

A NEW SPECIES OF *DREPANOLEJEUNEA* (MARCHANTIOPHYTA: LEJEUNEACEAE) FROM INDIA

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ABSTRACT

A new epiphyllous liverwort species, *Drepanolejeunea devendrae* is described and illustrated here from Umiam, Ribhoi district, Meghalaya.

Keywords: *Drepanolejeunea devendrae*, New species, India.

INTRODUCTION

The genus *Drepanolejeunea* (Spruce) Schiffn. is represented by 14 species in India (Pande & al., 1957; Udar & Awasthi, 1979, 1982, 1984; Grolle, 1984; Grolle & Zhu, 2000; Singh & Nath, 2007; Asthana & Shukla, 2009; Dey & al., 2009; Dey & Singh, 2010). Except *D. pentadactyla* (Mont.) Steph. and *D. ternatensis* (Gottsche) Steph. which are distributed in Western Ghats, all are recorded from North-East India, including Eastern Himalaya, and many of them are epiphyllous in nature.

During the course of studies on diversity and distribution of Hepaticae and Anthocerotae of North-East India, the authors came across an epiphyllous population from Umiam, Ribhoi district of Meghalaya. Subsequent taxonomic studies of the specimen revealed a hitherto undescribed species, which is described here as *Drepanolejeunea devendrae* Sushil K. Singh & M. Dey.

***Drepanolejeunea devendrae* Sushil K. Singh & M. Dey sp. nov.**

(Fig. 1)

This species can be differentiated by its leaf lobes which are ovate with rounded - obtuse apices and finely denticulate - nearly entire margins, thin - slightly thick-walled leaf cells with small trigones but devoid of intermediate thickenings; leaf lobule, 1/3 - 2/5 as long as the leaf lobe with the free lateral margin bordered by 4 rectangular - linear cells; and suborbicular - oblong, 2/3 - 3/4 bilobed underleaves with subparallel, lanceolate - triangular-lanceolate lobes which are 5 - 7 cells long, 2 - 3 (-4) cells wide at base, 1 - 2 cells uniseriate at apex.

Type: North-East India, Meghalaya, Ribhoi district, Umiam, c. 900 m, 07.12.2011, S.K. Singh 124302 (Holotype: CAL; Isotypes: ASSAM).

Plants small, dull green when fresh, yellowish brown in herbarium; shoot 4 - 7mm long, 0.6 - 0.85mm wide; branching '*Lejeunea*' type, irregular. Stem orbicular in outline in transverse section, 55.0 - 67.5µm, 4 cells across the diameter; cortical cells in 7 vertical rows, subquadrate - rectangular, 7.5 - 15.0 × 10.0 - 22.5µm, slightly thick-walled; medullary cells in 3 vertical rows, polygonal, 7.5 - 10.0 × 7.5 - 12.5µm, slightly thick-walled; ventral merophytes of stem 2 cells wide. Leaves imbricate, obliquely spreading; leaf lobe ovate, 0.32 - 0.43mm long, 0.25 - 0.33mm wide, apex rounded - obtuse, margins finely denticulate - nearly entire, dorsal margin arched, ventral margin almost straight - very slightly arched; apical leaf cells subquadrate - polygonal, 7.5 - 12.5 × 10.0 - 15.0µm; median leaf cells polygonal, 17.5 - 25.0 × 15.0 - 22.5µm; basal leaf cells polygonal, 17.5 - 37.5 × 17.5 - 27.5µm, walls thin - slightly thick with small trigones, intermediate thickenings absent; cuticle smooth; oil-bodies not seen; ocelli (1-) 2 per leaf lobe, suprabasal, 37.5 - 57.5 × 25.0 - 30.0µm; leaf lobule inflated, 1/3 - 2/5 as long as the leaf lobe, oblong ovate - ovate, 0.13 - 0.17mm long, 0.09 - 0.11mm wide, bidentate, first tooth unicellular, elongate, strongly curved; second tooth obsolete; hyaline papilla at the proximal side of first tooth; free lateral margin bordered by 4 rectangular - linear cells; keel arched, smooth. Underleaves distant, 2 - 3 times as wide as stem, suborbicular - oblong, 0.09 - 0.15mm long, 0.07 - 0.13mm wide, bilobed to

