

***Crepidium* Blume (Orchidaceae) IN MANIPUR, INDIA WITH TWO NEWLY RECORDED SPECIES**

K. Chowlu^{1&2} and H. Bishwajit Sharma²

1. Botanical Survey of India, Arunachal Pradesh Regional Centre, Senki View, Itanagar, District Papum pare, Arunachal Pradesh 791 111
2. Orchid Research & Development Centre, Hengbung, P. O. Kangpokpi, Senapati District, Manipur 795 129, India

Corresponding author email: krishnachowlu@gmail.com

Abstract

The present paper highlights 4 species of the genus *Crepidium* from Manipur including two new additions, *Crepidium calophyllum* and *Crepidium khasianum*. All the species viz. *Crepidium acuminatum*, *Crepidium calophyllum*, *Crepidium khasianum* and *Crepidium purpureum* are described here with an identification key for the species.

INTRODUCTION

The genus *Crepidium* Blume characterised by herbs, terrestrial, rarely epiphytic or lithophytic. Stem cylindrical to pseudobulbous, fleshy. Leaves 2 to several, broad, thinly textured to fleshy, plicate, petiolate, petiole sheathing at base. Inflorescence apical, erect, unbranched; floral bracts persistent, often recurved or reflexed, lanceolate or setose. Flower usually not resurpinate, green, brown, yellow, pink, or purple. Dorsal sepal spreading, free, lateral sepals free or fused. Petals often narrower than sepals, free, spreading; lip erect, entire to lobed, auriculate at base or lacking auricles, apical margin entire or toothed, lacking spur, callus absent. Column without foot, with 2 apical arms on either side of clinandrium; anther cap movable, dorsal, dorso-ventrally flattened, attached by a slender filament, locules opening ventrally; pollinia 4, equal, in pairs, clavate, waxy, with 1 delicate viscidium or lacking viscidium; stigma elliptic to transversely elliptic; rostellum often obtuse or rounded at apex.

This genus *Crepidium* is represented by 280 species in the world (Govaerts *et al.*, 2014) distributed throughout the Asian tropics and subtropics and Australia with a few species in temperate Asia. In India it is represented by 10 species (Misra, 2007; Rao, 2007), and all the species are found in northeast. In Manipur, two species were reported (Kumar & Kumar, 2005) and with the addition of two new species, viz. *Crepidium calophyllum* and *Crepidium khasianum*, the number is increased to 4. These plants of *Crepidiums* were collected from different parts of Manipur during the last 5 years in vegetative condition and brought to the orchidarium of the Orchid Research & Development Centre, in Hengbung, Manipur. They were identified during flowering by consultation of literature (Hooker, 1890; Mukerjee, 1953; Pradhan, 1979; Katak, 1986; Hyniewata *et al.*, 2000; Pearce & Cribb, 2002; Rao, 2007; Lucksom, 2007, Chen *et al.*, 2009). All herbarium specimens mentioned in this paper are

deposited in the herbarium of Centre for Orchid Gene Conservation for Eastern Himalayan Region (COGCEHR, Herbarium, Hengbung, Manipur).

Crepidium acuminatum (D. Don) Szlachetko, *Fragm. Florist. Geobot.*, suppl. 3: 123. 1995.

Stem cylindrical, 4-5 mm diam. Leaves 3-5, obliquely ovate, ovate-oblong, or sub-elliptic, acuminate, base contracted into a sheath like. Inflorescence erect; peduncle 12-40 cm, wingless; rachis 3-9 cm, 10-or more flowered. Flowers c. 1 cm across, purplish red. Dorsal sepal narrowly oblong or broadly linear, 3-veined, margin revolute, obtuse; lateral sepals oblong, margin revolute, obtuse. Petals narrowly linear, margin revolute. Lip superior, ovate-oblong or obovate-oblong in outline, shallowly 2-lobed, with a sinus. 1 mm deep, with a pair of auricles decurrent backward. Column stout.

Flowering: May

Locality : Hengbung Hill.

Crepidium calophyllum (H. G. Reichenbach) Szlachetko, *Fragm. Florist. Geobot.*, suppl. 3: 125. 1995.

Stem cylindrical. Leaves 2-4, adaxially pale brown and stained with white on both sides, obliquely ovate, ovate-elliptic, or narrowly ovate, base narrowed into petiole margin crisped, apex acuminate. Peduncle nearly wingless; floral bracts narrowly lanceolate or nearly subulate. Flowers pale yellowish green, lip with purplish red base. Dorsal sepal suboblong, margin revolute, apex obtuse; lateral sepals broadly oblong-elliptic, margin revolute. Petals narrowly linear, apex obtuse. Lip superior, broadly ovate-elliptic or broadly oblong in outline, base with a central depression surrounded by a fleshy ridge; abruptly contracted toward apex into a short apiculus and shallowly 2-lobed, auricles ovate, decurrent backward embracing column. Column stout, apex with 2 wings.

Flowering: July

Locality : IT Camp, Hengbung.

Crepidium khasianum (J. D. Hooker) Szlachetko, *Fragm. Florist. Geobot.*, Suppl. 3: 127. 1995.

