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A NEW SPECIES OF *LOPHOLEJEUNEA* (SPRUCE) SCHIFFN. FROM INDIA

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INTRODUCTION

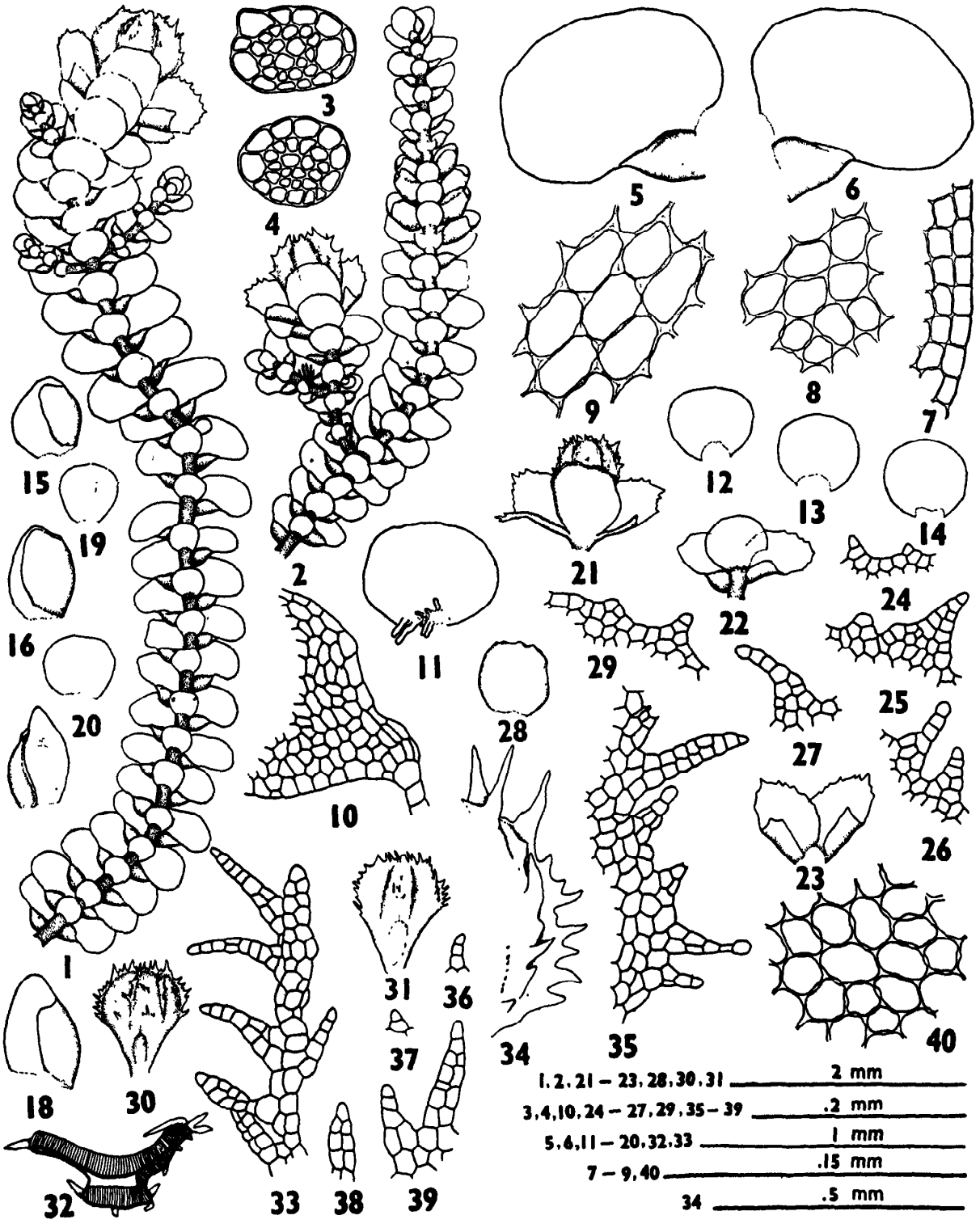
Most species of the genus *Lopholejeunea* (Spruce) Schiffn. are characterised by perianth with dentate keels together with dentate female bract-lobe and bracteole. Recently an atypical species *L. gradsteinii* Udar, Awasthi et Shaheen was described from Agumbe (Karnataka) South India (Udar et al., 1983) which lacked dentitions in all these. An examination of a collection from Jowai (Meghalaya) eastern India revealed a taxon with dentitions present not only on perianth keels but on both postical and antical surfaces of the perianth and also on female bract-lobe (sometimes also on lobule) and bracteole and thus represents an extreme case with regard to the degree of development of dentitions and is described as a new species, *L. indica* sp. nov. This plant has also been recently collected from Lakkidi in Kerala (south India).

