

TWO MOSSES NEW TO THE BRYOFLOTA OF THE INDIAN MAINLAND

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ABSTRACT

Two mosses, viz., *Calymperes moluccense* and *C. taitense*, earlier known to occur only in the Andamans in India, are recorded for the Indian mainland. They are described in detail and illustrated.

Keywords : Andamans, New Records, Mainland India, *Calymperes moluccense*, *Calymperes taitense*.

INTRODUCTION

Since the lower groups of plants are continued to be neglected in India, studies on the bryoflora of the Southern Western Ghats were initiated in the Tirunelveli-Travancore hills about a decade ago with a view to consolidating the flora and the important findings are published as and when found. In an earlier contribution 4 mosses, viz., *Calymperes motleyi*, *Fissidens robinsonii*, *Leucophanes glaucescens* and *L. nicobaricum* were recorded for the Indian mainland (Daniels & Daniel, 2005). In the present contribution two mosses, viz., *Calymperes moluccense* Schwägr. and *C. taitense* (Sull.) Mitt., earlier known to be distributed only in the Andaman & Nicobar Islands in India, are added here to the bryoflora of the Indian mainland. Each species is provided with the correct name, basionym/synonyms, if any, a detailed description, notes on habitat and distribution and an illustration. Specimens cited are at SCCN (Herbarium, Botany Department, Scott Christian College, Nagercoil).

1. ***Calymperes moluccense*** Schwägr., Sp. Musc. Frond. Suppl. 2: 99. 1824; Bruehl, Rec. Bot. Surv. India 13(1): 33. 1931; L.T. Ellis, J. Bryol. 15: 705. 1989. - Type: Moluccas, Rawack, *Gaudichaud* 29(15) (Isotypes - BM). *C. kurzianum* Hampe ex Müll.Hal., Flora 61: 82. 1878; Bruehl, Rec. Bot. Surv. India 13(1): 32. 1931; Gangulee, Moss. E. India. 1(3): 598. 1972; Lal, Checklist Indian Moss.: 35. 2005. - Type: South Andaman Isl., *S. Kurz* 1665 (BM). *C. contractum* Besch., Ann. Sci. Nat., Bot. 8, 1: 264, 280. 1855. - Type: Sri Lanka, *Thwaites* 62 (BM). (**Fig. 1**).

Plants 4 - 6 mm high, caespitose or forming mats, pale green. Leaves curled and falcate when dry, erectopate to spreading when wet, ovate-lingulate, cuneate at base, 1.5 - 3 × 0.4 - 0.6 mm, dimorphic; nongemmiferous ones obovate to lingulate, acute; margin entire at tip, faintly toothed at base; cells hexagonal to quadrate, 1-papillate; apical and median cells 4 - 8 × 4 - 8 µm; basal ones at margin 16 - 32 × 4 - 8 µm; those of cancellina 9- or 10-rowed on either side of costa, 20 - 40 × 16 - 40 µm, transparent, elongate, rectangular, smooth; teniola, submarginal, 2- or 3-rowed, extending to a little below apex; costa excurrent. Gemmae 120 - 200 × 24 - 40 µm, green, radiating and clustered at costal apex. Sporophyte not seen.

Habitat: Corticolous, in riparian forests, c. 500 m.

Distribution : Indonesia (Moluccas), Sri Lanka and India: Andaman & Nicobars and Tamil Nadu (W. Ghats of Kanyakumari dist.).

Specimen examined : Tamil Nadu, Kanyakumari dist., W. Ghats, Lower Kodaiyar, c. 500 m, 22.01. 2009, A.E.D. Daniels & J.L. Mabel 106.

2. ***Calymperes taitense*** (Sull.) Mitt., J. Linn. Soc. Bot. 10: 172. 1868; L.T. Ellis, J. Bryol. 15: 718. 1989. *Syrhophodon taitense* Sull., U.S. Expl. Exped., Musc.: 6. 1860. - Type: Society Isl., Tahiti, 1838 - 1842, *C. Wilkes* s.n. (BM). *Calymperes andamense* Besch., Ann. Sci. Nat. Bot. 8, 1: 276. 1895; Bruehl, Rec. Bot. Surv. India 13(1): 33. 1931; Gangulee, Moss. E. India 1(2): 622. 1971; Lal, Checklist Indian Moss.: 35. 2005. - Type: South Andaman Isl., *Kurz* s.n. (BM). (**Fig. 2**).

