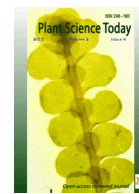




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Research Communication

***Archilejeunea minutilobula* Udar et U. S. Awasthi (Lejeuneaceae-Marchantiophyta) New to Gangetic plains of India**

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Abstract

During an investigation on the bryophytes of Gangetic plains, *Archilejeunea minutilobula* Udar et U. S. Awasthi has been identified at Farakka, district Murshidabad (West Bengal) which is a new addition to the Gangetic plains and West Bengal. Previously it was known from South India (Mettupalayam, Mahabaleshwar) only. The taxon belongs to subfamily Ptychanthoideae of the family Lejeuneaceae (order Jungermanniales). Family Lejeuneaceae is underexplored in the Gangetic plain region and discovery of this species from this region after five decades since its inception is very significant.

Keywords

Lejeuneaceae; *Archilejeunea minutilobula*; Gangetic plains

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Introduction

During a recent survey to investigate the floristic elements in general and bryophytes in particular in the flood zone along river Ganga in Farakka town of District Murshidabad (West Bengal) in the Littoral and Swamp Forest areas, several interesting bryophytes have come across. Amongst them, *Archilejeunea minutilobula* Udar et U. S. Awasthi is the one which was found growing remarkably at the altitude of about 24m above sea level as epiphyte on stem bark of mango tree in association with mosses. The occurrence of *A. minutilobula* at such climatic zone confirms the Pantropical nature of the genus *Archilejeunea* (Shi *et al.*, 2015). The genus *Archilejeunea* (Spruce) Stephani was first described as a subgenus in the broadly defined genus *Lejeunea* Lib. (Shi *et al.*, 2015), subsequently it was divided into two heterogenous subgenera i.e., *A. subg. Archilejeunea* and subg. *Dibrachiella* (Spruce) Schiffn. (Gradstein, 1994; Gradstein and Bukes, 1985). There are about 28 species of the genus known worldwide (Shi *et al.* 2015, Shi and Zhu 2015). Udar and

Awasthi (1981) and Awasthi and Srivastava (1988) described three taxa of *Archilejeunea* viz., *A. apiculifolia* Stephani, *A. apiculifolia* Stephani var. *dentifolia* U. S. Awasthi and S. C. Srivastava and *A. minutilobula* from South India. However, in a recent treatment *A. apiculifolia* was synonymized under *A. planiuscula* (Mitt.) Stephani by Shi *et al.* (2015). Hence in the present state of our knowledge only three taxa are referable to genus *Archilejeunea* in Indian context. So far as *Archilejeunea minutilobula* is concerned it has not been collected since its circumscription and collection made by Udar and Srivastava in the year 1965. Interestingly, during the course of a recent bryological exploration this taxon has been collected again after a gap of five decades. It confirms the validity and independent status of the species. Earlier this taxon was known from South India only, but its occurrence at Farakka, district Murshidabad (West Bengal) is a new addition to bryoflora of Gangetic plains with an extended range of distribution from South India.

