

WARDIACEAE

(R.E. Magill)

A monotypic family restricted to the mountains of the southwestern cape of South Africa. The family is placed near Fontinalaceae.

Wardia (Fig. XX)

One species, *Wardia hygrometrica* Harv. & Hook.

Plants forming small or large, loose mats, dark green to yellowish green or blackish, aquatic, floating or in splash zones on rock. **Stems** elongated 15-80 mm, branching irregular above stipe, in cross-section round, central strand absent. **Leaves** spreading to erect-appressed, concave, elliptical to broadly oblong, 1.2-2.2 mm long, apex acute to narrowly acuminate, margins plane and entire. **Costa** extremely variable, absent, present only in the leaf base, discontinuous and present only at the apex and base, or strong throughout; in cross-section cells not differentiated, thick walled, 3-6 rows thick; upper leaf cells linear-fusiform, 55-90 μm long, smooth, walls generally thickened, basal cells linear to long-rectangular, 50-125 μm long, smooth thickened; alar cells strongly differentiated and in distinct groups, enlarged and inflated, hyaline, thin walled. Dioicous. **Perichaetial leaves** broadly ovate, acute, sheathing below. Seta 4-6 mm long, yellow-brown or blackish, smooth, thick. **Capsule** exserted, erect, short cylindrical or ovoid, 1.0-2.2 mm long, smooth, exothecial cells irregular, rounded to quadrate or hexagonal, incrassate, stomata absent. **Peristome** rudimentary, yellow to orange, teeth short, truncate, erect, 40-50 μm high, smooth with irregular prostome development. **Operculum** curved-rostrate, attached to columella, persistent, 1.0-1.3 mm long. **Calyptra** small, cucullate. **Spores** round, 25-31 μm , granulate, brown.

HABIT. Growing attached to rock submerged or in splash-zones in mountain streams. Endemic to South Africa, most specimens have been collected on Table Mountain. Its range has recently been expanded but is still restricted to the mountains of the southwestern cape.

DISCUSSION. The genus shows a great deal of variability in gametophytic characters. This is true in plant length and firmness, stipe development, and development of leaf costa. For example, the costae on the same plants can be absent or present, present only in the base as a bistratose region near the leaf insertion, discontinuous with distinct, unconnected parts in the leaf base and apex, or strong and extending from base to near apex.

The plants are similar to *Fontinalis* in habit and habitat. They differ in alar cell development and several sporophyte characteristics. The sporophyte is adapted for the aquatic habitat with short, stout setae and not stomata. The operculum remains attached to the columella after the capsule is open, perhaps working in spore discharge but certainly resulting in the short, truncated peristome teeth. The alar cells of *Wardia* are enlarged and coloured. Despite their thickened walls, the alar cells are frequently lost, probably through erosion and this important character can be missed.

LITERATURE. Magill, R. E., 1998. Flora of Southern Africa. Part 1 Mosses. Fascicle 3: 538-540.