

# Notes on a little known species of *Cololejeunea* (Marchantiophyta) recently collected in the Western Ghats of Tamil Nadu

R. Sreebha, K.C. Kariyappa and A.E.D. Daniels✉

Bryology Laboratory, Botany Department & Research Centre Scott Christian College (Autonomous),  
Nagercoil - 629 003, Tamil Nadu

✉Corresponding author : dulipdaniels@yahoo.co.uk

## तमिलनाडु के पश्चिमी घाट से हाल ही में संग्रहित अल्पज्ञात कोलोलेज्यूनिया (मार्केशियोफाइटा) पर टिप्पणी

आर. श्रीभा, के.सी. करियप्पा एवं ए.इ.डी. डेनियल्स

### सारांश

तमिलनाडु, अन्नामलाई के पश्चिमी घाटों से कोलोलेज्यूनिया सिगमोइडिया जोवेट-एस्ट एवं टिक्सियर ( लेज्यूनिऐसी ) लिवरवर्ट पहली बार अभिलेखित किया गया है। इससे पूर्व 75 साल पहले इसका अभिलेखन पश्चिमी घाट, कर्नाटक से किया गया था। वर्तमान रिपोर्ट भारत में इस पादप जाति का द्वितीय संग्रहण दर्शाती है।

### ABSTRACT

The liverwort *Cololejeunea sigmoidea* Jovet-Ast & Tixier (Lejeuneaceae) is recorded for the first time in Tamil Nadu from Anamalais in the Western Ghats. The earlier Indian report was from a 75 year old collection made in the Western Ghats of Karnataka. The present report represents the second collection of this species in India.

