

NOTES ON A LITTLE KNOWN MOSS FROM THE WESTERN GHATS

A.E.D. DANIELS AND K.C. KARIYAPPA

*Bryology Laboratory, Botany Department, Scott Christian College
Nagercoil - 629 003, Tamil Nadu*

ABSTRACT

Lepidopilidium furcatum, so far known only from the Western Ghats in Peninsular India for the country, finds a place only in checklists or enumerations without descriptions in Indian literature. Hence, fertile material recently collected from Agasthyamalai Biosphere Reserve in the Southernmost Western Ghats is described in detail and illustrated.

Keywords: *Lepidopilidium furcatum*, Agasthyamalai Biosphere Reserve, fertile material

INTRODUCTION

The first study on Indian bryophytes was made by Rheede (1678-1703) in his monumental work *Hortus Indicus Malabaricus* where he described one moss as 'puem-peda' which Robinson after going through Rheede's comments concluded that it should be *Bryum bicolor* (Nicolson & al., 1988). Since then, several European botanists/physicians/defence personnels/missionaries in Colonial India carried out inventories/surveys on mosses and liverworts at almost equal measures in the country and the last of the publications on the mosses of the Western Ghats was by Foreau (1964) which was mostly based on the collections made in Palni Hills between 1909 and 1959.

In the early twentieth century, the first Indian to venture into studies on bryophytes was S.R. Kashyap. He made several studies on liverworts but none pertaining to the Western Ghats. Since then, more Indians took up studies on liverworts and hornworts of different regions in the country including the Western Ghats, but mosses of the Western Ghats remained ignored. Hence, there was a lull in the study of the mosses of the Western Ghats until Raghavan and Wadhwa (1968) resumed it when they reported 28 mosses from the Agumbe and Hulical Ranges on the Western Ghats in Shimoga District of Karnataka. The only comprehensive work on Indian mosses that gives some information on the habitat and distribution of the south Indian mosses including the Western Ghats is Gangulee's *Mosses of Eastern India and Adjacent Regions* (1969-1980). Chopra's (1975) *Taxonomy of Indian mosses* does not provide descriptions for the enumerated species. A perusal of old literature on Indian mosses reveals that there are several species reported from the Western Ghats that lack descriptions and/or illustrations. *Lepidopilidium furcatum* is one such species so far known only from the Western Ghats in Peninsular India, which finds a place only in checklists or enumerations without description. Fertile material of *Lepidopilidium furcatum* is known only by the type specimens and another collection by Ferguson from Ceylon (Sri Lanka). However, neither Thwaites and Mitten (1873) nor Brotherus (1907) substantiated the description with figures.

Foreau's collections of *L. furcatum* from the Palni Hills in Western Ghats, housed in Edinburgh are sterile (Long, *in litt.*). Unfortunately, none of Foreau's moss collections is now at RHT; probably lost during the transit from Shenbaganur in Palni Hills to Tiruchirapalli (Britto, *in litt.*). However, Subramanian (1: 2008) states that he could get a large number of paper packets of mostly identified moss specimens of Foreau's collections from K.P. Chellappan, a former Head of the Department of Botany, Annamalai University, which he claims to hold in his personnel herbarium maintained at his residence. How did Chellappan get possession of Foreau's collections is not known. Against this backdrop, two recent collections from the Agasthyamalai Biosphere Reserve in the Southernmost Western Ghats, one being fertile, is described in detail and illustrated. These are probably the only collections at present in the country, housed at SCCN (Herbarium, Scott Christian College, Nagercoil) and CAL.

