

Rediscovery of *Crepidium crenulatum* (Orchidaceae) from the Western Ghats, India

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Abstract: *Crepidium crenulatum* (Ridl.) Sushil K. Singh, Agrawala & Jalal (Malaxidinae: Orchidaceae) was known only by its type collection made by R.H. Beddome from Nilgiris and was not recollected after 1888 from the type locality or any other places in the Western Ghats. Botanical surveys carried out in the grasslands of Pakasura Hills, led to locate the presumably extinct *Crepidium crenulatum*, after 132 years of its establishment. An amended description based on our recently collected specimens, and a photo plate of the species, is presented.

Keywords: *Malaxis*, Endemic, Recollection, Western Ghats, Chyawanprash and Taxonomy.

Introduction

Crepidium Blume is a genus with about 294 species distributed mainly in Tropical & Subtropical Asia and Pacific (POWO, 2023). About 18 species are recorded from India (Singh *et al.*, 2020; Schuitemen *et al.*, 2022); of these, 13 species are endemics (Singh *et al.*, 2019). The first author has collected some interesting terrestrial orchid specimens from the grasslands of Pakasura Hills, Nilgiri District. The collected specimen is characterized by its unique flabellate lip with 9-12 dentate apical teeth and hornlike stelia at the dorsal surface of the column. Critical studies with protologue and relevant literature (Ridley 1888; Seidenfaden, 1978-1979; Szlachetk, 1995;

Margońska & Szlachetko, 2001) it was identified as *Crepidium crenulatum* (Ridl.) Sushil K. Singh, Agrawala & Jalal, an endemic species of Nilgiri Biosphere Reserve (Margońska *et al.*, 2013; Nayar *et al.*, 2014; Singh *et al.*, 2015 & 2019) so far not been collected after Beddome's type collection (Joseph 1987; Karuppusamy *et al.*, 2022; Anusuba *et al.*, 2023). Thus, the present collection is a rediscovery after 132 years of its establishment. Therefore, a detailed account on the taxonomy, and geographical distribution of the species is presented here along with photo-plate, and a distribution map for the correct identification of the species.

Taxonomic Treatment

Crepidium crenulatum (Ridl.) Sushil K. Singh, Agrawala & Jalal, Orchids of India: 172. 2019; Schuit. & al., Monogr. Syst. Bot. Missouri Bot. Gard. 139: 68. 2022. *Microstylis crenulata* Ridl. J. Linn. Soc., Bot. 24: 346. 1888. *Malaxis crenulata* (Ridl.) Kuntze, Revis. Gen. Pl. 2: 673. 1891, nom. illeg., non. Blume, 1825; Seidenf., Bot. Tidsskr. 73(2): 102. 1978; Joseph, Orchids Nilgiris: 44. 1987. *Seidenfia crenulata* (Ridl.) Szlach., Fragm. Florist. Geobot., Suppl. 3: 122. 1995. *Crepidium crenulatum* (Ridl.) Kottaim., Int. J. Curr. Res. Biosci. Pl. Biol. 6(10): 40. 2019. *nom. superfl. Type: INDIA. Deccan, Western Nilgiris, Beddome 8108 (holo BM [digital image with barcode BM000082880!]).* **Figs. 1 & 2**

