

Studies on the *Microlejeunea minutistipula* Steph. from Andaman Islands, India

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The corticolous and foliicolous species, viz., *Microlejeunea minutistipula* Steph. is widely distributed in the tropical rain forests of Andaman Islands. A detailed morphotaxonomic account of this taxon has been provided here.

Key-words - Hepaticae, Jungermanniales, Lejeuneaceae, *Microlejeunea*, Andaman Islands, India.

INTRODUCTION

THE genus *Microlejeunea* (Spr.) Jack. *et* Steph. shows maximum representation in the tropical rain forests of India. It has not received any attention since the report of nine species viz., *M. aligera* (Mitt.) Steph., *M. gracillima* (Mitt.) Carr *et* P., *M. inflatiloba* St., *M. longirostris* St., *M. microstipula* St., *M. minutistipula* St., *M. nepalensis* St., *M. punctiformis* (Tayl.) St. and *M. ulcina* Evans. *M. gracillima* and *M. ulcina* have also been reported from the Eastern Himalayas (Agarwal, 1985).

Microlejeunea minutistipula Steph. is known from Andaman Islands, India (Stephani, 1912-17, 1917-24). However, a detailed illustrated account of this taxon is not available so far. Therefore, an attempt has been made to describe the species in detail. The observations recorded here are based on the specimens collected by us from the different localities of tropical rain forests of Andaman Islands, India in October, 1986 and September 1987 (Joshi *et al.*, 1989, 1991, 1992, 1994).

DESCRIPTION

Microlejeunea minutistipula Steph.

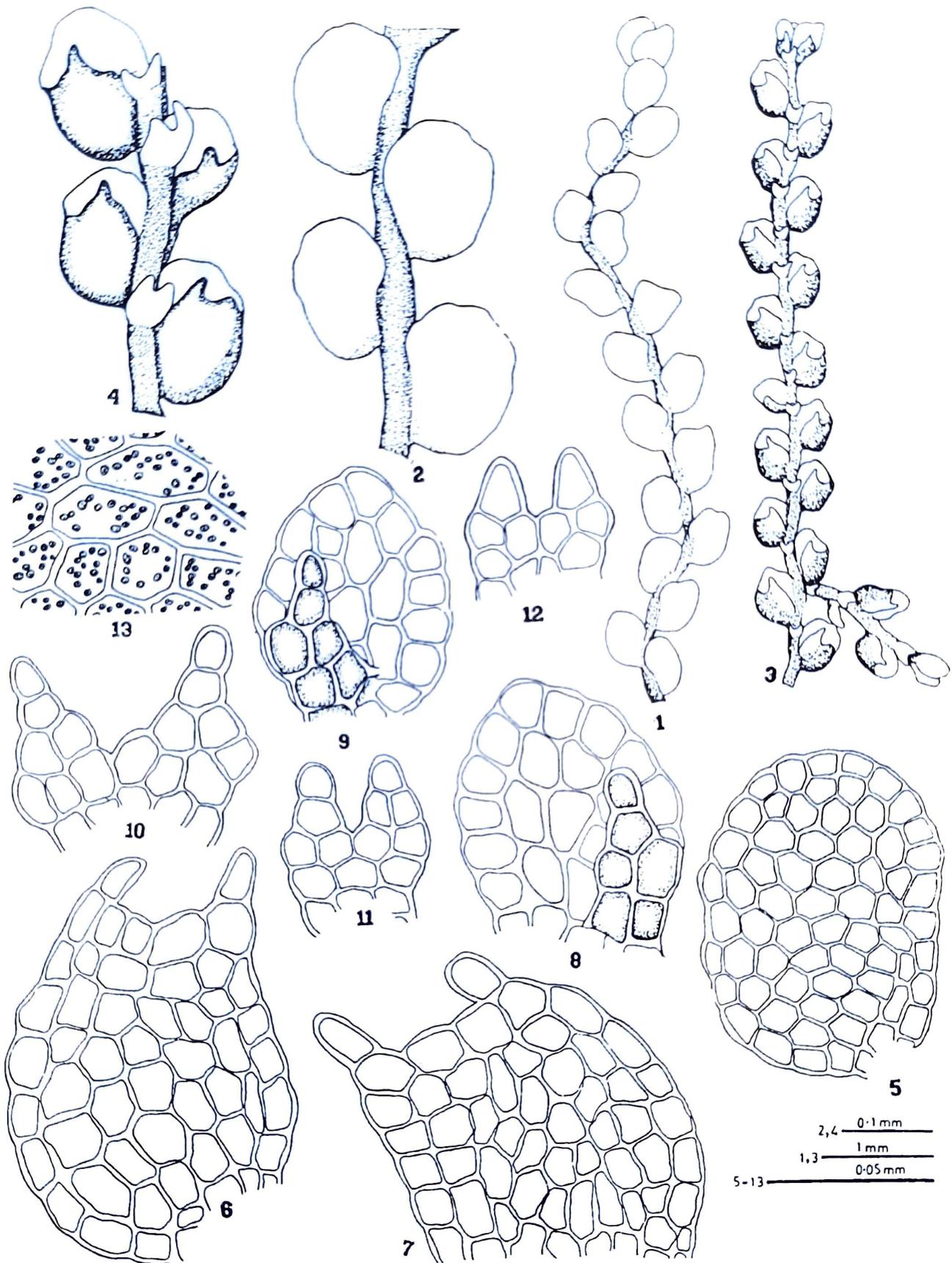
Species Hepaticarum, V, 813 (1912-17)