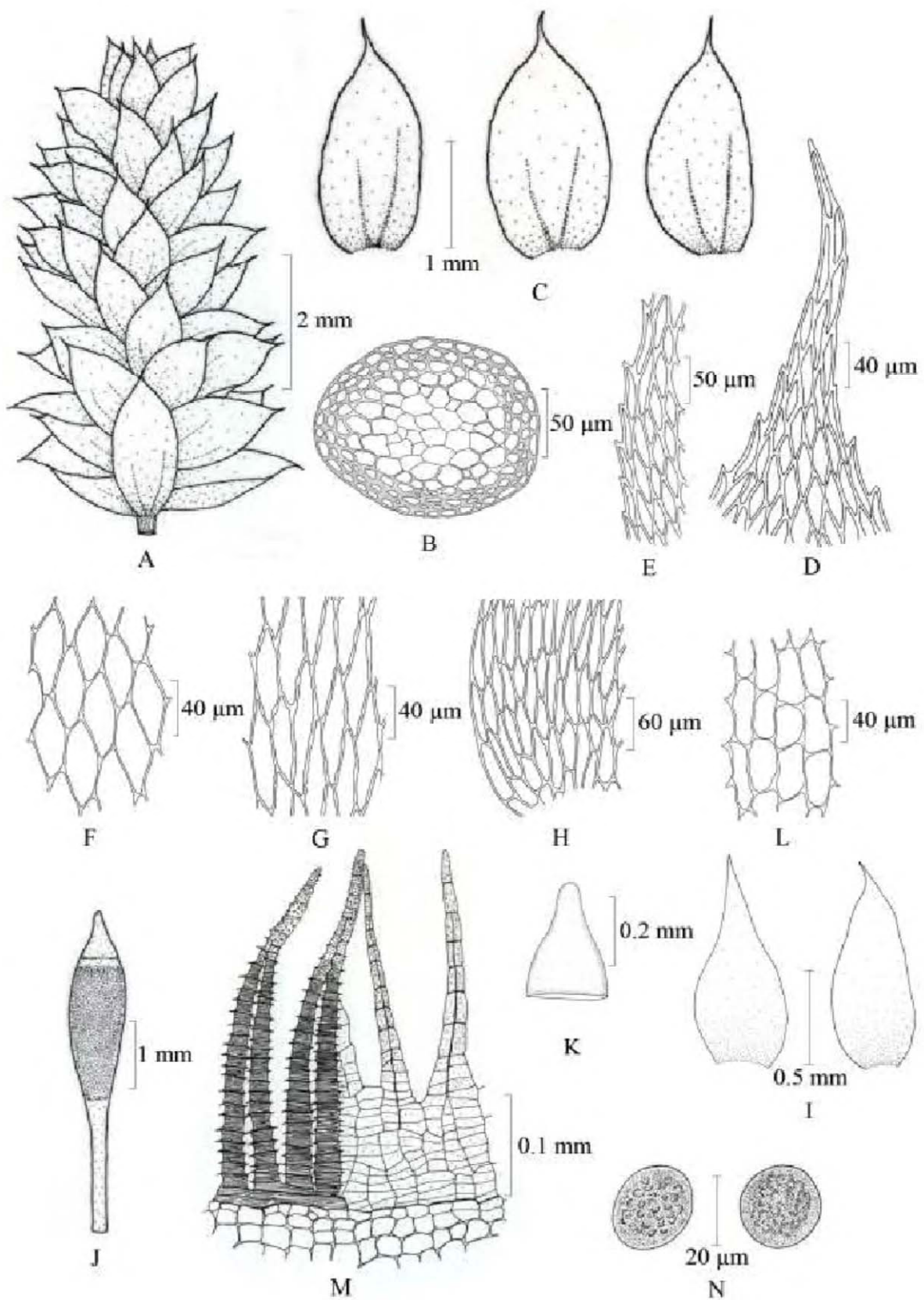


Fig. 1. *Lepidopilidium furcaum* (Twaites & Mitt.) Broth. **A.** Plant; **B.** Cross section of stem; **C.** Leaves; **D.** Leaf apical cells; **E.** Leaf marginal cells; **F.** Leaf median cells in upper half; **G.** Leaf median cells in lower half; **H.** Leaf basal cells; **I.** Perichaetial leaves; **J.** Capsule; **K.** Operculum; **L.** Capsule wall cells; **M.** Peristome teeth; **N.** Spores (drawn from Kariyappa 3627 pp.)



