

**THE MOSS GENUS *AULACOPILUM*
(ERPODIACEAE, BRYOPHYTA)
NEW TO THE EASTERN GHATS IN PENINSULAR INDIA**

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Aulacopilum beccarii, earlier known from the Western Ghats for India is added here to the moss flora of the Eastern Ghats. This record is just the second for Asia and India as well, and on the other hand, the genus is new to the Eastern Ghats. A brief description with figures and a photographic plate are provided.

Key words: *Aulacopilum beccarii*, Eastern Ghats, Western Ghats

INTRODUCTION

Aulacopilum Wilson with 8 species world-wide, belongs to the family Erpodiaceae. Of these, *A. beccarii* (Müll. Hal. ex Venturi) Mitt. and *A. glaucum* Wilson were reported as new to Asia and India, respectively by Daniels *et al.* (2012) from the Western Ghats in Peninsular India.

Surveys made on the Eastern Ghats in Peninsular India recently, led to the discovery of *A. beccarii*, which is just the second record for Asia and India as well, and from a different phytogeographical region. Incidentally, the genus is new to the Eastern Ghats. A brief description is provided supported by figures and a photographic plate. The specimen is housed at SCCN.

***Aulacopilum beccarii* (Müll. Hal. ex Venturi) Mitt.
(Figs 1–34)**

Basionym: *Erpodium beccarii* Müll. Hal. ex Venturi, Nuovo Giorn. Bot. Ital. 4: 18 (1872). = *Aulacopilum beccarii* (Müll. Hal. ex Venturi) Mitt., J. Linn. Soc., Bot. 13: 308 (1873); Brotherus in Engler and Prantl, Nat. Pflanzenfam. ed. 2, 2(11): 3 (1925); Crum, H. A., Beih. Nova Hedwigia 23: 211 (1972); Pursell, Mem. New York Bot. Gard. 69: 586 (1994); Hodgetts, J. Bryol. 19: 116 (1996); Stone, J. Bryol. 19: 494 (1997); Magill and van Rooy in Leistner, Fl. S. Africa: 453 (1998); Pursell and Allen, Monogr. Syst. Bot. Missouri Bot. Gard. 90: 524 (2002). – Type: Africa, Ethiopia, *Beccari*, s.n. (NY).
= *Erpodium paraguense* Besch., Mém. Soc. Sci. Nat. Math. Cherbourg 21: 265 (1877). – Type: South America, Paraguay, on tree trunks, May 1877, *Balansa* 1214 (FH).

- = *Erpodium lorentzianum* Müll. Hal., *Linnaea* 42: 384 (1879). – Type: South America, Argentina, Mt Crún, 15 Sept. 1873, epiphytic on urunday?, *Lorentz*, s.n. (B, STR).
- = *Erpodium hanningtonii* Mitt., *J. Linn. Soc., Bot.* 22: 313 (1886). – Type: Africa (SW. Kenya), Nyanza Prov., Lake Nyanza, on *Adansonia digitata*, *Hannington*, s.n. Herb. Mitt. (NY).
- = *Erpodium joannis-meyeri* Müll. Hal., *Flora* 73: 486 (1890). – Type: Africa (NE Tanzania), Mt Kilimanjaro, 1,800 m, on a tree trunk, 1889, *Hans Meyer*, s.n. (B).
- = *Erpodium menyharthii* Müll. Hal., *Verh. k.-k. zool.-bot. Ges., Wien* 43: 13 (1893). – Type: Africa, Zambezi, around Boroma (Somalia), on bark of tree trunk, Aug. 1890, *Menyharth*, s.n. (B).
- = *Erpodium opuntiae* Cardot, *Rev. Bryol.* 37: 6 (1910). – Type: North America, Mexico, around Oaxaca, on *Opuntia* sp., 1894, *Pringle* 31a (FH, MICH, MO, NY).

