

A new species of *Crepidium* (Orchidaceae) from Meghalaya, North-east India

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Abstract

A new species, *Crepidium meghalayensis* M. Murugesan, Sushil K.Singh & A.A. Mao is proposed here, based on a recent collection from the Khasi hills (Ri-Bhoi district), Meghalaya, India.

Keywords

Orchidaceae, *Crepidium*, new species, Khasi Hills, India.

Introduction

The *Crepidium* Blume, remained under the cosmopolitan genus *Malaxis* Sol. ex Sw. until re-established by Szlachetko (1995). He has included about 167 species under *Crepidium* containing most of the Asiatic species of *Malaxis*. At present the genus is represented with c. 280 species found throughout the Asian tropics and sub tropics, Australasia and Indian ocean Islands with a few species in temperate Asia. The members of the genus are terrestrial or lithophytic and characterized by terminal, elongated inflorescence which bears many small non-resupinate flowers; the sessile labellum concave at the centre, with a membrane surrounding the cavity and large basal auricles. Fourteen species are recorded so far in India (Vij *et al.*, 2013) with maximum distribution in North-east India (10-11 species).

During a recent field exploration to the forests of Meghalaya, the authors came across a small population of *Crepidium* species growing in the community reserve forests of Ri-Bhoi district, Khasi hills, Meghalaya. The study of vegetative and flowering plant revealed a species that could not be matched with any known species under the genus, hence, the same has been described here as a new species.

Crepidium meghalayensis M. Murugesan, Sushil K.Singh & A. A. Mao, *sp. nov.* (Figure 1).

Closely allied with *Crepidium purpureum* (Lindl.) Szlach., but differs in having plants up to 55 cm high; leaves 4 – 5(-6), well developed 10 – 24 cm long and 2.5 – 9 cm wide, (5-)7 – 9- ribbed, ovate-elliptic or elliptic-lanceolate and often 1 – 3 reduced leaves; peduncle 4 (-5)-angled, 18 – 47 cm long, winged at base; sterile bracts 2 – 4 (5); floral bracts 6 – 13 mm long; flowers purple – dark purple, 11 – 15 mm across; pedicel and ovary 10 – 17 mm long; labellum comparatively larger (8 – 10 × 6 – 7 mm), broadly orbicular-ovate, convex, constricted just below to the middle portion, base 2-lobed, obtuse, overlapping or rarely dilated.

Type: India, Meghalaya, Ri-Bhoi district, Kbet Nongbri village near Nongpoh, on soil covered rocks, 02.07.16, longitude 25°54'34" N, latitude 92°0'50" E, 840 m asl, S.K. Singh *et al.* 110483(Holo & Isotypes: ASSAM).

Terrestrial or lithophytic herb, 23 – 55 cm high including inflorescence. Stem stout, glabrous, 7 – 10 cm high, sheathing at base, slightly pseudobulbous. Roots fasciculate, slender, up to 2.5 mm wide, appearing from the basal nodes of pseudobulbs. Pseudobulbs 1 – 1.5 × 0.5 – 1 cm, ovoid, underground, sheathing by 2 – 5 basal scales and leaf-bases, whitish. Leaves 4 – 5 (- 6), and 1 – 2 (3) reduced leaves, ovate-elliptic or elliptic-lanceolate, 10 – 24 × 2.5 – 9 cm, 7 – 9-ribbed, narrowed to sheathing at base, acute or very shortly acuminate at

apex, slightly-distinctly undulate at margin, petiolate or rarely sessile; leaf sheath 0.7 – 1.5 cm in diameter, more or less rigid; leaf petiole 2.5 – 4 × 1.2 – 1.7 cm, prominently abbreviated. Inflorescence raceme, 18 – 47 cm long, dark purplish; peduncle 15 – 40 cm long, 1 – 3 mm in diameter, 4 (-5) - angled, slightly winged at base and prominently ribbed towards apex; rachis 10 – 35 cm long, many-flowered, flowers laxly arranged at base of the inflorescence and dense towards apex. Sterile bract 2 – 5 in numbers, 3 – 7 × 0.5 – 1.5 mm, lanceolate, apex acute-acuminate, deflexed. Floral bracts numerous, 6 – 13 × 1 – 2 mm, usually longer than ovary, narrowly lanceolate or linear lanceolate, apex acuminate, green-purplish, deflexed. Flowers 1.1 – 1.5 cm across, slightly convex,

dark-purplish. Sepals subsimilar, oblong, subacute-obtuse or rarely rounded at apex; dorsal sepal 6 – 7 × 1.5 – 2 mm, oblong or lanceolate, subacute-obtuse at apex, margin involuted, 3-nerved; lateral sepals 4 – 5 × 2 – 3 mm, broadly oblong-ovate – triangular-ovate, subacute or obtuse at apex, margin involuted, 3-nerved. Petals 5 – 6 × 0.8 – 1.1 mm, linear or linear-lanceolate, obtuse or rarely truncate at apex, margin involuted. Labellum longer than sepals and petals, convex, fleshy, broadly orbicular-ovate, 8 – 10 × 6 – 7 mm when flattened, constricted just below to the middle portion, base divided in to 2 oblong lobes, slightly incurved at apex, auricles overlapping rarely dilated. Column fleshy, 1.5 – 2 mm long. Pollinia 2-paired, broadly obovate – falcate, 0.5 – 0.7 × 0.2 – 0.25

