



## *Chlorophytum assamicum* (Asparagaceae), a new species from Northeast India

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The genus *Chlorophytum* Ker Gawler (1808: 1071) (Asparagaceae), includes about 200 species (Govaerts *et al.* 2012) distributed in the Old World tropics (Mabberley 2017). In India, this genus is represented by 19 species (Malpure & Yadav 2009; Chandore *et al.* 2012), including the new species proposed below. Indian species of *Chlorophytum* are usually forest dwellers and are cryptophytic with aboveground organs disappearing in the dry season (Chandore *et al.* 2012). Most of the members of *Chlorophytum*, reported from India have their distribution in Western Ghats except *C. nepalense* (Lindley 1826: 277) Baker (1876: 320), *C. comosum* (Thunberg 1794: 63) Jacques (1862: 345), *C. breviscapum* Dalzell (1850: 141), and *C. arundinaceum* Baker (1876: 323) growing in northeastern Himalaya (Adsul 2015).

While inventorying the flowering plants in Behali Reserve forest, in the Sonitpur district of Assam (northeastern India), the authors met an unusual species of *Chlorophytum* as an element of shady moist mixed deciduous forest. After detailed study of the specimen morphology and analysis of relevant literature, the plant is now recognised as a new species of *Chlorophytum*.

### Description of the new species

*Chlorophytum assamicum* D.Borah & A.P.Das *sp. nov.* (Fig. 1)

The new species is quite similar with closely allied *C. tuberosum* and *C. arundinaceum* in their habit, shape and size of leaves, type of inflorescence and overall flower structure. It can be easily distinguished from these two species for the presence of subterranean rhizomatous rootstock bearing narrowly fusiform roots (vs. broadly fusiform in *C. arundinaceum* and ellipsoid to cylindrical oblong in *C. tuberosum*), the presence of a sterile bract (vs. absent in both) in the peduncle, the long pedicel without any articulation (vs. pedicel with an articulation at middle or below middle in *C. arundinaceum* and below middle in *C. tuberosum*), the indistinct venation in perigone segments (vs. 3-veined in outer and 5-veined in inner perigone segments in *C. arundinaceum* and 7-veined in outer as well as inner perigone segments in *C. tuberosum*), the filament slightly longer than anthers as well as dehiscent by apical pores (vs. shorter or equal to anthers in *C. arundinaceum* and shorter than anthers in *C. tuberosum* and dehiscent by longitudinal slits in both).

**TYPE:**—INDIA. Assam: Sonitpur district, Behali Reserve Forest, 26°54'03"N 93°15'45"E, elev. 90 m, 26 May 2018, D. Borah & P. Kafley 054 (holotype, CAL!; isotype, ASSAM!).

Perennial terrestrial rosulate herb, erect or sub erect leaves to 45 cm long. Rhizomatous rootstock subterranean, horizontal to oblique, 2.5–6 × 1.2–1.5 cm; roots 30–60, 10–28 cm long, 5–8 mm thick, narrowly fusiform, white; slender secondary roots mostly produced from below the fusiform area. Cataphyll one with a very small limb. Leaves sessile, rosulate, 6–12 to a plant, spreading, imbricating at base; leaf blade 15–45 × 5–6 cm, broadly lanceolate, margin entire-hyaline, slightly undulate, acuminate, base gradually narrowed down, green, leathery, both surfaces glabrous; veins 24–28, parallel, main vein channelled on upper surface. Scape solitary, unbranched, peduncle 17–25 cm long, terete, glabrous, without intermediate node, raceme 5–6 cm long, about 1/4<sup>th</sup> length of the scape; lowermost bract sterile, larger than others, 6–7 × 0.25–0.35 cm, green at the beginning but soon turning blackish-brown, subulate, entire, long-acuminate, glabrous. Fertile bracts ovate-acuminate, crenate, whitish, 1–2 × 0.5–0.6 cm, thinly herbaceous, margin hyaline-translucent, with 5 greenish veins, glabrous, soon withers. Bracteoles 3, recurved, triangular-ovate, whitish, turning blackish-brown in flower, 1–5 × 1–3 mm. Pedicels 1–3 to a node, 0.6–0.8 cm long, terete, glabrous, greenish white, without an articulation. Flowers 1.3–1.8 cm across. Perigone segments in two whorls, free, white, 1.1–1.3 × 0.3–0.4 cm, ovate lanceolate, obtuse, veins obscure. Stamens in two whorls, 0.8–1.1 cm long, erect; filaments 0.5–0.6 cm long, terete, white, glabrous, slightly longer

than anthers, smooth; anthers 0.3–0.4 cm long, yellow, dehiscent with one apical pore on each side of the minute terminal appendage, later furrowing below. Ovary terete, 2.5–4 × 1.9–2 mm, light greenish, 3-lobed; style 1, terminal, 1–1.4 cm long, straight, white, glabrous; stigma elongate, finely papillose. Immature capsule green, triquetrous, sulcate, ca. 1.2–1.5 cm long. Seeds not observed.



**FIGURE 1.** *Chlorophytum assamicum*. **A.** Habitat. **B.** Habit. **C.** Rootstock. **D.** Inflorescence. **E.** A single flower showing bracts. **F.** Perigone segments. **G.** Bracteole. **H.** Flower with the perigone removed, showing the stamens and the pistil. **I.** Stamen with apical pore on each side. **J.** Gynoecium. **K.** Capsule. Photographs by Dipankar Borah and Parixit Kafley.

**Phenology:**—Flowering from April to May, fruiting from May to June.

**Etymology:**—The specific epithet refers the Indian state of Assam where the new species was collected.

**Distribution:**—*Chlorophytum assamicum* grows in dense mixed deciduous forests of Behali Reserve Forest, Sonitpur district of Assam in Northeast India at elevation about 90 m a.s.l. Grows in association with *Sterculia lanceolata* var. *coccinea* (Jack) Phengklai, *Chloranthus elatior* Link, *Coffea benghalensis* B.Heyne ex Schult., *Clerodendrum laevifolium* Blume, *Dalhousiea bracteata* (Roxb.) Graham ex Benth., *Gnetum gnemon* L., *Dracaena petiolata* Hook.f., *Mycetia nutans* (R.Br. ex Kurz) Razafim. & B.Bremer, *Tropidia curculigoides* Lindl., *Tacca integrifolia* Ker Gawl., *Amischotolype hookeri* (Hassk.) H.Hara.

**Conservation status:**—The IUCN status for the new species was “Not Evaluated” as only two populations within a diameter of 1 km were detected. One population had 10 plants and the other had nearly 20 individuals. The habitat is a natural reserve forest, and due to the increasing human pressure for collection of firewood as well as other non-timber forest products, the population is under severe threat.

### Acknowledgements

The authors are grateful to the Forest department of Biswanath district of Assam for providing necessary permissions to carry out the study within the protected area and are also thankful to the anonymous reviewers for their careful and meticulous review, which has helped improve the quality of the manuscript.

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