

AEQUATORIELLA

Andries Touw¹

Aequatoriella Touw, *J. Hattori Bot. Lab.* 90: 202 (2001).

Type: *A. bifaria* (Bosch & Sande Lac.) Touw

Description as for the species.

This monotypic genus is widespread in Malesia and Melanesia.

References

Touw, A. (1993), Notes on tropical Asia Thuidiaceae, with two new Malesian species of *Thuidium* s.l., *J. Hattori Bot. Lab.* 74: 193–204.

Touw, A. (2001a), A review of the Thuidiaceae (Musci) and a realignment of taxa traditionally accommodated in *Thuidium sensu amplo* (*Thuidium* Schimp., *Thuidiopsis* (Broth.) M.Fleisch., and *Pelekium* Mitt.), including *Aequatoriella* gen. nov. and *Indothuidium* gen. nov., *J. Hattori Bot. Lab.* 90: 167–209.

Touw, A. (2001b), A taxonomic revision of the Thuidiaceae (Musci) of tropical Asia, the western Pacific, and Hawaii, *J. Hattori Bot. Lab.* 91: 1–136.

Aequatoriella bifaria (Bosch & Sande Lac.) Touw, *J. Hattori Bot. Lab.* 90: 202 (2001)

Thuidium bifarium Bosch & Sande Lac., in Dozy & Molke, *Bryol. Javan.* 2: 123 (1865); *Pelekium bifarium* (Bosch & Sande Lac.) M.Fleisch., *Musci Fl. Buitenzorg* 1513 (1923); *Lorentzia bifaria* (Bosch & Sande Lac.) W.R.Buck & H.A.Crum, *Contrib. Univ. Michigan Herb.* 17: 64 (1990). T: Sumatra, ad literis occidentale, *J.E.Teijsmann s.n.*, L 910.123.1145; lecto: L, *fide* A.Touw, *op. cit.*; isolecto: BM, FH, H, NY, S, UPS; Sumatra, *P.W.Korthals s.n.*; syn: FH, L; Java, Depok, *Holle s.n.*; syn: L.

Illustrations: A.Touw, *op. cit.* 195, fig. 1 (1993), as *Thuidium hattorii*; A.Touw *op. cit.* 63, fig. 17 (2001b).

Dioicous. Plants pale sordid green to yellowish green or brownish, forming open or intricate wefts or straggling among other mosses, bipinnate or weakly tripinnate, often consisting of prostrate stems and ascending once-pinnate branches forming small separate fronds. Stems to 10 (–25) cm long, creeping and arching. Branches to 8 mm long, mostly unilateral and ascending, weakly to strongly compressed when moist, flexuose or coiled when dry, remotely once-pinnate, with to 6 (–13) branchlets on both sides. Axillary hairs consisting of 1 (–2) orange basal cells, and 1 colourless or yellowish distal cell. Stem paraphyllia to 9 cells long, mostly simple, occasionally with a branch 1 or 2 cells long, occasionally almost lacking; cells smooth or weakly papillose. Branch paraphyllia occasionally lacking; branchlets naked or nearly so. Stem pseudoparaphyllia to 0.4 mm long, often conspicuous, squarrose.

Stem leaves 0.5–0.7 (–1.0) mm long, mostly narrowly triangular, erect to broadly patent when moist, often twisted from a patent base when dry; apical part contracted to a narrowly triangular acumen often longer than the rest of the leaf, mostly piliferous; hair tip of up to 10 quadrate to short-linear cells, often broken; margin narrowly recurved below, mostly plane and almost entire upward, not appendiculate; costa abaxially smooth or nearly smooth, not appendiculate; median leaf cells 5–8 µm wide, nearly isodiametric to oblong, almost flat on both leaf faces or mammillose and 1(–2)-papillose; adaxial face least strongly ornamented;

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apical cell usually truncate and pluripapillose. Leaves of ultimate branchlets to 0.4 mm long, ovate to ovate-oblong, oblong or lingulate, often asymmetrical, complanate, and not overlapping, incurved or twisted and folded when dry, more straight and more distinctly concave when moist; apex mostly wide and broadly acute, less often narrowly acute; margin plane; costa dividing many leaves into unequal parts, abaxially smooth, mammillose-unipapillose, or prorate; median leaf cells 5–10 μm wide, smooth or unipapillose, equally ornamented on both leaf faces; apical cell truncate or rounded, pluripapillose.

Perichaetia thick and mostly fluffy due to numerous flexed leaf apices and cilia. Inner leaves with a serrate-dentate margin at the leaf base, ciliate upward; acumen flexuose, much longer than the rest of the leaf, mainly consisting of the costa, piliferous; hair tip consisting of to 5 (–8) hyaline cells. Setae 20–25 mm long, stout, covered by low mamillae and unicellular spines to 150 μm tall. Capsules 1.5–3.0 mm long, brown, inclined to subnutant, ovoid, weakly constricted below the orifice; stomata up to c. 30. Peristome complete, not reduced. Spores 8–15 μm . Operculum narrowly long-rostrate; rostrum almost straight. Calyptrae to 3 mm long, narrowly to broadly campanulate; base often contracted, many-lobed, minutely scabrid, occasionally bearing multicellular bristles or appressed hairs.

Known from Christmas Island, but not yet collected in continental Australia. Widespread from the Nicobars, Peninsular Thailand and Botel Tobago (near Taiwan) to Fiji; usually in rainforest from sea level to 1000 (–1370) m, on damp clayey soil and weathered rock (mostly limestone), less often on decaying wood, tree trunks, and tree bases.

CHRISTMAS ISLAND: 1.5 km ESE of Jacks Hill, *H.Lepp* 70171 (CANB); E of Grants Well, *H.Lepp* 70342 (CANB); S of Hanitch Hill, *J.Claussen* 15 (CANB).

Plants vary greatly in size and general appearance. Most are slender and resemble species of *Pelekium*, but tall plants are similar in size to *Thuidium*. *Aequatoriella bifaria* can be identified readily by its sporophytes but these are usually lacking. Other diagnostic characters include mostly strongly complanate branches and narrowly triangular stem leaves with smooth or nearly smooth costae lacking abaxial appendages. Additional differences from *Thuidium* include axillary hairs with a single distal cell, unbranched or scarcely branched, short and smooth or weakly ornamented paraphyllia, smooth or weakly ornamented stem leaf cells, and branch leaf cells ornamented on both faces. Species of *Pelekium* are monoicous, lack strongly ciliate perichaetial leaves, and have stem leaves ending in a short hair, if any.