ISSN 0376-5561
Geophytology 43(2): 163-166
November 2013

Mastigolejeunea humilis (Gott.) Schiffn. from Sibsagar, Assam, new to Indo-Burma Biodiversity Hotspot

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Manuscript received: 22 April 2013
Accepted for publication: 28 July 2013

ABSTRACT

Verma P. K., Rawat K. K., Yadav A. & Kaushik P. K. 2013. *Mastigolejeunea humilis* (Gott.) Schiffn. from Sibsagar, Assam, new to Indo-Burma Biodiversity Hotspot. Geophytology 43(2): 163-166.

Mastigolejeunea humilis (Gott.) Schiffn., collected from Sibsagar District of Assam, is new to Indo-Burma Biodiversity Hotspot. This species is widely distributed in Asia and Australia. In India, the species is known only from Western Ghats and Andaman & Nicobar Islands. The diagnostic characters of the species are elongated leaf-lobe, convolute leaves and cordate trigones.

Key-words: *Mastigolejeunea humilis*, corticolous, Ptychanthoideae, Lejeuneaceae, Hepaticae, Assam, Indo-Burma Biodiversity Hotspot.

INTRODUCTION

The Indo-Burma Biodiversity Hotspot comprises unique assemblages of plant and animal communities, including threatened and endemic species. Some of these are under high levels of threat and are on global priority for conservation. This hotspot is also listed in the top 10 hotspots for irreplaceability and in the top five for threat.

Mastigolejeunea belongs to subfamily Ptychanthoideae of family Lejeuneaceae and is characterized by dull texture of plant, elongated leaf-lobe and lobule, convolute leaves, cordate trigones and large female bract-lobule. The genus is pan-tropical in distribution (Vanden Berghen 1949, Jones 1957, Schuster 1980, Mizutani 1986). In India, only two species [*M. humilis* (Gott.) Schiffn. and *M. repleta* (Tayl.) Stephani] and one variety [*M. auriculata* var. *ciliata* (Awasthi & Udar) A. E. D. Daniels & P. Daniel 2007] of the genus have been reported (Udar & Awasthi 1984). During recent explorations in Assam, *Mastigolejeunea humilis* has been collected from trees planted near Talatal Ghar or Kareng Ghar, an archeological site of Ahom Dynasty. The species, earlier known from Western Ghats and Andaman Islands, has extended range of distribution in Indo-Burma Biodiversity Hotspot.

DESCRIPTION

Mastigolejeunea humilis (Gott.) Schiffn.

Plate 1, figures 1-9

Mastigolejeunea humilis (Gott.) Schiffn., In: Engler & Prantl., Nat. Pfl. Fam. 1(3): 129. 1895.

– *Phragmicoma humilis* Gott., In: Gott., Lindenb & Nees, Syn. Hep. 299. 1845.

Description: Plants prostrate, dark green in colour, up to 30 mm long, 0.32 mm wide, growth habit deliquescent, ramification pattern irregularly pinnate, branching '*Lejeunea*-type'. Stem 12-14 cells across the diameter, differentiated, cortical cells in 1 row, large, thin-walled; medullary cells small, thick-walled, trigones prominent. Leaves imbricate, obliquely inserted, horizontally spreading; leaf-lobe ovate-oblong, slightly falcate, 1.2-1.5 mm long, 0.6-0.8 mm wide, apex rounded, obtuse, often acuminate, margin entire, antical margin arched, postical margin revolute along with lobule (forming long sac); cells with prominent trigones, intermediate nodular thickenings absent, apical cells 8-15 x 3-12 µm, median cells 21-35 x 8-18 µm, basal cells 26-52 x 16-34 µm; leaf-lobule 1/3 of the lobe length, oblong, 0.35-0.41 mm long, 0.27-0.29 mm wide, strongly inflated, apex truncate, with 1-2 teeth, first tooth 1-2 cells long, hyaline, papilla on inner side. Under-leaves imbricate, sinuately inserted, obcordate, 0.47-0.59 mm long, 0.46-0.60 mm wide, apex truncate to retuse, margin entire. Dioecious, only juvenile female plants seen. Female bracts and bracteole larger than leaves and under-leaves. Archegonia developed at axes of female bracts. Male plants not seen.

Type locality: Indonesia - Java (Mizutani 1961).

Range of distribution: Africa; Australian region: Bismarck Archipelago, Caroline Island, Celebes New Caledonia, Papua New Guinea, Solomon Islands, Samoa; Asia: Bhutan, India, Indonesia, Japan, Malaysia, Nepal, Philippines, Taiwan, Sri Lanka, Thailand (Mizutani 1961, Gradstein & Inoue 1980, Grolle & Piippo 1984, Udar & Awasthi 1984, Kuo & Chiang 1988, Long & Grolle 1990, Streimann 1991).

Distribution in India: Andaman & Nicobar Islands, Kerala, Tamil Nadu (Awasthi & Udar 1984, Joshi et al. 1992, Manju et al. 2012) and Assam: Sibsagar (as new record).

Ecology: Plants grow in smooth mats on angiospermic trees, as epiphytic population.

Specimen examined: Indo-Burma Biodiversity Hotspot: India, Assam: Sibsagar (near Talatal Ghar), Lat. 27°17'N: Long. 95°26'E, ca. 85 m, 11.06.2012, P. K. Verma, 156/2012 (RFRI).