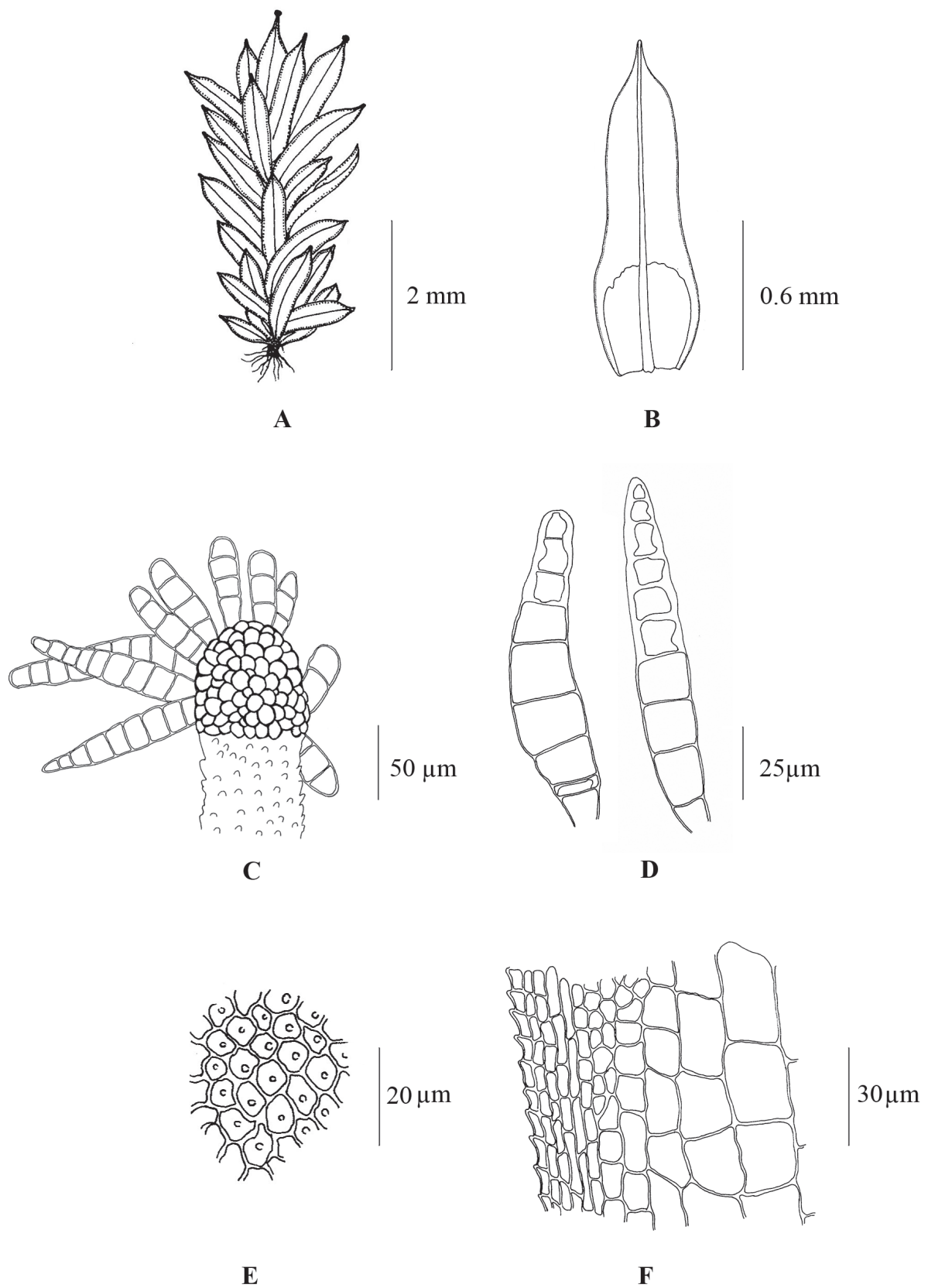


Fig. 1(A-F). *Calymperes moluccense* Schwägr.: **A.** Habit; **B.** Leaf; **C.** Leaf apex with gemmae; **D.** Gemmae
E. Leaf median cells; **F.** Leaf basal cells with teniola and cancellina.