Plants 1–1.5 cm long, slender, in loose or dense mats, dark green. Stems creeping, irregularly branched, green to brown, *ca* 0.16 × 0.12 mm in cross section, 11–12-celled across; cortex 2-layered; cells 4–12 × 3–8 µm, thick-walled; medullary cells 10–24 × 8–20 µm, thin-walled; branches horizontal to ascending. Leaves patent, deeply concave, 1–1.2 × 0.3–0.4 mm, oblong-ovate, crenulate-papillose at margin, acute to acuminate, tapering to a uniseriate, brittle awn, ecostate; awn broad at base, *ca* 0.45 mm long, distantly serrulate; cells thin-walled, hexagonal to quadrate, multipapillate, distinct; papillae 2–5 per cell, verrucose; apical cells 12–20 × 8–16 µm; median ones 12–16 × 10–14 µm; those at base 10–28 × 8–20 µm. Rhizoids clustered along ventral surface of stem, pale brown. Sporophytes on branches. Perichaetial leaves larger than vegetative ones, 2–2.6 (including awn) × 0.6–0.8 mm, ovate-oblong, entire, acuminate; cells elongate-rhomboid; apical ones 32–64 × 8–10 µm, epapillate; median ones 24–72 × 8–12 µm, multipapillate; those at base 16–24 × 8–20 µm, epapillate. Setae *ca* 0.25 mm high. Capsules immersed, *ca* 1.2 × 0.5 mm, cylindrical-ovoid, pale brown; annulus deeply inserted, with 5 or 6 rows of more or less rectangular, 16–32 × 8–12 µm cells. Operculum convex, rostellate, *ca* 0.35 × 0.28 mm. Stomata at capsule base only, *ca* 6 × 4 µm; guard cells *ca* 20 × 12 µm. Calyptra not seen. Spores globose to ovoid, 28–36 × 24–32 µm, papillose, pale brown.

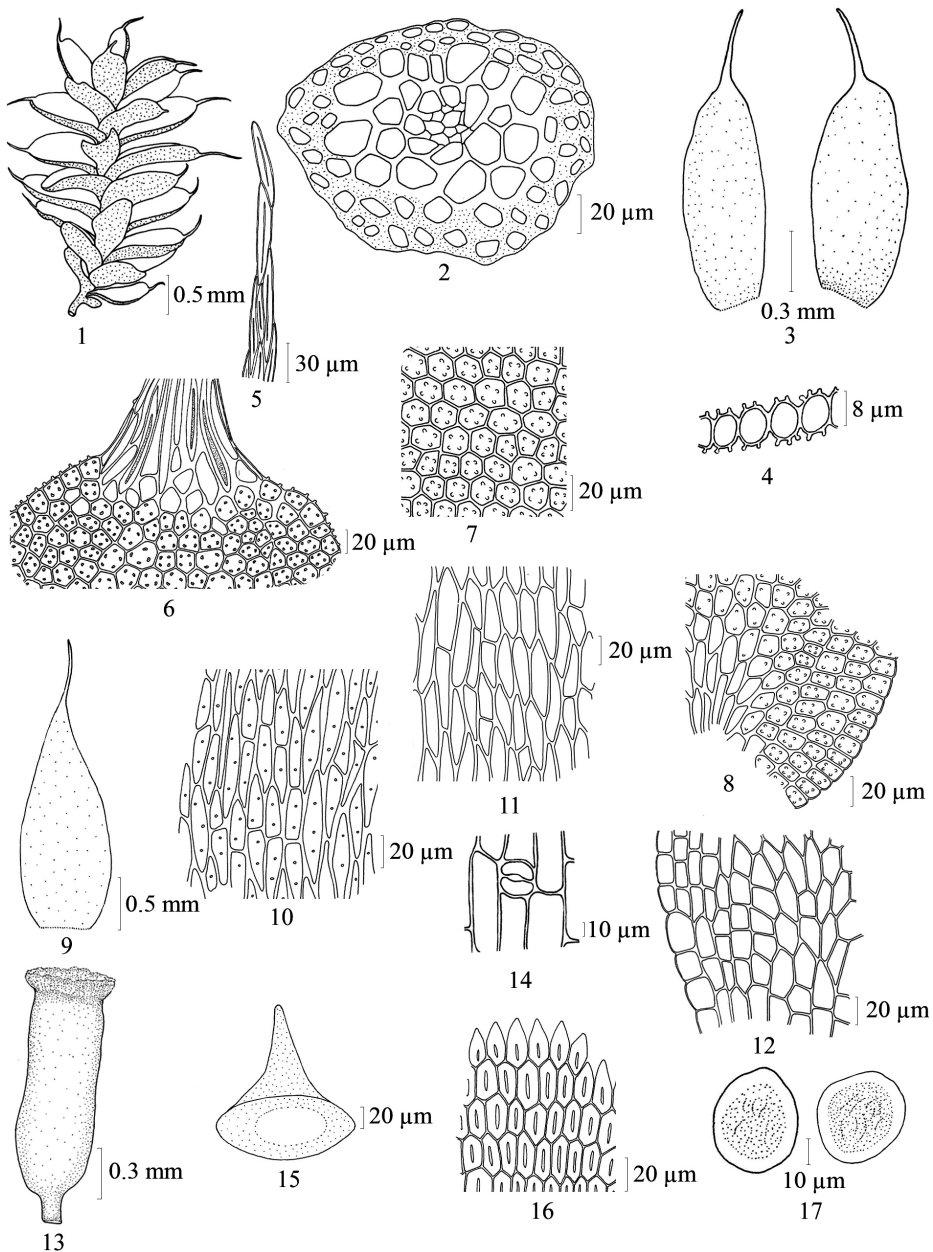
Habitat: Corticolous on *Mangifera indica* L. (Anacardiaceae), in mixed plantations, *ca* 1,020 m.

