

## ***Molineria garoense* (Hypoxidaceae), a new species from Meghalaya, India**

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### **Abstract**

A new species of *Molineria* Colla (Hypoxidaceae), *M. garoense* D.K. Roy & D. Vijayan is described and illustrated from Meghalaya, India.

**Key words:** South Garo Hills, Meghalaya, new species, northeast India, *Molineria*.

### **INTRODUCTION**

The genus *Molineria* Colla belonging to the herbaceous perennial monocotyledonous family Hypoxidaceae is characterized and distinguished from its allied genus *Curculigo* Gaertner by comparatively smaller and unbeaked seeds without an extended end in the funicle and the seed surface with striate or not with a subtle tessellate ornamentation (Kocyan *et al.* 2011). It comprises of seven species and two varieties (Talukdar *et al.* 2015; Govaerts 2016). In India, the genus is represented by all the seven species and one variety namely *M. capitulata* (Loureiro) W. Herbert, *M. crassifolia* Baker, *M. gracilis* Kurz, *M. latifolia* (Dryander ex W. T. Aiton) W. Herbert ex Kurz, *M. oligantha* C.E.C. Fischer, *M. prainiana* Deb, *M. prainiana* var. *josephii* D.K. Roy, D. Verma & A.D. Talukdar and *M. trichocarpa* (Wight) N.P. Balakrishnan of which *M. oligantha* and *M. prainiana* var. *josephii* are endemic (Hooker 1894; Fischer 1932; Deb 1965; Talukdar *et al.* 2015).

During a field trip (June 2014) to Balpakram National Park, South Garo Hills district of Meghalaya state in India, one *Molineria* species having raceme with both bisexual (lower ones) and unisexual (upper ones, usually male) flowers growing in association with *Curculigo orchioides* Gaertner, was encountered. Critical observations on the specimens and literature survey (Hooker 1894; Fischer 1932; Deb 1965; Talukdar *et al.* 2015; Odyuo *et al.* 2016) have revealed number of morphological differences from all other known taxa of the genus, which warrant its description as a new species. Table 1 demonstrates the morphological differences between the allied species.

***Molineria garoense* D.K. Roy & D. Vijayan, sp. nov. [PLATE - I]**

This new species differs from *M. gracilis* Kurz in having glabrous lamina surface, shorter (15 cm) pseudopetiole and clavate stigma; from *M. oligantha* C.E.C. Fischer in 5 – 7-flowered raceme, linear-lanceolate bracts, comparatively longer, to 1 cm long pedicel; from *M. trichocarpa* (Wight) N.P. Balakrishnan in having smaller, to 15 cm long pseudopetiole,