Stem 4-6 mm thick, cylindrical, fleshy with several nodes, sheathed at base. Leaves 3-4, obliquely ovate to ovate-lanceolate, acute, membranous, sheathing base, petiolate, margins undulate. Inflorescence erect, racemose; peduncle ribbed; rachis glabrous, laxly many flowered; pedicel ovary green. Flower 8-10 mm across, reddish yellow. Sepals unequal, reddish yellow; dorsal sepal linear oblong, acute; lateral sepals broadly ovate-oblong, obtuse. Petals narrowly linear, acute, margins recurved. Lip yellow, narrowly ovate, sagittate, apex divided into 2 broad to lanceolate lobes, apex flat. Column stout, fleshy.

Flowering: June-July

Locality : Hengbung.

Crepidium purpureum (Lindley) Szlachetko, *Fragm. Florist. Geobot.*, suppl. 3: 131. 1995.

Stem cylindrical, 2-4 cm, 5-7 mm in diam., fleshy, with several nodes. Leaves often 3 or 4, obliquely ovate or oblong, base contracted into a sheath like, amplexicaul, apex acuminate or caudate-acuminate. Inflorescence erect; peduncle nearly wingless; floral bracts lanceolate. Flowers red or occasionally pale yellow. Dorsal sepal sub-oblong, apex obtuse; lateral sepals broadly oblong or broadly ovate-oblong, apex obtuse or acute. Petals narrowly linear. Lip superior, subovoid-rectangular in outline, abruptly contracted near middle and shoulder like, base with a central depression, apex deeply 2-lobed, sinus deep; auricles ovate or ovate-lanceolate, decurrent backward embracing column. Column stout.

Flowering: June-July

Locality : Senapati

ACKNOWLEDGEMENTS

Sincere thanks to Director, Botanical Survey of India, Kolkata, also thanks to Head of Arunachal Pradesh Regional Circle, Botanical Survey of India, Itanagar for providing support and logistic. Also thanks to Mr. H. Kipgen, President of the Foundation for Environment and Economic Development Services, Hengbung, for facility and encouragement; to the SERB division of Department

of Science and Technology, Government of India, New Delhi for financial support to carry out the study on orchids of the Eastern Himalayan Region.

REFERENCES

- Chen, Q., Z. J. Liu, G. H. Zhu, K. Y. Lang, Z. H. Ji, Y. B. Luo, X. B. Jin, P. J. Cribb, J. J. Wood, S. W. Gale, P. Ormerod, J. J. Vermeulen, H. P. Wood, D. Clayton & A. Bell. (2009).** Orchidaceae. - In: Z. Y. Wu, P. H. Raven, & D. Y. Hong (eds.). *Flora of China*. Vol. 25. pp. 1-506. Science Press, Beijing & Missouri Botanical Garden Press, St. Louis.
- Chowlu, K., Y. Nanda, K. S. Thithila & A. Nageswara Rao (2014).** Two new additions to the orchid flora of Manipur, India. *The Orchid Society of India* 27 (1-2): 89-92.
- Govaerts, R., J. Dransfield, S. F. Zona, D. R. Hodel & A. Henderson (2014).** Word Checklist of Orchidaceae. Facilitated by the Royal Botanic Gardens, Kew. Published on the internet: <http://apps.kew.org/wcsp/> Retrieved 2016-02-25.
- Hooker J. D. (1890).** Orchidaceae In: *Flora of British India*. 5: 667-858 & 6: 1-198. Asford, Kent.
- Hynniewata, T.M, S. K. Katakai & B. M. Wadhwa (2000).** In: Hajra, P.K. & U. Chatterjee (eds.), *Orchids of Nagaland*. Botanical Survey of India, Calcutta. pp. 51-80.
- Katakai, S.K. (1986).** *Orchids of Meghalaya*. Govt. of Meghalaya, Shillong.
- Kumar C. S. & P. S. C. Kumar (2005).** *Orchid digest of Manipur, Northeastern India*. *Rheedea* 15(1): 1-78.
- Lucksom, S. Z. (2007).** *The Orchids of Sikkim and North East Himalaya*, Spectrum House, Siliguri. pp 688-772.
- Misra, S. (2007).** *Orchids of India*. Bishen Singh Mahendra Pal Singh, Dehradun. pp 279-320.
- Mukerjee, S.K. (1953).** *An enumeration of the orchids of Ukhrul, Manipur*. Notes Royal Botanic Garden Edinburgh. 21 : 149-154.
- Pearce, N. R. & P. J. Cribb (2002).** *The orchids of Bhutan*. Royal Botanic Garden Edinburgh, Royal Government of Bhutan.
- Pradhan, U. C. (1979).** *Indian Orchids: Guide to Identification and Culture*, Vol.-2. Self Published, Kalimpong. 2: 371-429.
- Rao, A. N. (2007).** *Orchid Flora of North East India - An Up Date Analysis*. *Bulletin Arunachal Forest Research* 23 (1 & 2): 6-38.
- Legends. Plate. 1. A.** *Crepidium acuminatum* (D. Don) Szlachetko B. *Crepidium calophyllum* (H. G. Reichenbach) Szlachetko C. *Crepidium khasianum* (J. D. Hooker) Szlachetko D. *Crepidium purpureum* (Lindley) Szlachetko.

PLATE 1



Crepidium acuminatum



Crepidium calophyllum



Crepidium khasianum



Crepidium purpureum