Text-figures: 1-28.

Plants minute, transparent, white or yellow in colour; 0.5-0.8 mm long and 0.03-0.05 mm wide, corticolous; branching irregularly, *Lejeunea*-type; stem

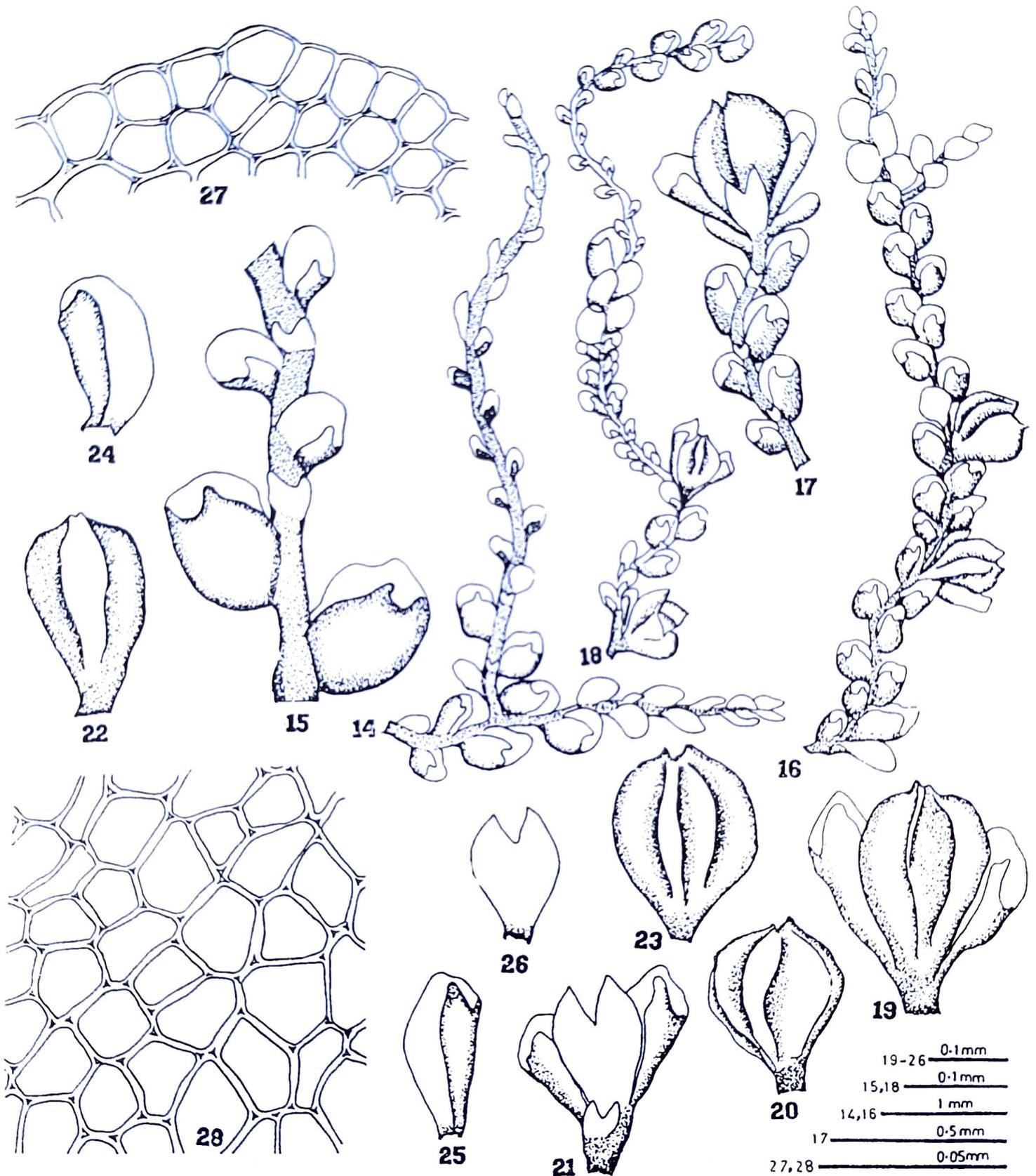
strongly flexuous. Leaves small, 0.13-0.17 mm long and 0.10-0.11 mm wide, alternate, distant, suberect to obliquely spreading, ovate, apex subacute, margin more or less constricted (Text-figures: 1-5,8,9); cells thick walled, rectangular to polygonal with indistinct trigones, intermediate nodular thickenings absent, marginal cells 13.2-19.8 x 9.9-16.5 μ m, median cells 16.5-29.7 x 16.5-23.1 μ m and basal cells 16.5-29.7 x 16.5-23.1 μ m, generally marginal cells are smaller and cylindrical than median cells and basal cells (Text-figures-5,8,9); oil-bodies 20-25 or many, scattered in rows of 3-4, spherical (Text-figure: 13). Leaf lobules 0.09-0.14 mm long and 0.06-0.09 mm wide covers 2/3 part at basal and 1/2 at apical leaf-lobes, bilobed, occasionally one lobe reduced to uniseriate, one or two celled free tooth, other cells quadrangular to polygonal with indistinct trigones, intermediate nodular thickenings absent (Text-figures: 6-9). Underleaves 42.6-71 μ m long and wide, minute, distant, bilobed with asymmetrical lobes; sinus 'V' shaped and narrow, apical lobe cells triangular with obtuse apex (Text-figures; 4, 10-12).