RESULT

Mastigolejeunea humilis (Gott.) Schiffn. is dioecious in nature. Plants vigorously grow in compact large patches. The species is characterized by oblong leaf-lobe which is slightly falcate at postical margin, while leaf-lobules are larger and rectangular in shape. The leaf polymorphy is another remarkable character. The apex of leaf lobe is obtuse-rounded to sub-acute.

ACKNOWLEDGEMENT

The authors are thankful to the Director, Rain Forest Research Institute, Jorhat for his valuable support.

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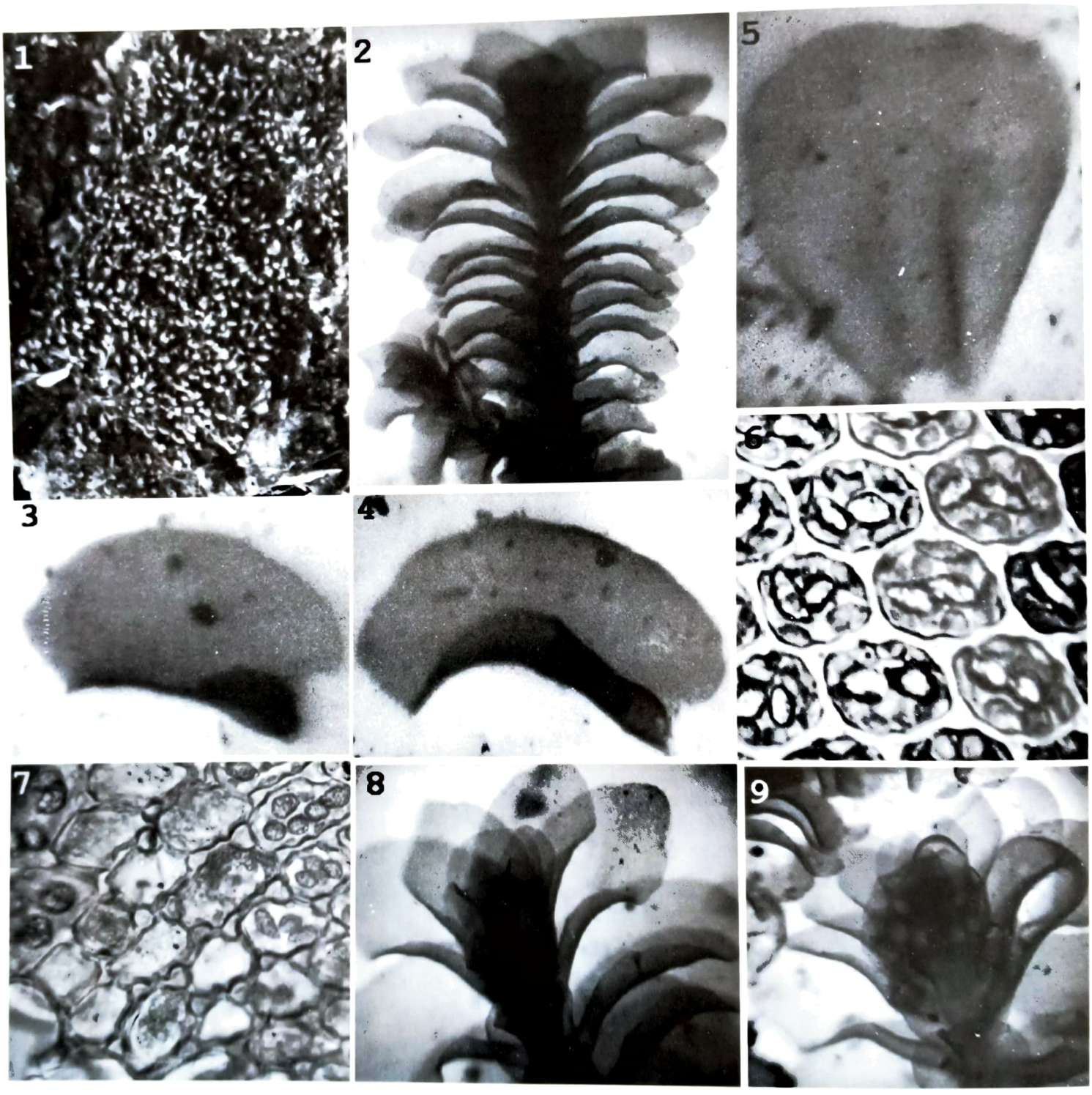

Plate 1

1-9. *Mastigolejeunea humilis* (Gott.) Schiffn. 1. Plant habitat (as corticolous). 2. Plant ventral view. 3-4. Leaves. 5. Under-leaf, 6. Median cells of leaf. 7. Basal cells of leaf, 8. Female plants with developing archegonia. 9. Female plants with archegonia in juvenile perianth (all figures drawn from RFRI 156/2012).

MATERIAL AND METHOD

Field survey of bryophytes growing on trunk and branches of angiospermic trees, planted near famous archeological site Talatal Ghar in Sibsagar District of Assam, was carried out. All the specimens collected from this site are deposited at the Cryptogamic Herbarium of Rain Forest Research Institute (RFRI), Jorhat, India.

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