

APONOGETONACEAE (C. G. G. J. van Steenis, Buitenzorg)

1. APONOGETON

LINNÉ *f. Suppl.* (1781) 32; ENGL. & KRAUSE, *Pfl. R.* 24 (1906).

Perennial lactiferous freshwater herbs, rhizome short tuberous with fibrous roots. *Leaves* radical, submerged or floating, base sheathing, oblong to linear, entire or crisped, often long-petiolate; nerves lengthwise parallel, connected by numerous oblique transverse veins. Spike emerging from the water, simple or 2–8-forked, without bracts, subtended by a mostly caducous basal sheath (spathe). *Flowers* bisexual (rarely by abortion unisexual), small, spicate-scapose, white, rose, purple, yellow or yellowish-green. Perianth segments 2 (1–3, or absent), equal or unequal, usually persistent. Stamens in 2 rows, 6 (or more), free, hypogynous, persistent; filament filiform; anthers extrorse, small, 2-celled. Pollen subglobose or ellipsoid. *Gynaecium* superior, apocarpous; carpels 3–6, sessile, each with a simple style. Ovules 1–8 (or more), anatropous. Mature carpels inflated, opening along the back. Seeds without endosperm; outer testa often loose; embryo straight, elongate.

Distr. About 40 *spp.* described, Africa, Madagascar, Ceylon, SE. Asia, through Malaysia (very rare) to N. Australia, centering in Africa and Madagascar.

Ecol. The few Malaysian specimens were collected in lowland stony streams both on calcareous and other rock. The testa contains in some *spp.* air between the two coats and float on the water; it soon decays and the embryo sinks to the bottom.

Uses. The starchy tuberous rootstock is said to be edible in some *spp.*

Notes. Monogeneric family. Next to the single indigenous species, *A. fenestralis* with its unique fenestral-leaved foliage is cultivated in the Bot. Gard. Buitenzorg, and may be found in private gardens as a curiosity.

1. *Aponogeton loriae* MARTELLI, *NUOVO GIORN. Bot. Ital.* II, 3 (1897) 472, t. 8; ENGL. & KRAUSE, *Pfl. R.* 24 (1906) 12; DOMIN, *Bibl. Bot.* 20 (1915) 254; CAMUS, *Bull. Soc. Bot. Fr.* 70 (1923) 672–3; RENDLE, *J. Bot.* (1923) *Suppl.* 58; STEEN, *Journ. Arn. Arb.* 28 (1947) 419.—*A. crispus* (non THUNB.) F. v. M. *Descr. Not. Pap. Pl.* 8 (1886) 51; RIDL, *J. Bot.* 24 (1886) 359.—*A. monostachyum* (non L. f.) HEMSL. *Kew Bull.* (1899) 113.—*Fig. 1.*

Submerged; rootstock roundish $\frac{1}{2}$ – $1\frac{1}{2}$ cm. *Leaves* green or brown, distinctly petiolate (2–15 cm), blade linear-spathulate, 10–35 by 1–4 cm, mostly gradually tapering into the petiole, base narrow-cuneate, apex rather broadly cuneate and \pm blunt, primary nerves 2 on both sides and a marginal vein; parenchyma opaque dotted brown-punctate; margin slightly undulate-crisped to \pm flat. *Scape* 5–40 cm. *Spathe* $\frac{1}{2}$ – $1\frac{1}{2}$ cm long, ovate-acute, lengthwise nerved, persistent, decaying gradually from the apex towards the base, green, concave, subamplexicaulous, apex mucronulate. *Flowers* greenish-yellow, the lower ones over 2–3 cm densely set and

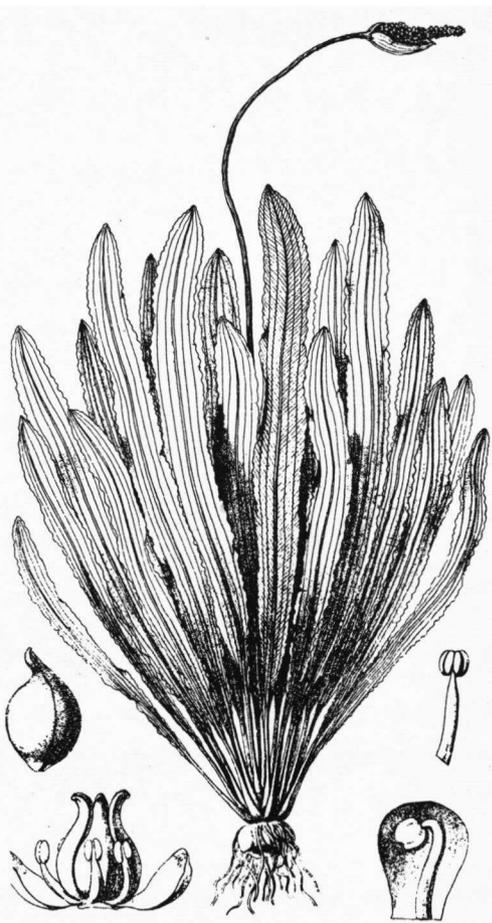


Fig. 1. Aponogeton loriae MARTELLI. Plant $\times \frac{1}{2}$, flower, tepal with stamen, stamen, and fruit enlarged (after MARTELLI).

with developing fruits, stamens about equaling the tepals on 2 mm long filaments, the upper ones rather abruptly as it seems male with 3 mm long stamens, very small ovaries and flowers set laxly to remote. Spikes 1½–7 elongating in flower up to 18–20 cm. Tepals obovate *ca* 1½–1¾ by 1–1¼ mm, concave, apex broadly rounded. Stamens 6; anthers roundish oval, no dehisced ones observed by me. *Carpels* 3, *ca* 2½ mm long, ovate, ± bluntly trigonous, rather abruptly beaked by a distinct recurved rostrate style about ½ mm long. Seeds (in TEYSMANN 12792) 1–6 with a delicate loose outer coat 6-winged or -ribbed, transparently brown-reticulate-netted-celled, 2 by ⅔ mm. Inner testal

coat oblong, opaque, darkbrown, smooth, 1¼ by ½ mm, closely enveloping the straight embryo, easily splitting on slight pressure, rounded at both sides.

Distr. Queensland (DIELS 8397, *n.v.*), in *Malaysia*: New Guinea, and SW. Celebes in the calcareous Maros-Pangkadjene distr. (TEYSMANN 11901, 12792).

Ecol. In shallow stony streams in forests and savannahs, 100–600 m.

Notes. There is a remarkable yet unexplained dimorphy in the flowers of the spike, the lower ones setting fruit only and differing in length of anthers.