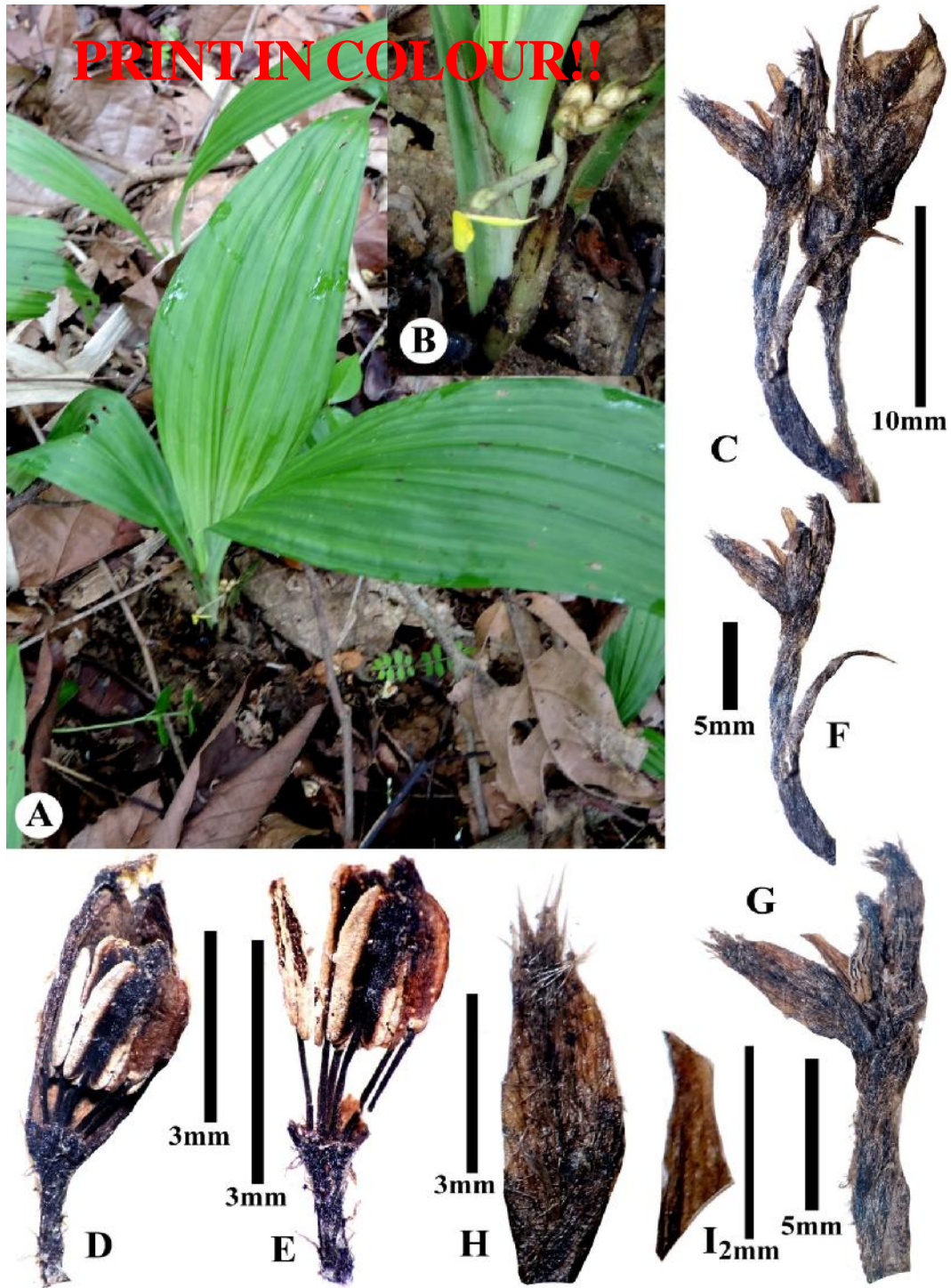


PLATE - I. *Molineria garoense* D.K. Roy & D. Vijayan: A. Habit; B. Basal parts of pseudopetioles with inflorescence; C. Raceme; D. Male flower; E. Stamens with pedicel; F. Bisexual flower with bract; G. Bisexual flower showing perianth segments, stamens & gynoecium; H. Outer perianth segment; I. Inner perianth segment

glabrous lamina surface, comparatively shorter, to 1 cm long pedicel, 5 – 7-flowered raceme and clavate stigma and from them in having 10 – 27 cm long, 3.0 – 5.5 cm wide, elliptic-oblongate lamina, comparatively smaller, to 7 cm long scape and elliptic-lanceolate perianth segments.

**Types: INDIA.** Meghalaya: South Garo Hills District, Balpakram National Park, Helipad area, alt. 500 m, 6<sup>th</sup> June 2014, *D.K. Roy 130181* (Holotype: ASSAM!; Isotype: ASSAM!); Balpakram National Park, Helipad-Hatisia Beat, alt. 450 m, 10<sup>th</sup> June 2014, *D.K. Roy 130299* (Paratype: ASSAM!).

