

sometimes hemispherical or segment-shaped with concave ventral faces, (4–)5–8 mm long; apex rounded, with a circular, usually slightly raised or depressed, attachment scar; base rounded, with the more or less circular hilum puckered, sunken and central or to one side. Testa glabrous, dull or slightly glossy, with an egg yellow to dark egg yellow to orange-brown background and sparse to dense irregular brown to dark brown spots, irregular and often wrinkled, especially near hilum and attachment scar.

N, S, St., Ch. Fresh ripe fruit are bright red. Seed shape varies with the number of seeds that mature in a berry. When only one matures, as is usually the case, it is more or less globose (upper seeds in illustration, showing the attachment scar (hilum) on the left seed, and the micropyle on the right seed). When two mature, they are hemispherical (lower left), and when three or four mature, they are segment-shaped (lower right). Macmillan (1972) provided information on the quantity of seed produced, dispersal, viability, and the morphological details of germination.

RUPPIACEAE

Fruit a head of drupelets (each fruit with an endocarp), long-stipitate or sessile. Endosperm absent; embryo straight, curved or coiled.

RUPPIA L.

Drupelets decaying, the endocarp opening by a small operculum.

Mason (1967) provided descriptions and photographs of the fruits of the two NZ species, as well as drawings of the endocarps. Excellent drawings of the endocarps are also provided in Moore and Edgar (1970).

1 Endocarp 3.2–4.3 mm long (including beak), moderately tuberculate; beak 0.6–1.2 mm long; pedicel persistent, broader at apex *R. megacarpa*

Endocarp 1.7–2.4 mm long (including beak), sometimes with a few scattered tubercles; beak 0.2–0.3 mm long; pedicel ephemeral, uniformly narrow

..... *R. polycarpa*

Ruppia megacarpa R.Mason [Pl. 104: 4]

horse's mane weed

Endocarp on a persistent pedicel. Endocarp body irregularly ovate, somewhat compressed laterally, 3.2–4.3 mm long (including beak), with an operculum on one margin and gibbous toward base on the other, slightly oblique to operculum side, with two lateral apertures near apex; apex tapered to beak; beak usually straight, sometimes slightly curved, 0.6–1.2 mm long; base rounded; operculum elliptic, reaching from base to below beak, with a raised outer rim and a rounded central longitudinal ridge, falling away to leave an elliptic opening; apertures usually triangular or ovate-triangular, sometimes circular, 0.6–0.8 mm long; surface dull, black, glabrous, moderately tuberculate and finely reticulate. Pedicel broader toward apex, terete; persistent part (0–)5–15 mm long; surface dull, pale orange-yellow

to buff brown, irregularly longitudinally striate, sometimes with white retrorse hairs when not fully weathered.

N, S., also Australia. Fresh ripe fruit are olive-green. The illustration shows three individual endocarps, each on a pedicel. This species is also illustrated in colour on the cover of this volume.

Ruppia polycarpa R.Mason [Pl. 104: 5]

horse's mane weed

Endocarp on an ephemeral pedicel. Endocarp body irregularly ovate, somewhat compressed laterally, 1.7–2.4 mm long (including beak), with an operculum and gibbous on one margin and gibbous toward base on the other, more or less erect, with two lateral apertures near apex; apex tapered to beak; beak straight, 0.2–0.3 mm long; base rounded; operculum narrowly elliptic to elliptic, reaching from at or near base to below beak, with a slightly raised outer rim and a rounded central longitudinal ridge, falling away to leave an elliptic opening; apertures narrowly elliptic, 0.2–0.4 mm long; surface dull, dark purple-brown to black, glabrous, sometimes with a few scattered tubercles, slightly irregular to finely reticulate. Pedicel uniformly narrow, terete; surface dull, pale orange-yellow to buff brown or dark brown, irregularly longitudinally striate, sometimes with white retrorse hairs when not fully weathered.

N, S, Ch., also Australia. Fresh ripe fruit are brown. The illustration shows five individual endocarps, each on a pedicel.

TYPHACEAE

Fruit a drupe with spongy mesocarp and hard endocarp, or an eventually dehiscent nutlet with gynophore and persistent style. Endosperm copious, starchy or oily; embryo straight.

SPARGANIUM L.

Fruit with a spongy mesocarp, and a hard endocarp with a micropylar plug, the mesocarp eventually rotting; endosperm starchy.

Sparganium subglobosum Morong [Pl. 105: 1]

mārū,
burr-reed

Fruit usually obovate to obovate-obtriangular, sometimes broadly obovate, not or slightly dorsiventrally compressed, irregularly or regularly 3–4-angled, 3.0–5.5 mm long (excluding style); apex rounded or sometimes flattened to base of style; style brittle and not long-persistent, narrow, usually slightly hooked or sometimes appressed to apex; base cuneate, sometimes with several scarios scales; angles obtuse to acute, often narrowly ribbed; faces more or less flat to convex. Surface glabrous, dull or semi-glossy, buff brown to orange, nut brown or grey nut brown, finely reticulate.

Endocarp obovate-elliptic to obovate, usually dorsiventrally compressed, sometimes only slightly compressed, sometimes slightly 3–4-angled, 2.6–3.5 mm long; apex obtuse to acute or apiculate; base truncate, the micropylar plug leaving a small central hole; margins rounded; faces convex, with a few irregular narrow longitudinal ribs or