Plate 1. *Lepidopilidium furcatum* (Twaites & Mitt.) Broth. **A.** Plant; **B.** A portion enlarged; **C.** Cross section of stem; **D & E.** Leaves; **F.** Leaf apical cells; **G.** Leaf marginal cells below apex; **H.** Leaf median cells; **I.** Leaf marginal cells at base; **J.** Leaf basal cells; **K.** Capsule; **L.** Capsule wall cells; **M.** Peristome teeth; **N.** Stoma; **O.** Spores.

Lepidopilidium furcatum (Thwaites & Mitt.) Broth. in Engl. & Prantl, Nat. Pflanzenfam. 1(3): 944. 1907; P. de la Varde in Rev. Bryol. Lichénol. 52: 42. 1925; Foreau in J. Madras Univ. 3: 121. 1931 & J. Bombay Nat. Hist. Soc. 58: 36. 1961; Bruehl in Rec. Bot. Surv. India 13(1): 81. 1931; Wadhwa in M.V.M. Patrika 6: 74. 1971; R.S. Chopra, Taxon. Indian Moss.: 388. 1975; B.J. O'Shea in J. Hattori Bot. Lab. 92: 141. 2002; J. Lal, Checklist Indian Moss.: 81. 2005; A.E.D. Daniels in Arch. Bryol. 65: 66. 2010. *Lepidopilum furcatum* Thwaites & Mitt. in J. Linn. Soc., Bot. 13: 310. 1873. - Types: Ceylon, Central Province, *Thwaites* 123, 156 (NY, MO). (**Fig. 1; Pl. 1**)

Plants 2 - 3cm long, pale green to reddish brown. Stems creeping, branched, 0.28 - 0.36 × 0.22 - 0.26mm across, ovate, without a central strand; cortical cells 2- or 3-layered, 8 - 30 × 6 - 16µm, rounded-quadrate, thick-walled; medullary ones 20 - 48 × 16 - 30µm, hexagonal to polygonal, thin-walled. Leaves in several rows, 1.8 - 2.2 × 0.88 - 1.1mm, oblong-ovate, rarely involute on one side and toothed at margin above, long-acuminate at apex; cells rhomboid, thin-walled; apical ones 40 - 50 × 16 - 20µm; median ones 40 - 80 × 16 - 20µm, those towards base 70 - 120 × 12 - 16µm, porose; basal ones 40 - 80 × 12 - 16µm, elongate-rhomboid to elongate-rectangular; costa double, more than 1/2 as long as leaves, divergent. Sporophytes on main stem. Perichaetial leaves 1.04 - 1.12 × 0.4 - 0.48mm, ovate to oblong-ovate. Setae 2.2 - 2.5 × 0.15 - 0.16mm. Capsules erect to horizontal, 1.4 - 1.5 × 0.56 - 0.64mm, ovoid-cylindric, reddish green; outer wall cells of capsule 30 - 35 × 20 - 30µm, quadrate to rounded hexagonal, thin-walled, thickened at corners, stomatiferous. Operculum 0.6 - 0.65 × 0.47 - 0.5mm, conic. Peristome teeth 2-rowed, 0.32 - 0.36 × 0.05 - 0.06mm, with a high basal membrane, eciliate. Spores 16-20 × 20-22µm, globose to ovoid, smooth, pale brown.

Habitat: Rupicolous in evergreen forests, 1400-1868m.

Distribution: Sri Lanka and India: Western Ghats of Tamil Nadu (Madurai and Tirunelveli), rare.

Specimens examined: Tamil Nadu, Tirunelveli Dist., W. Ghats, Agasthyamalai Biosphere Reserve, Ponkalapparai, ca 1400m, 19.4.2010, K.C. Kariyappa 3627 pp.; Agasthyamalai peak, ca 1868, 19.4.2010, K.C. Kariyappa 3729 pp.

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