ANOMODONTACEAE

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Anomodontaceae Kindb., *Gen. Eur. North Amer. Bryin.* 6 (1867).

Type: *Anomodon* Hook. & Taylor

Dioicous or monoicous. Plants perennial, pleurocarpous, small to large, in thin to dense mats. Stems of primary axis prostrate, creeping, occasionally becoming stoloniferous, irregularly branched; secondary stems and branches prostrate to ascending or erect, irregularly or rarely somewhat pinnately branched; branch apices often curved, sometimes attenuate-flagelliform, becoming stoloniferous; central strand present or absent; paraphyllia lacking. Leaves of primary stems small and scale-like, those of secondary stems and branches well developed, similar (although branch leaves somewhat smaller), imbricate to erect-spreading, occasionally catenulate when dry, erect to erect-spreading when wet, lingulate, broadly lanceolate to ovate or ovate-lanceolate, often somewhat shouldered at mid-leaf; apices rounded-obtuse to acute, rarely acuminate; margins plane or recurved proximally, occasionally undulate or rugose, entire to often serrulate or serrate distally; costa single, strong, reaching mid-leaf or into the acumen, or percurrent, rarely excurrent as an awn, often sinuose distally. Laminal cells irregularly quadrate to short-rhomboidal or hexagonal, mostly thin-walled, clear or often pellucid, smooth or singly or multipapillose over the cell lumen; papillae low to high-mammillose, occasionally branched; cells at base more oblong, not strongly differentiated, smooth; alar cells not differentiated, mostly smooth.

Perichaetia lateral on secondary stems; perichaetial leaves larger, narrower and more acute to acuminate than vegetative leave. Seta slender, red to brown, short to long, straight or twisted. Capsules usually exserted, sometimes immersed, erect or weakly inclined, symmetrical, cylindrical or ovate, smooth; annulus differentiated; operculum conical to obliquely rostrate. Peristome double; exostome teeth lanceolate, whitish, densely papillose, rarely weakly cross-striolate proximally, not or rarely weakly trabeculate; endostome reduced, ±absent or present as a low thin basal membrane, white to yellow; segments present or absent, narrow, not keeled; cilia rudimentary or absent; calyptra cucullate, smooth to sparsely hairy. Spores spherical, 9–20 (–24) µm diam., moderately to densely papillose.

The family includes 6 or 7 genera and perhaps 30 species. It occurs in temperate, subtropical and tropical regions of the world, with its centre of diversity in SE Asia. Traditionally, the Anomodontaceae has been included within the Thuidiaceae, but it lacks the characteristic paraphyllia of that family.

Three genera and three species are known from Australia. I follow the traditional classification of genera within the family (Watanabe, 1972; Goffinet *et al.*, 2008), as molecular studies (Gardiner *et al.*, 2005) do not support the morphological classification proposed by Granzow-de la Cerda (1997). Further research, using a combined approach, will be required in order to determine generic relationships within this family.

References

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Key to Genera

1 Distal and median laminal cells smooth; plants robust; $_{distal}$ laminal margins coarsely dentate..... ..... **HERPETINEURON**

1: Distal and median laminal cells strongly pluripapillose; plants small and slender to medium-sized; distal laminal margins smooth to serrate.....2

2 Costa reaching to 1/2–3/4 of the lamina; leaves lingulate, not decurrent, appressed when dry; apex broadly acute, not hyaline-tipped; apical cells short; plants somewhat complanate .... **HAPLOHYMENIUM**

2: Costa strong, percurrent; leaves ovate-lanceolate, decurrent, spirally twisted around the stem when dry; apex slender, long-acuminate, hyaline, ending in an elongate apical cell; plants not complanate .... **ANOMODON**