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Terrestrial herbs, up to 20 cm high. Roots 1.25 mm in diam., arising from the base of the pseudobulb, fibrous. Pseudobulbs 1–1.25 × c. 1 cm, broad-ovoid to pyriform, erect, fleshy, glabrous, entirely covered with sheathing leaf bases; new shoots arising from the base of the matured pseudobulbs. Leaves 2–3, 2–3.25 × 2–2.3 cm, basal one smaller, base clasping, lamina ovate to oblong-elliptic, entire, acute, prominently 5 veined, sparsely pubescent. Inflorescence apical on developing shoot upto 16 cm long, successive, angular; peduncle 6 cm long without sterile bracts; rachis 5–10 cm long, laxly 15–30-flowered, floral bracts minute, strongly reflexed and adpressed to the peduncle, 2–2.5 × c. 1.5 mm, ovate-triangular, entire, acute. Flowers 6 mm long, 3.5 mm across, tepals deep yellow, labellum bright yellow with purple tinge at disc, column pale purple, yellowish green in bud, glabrous, non-resupinate. Pedicle plus ovary c. 3 × 1 mm, curved, angular. Dorsal sepal ovate-lanceolate, 3.5–4 × 1.5–2 mm, entire, obtuse, outcurved, deflexed at apex, 3 veined; lateral sepals 2–2.25 × 1–1.5 mm, broadly ovate, entire, obtuse, outcurved, strongly deflexed and projecting towards dorsal sepal. Petals 3 × 1 mm, ovate, entire, conduplicate, slightly deflexed at middle, 3-veined. Labellum 2–2.25 × 3.5–4, flabellate-reniform, strongly deflexed at base, papillate, broadly toothed at apical margin, base fleshy, conduplicate, adnate to the base of the column; teeth 5, on each side of the mid-tooth, 0.2–0.4 × 0.2–0.5 mm, broad-triangular, obtuse; mid-tooth shorter than the lateral ones; disc c. 1 × 1.25 mm, deeply concave, glandular, callus c. 0.75 × 0.5 mm, projecting upwards at the base of the disc. Column c. 1 × 1 mm, stout, erect, apex having c. 0.75 mm long stelidia, foot absent; rostellum c. 0.5 mm long, attenuate; clinandrium 2-grooved; anther cap c. 0.75 × 0.75 mm, cordate, two lobed, creamy yellow; pollinia 4 in two groups of two each, sessile, yellow and waxy. Stigmatic cavity c. 0.25 × 0.5 mm, transverse

elliptic. Capsule c. 7 × 2 mm, vertically ridged.

Flowering & fruiting: Flowering and fruiting from October to December.

Habitat: *Crepidium crenulatum* is a rare ephemeral and currently known from the Pakasura Hills, Nilgiri Biosphere Reserve. It grows in the grasslands at elevations between 1700–1900 m above sea level. This species was found together with the *Biophytum intermedium* Wight, *Canthium rheedei* DC., *Curculigo orchioides* Gaertn., *Drosera peltata* Thunb., *Gentiana quadrifaria* Blume, *Habenaria longicornu* Lindl., *Impatiens clavicornu* Turcz., *Leucas suffruticosa* Benth., *Nicotaba nilgherrensis* (Nees) Lindau, *Osbeckia brachystemon* Naudin, *Rhodomyrtus tomentosa* (Aiton) Hassk., *Sisyrinchium rosulatum* E.P. Bicknell, *Striga lutea* Lour., *Strobilanthes neilgherrensis* Bedd., *Torenia diffusa* D. Don and *Wahlenbergia marginata* (Thunb.) A. DC.

Distribution: India (Kerala & Tamil Nadu). Endemic.

Specimens examined: INDIA, **Tamil Nadu**, Nilgiri District, Pakasuran Hills, 1890 m, 30.12.2023, G. Aazhivaendhan & C. Rajasekar 178278 (MH); Pakasura Hills, 1828 m, 10.12.2017, C. Rajasekar 224 (Bharathiar University Herbarium).

Notes: *Crepidium crenulatum* was originally described as *Microstylis crenulata* Ridl. by Ridley in 1888 based on the specimens collected by R.H. Beddome from Western Nilgiris. Other than this, there is no further collection available from any of the Indian herbaria. Joseph (1987) included the species in Orchids of Nilgiris solely based on Beddome's type collection and this was followed by the subsequent workers (Narasimhan & Irwin 2020; Karuppusamy *et al.*, 2022; Anusubha *et al.*, 2023). However, Joseph and Ansari (1989) did not include this species in Orchidaceae of Tamil Nadu due to the non-availability of specimens in Madras Herbarium (MH). *Crepidium crenulatum* is very closely similar to *C. malabarica* in general aspect, but it differs by the flabellate-reniform



Fig. 1. *Crepidium crenulatum* (Ridl.) Sushil K.Singh, Agrawala & Jalal.: **a.** Habit; **b.** Pseudo bulb; **c.** Inflorescence; **d.** lateral view of flower; **e.** front view of flower (photos by C. Rajasekar).