**Keywords:** Western Ghats, Anamalais, *Cololejeunea sigmoidea*.

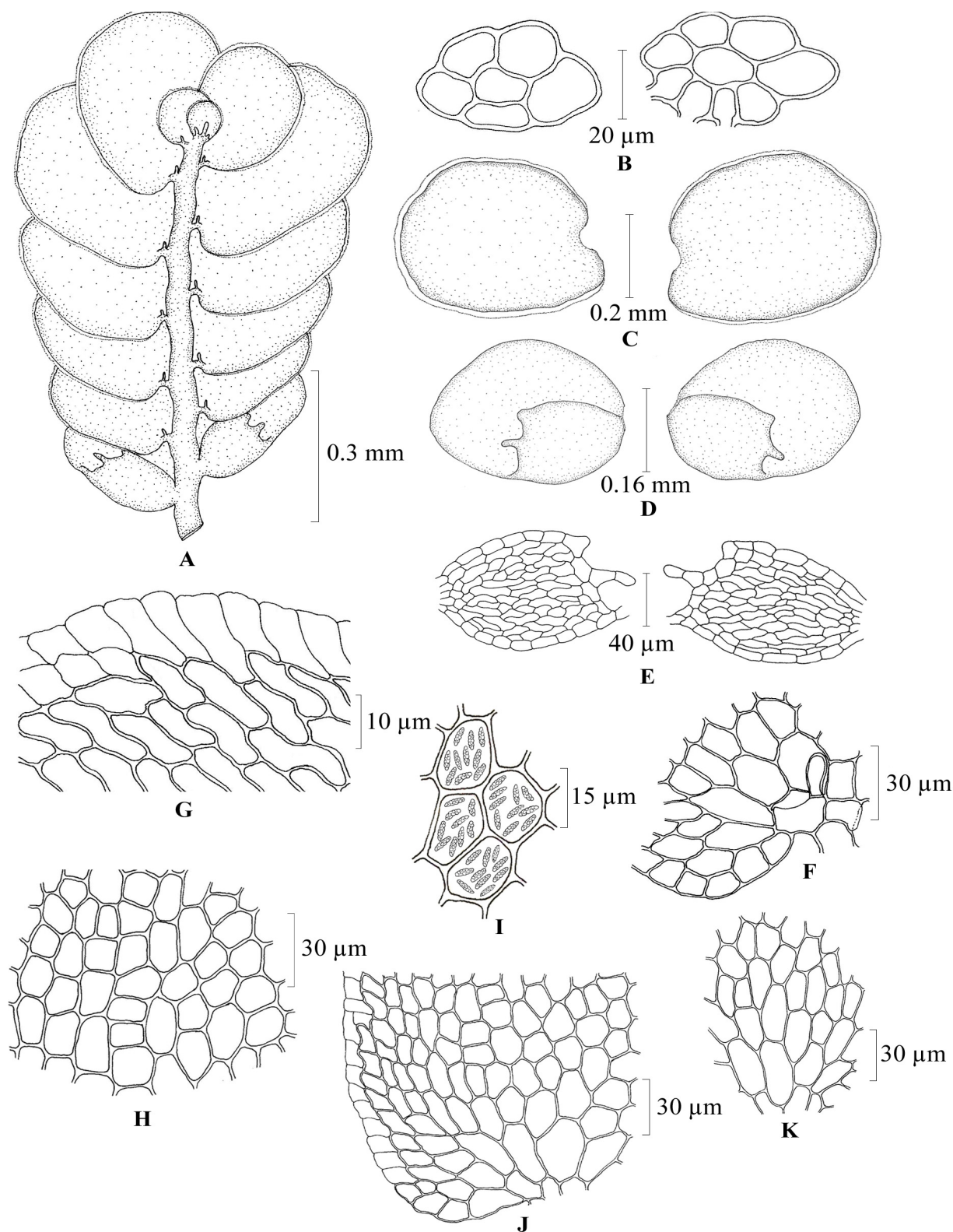
### INTRODUCTION

Jovet-Ast and Tixier (1962), described *Cololejeunea sigmoidea* from Vietnam. However, in India, this species was collected by S.K. Pandé as early as 1940 in the Western Ghats of Karnataka (Udar & al., 1985; Asthana & Srivastava, 2003). Since then, this species has not been collected elsewhere in India. Thus, the present collection from Anamalais in the Western Ghats constitutes the first report of the species from Tamil Nadu and on the other hand the second collection of it in India after a span of 75

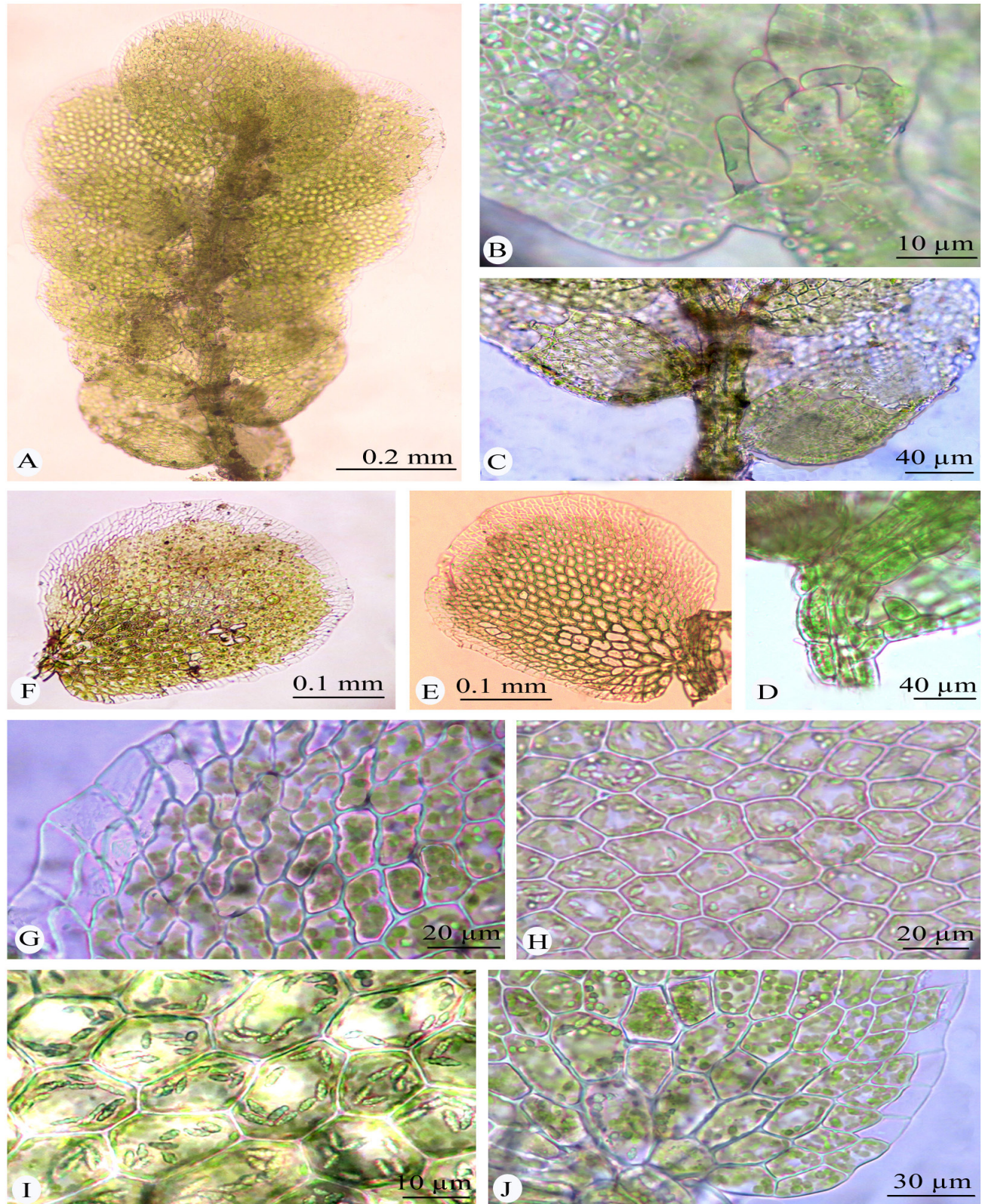
years. A description with illustration and a colour plate is provided here.

