

COLOLEJEUNEA (PEDINOLEJEUNEA) KASHYAPII SP. NOV. FROM KARNATAKA, INDIA*

R. UDAR AND G. SRIVASTAVA

Department of Botany, University of Lucknow, Lucknow 226 007, India

Abstract

Cololejeunea (Pedinolejeunea) kashyapii sp. nov., an epiphyllous taxon, has been described from Jog Falls, Karnataka. This species is characterised by hyaline border on leaf-lobe, lobule, female bract-lobe and lobule. The leaf-lobe is highly variable in shape being both inflated and strap-shaped and the second tooth may be of single cell or large multicelled.

Introduction

Karnataka, a state in southern India, is particularly rich in taxa of *Cololejeunea* (Udar & Srivastava, 1982, 1983) due to heavy annual precipitation. A recent examination of collections from Jog Falls, made by late Prof. S. K. Pande in 1940, showed an interesting epiphyllous taxon of the subgenus *Pedinolejeunea* which has hyaline cells bordering the leaf-lobe, lobule, female bract-lobe and lobule and described here as a new species.

Taxonomic description

Cololejeunea kashyapii sp. nov.

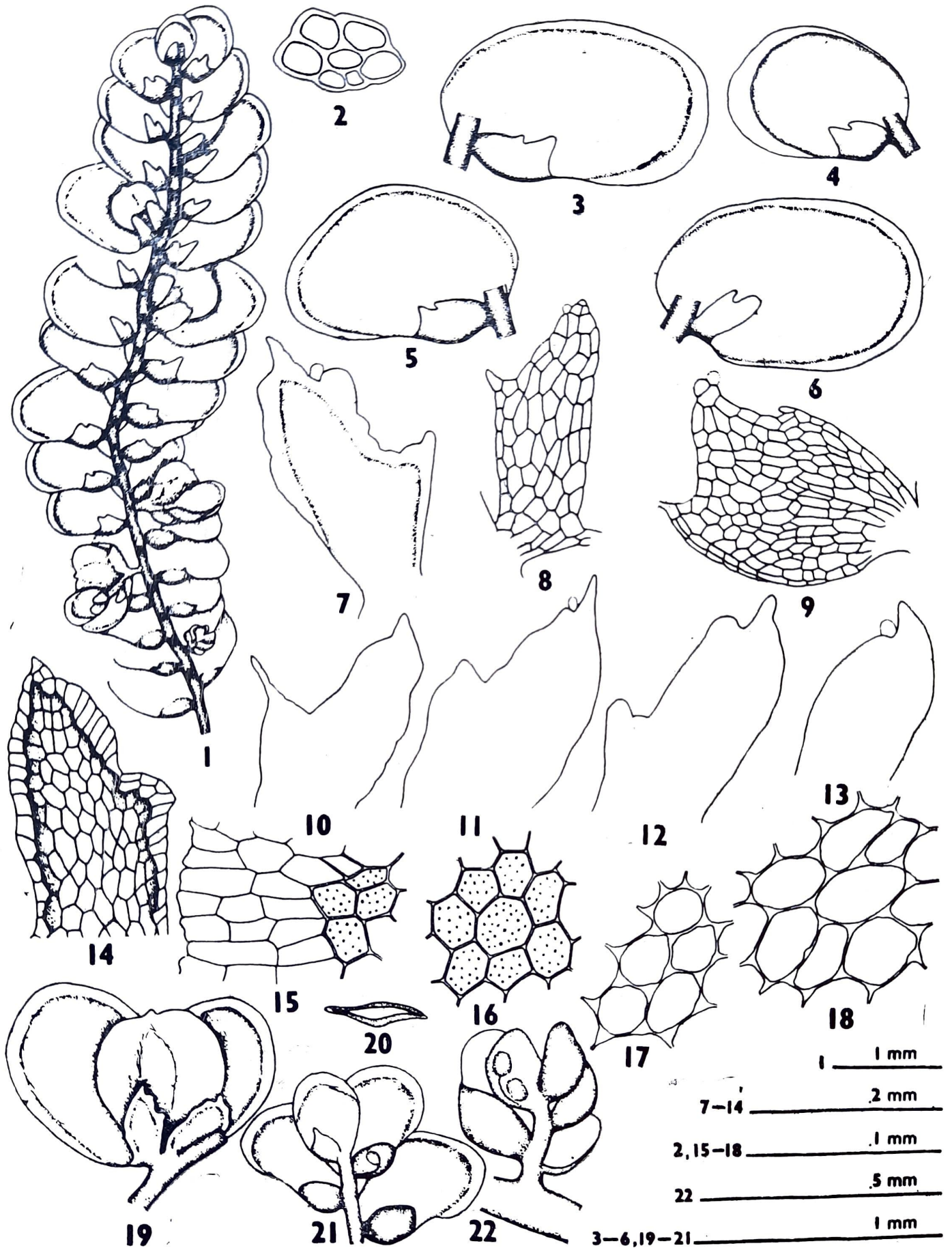
Planta substrato appressa, rhizoideis hyalinis, fasciculatis, lobus ovalis-oblongae, marginalis hyalinis, $10-20 \times 6-17 \mu\text{m}$, medianeles $30-34 \times 17-31$, basali $47-54 \times 23-31$, lobulus variabilis, bidentatus, elongatus-inflatus, cellulae marginalis hyalinae, papilla hyalina apicalea-sub-apicalea. Monoica, androecia terminalea vel intercalarea, bracteis 2-5 jugis, gynoecia uno latere innovate, perianthium compressum, obovatum.