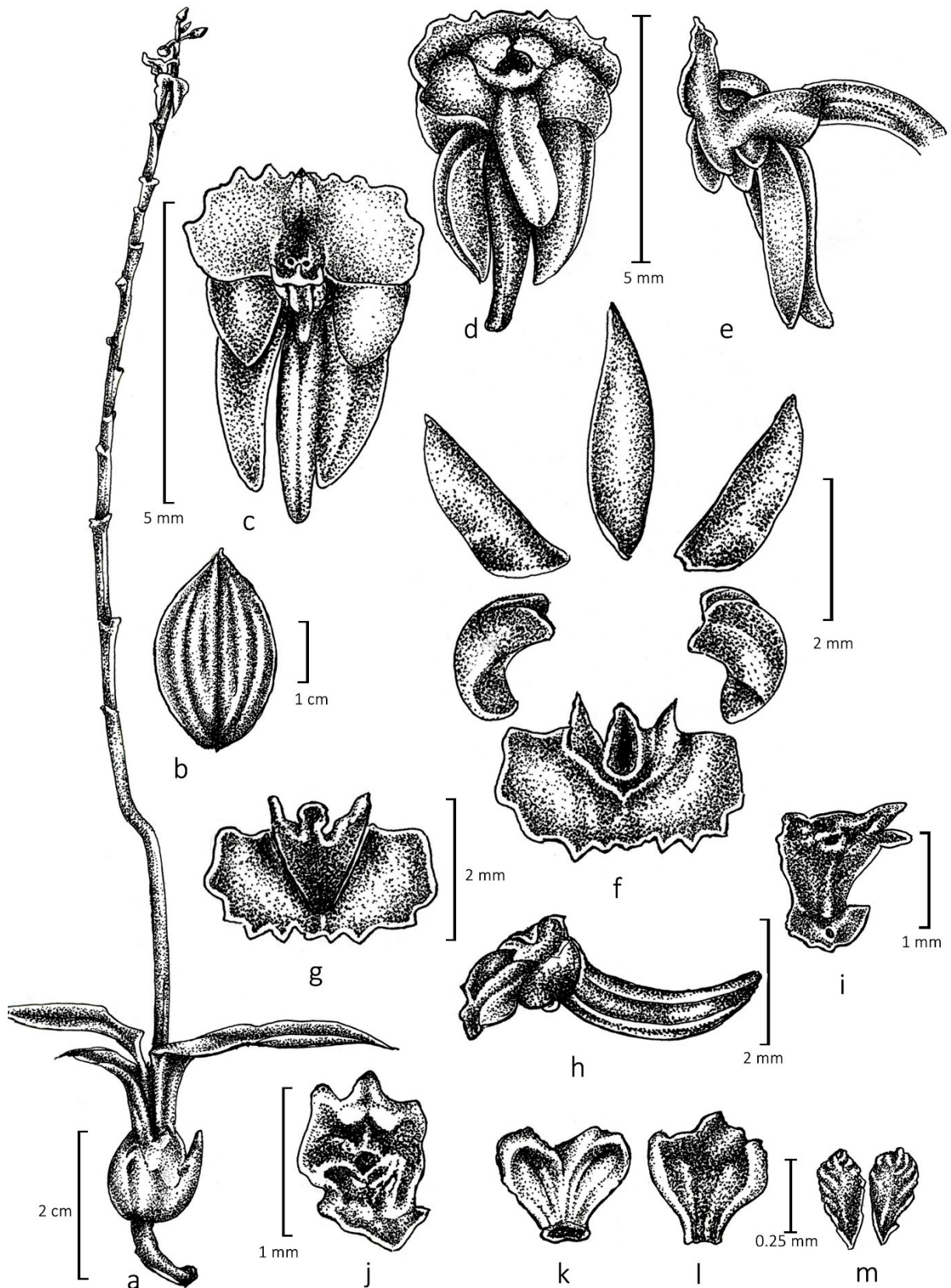


Fig. 2. *Crepidium crenulatum* (Ridl.) Sushil K.Singh, Agrawala & Jalal: **a.** Habit; **b.** Leaf; **c.** Flower—front view; **d.** Flower—back view; **e.** Flower—side view; **f.** Sepals, Petals and labellum; **g.** Labellum—back view; **h.** Labellum, column and ovary; **i.** Column—side view; **j.** Stigmatic cavity; **k** & **l.** Anther cap—front and back view; **m.** Pollinia. (drawn by R. Suresh, Coimbatore).

lip with 9-12 teeth (whereas *C. malabarica* having triangular lip with 9 teeth) and column with stelidia on dorsal surface (*vs.* column without stelidia in *C. malabarica*).

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