta*, **2**: 750-72.
- Pradhan, U. C. 1979. *Indian Orchids: Guide to Identification and Culture*, Vol. 2. Kalimpong, India.
- Rahman, M. A., M. K. Huda, and M. E. Rashid. 2017. Orchid Species Diversity in Bangladesh and their Revised Nomenclatural Updates. *Biodivers. Bull. Bangladesh*, **10**: 1-70.
- Seidenfaden, G. 1982. Orchid genera in Thailand X *Trichotosia* Bl. and *Eria* Lindl. *Opera Bot.*, **62**: 1-157.
- Sharma, O. P. 2000. Orchidaceae. In: *Plant Taxonomy*. Tata Mc Grew-Hill Publishing Co., Rajkamal Electric Press, New Delhi, India.
- Sinclair, J. 1956. *The Flora of Cox's Bazar, East Pakistan*. *Bull. Bot. Soc. Beng.*, **9**(2): 107-08.
- Zaman, M. A. and P. Sultana. 1983. Cytogenetics of orchids from Bangladesh *Spathoglottis plicata* Blume. and *Cymbidium bicolor* Lindl. Bangladesh. *J. Bot.*, **12**(1): 37-49.

Bulbophyllum is one of the largest genera in the orchid family Orchidaceae. With more than 2,000 species, it is also one of the largest genera of flowering plants, exceeded only by Astragalus. This genus is abbreviated in the trade journals as Bulb. It is found throughout most of the warmer parts of the world: Africa, southern Asia, Latin America, the West Indies, and various islands in the Indian and Pacific Oceans. S. Bulbophyllum alsiosum. Bulbophyllum alsiosum, blooming size. Orchid Species Photographs. IOSPE PHOTOS. Bulbophyllum is the largest genus in the orchid family Orchidaceae. With 1805 species, it is also one of the largest genera in the entire plant kingdom, exceeded only by Senecio and Euphorbia. This genus is abbreviated in the trade journals as Bulb. The center of diversity is in the montane forests of Papua New Guinea (more than 600 species) which seems to be the evolutionary homeland, though the genus is pantropical and widespread, occurring in Australia, Southeast Asia with over 200 species in Bulbophyllum is the largest genus in the orchid family Orchidaceae. With more than 2,000 species, it is also one of the largest genera of flowering plants, exceeded only by Astragalus.[2] This genus is abbreviated in the trade journals as Bulb. It is found throughout most of the warmer parts of the world: Africa, southern Asia, Latin America, the West Indies, and various islands in the Indian and Pacific Oceans.[1]. The center of diversity of this genus is in the montane forests of Papua New Guinea (more than 600 species) which seems to be the evolutionary homeland,[4] though the genus is pantropical and widespread, occurring in Australia, Southeast Asia (with over 200 species in Borneo), India, Madagascar (with 135 species, some endemic), Africa and in tropical central and. Bulbophyllum translucidum (Orchidaceae), eine neue Art von den Philippinen [Bulbophyllum translucidum (Orchidaceae), A New Species from the Philippines]. Die Orchidee. 2(4). [Herpetology 2020] Adelophryne amapaensis A New Amazonian Species of the Diminutive Frog Genus Adelophryne (Anura: Brachycephaloidea: Eleutherodactylidae) from the State of Amapá, Northern Brazil. Adelophryne amapaensis Taucce, Costa-Campos, Haddad & de Carvalho, 2020 DOI: 10.1643/CH-19-254 twitter.com/ PedroTaucce Abstr (Orchidaceae) from Bangladesh. Item Preview. remove-circle. Share or Embed This Item. EMBED. (Orchidaceae) from Bangladesh. by. Mokter Ahmed; M K Pasha; M A Aziz Khan. Publication date. 1994. Usage. Attribution-Noncommercial 3.0.