Holotype—LWU 3794/40 Loc. Jog Falls, South India. ca 600 m, January 5, 1940, on angiospermic dicot leaves. Leg. S. K. Pande.

Other specimen examined—G 14324, *Leptocolea bolombensis* (Steph.) E.W. Jones c. fr. On 12 month old leaves of *Chlorophora* sapling in small gap in high forest. Mamu River Forest Reserve, Awka District, Onitsha Prov., Nigeria E. W. Jones no. 845, October 1955

Plants yellowish, closely appressed to the substratum; stem usually 4-10 mm long, 0.07-0.11 mm in diameter, with leaves 1.8-2.0 mm wide, cross section of the stem with 6 cortical cells and one medullary cell, walls thick, trigones large, the ventral cells of the cortex smaller; rhizoids numerous in tuft, hyaline, branched and unbranched; leaves widely-obliquely spreading, the leaf-lobe plane, ovate-oblong, 0.8-1.1 mm long, 0.5-0.7 mm wide, margin bordered by 2-4 rows of hyaline cells, apex rounded, dorsal margin

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Text-figs. 1-22. *Cololejeunea* (*Pedinolejeunea*) *kashyapii* sp. nov. 1. Plant in ventral view with male and female inflorescences; 2. Cross section of the stem; 3-6. Leaves with lobe and lobule; 7-14. Leaf-lobules (7 and 14 with hyaline border); 15. Marginal hyaline leaf-cells; 16. Marginal chlorophyllous cells with papillose cuticle; 17. Median leaf-cells; 18. Basal leaf-cells; 19. Perianth; 20. T. S. of perianth; 21. Axis with large hyaline bordered male bracts; 22. A male branch magnified (2 antheridia towards apex).

arched toward base and far beyond the farther edge of the stem, hyaline marginal cells $10-20 \times 6-17 \mu\text{m}$, ordinary chlorophyllous cells neighbouring hyaline marginal cells polygonal, $13-24 \times 17-24 \mu\text{m}$, without trigones, median cells polygonal, $30-34 \times 17-13 \mu\text{m}$, trigones present, basal cells polygonal and elongated $47-54 \times 23-31 \mu\text{m}$, trigones and occasional intermediate nodular thickening present, cuticle minutely papillose, leaf-lobule variable, elongated, strap-shaped to inflated, the strap-shaped lobule either bordered by hyaline cells or not, first tooth large, wide, second tooth highly variable, may be very small of single projected cell or large either narrowly elongated or broad, or even indistinct, hyaline papilla at the tip of the first tooth or sub-apical. Monoecious, androecia spikate on short lateral branch, with 2-5 pairs of male bracts, occasionally intercalary on main axis when bracts much larger in size, each bract with 1-2 antheridia; female inflorescence on the main axis or on lateral branch with one subfloral innovation, the bract-lobe oblong-obovate, 0.7-1.1 mm long, 0.4-0.7 mm wide, the margin bordered by 1-4 rows of hyaline cells, apex rounded, lobule toothed, bordered by 1-2 rows of hyaline marginal cells; perianth obovate, 0.5-0.6 mm long, 0.4-0.6 mm wide, dorsally and ventrally plane with sharp lateral plicae, compressed at apex and middle, inflated at base; mature capsule not seen.

Discussion

Several African species (Jones, 1953), described under the generic epithet *Leptocolea*, approach the above species in one or the other character but no single species shows complete resemblance. However, *Leptocolea bolombensis* (Steph.) Jones shows close resemblance in the oblong shape of leaf-lobe; elongated strap-shaped lobule with sub-apical hyaline papilla and papillose cuticle. We have examined the African plant (*L. bolombensis* G 14324) identified by Dr E. W. Jones, which clearly differs in having less developed hyaline border on leaf-lobe and absence of hyaline cells on both leaf-lobule and bract-lobule. In addition to these features, the antheridia occur in the axils of female bracts and sometimes also in the axils of scarcely modified subinvolucral leaves (see also Jones, 1957) thus showing basically a paroicous condition. In *C. kashyapii*, however, the androecia are spikate on short lateral branches and occasionally also intercalary on leading axis—thus autoicous condition.

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