

PTERIGYNANDRACEAE

(Brian J. O'Shea)

The Pterigynandraceae contain about five genera and 20-25 species; primarily of the Northern Hemisphere. The definition and circumscription of the family, a member of the Hypnales, is outlined by Buck and Crum (1990). Only one genus is known from sub-Saharan Africa (*Trachyphyllum*), but *Pterigynandrum filiforme* Hedw. is known from northern Africa; it is distinguished by slender, julaceous branches, elliptic to oblong-ovate leaves (to 1 mm long), apices acute, short and forked costa, and the cells strongly projecting at both ends.

Trachyphyllum A.Gepp in Hiern (Fig. XX)

A pantropical genus of seven species, four of which occur in Africa (O'Shea 1999).

Plants small, forming rather dense mats, brownish green to yellow. **Stems** creeping, 1-pinnately branched, branches short, suberect and curved; in cross-section outer 2-3 rows of cells small, thick-walled, inner cells larger, thin-walled, central strand weak; rhizoids clustered beneath stems, appearing smooth. **Leaves** of stem julaceous to erect, broadly ovate-lanceolate, to 1.2 mm long, apex acuminate to apiculate; margins plane or slightly reflexed at base, appearing denticulate at mid region; costae short and forked, joined at base; apical cells long linear, smooth or nearly so; median cells linear (shorter than apical cells), rather strongly papillose by projecting cell angles; basal cells adjoining costa oblong-rectangular, porose; alar region well differentiated, cells numerous, extending to, or just beyond broadest portion of leaf, oblate short rectangular to subquadrate; marginal cells at mid leaf shorter and broader; branch leaves usually smaller, narrowly ovate-lanceolate, apex slenderly long acuminate.

Dioicous. Perichaetia lateral; leaves abruptly long acuminate from an oblong base, costae single or double, margins strongly serrate, teeth sometimes multicellular. **Seta** elongate, smooth, twisted. **Capsule** exserted, inclined, urn short-cylindrical, asymmetric, constricted below mouth when dry; exothecial cells quadrate to rectangular, not collenchymatous; stomata at urn base, superficial; annulus absent. **Operculum** short rostrate. **Peristome** double, exostome teeth 16, densely cross-striate below, distally papillose, median zig-zag line present, trabeculate on back; endostome nearly equal exostome length, basal membrane rather high, segments 16, keeled and perforate, finely papillose, cilia well-developed, 1-3. **Calyptra** cucullate, smooth and naked. **Spores** spherical, finely papillose.

HABITAT. Tree trunks and bases, rocks, broken ground and soil; in open woodland, at elevations from 500--1800 m.

DISCUSSION. The genus is recognized by the broadly ovate-lanceolate leaves, acuminate to apiculate apex, short and forked double costa, upper long, smooth, linear apical cells, projecting papillae at distal angle of median cells, and well differentiated alar cells that extend up the margin of the leaf. Not often seen with sporophytes.

The gametophytes of *Trachyphyllum* can be mistaken for *Erythrodontium* (Entodontaceae), but are readily separated by the strong projecting papillae at the distal cell angles of *Trachyphyllum*, and smooth laminal cells of *Erythrodontium*. *Trachyphyllum* was only recently reported in the Americas (Buck & Griffin, 1984).

LITERATURE. **Buck, W. R. 1979.** A revision of the moss genus *Trachyphyllum* Gepp (Thuidiaceae). *Brittonia* 31: 379-394 [keys, illustrations]. **Buck, W. R. & Crum, H. 1990.** An evaluation of familial limits among the genera traditionally aligned with the Thuidiaceae and Leskeaceae. *Contributions to the University of Michigan Herbarium* 17: 55-69. **Buck, W. R. & Griffin III, D. 1984.** *Trachyphyllum*, a moss genus new to South America with notes on African-South American bryogeography. *Journal of Natural History* 18: 63-69. **O'Shea, B.J. 1999.** British Bryological Society Expedition to Mulanje Mountain. Malawi. 11. Pterigynandraceae M.Fleisch. and Rigodiaceae H.A.Crum (Bryopsida) in Africa. [key to African species, distribution map]