Plants monoecious (Text-figure : 18). Male inflorescence terminal or intercalary on lateral braches, bracts 4-8 alternate (Text-figures : 14, 15, 18); male-bracts 0.06-0.09 mm long and 0.02-0.06 mm wide, much smaller than the acute apex; bract-margin entire with acute apex; bract-lobules small, bilobed; bracteoles minute, distant (Text-figure: 15). Female on long or short lateral branches, 1-2 innovations present



Text-figures: 1-13. *Microlejeunea minutistipula* Steph.

Figs. 1,2. Portions of the plant in dorsal view, Figs. 3,4 : Portions of the plant in ventral view, Figs. 5-7: Leaf-lobe, Figs. 8,9 : Leaves with leaf-lobule, Figs. 10-12: Underleaves, Fig. 13: Leaf-lobe cells with oil-bodies.



Text-figures 14-28. *Microlejeunea minutistipula* Steph.

Fig. 14. Portion of the plant showing male inflorescence, Fig. 15: Portion of the male branch with male bract-lobes, Figs. 16,17: Portion of the plant showing female inflorescence, Fig. 18.: Portion of the plant showing male and female inflorescence, Fig. 19: Female bract-lobes and perianth. Figs. 20, 22, 23. : Perianths, Fig. 21: Female bracteole and bract-lobe, Figs. 24, 25: Female bract-lobes. Fig. 26: Female bracteole. Fig. 27. : Marginal cells of the perianth, Fig. 28. Surface cells of the perianth.

(Text-figures: 16-18); female-bracts 0.29-0.36 mm long and 0.20-0.24 mm wide, larger than the leaf-lobes, apex sub-acute to obtuse, margin entire with antical convex and postical concave, as long as perianth; bract-lobule 0.24-0.27 mm long and 0.19-0.21 mm wide, linear as long as bract-lobes, free apex, subacute, margin entire (Text-figures-19,21,24,25), bracteoles 0.16-0.19 mm long and 0.09-0.16 mm wide, bilobed, sinus 'V' shaped (Text-figures: 21, 26). Perianths obovate, 0.31-0.36 mm long and 0.19-0.36 mm wide, 2-3 plicate, keels distant and smooth, beak short, surface cells 16.5-23.1 x 17.6-23.1 μm , thick walls with distinct trigones, nodular thickening absent (Text-figures: 19, 20, 22, 23).

DISTRIBUTION & ECOLOGY

Habitat : Corticolous (on decayed wooden logs and on trunk of *Areca catechu*) and epiphyllous associated with *Caudalejeunea cristiloba* (Gott.) Gradst., *Lejeunea andamanica* sp. nov., *Lopholejeunea eulopha* (Tayl.) Schiffn. and mosses.

Locality : Mount Harriet, Wright Myo, Bada Balu, Kurang nala, Pitcher nala and Baratang.

Distribution in India : Andaman Islands.

Date of Collection : October, 1986 and September, 1987.

DISCUSSION

It is interesting to note that the species is smallest among the members of Lejeunoideae and the rich occurrence of corticolous and epiphyllous species dominate the hepatic flora of Andaman Islands, India. The extensive collection of *M. minutistipula* was made in the lowest layer of forest on the tree trunks, shrubs, bark of Beetle nut, *Areca catechu* and de-

cayed wooden logs. The minute hair-like plants are densely associated with the larger members of Ptychanthoideae and Lejeunoideae.

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