Distribution: Africa, Australia, Mexico, South America and India: Western Ghats and Eastern Ghats of Tamil Nadu.

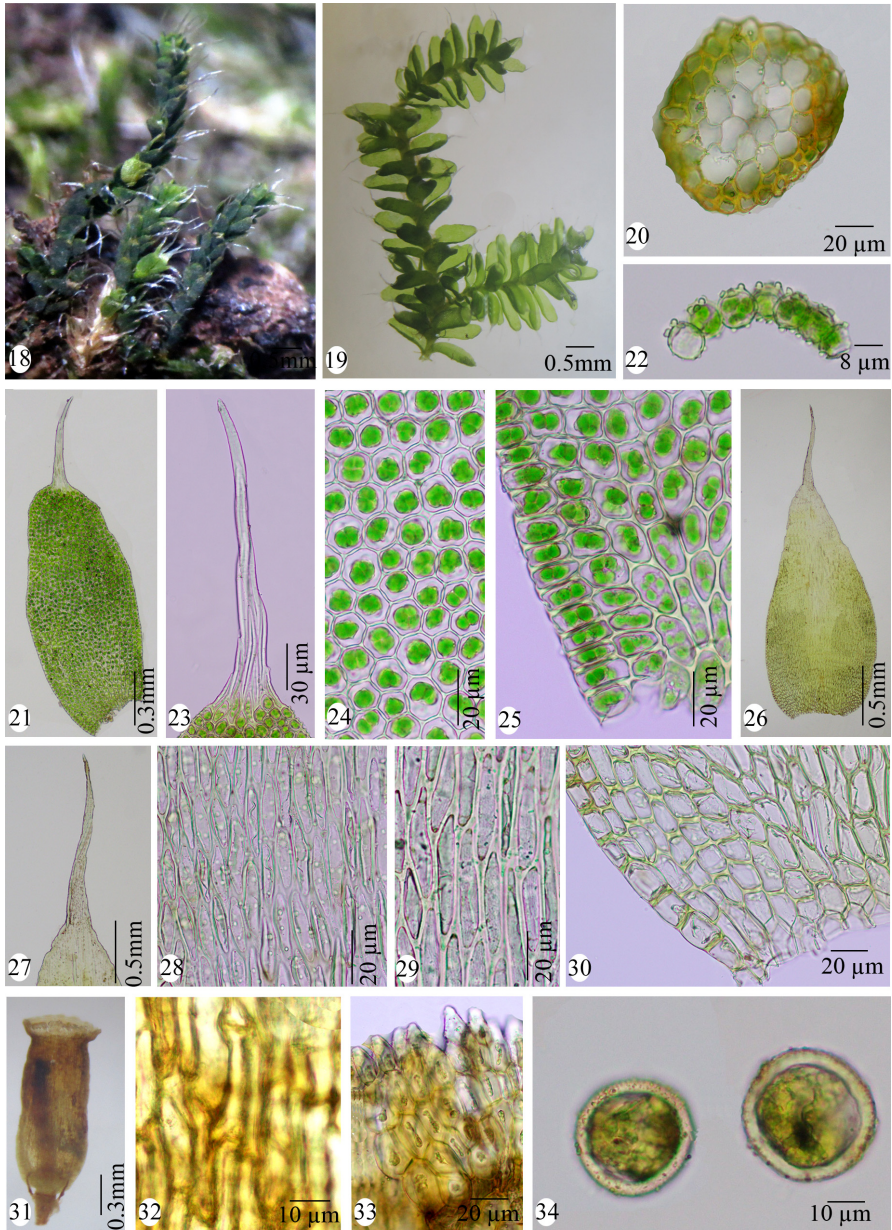
Specimen examined: India, Tamil Nadu, Salem Dist., Eastern Ghats, Sherveroy Hills, Kottaikkad. Alt.: *ca* 1,020 m a.s.l., 12.08.2015, Daniels, A. E. D. and Biju, P. M. (11418 p.p.).