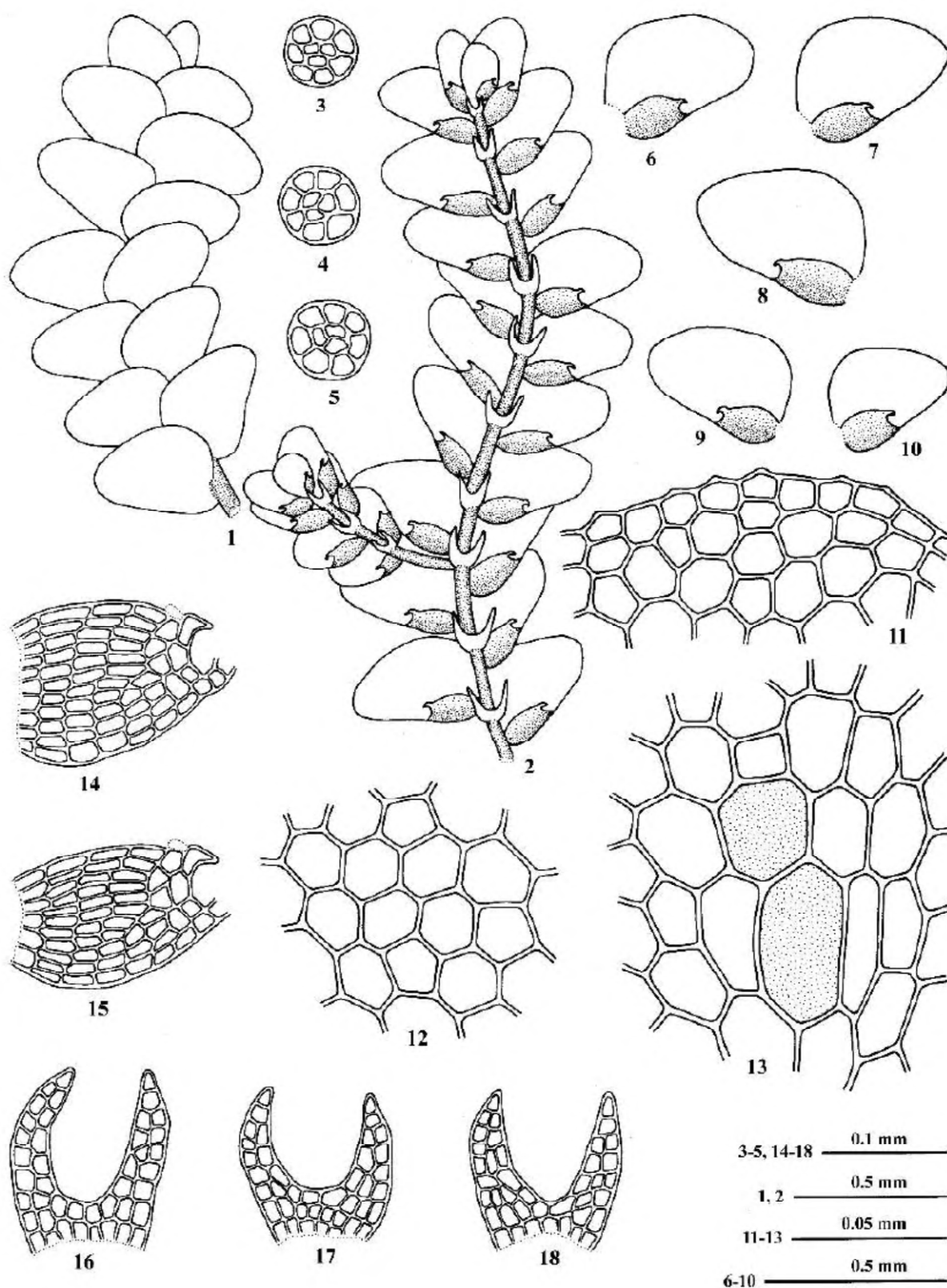


Fig. 1. *Drepanolejeunea devendrae* : 1. A portion of plant in dorsal view, 2. The same in ventral view (rhizoids not drawn), 3 - 5. Transverse sections of stem, 6 - 10. Leaves, 11. Apical leaf cells, 12. Median leaf cells, 13. Basal leaf cells, showing basal ocelli, 14, 15. Leaf lobules, 16 - 18. Underleaves.

2/3 - 3/4 of underleaf length; lobes lanceolate - triangular-lanceolate, 5 - 7 cells long, 2 - 3(-4) cells wide at base, 1 - 2 cells uniseriate at apex, sub parallel. Rhizoids numerous, hyaline, fasciculate at the base of underleaves. Asexual reproductive organs, androecial and gynoecial branches not seen.

Habitat: Epiphyllous, growing on dicot leaves in moist and shady condition, in association with *Cololejeunea latilobula* (Herzog) Tixier.

Etymology: The species has been named in honour of our mentor, Dr. D.K. Singh, Scientist-F, Botanical Survey of India, Kolkata, for his invaluable contributions to the Hepaticological studies in India.

Notes: *Drepanolejeunea devendrae* is characterized by ovate leaf lobes with rounded - obtuse apices and finely denticulate - nearly entire margin (Fig. 1: 1, 2, 6 - 11); thin - slightly thick-walled leaf cells with small trigones, but devoid of intermediate thickenings (Fig. 1: 11 - 13); oblong ovate - ovate, inflated leaf lobule, 1/3 - 2/5 as long as the leaf lobe with the free lateral margin bordered by 4 rectangular - linear cells (Fig. 1: 2, 6 - 10, 14, 15); and suborbicular - oblong, 2/3 - 3/4 bilobed underleaves with sub parallel, lanceolate - triangular-lanceolate lobes which are 5 - 7 cells long, 2 - 3 (-4) cells wide at base, 1 - 2 cells uniseriate at apex (Fig. 1: 2, 16 - 18).

In the presence of unicellular, strongly curved first tooth in leaf lobule with the free lateral margin bordered by 4 cells and subparallel underleaf lobes, the present species belongs to subgenus *Drepanolejeunea*.

Among the members of subgenus *Drepanolejeunea*, *D. devendrae* resembles *D. erecta* (Steph.) Mizut. in having similar habit of plants, ovate leaf lobes with slightly denticulate margins, sub parallel underleaf lobes and occasionally with 1-2 basal ocelli at leaf lobe base. But, the latter differs from the former in having underleaves 1/3 - 2/3-bilobed which lobes are 4 - 12 cells wide at base, leaf cells with nodulose trigones and intermediate thickenings; leaf lobules are 1/3-1/2 of the leaf lobe length and plant usually with brood branches (Udar & Awasthi, 1982; Zhu & So, 2001).

The present species also resembles *D. pulla* (Mitt.) Grolle in having small, 5 - 6 mm long plants, ovate leaf lobes and sub parallel underleaf lobes which are 2 - 3 cells wide at base. But, the latter differs in having acute leaf apices, presence of intermediate thickenings in leaf cells, a single basal ocellus and free lateral margin of leaf lobule bordered by 6 - 7 cells. (see Grolle, 1979; Udar & Awasthi, 1982).

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