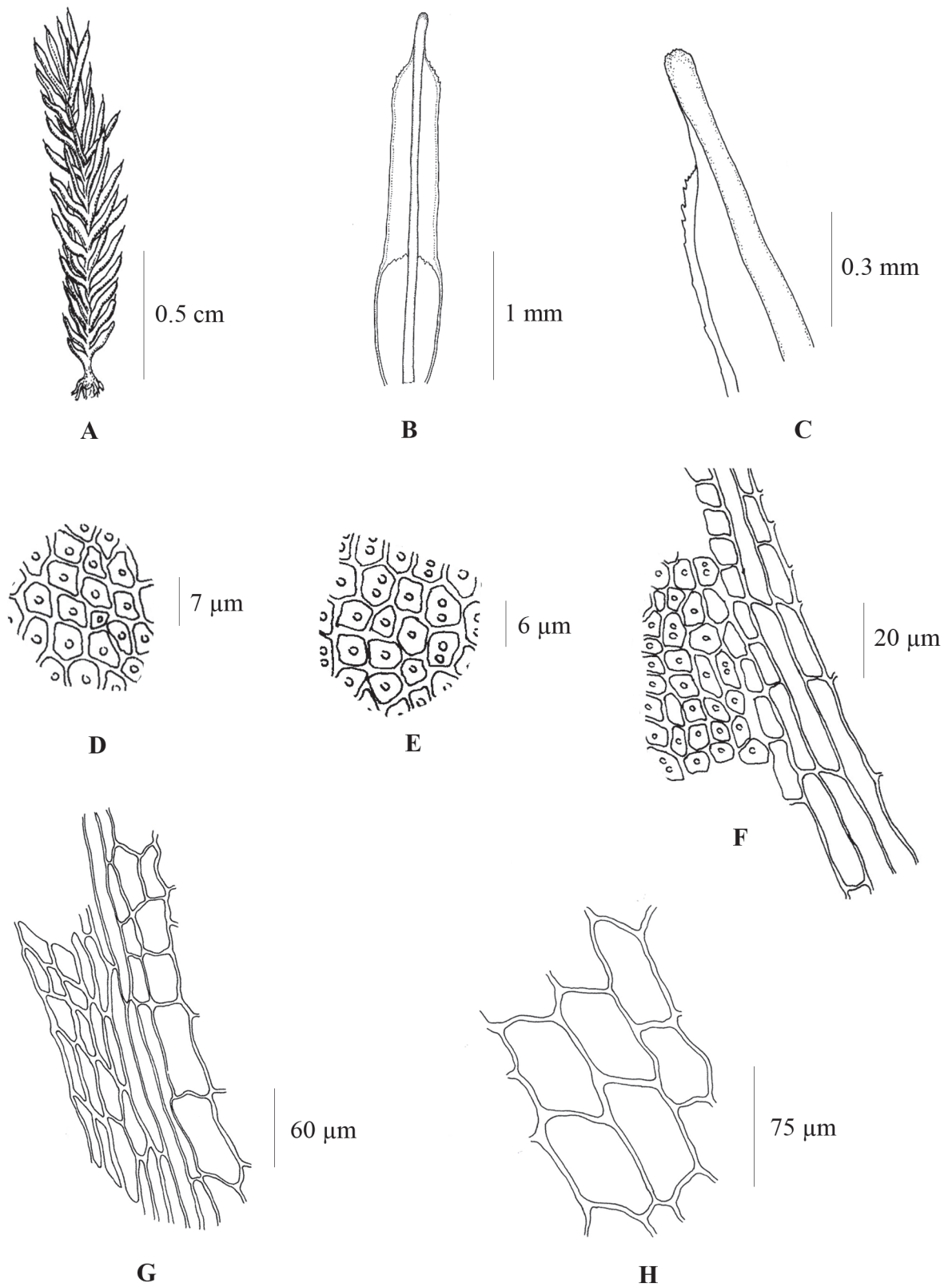


Fig. 2(A-H). *Calymperes taitense* (Sull.) Mitt.: **A.** Habit; **B.** Leaf; **C.** Leaf apex; **D.** Leaf apical cells; **E.** Leaf median cells; **F.** Median cells with teniola; **G.** Leaf basal cells with cancellina and teniola and **H.** Cancellina cells.

Plants 1 - 2 cm high, caespitose, green. Leaves closer above, lax below, erectopatent, curled when dry, $1.5 - 2.5 \times 0.3 - 0.7 \mu\text{m}$, ovate-lingulate, serrate at margin; cells incrassate, quadrate-rectangular - hexagonal, cells $8 - 20 \times 6 - 16 \mu\text{m}$, unipapillate; cancellinae cells 9 - 13-rowed, hyaline, $16 - 32 \times 12 - 20 \mu\text{m}$, rectangular, on either side of costa; teniola submarginal, 3- or 4-rowed, extending to a little below apex; costa excurrent, gemmiferous. Sporophyte not seen.

Habitat : Corticolous, in degraded evergreen forests, 200 - 550 m.

Distribution : South East Asia, Oceania and India: Andamans, Tamil Nadu (W. Ghats of Tirunelveli and Kanyakumari dists.) and Kerala (W. Ghats of Thiruvananthapuram dist.).

Specimens examined : Tamil Nadu, Kanyakumari dist., W. Ghats, Maramalai, c. 550 m, 2.10.2004, Hepzi 67; Perunchani, c. 260, 18.3.2004, Catherine 27; Kattuva, c. 200 m, 30.8.2004, Shoba 20. Kerala, Thiruvananthapuram dist., W. Ghats, Neyyar Wildlife Sanctuary, c. 300 m, 16.10.2007, Brijithlal 206; 22.12.2007, Brijithlal 259.

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REFERENCES

- BRUEHL, P. 1931. A census of Indian mosses with analytical keys to the genera. *Rec. Bot. Surv. India* 13(1): 1 - 135; 13(2): 1 - 152.
- DANIELS, A.E.D. AND P. DANIEL. 2005. Additions to the moss flora of the Indian mainland. *Bull. Bot. Surv. India* 47: 93 - 100.
- ELLIS, L.T. 1989. A taxonomic revision of *Calymperes* in Southern India and neighbouring islands. *J. Bryol.* 15: 697 - 732.
- GANGULEE, H.C. 1969 - 1980. Mosses of Eastern India and adjacent regions. 1 - 3(1 - 8): 1 - 2142. Calcutta.
- LAL, J. 2005. A checklist of Indian Mosses. BSMPS, Dehradun.

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