INTRODUCTION

Unlike the Western Ghats, Eastern Ghats are a discontinuous chain of mountain ranges with a series of much broken hills spread over three States namely Orissa, Andhra Pradesh and Tamil Nadu. Situated along the eastern side of Peninsular India, the mountain ranges take their origin from Khondomal-Simplipal Hills in Orissa and run over 1750 km south to terminate in Tamil Nadu. These ranges merge with that of the W. Ghats along the Nilgiri belt and spread over North & South Arcot, Salem, Namakkal, Dharmapuri and Tiruchirapalli districts of Tamil Nadu (Pullaiah and Rao 2002).

Knowledge on the bryoflora of the E. Ghats is far from adequate since few studies have been made viz, Kumar and Murthy’s (2007) report of 59 species of mosses from Shervaroy Hills, Rani et al.’s (2014) report of 94 species of bryophytes from Andhra Pradesh which includes mosses, liverworts and hornworts, and Sathish et al.’s (2014) list of 54 species of mosses from Kalrayan Hills, which unfortunately includes 6 liverworts thereby reducing the number of mosses to 48.

Kolli Hills, a part of the E. Ghats, lies between 11° 11’ and 11° 30’ north latitude and 78° 16’ and 78° 30’ east longitude. It spreads over two districts namely Namakkal and Salem, and covers an area of ca 473 km². Of this, 282.9 km² is under the jurisdiction of the Block Development Office. However, the rest of the area is steep and rocky with the bases covered with dense deciduous forests. The forests above 1000 m resemble the montane evergreen forests of the Western Ghats and are so moist that the branches of trees are generally clothed with epiphytic mosses, lichens, ferns and orchids. Kolli Hills remained a terra incognita for bryophytes until surveys were initiated by the authors a year ago and as a result, four species of liverworts namely *Lejeunea discreta*, *L. obscura*, *L. tuberculosa* and *Microlejeunea punctiformis* were collected from here were found to be new records for E. Ghats and are added here to the liverwort flora of the E. Ghats. Genus *Microlejeunea* Steph. is new to the Eastern Ghats. The species are described and illustrated.
Plants 0.9 - 10 mm long, pale green. Stems ca 0.084 × 0.072 mm in cross section, 6-celled across; cortex ca 9-celled, with 16 - 28 × 12 - 16 µm, thin-walled cells enclosing 12, smaller, 10 - 14 × 8 - 12 µm, thinned-walled medullary cells. Leaves imbricate to contiguous, widely to obliquely spreading, 0.36 - 0.48 × 0.32 - 0.40 mm, convex, ovate-rotundate, faintly trilobed. Rhizoids of leaf apical, unicellular, with a hyaline papilla at base; second tooth indistinct; keel almost straight, smooth. Underleaves distant, transversely inserted, 0.17 - 0.18 × 0.14 - 0.19 mm, 2 to 3 times as broad as stem, suborbicular, 2-lobed for half; lobes triangular, entire at margin, subacute. Sporogonium not seen.

**Habitat:** Corticolous in degraded evergreen forests, 1140 - 1180 m.

**Distr.:** Bhutan, China, Indonesia, Nepal, Sri Lanka and India: Eastern Himalaya, NE. India, W. Ghats and E. Ghats of Tamil Nadu (Namakkal District).

**Specimens examined:** Eastern Ghats: Namakkal Dist., Kolli Hills, Sholakkadu, 22.07.2015, ca 1140 m, P.M. Biju 10228; 1180 m, P.M. Biju 10239 (SCCN).
Fig. 1(A-II). *Lejeunea discreta* Lindenb.

A. Portion of plant B. Cross section of stem C. Leaves D. Leaf lobules E. Leaf apical cells F. Leaf median cells G. Leaf basal cells H. Underleaves (*P.M. Biju* 10217)
Fig. 2 (A - L) *Lejeunea obscura* Mitt.
A. Portion of plant B. Cross section of stem C. Leaves D. Leaf lobules
E. Leaf apical cells F. Leaf median cells G. Leaf basal cells H. Perianth
I. Bract J. Bracteole K. Cross section of perianth L. Underleaves (*P.M.Biju* 10228)
Fig. 3(A - H) Lejeunea tuberculosa Steph.
A. Portion of plant B. Cross section of stem C. Leaves D. Leaf lobule cells
E. Leaf apical cells F. Leaf median cells G. Leaf basal cells H. Underleaves
(P.M.Biju 10214)
Fig. 4(A - G). Microlejeunea punctiformis (Taylor) Steph.
A. Portion of plant B. Cross section of stem C. Leaves D. Leaf lobule cells
E. Leaf cells F. Leaf median cells with oil bodies G. Underleaf
(A.E.D. Daniels 10195)
crenulate, arched at antical margin, faintly incurved in middle at postical margin, rounded; apical cells 10 - 20 × 9 - 22 µm; median ones 12 - 22 × 16 - 24 µm; basal ones 18 - 32 × 16 - 24 µm; walls moderately and uniformly thickened; oil bodies not seen; lobules ca 1/3 as long as leaf, 0.20 - 0.21 × 0.12 - 0.19 mm, swollen, free and incurved at margin, truncate, with a 1-celled tooth at apex and a hyaline papilla at base; keel arched, faintly crenulate. Underleaves distant, transversely to obliquely inserted, 0.22 - 0.30 × 0.24 - 0.28 mm, ca twice as broad as stem, orbicular to ovate, 2-lobed for ca 1/2; lobes triangular entire or with a blunt tooth at margin. 

Habitat: Corticolous in degraded evergreen forests, ca 1140 m.

Distr.: Africa, Bhutan, Nepal, the Philippines and India: Northeast India, Himalaya, W. Ghats and E. Ghats of Tamil Nadu (Namakkal District).

Specimens examined: Eastern Ghats: Namakkal Dist., Kolli Hills, Sholakkadu, Moolihavaianam, 22.07.2015, ca 1140 m, P.M. Biju 10214 (SCCN).


Plants 1 - 2 mm long, pale olive-green. Stems sparingly and irregularly branched, ca 0.028 × 0.026 mm in cross section, 4-celled across; cortex ca 7-celled, with 10 × 14 × 9 - 12 µm thin-walled cells enclosing 4, smaller, 8 × 12 - 6 × 10 µm thick-walled medullary cells. Leaves distant, widely spreading, 0.1 - 0.16 × 0.07 - 0.09 mm, convex, ovate to ovate-rotundate, faintly crenulate, arched at antical margin, faintly incurved in middle, continuous with keel at postical margin, rounded; apical cells 8 - 14 × 8 - 12 µm; median ones 10 - 16 × 9 - 14 µm; basal ones 12 - 18 × 10 - 16 µm; walls with minute trigones and without intermediate nodular thickenings; lobules 1/2 - 3/4 as long as leaf, 0.10 - 0.13 × 0.08 - 0.11 mm, swollen, free and incurved at margin, constricted, with a 1-celled tooth at apex and a hyaline papilla at base; keel arched, smooth; oil bodies 4 to 6 per cell, ca 8 × 4 µm, elongate-elliptic. Underleaves distant, transversely to obliquely inserted, 0.06 - 0.07 × 0.04 - 0.048 mm, ca twice as broad as stem, orbicular to ovate, 2-lobed for ca 1/2; lobes triangular with a blunt tooth or entire at margin. Perianth not seen.

Habitat: Corticolous in degraded evergreen forests, ca 1110 m.

Distr.: Japan, Sri Lanka, Taiwan and India: Western Ghats and E. Ghats of Tamil Nadu (Namakkal District).


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REFERENCES