Table 1: Comparison of new species with the allied species:

Characters	<i>C. khasianum</i> (Hook.f.) Szlach.	<i>C. acuminatum</i> (D.Don) Szlach.	<i>C. purpureum</i> (Lindl.) Szlach.	<i>C. meghalayensis sp. nov.</i>
Plant length	20-30 cm high	14-30 cm high.	up to 30 cm high	23-55 cm high.
Leaves	4-5, ovate-elliptic or ovate-lanceolate, slightly oblique, greenish-grey flushed with purple, 4-9.5 × 1.5-4 cm, 5-7-ribbed	3 or 4, ovate-lanceolate, greenish, 5.5-12 × 2.5-6 cm, 5-7-ribbed	3-4, ovate-lanceolate, greenish, 7-18 × 4-5 cm, 5-7-ribbed	4-5(-6), ovate-elliptic or elliptic-lanceolate, greenish, 10-24 × 2.5-9 cm, (5)7-9-ribbed
Inflorescence	raceme, peduncle 7-16 cm long, deeply ridged; rachis 4-5 cm long	raceme, peduncle 13-28 cm long, ribbed; rachis 4-8 cm long	raceme, peduncle 9-14 cm long, ribbed; rachis 4-10 cm long	raceme; peduncle 18-47 cm long, 4 (5)-angled and winged at base and ribbed towards apex; rachis 10-35 cm long
Floral bracts	lanceolate, acute at apex, reflexed, 7-7 × 1-1.5 mm	lanceolate, subacute at apex, 3-4 × 0.5-1 mm	lanceolate, acuminate at apex, reflexed, 6-7 × 1-1.5 mm	lanceolate or linear-lanceolate, acuminate at apex, reflexed, 6-13 × 1-2 mm
Flowers	5-7 mm across, sepals and petals purple, labellum yellowish-green	10-13 mm across, uniformly yellowish-green tinged with red-purple or pink-purple	14-16 mm across, yellowish-green, tinged with red-purple or pink-purple	11-15 mm across, purple-dark purple
Labellum	oblong-ovate or triangular-ovate, concave, 2.5-3 × 1.5-2 mm, constricted below to mid portion; apex broad – transversely oblong, truncate, base 2-lobed, auricles dilated	broadly ovate or ovate-sagittate, concave, 6-7 × 4-5 mm, not constricted; apex notched or rounded or shallowly bilobed; base 2-lobed, auricles dilated	oblong-ovate, 7-9 mm long, convex, constricted below to mid portion; apex deeply bilobed, truncate-obtuse; base 2-lobed, auricles overlapping or often dilated	broadly orbicular-ovate, 8-10 × 6-7 mm, convex, constricted below to mid portion; apex deeply bilobed, obtuse; base 2-lobed, auricles overlapping
Pedicel and ovary	3-5 mm long	5-7 mm long	8-10 mm long	10-17 mm long

Source: Seidenfaden (1978), Pearce & Cribb (2002), Kataki (1986); and our own observations



Fig. 1. A-M. *Crepidium meghalayensis* A. A plant in-situ; B. A single plant; C. Leaves; D. A part of inflorescence; E. Arrangement of bract; F. Column; G. A flower- dorsal surface; H. The same in ventral surface; I. Sepals and petals (ventral); J. Labellum (dorsal); K. Anther cap; L. Pollinia; M. A fruit; N. *Crepidium purpureum* (= *Microstylis wallichii* var. *biloba*) A flower (after King & Pantling 1898).

mm, yellow colored. Ovary and pedicel 1 – 1.7 cm long, often tinged with purple, linear-fusiform, ridged.

Distribution and ecology: The flowering plants of this species were growing along the undisturbed forests edges, on soil covered moist rock at an altitude of 840 m. The population consisted of 6 –7 individuals found in vicinity of *Arisaema* spp., *Gastrochilus incospicuous* (Hook.f.) Kuntze, *Impatiens* spp., *Fimbristylis* spp., *Huperzia squarrosa* (G. Forst.) Trev., etc.

Etymology: Named after the Indian state of Meghalaya from where the type is based.

Notes and differentiation: The new species show affinities with *Crepidium purpureum* (Lindl.) Szlach., *Crepidium acuminatum* (D.Don) Szlach. and *Crepidium khasianum* (Hook.f.) Szlach.. However, these species are quite distinct in having comparatively smaller plants (upto 30 cm high), leaves 5-7-ribbed, smaller inflorescences (upto 28 cm high) smaller pedicel and ovary which is up to 10 cm long (table 1). *Crepidium purpureum* further differs in having smaller peduncle (9-14 cm long), flowers yellowish-green tinged with purple, labellum oblong-ovate, 7-9 mm long, convex, constricted below to middle portion, apex deeply bilobed, truncate-obtuse and base often dilated *Crepidium acuminatum* differ from the species in discussion by its yellowish-green often tinged with purplish flowers, labellum broadly ovate or concave, entire margined which apex are notched or rounded or shallowly bilobed and base 2-lobed with dilated auricles. While *Crepidium khasianum* differs in its concave, smaller flowers (5-7 mm across), purplish sepals and petals and yellowish-green labellum (Table 1).

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