Rhizomatous herbs, to 30 cm high. Rhizome tuberous, with creeping, slender stolons. Leaves often 3 – 4; pseudopetiole channelled, 5 – 15 × 0.3 – 0.5 cm, glabrous, sheathing at base; leaf-blade elliptic-oblongate, 10 – 27 × 3.0 – 5.5 cm, papery, entire, acuminate, glossy, glabrous, veins prominent. Scapes flattened, 4 – 7 cm long, ca. 0.2 mm wide, densely brown tomentose. Racemes short, lax, 2 – 3 cm long, 5 – 7-flowered. Flowers yellow, bracteate, upper ones usually males without style, lower ones bisexual. Floral bract 1, linear-lanceolate, 1.2 – 2.0 cm long, ca. 2 mm wide, green, densely hairy along midrib and margin abaxially, glabrous adaxially. Pedicel tomentose, 0.6 – 1 cm long. Perianth 0.5 – 0.6 cm across, segments six, in two alternative whorls (three in each); outer segments elliptic-lanceolate, 0.6 – 0.7 × ca. 0.2 cm, obtuse, tomentose abaxially with an apical tuft of hairs; inner segments elliptic-lanceolate, 0.4 – 0.5 × ca. 0.1 cm, glabrous. Stamens 6, free; filaments 1.5 – 2.0 mm long; anthers erect, lanceolate, 2.0 – 2.5 mm long, 0.5 – 1.0 mm wide, dorsifixed, dithecal, obtuse, sagittate at base, with longitudinal dehiscence. Ovary oblong, 3-carpelled, 0.5 – 0.7 × ca. 0.2 cm, densely villous; style linear, 3.5 – 4.0 mm; stigma clavate. Fruit not seen.

**Table 1.** Morphological comparison between *M. garoense*, *M. gracilis*, *M. oligantha* and *M. trichocarpa*

Character	<i>M. garoense</i>	<i>M. gracilis</i>	<i>M. oligantha</i>	<i>M. trichocarpa</i>
Pseudopetiole (length)	5 – 15 cm	20 – 50 cm	6 – 18 cm	7 – 35 cm
Leaf-blade	Elliptic-oblongate, 10 – 27 × 3 – 5.5 cm, glabrous	Lanceolate to suboblong-lanceolate, 20 – 50 × 2.5 – 5 cm, adaxially glabrous, abaxially pilose on veins	Elliptic-lanceolate, 16 – 30 × 1.7 – 3.8 cm, glabrous	Elliptic-lanceolate to linear, 15 – 50 × 2.5 – 3.5 cm, pilose or glabrescent
Scape (length)	4 – 7 cm	10 – 20 cm	8 – 10 cm	5 – 10 cm
Raceme	2 – 3 cm long, 5 – 7-flowered	3 – 6 cm long, 10 – 12-flowered	2 – 3 cm long, 2 – 3-flowered	3 – 5 cm long, 6 – 30-flowered
Bract	Linear-lanceolate	Linear-lanceolate	Lanceolate	Linear
Pedicel	0.6 – 1 cm long	0.5 – 1.5 cm long	0.5 – 0.6 cm long	3.0 – 3.5 cm long
Perianth segments	Elliptic-lanceolate, 0.4 – 0.7 cm long, outer ones tomentose abaxially with an apical tuft of hairs, inner ones glabrous	Suboblong, 0.8 – 1 cm long, outer ones abaxially hairy on midvein, inner ones glabrous	Elliptic-oblong to subcircular or broadly oblong, 1.0 – 1.1 cm long, outer ones glabrous or hairs on back with an apical tuft of hairs, inner ones glabrous	Obtuse, 0.6 – 0.8 cm long, outer ones abaxially hairy on midvein, inner ones glabrous
Stigma	Clavate	Capitate	Clavate	Capitate
Ovary (length)	0.5 – 0.7 cm	0.8 – 1 cm	0.5 – 1.1 cm	0.8 – 1.3 cm

**Phenology:** Flowering in May to June.

**Distribution:** Currently known only from the type locality.

**Etymology:** The species epithet is named after the place of occurrence, i.e. Garo Hills of the state of Meghalaya, India.

Differences of *M. garoense* from its related species has been elaborated in Table 1.

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