***Cololejeunea sigmoidea*** Jovet-Ast & Tixier, Rev. Bryol. Lichénol. 31: 27. 1962; Mizut., J. Hattori Bot. Lab. 44: 128. 1978; Udar & al., J. Indian Bot. Soc. 66: 24. 1987; R.L. Zhu & M.L. So, Beih. Nova Hedwigia 121: 254. 2001; G. Asthana & S.C. Srivast., Bryophyt. Biblioth. 60: 33. 2003. - Type: Vietnam, Benom da Treu, dense forest, 1800 m alt., *P. Tixier s.n.* (PC). (Fig. 1, Plate-1)

Plants 2 - 3 mm long and 0.5 - 0.7 mm wide, strongly appressed to substratum, yellowish-green to pale green.



**Fig -1:** *Cololejeunea sigmoidea* Jovet-Ast & Tixier.: **A.** Portion of plant in ventral view; **B.** Cross section of stems; **C & D.** Leaves; **E.** Leaf lobules; **F.** Basal part of leaf lobule showing stylus; **G.** Marginal leaf cells towards apex; **H.** Median leaf cells; **I.** Median leaf cells with oil bodies; **J & K.** Basal leaf cells (Drawn from Kariyappa & Sreebha 9936 p.p.).



**Plate -1:** *Cololejeunea sigmoidea* Jovet-Ast & Tixeier: A. plant, B. portion of plant with stylus; C. Swollen leaf lobules; D. Reduced leaf lobule; E & F. Leaves; G. Marginal leaf cells towards apex; H & I. Median leaf cells with oil bodies; J. Basal leaf cells. (From Kariyappa & Sreebha 9936 p.p.)

Stems rarely branched,  $0.05 - 0.06 \times 0.03 - 0.04$  mm, 3-celled across; cortex 5 - 8-celled; cells  $10 - 20 \times 12 - 15$   $\mu$ m, thin-walled, medullary cell single,  $12 - 15 \times 10 - 12$   $\mu$ m. Rhizoids clustered, hyaline. Leaves imbricate, obliquely spreading; leaf lobes  $0.28 - 0.3 \times 0.2 - 0.18$  mm, orbicular-suborbicular, entire, bordered by 1 or 2 rows of hyaline, linear-flexuose cells at apex and antical margin; apical cells  $10 - 20 \times 4 - 10$   $\mu$ m, linear-flexuose; median cells  $10 - 20 \times 8 - 12$   $\mu$ m, polygonal, thin-walled, with minute trigones; basal cells  $16 - 36 \times 12 - 24$   $\mu$ m, slightly elongated, with minute trigones; cuticle smooth; oil bodies 7 to 15 per cell,  $4 - 6 \times 2 - 3$   $\mu$ m, narrowly fusiform, bubble-segmented; leaf lobules  $0.12 - 0.16 \times 0.08 - 0.1$  mm, swollen, c. 1/3 as long as leaf, triangulate to ovate, 2-toothed at apex, often reduced to one cell or absent; keel narrow, straight in lingulate lobules, broad and arched in swollen lobules. Stylus distinct, unicellular, hyaline. Gemmae and sporogonium not seen.

*Habitat:* Follicolous, on *Cinnamomum verum* Presl, in evergreen forests, c. 1080 m.

*Distribution.:* Cambodia, China, Indonesia, Japan, Malaysia, Papua New Guinea, Taiwan, Thailand, Vietnam and India: Western Ghats of Karnataka and Tamil Nadu (Coimbatore).

*Specimens examined:* Western Ghats: Tamil Nadu, Coimbatore Dist., Valparai, c. 1800 m, 5.2.2015, K.C. Kariyappa & R. Sreebha 9935 p.p., 9936 p.p.(SCCN).

*Notes:* *Cololejeunea sigmoidea* was found growing with *Cololejeunea lanciloba* Steph., *C. planissima* (Mitt.) Abeyw., *Lejeunea flava* (Sw.) Nees, *Microlejeunea*

*punctiformis* (Taylor) Steph. and *Frullania densiloba* Steph. It is closely allied to *Cololejeunea ceratilobula* (P.C. Chen) R.M. Schust. but can be readily distinguished from the latter by the presence of unicellular styli and the absence of ciliate leaf lobules.

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