Lopholejeunea indica Udar et Awasthi

Figs. 1-40

Haec species a omnis alius in bractae femineae, bracteolae, perianthium carinis et pagniae dentatis differt.

Monoecious. Plants greenish brown in colour, irregularly branched by *Lejeunea* type of branching. Stem in cross-section (0.08 × 1.04 – 1.20 mm) with 11-12 cortical and 16-18 slightly smaller medullary cells, cortical cells brownish, dorsal cortical cells slightly larger than ventral cortical cells, medullary cells thick-walled with small trigones. Leaves imbricated-subimbricated, widely spreading, lobe ovate, 0.77-0.88 mm long, 0.56-0.61 mm wide, margin entire, postical margin slightly incurved at about middle, antical margin convex, apex rounded, cells with distinct radiate trigones and intermediate nodular thickenings, lobule highly saccate along the keel, free margin and its neighbouring area appressed to the lobe with inconspicuous tooth. Underleaves distant, slightly wider than long, 0.18-0.27 mm long, 0.29-0.32 mm wide, margin entire, apex rounded, rhizoids present at base. Male inflorescence intercalary, bracts hypostatic, strongly saccate, lobe ovate, 0.32-0.42 mm long, 0.20-0.32 mm wide, margin entire, apex obtuse or rounded, lobule 0.32-0.37 mm long, 0.18-0.21 mm wide, margin entire, apex obtuse ; bracteole imbricated and almost as long as wide, 0.19-0.21 mm long, 0.21-0.22 mm wide. Female inflorescence terminal on short lateral branch lacking in subfloral innovation, bract-lobe obovate-oblong, 0.77-0.81 mm long, 0.40-0.50 mm wide, margin dentate, postical margin straight to convex, antical margin convex, apex acute, sometimes rounded, lobule almost rectangular, 1/2 or slightly more than 1/2 of the lobe length, 0.41-0.43 mm long, 0.21-0.27 mm wide, adnate with lobe, sometimes extended beyond the keel, entire or with 1-6 teeth ; bracteole orbicular, ca 2/3 of the perianth length, 0.61-0.64 mm long and wide, margin dentate, slightly revoluted, apex rounded ; perianth exserted, obovate, 0.80-1.0 mm long, 0.69-0.65 mm wide, 4 plicate, plicae dentate, dentition also present on general surface of the perianth both on postical and antical surfaces.



Figs. 1-40 : *Lopholejeunea indica* sp. nov. : 1. Portion of the plant showing female inflorescence. 2. Portion of the plant showing male and female inflorescences. 3, 4. Cross-sections of stem. 5, 6. Leaves. 7. Marginal cells of leaf-lobe. 8. Median cells of leaf-lobe. 9. Basal cells of leaf-lobe. 10. Portion of leaf-lobule showing indistinct marginal tooth. 11-14. Underleaves. 15-18. Male bracts. 19, 20. Male bracteole. 21. Female bracts, bracteole and perianth. 22. Female bracts and bracteole. 23. Female bracts. 24-27. Dentitions of female bract-lobe. 28. Female bracteole. 29. Dentitions of female bracteole. 30, 31. Perianths. 32. Cross-section of perianth. 33. Ventral plicae of perianth showing dentitions. 34, 35. Lateral plicae of perianth showing dentitions. 36-39. Dentitions on general surface of perianth. 40. Cells of the perianth.

Specimens examined : LWU No. 4014/79 (Holotype) Loc.: Jowai (Meghalaya) eastern India. Dt.: November 11, 1979. Leg.: U.S. Awasthi and A. Kumar, Det.: R. Udar and U. S. Awasthi.

LWU No. 6002/82, Loc.: Lakkidi (Kerala) south India, Dt.: September 25, 1982, Leg.: R. Udar and party, Det.: R. Udar and U. S. Awasthi.

Habitat: 4014/79 on bark of *Pinus* in association of *Cheilolejeunea* sp., *Radula tjibodensis* and moss. 6002/82 on bark of *Mangifera indica* in association of *Microlejeunea* sp.

The dentitions on female bract-lobe (sometimes also on lobule), bracteole and perianth keels, as well as on general surface in between keels both on postical and antical sides (Figs. 1, 21, 30-32) are well-developed in plants from Jowai but those from Kerala show lesser development of dentitions in between the keels which often get reduced becoming sporadic and scattered in distribution or even often lacking.

The present species approaches to the neotropical *L. muelleriana* (G.) Schiffn. (Schuster 1980) in having dentition on general surface of the perianth in between the keels, in sexuality, shape of leaf, underleaf, female bracts and bracteole. However, the female bracteole in *L. muelleriana* has entire margin and the perianth is 5 plicate.

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