DISCUSSION

Based on the distributional records, *Aulacopilum beccarii* appears to be a tropical species. In the Western Ghats, the plant was found to grow on *Albizia odoratissima* (L.f.) Benth. (Mimosaceae), a medium-sized tree in degraded



Figs 1–17. *Aulacopilum beccarii* (Müll. Hal.) Mitt. – 1 = portion of plant, 2 = cross section of stem, 3 = leaves, 4 = portion of cross section of leaf, 5 = awn, 6 = leaf apical cells, 7 = leaf median cells, 8 = leaf basal cells, 9 = perichaetial leaf, 10 = median cells of perichaetial leaf, 11 = midbasal cells of perichaetial leaf, 12 = basal cells of perichaetial leaf, 13 = capsule, 14 = stoma, 15 = operculum, 16 = annulus, 17 = spores (Daniels, A. E. D. and Biju, P. M. 11418 p.p.)



Figs 18–34. *Aulacopilum beccarii* (Müll. Hall.) Mitt. – 18 = habitat, 19 = plant, 20 = cross section of stem, 21 = leaf, 22 = portion of cross section of leaf, 23 = leaf apical cells, 24 = leaf median cells, 25 = leaf basal cells, 26 = perichaetial leaf, 27 = apical cells of perichaetial leaf, 28 = median cells of perichaetial leaf, 29 = midbasal cells of perichaetial leaf, 30 = basal cells perichaetial leaf, 31 = capsule, 32 = stomata, 33 = annulus, 34 = spores (Daniels, A. E. D. and Biju, P. M. 11418 p.p.)

evergreen forests, ca 800 m. In Kenya (Africa) it was corticolous on *Adansonia digitata* L. (Bombacaceae), whereas in Tanzania (Africa) it occurs on many kinds of native or planted trees and even on dry granitic rocks (Bizot and Pócs 1974). In Mexico (North America) it was epiphytic on *Opuntia* sp. (Cactaceae). The present collection was made on *Mangifera indica* L. in mixed plantations. This reveals that the species is neither host nor habitat specific.

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