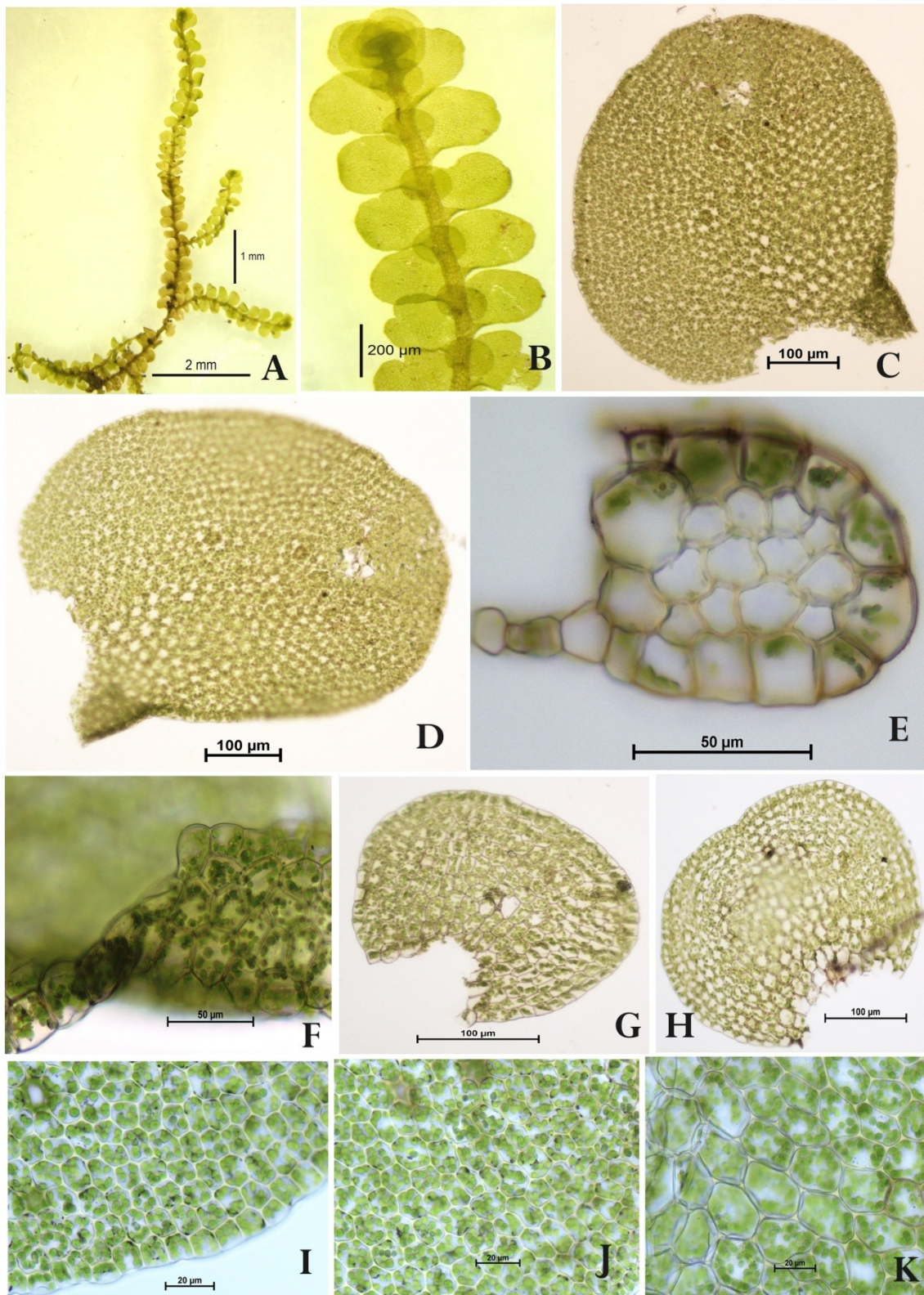


Figure 1 (A-K: *Archilejeunea minutilobula* Udar et U. S. Awasthi). A. Plant; B. A plant portion in Ventral view; C-D. Leaf lobes with lobule; E. Cross section of Stem; F. Leaf lobule; G-H. Amphigastria; I. Marginal cells of Leaf; J. Median cells of leaf; K. Basal cells of leaf.

Materials and Methods

Plant specimens were growing on stem bark of Mango tree in association with mosses at Farakka (LCT ghat), District Murshidabad (West Bengal).

Plants were air dried and transferred to brown packets. The voucher specimens were deposited in Bryophyte Herbarium, CSIR-National Botanical Research Institute, Lucknow (LWG).

Taxonomic Description

Archilejeunea minutilobula Udar et U. S. Awasthi, in *Geophytology* 11(1): 72-79 (1981) (Figure 1).

Plants bright green or greenish brown, 16-25 mm long and 0.9-1 mm wide including leaves, branched. Stem in cross section 76-80 x 100-120 µm in diameter, 6-7 cells across, composed of 11-13 cortical cells and 11-13 medullary cells, without trigones; cortical cells (16-20 µm wide) slightly larger than medullary cells (8-16 µm wide). Leaves contiguous or distantly arranged, widely spreading, oblong, 0.48-0.64 mm long and 0.56-0.64 mm wide, apex rounded, margin entire. Leaf marginal cells 8-12 µm wide, short quadrate or rectangular, trigones absent, median cells 12-20 µm wide, polygonal, trigones absent, basal cells 20-40 µm long and 16-20 µm wide, polygonal, trigones weakly developed. Leaf lobules small 1/5 of the lobe, 0.08-0.12 mm long and 0.04-0.064 mm wide, tooth indistinct. Amphigastria distantly arranged, reniform with entire margin, 0.20-0.26 mm long and 0.24-0.34 mm wide. Sporophyte not seen.

Habitat: Epiphytic on Mango tree, altitude ca 24 m, N 24°46.618', E 87°55.577'

Specimen examined: India: Gangetic plains: West Bengal, Murshidabad, Farakka, LCT Ghat, 10/07/2015, leg. A. K. Asthana, 300303(LWG).

Geographical Distribution: Gangetic plains (Farakka, West Bengal), South India (Mettupalayam, Mahabaleshwar).

Archilejeunea minutilobula can be distinguished from the another Indian species *A. apiculifolia* in having small leaf lobule, in lacking uniformly thickened cells and trigones in cross section of the stem, and indistinct trigones and intermediate thickenings in leaf cells.

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