

## FONTINALACEAE

(Ron D. Porley)

The Fontinalaceae comprise 3 genera and about 30 species, mostly of the north temperate region with only one genus in sub-Saharan Africa, *Fontinalis*. The family is placed in the order Leucodontales.

**Fontinalis** L. in Hedw. (Fig. XX).

Four taxa are known in the region, restricted to the South African Cape, Eritrea and Ethiopia. About 20 species are known worldwide, largely from the Northern Hemisphere.

**Plants** aquatic, forming loose floating mats, trailing from a single point of attachment, light to dark green. **Stems** usually elongate (to 50 cm long or more), frequently denuded below, irregularly pinnately branched; in cross-section outer 4-5 rows of cells small, thick-walled, inner cortical cells large, thin-walled, central strand absent. **Leaves** unistratose, rather flaccid, 3-ranked or appearing 2-ranked, loosely spreading, ovate-lanceolate, 3.5--5 mm long, to 2.2 mm wide, flat, concave or carinate, apex obtuse-rounded, occasionally somewhat cucullate, base rounded to subauriculate; margins plane, entire; costa absent, but a bistratose region in extreme leaf base may be present; laminal cells thin-walled, smooth, upper and median cells fusiform to broadly linear; basal cells rectangular-rounded; insertion cells often yellow or golden-brown; alar cells strongly differentiated, enlarged, thin-walled, subhexagonal to subquadrate. **Dioicous**. **Seta** very short. **Capsule** immersed to emergent, oval cylindrical. **Operculum** long conical. **Peristome** double, exostome occasionally united in pairs at apex. **Calyptra** mitrate to rostrate, smooth, naked. **Spores** spherical, smooth or finely papillose. (Sporophytes are not reported from Africa; description is taken from European and North American plants).

**HABITAT.** Usually attached to submerged rocks and wood in slow to fast flowing streams or in ponds, but may be exposed for short periods when water levels drop. South African plants are believed to be introductions from Europe (Magill & van Rooy 1998).

**DISCUSSION.** *Fontinalis* is distinguished by its aquatic habitat, 3-ranked, ecostate leaves, thin-walled elongate cells, and immersed capsules. Sporophytes are however unknown in sub-Saharan Africa, and dispersal is probably by fragmentation of leafy stems and branches. Buck and Allen (1997) suggested that the Fontinalaceae belong to the Leucodontales based on branching pattern, rhizoid-associated anatomy and axillary hairs. The four taxa can be separated as follows: *Fontinalis antipyretica* Hedw. var. *antipyretica*, known from Eritrea, is distinguished from the other species by keeled or deeply channelled leaves when wet. *F. antipyretica* Hedw. var. *gracilis* (Lindb.) Schimp., known from Western Cape (South Africa), is more slender than the type with smaller leaves and cell dimensions. *F. hypnoides* Hartm. var. *duriaei* (Schimp.) Husn., known from Eritrea and Ethiopia, has well-spaced, soft, broad ovate-lanceolate, nearly flat leaves. *F. squamosa* Hedw. var. *squamosa*., known from the South Africa Cape, has concave leaves with 1-3 marginal rows of slightly narrow, yellowish cells.

**LITERATURE.** **Buck, W.R. & Allen, B. 1997.** Ordinal placement of the Fontinalaceae. *Cryptogamie: Bryologie, Lichénologie* 18: 227-234. **Magill, R.E. & van Rooy, J. 1998.** - see general ref. **Welch, W.H. 1960.** A monograph of the Fontinalaceae. The Hague: Nijhoff. [keys, illustrations].