Flora of South Australia

5th Edition

Photograph: Helen Owens

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Government of South Australia

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HYDATELLACEAE[1]

J.G. Conran[2]

Subaquatic caespitose annual or perennial herbs; rootstock minute, not forming a rhizome; leaves linear, sessile, alternate, sheathing, eligulate. **Reproductive** units capitulum-like, scapose, heterogamous, unisexual or co-sexual with male florets scattered among female florets; involucral bracts 2–21, lanceolate, spreading or erect, forming an apparent whorl below the florets; perianth absent; male flower a single anther; female flower a superior, ± trigonous, 1-ovulate ovary, styles free. **Fruit** a shortly pedicellate, achene or follicle-like, sometimes dehiscent, often with 3 prominent longitudinal ribs; seed perispermous, starchy, more or less lacking endosperm, testa smooth or sculptured.

A monogeneric family of 12 species worldwide with 10 endemic to Australia, mainly in south-western W.A. and one species each in New Zealand and India. A single species recorded in S.A.

Hydatella Diels and *Trithuria* Hook.f. were traditionally regarded as two closely-related genera (recognised on the basis of plant sexuality and fruit dehiscence) within the family Centrolepidaceae and allied to the grasses and sedges, but recent molecular studies have shown that they represent a single genus and are members of the basal angiosperm family Hydatellaceae in the order Nymphaeales (Rudall *et al.* 2007; Saarela *et al.* 2007; Sokoloff *et al.* 2008). Although the family consists of a single genus (*Trithuria*), the family name Hydatellaceae (based on the now synonymous *Hydatella*) has priority.

1. TRITHURIA Hook.f.

Fl. Tasman. 2: 78 (1858).
(Greek *treis*, three; *thyris*, window; referring to the 3-way dehiscence of the fruit of *T. submersa*.)

Hydatella Diels, *Bot. Jahrb. Syst.* 35: 93 (1904).

Description and distribution statement as for family (monogeneric family).

1. **Trithuria submersa** Hook.f., *Fl. Tasman.* 2: 79, t. 138A (1858). — **Illustr.:** Rudall *et al.*, *Amer. J. Bot.* 94: 1073–1092, fig. 1, 4, 7 (2007); Sokoloff *et al.*, *Taxon* 57: 179–200, fig. 2–10, 13 (2008).

   Annual herb, green but usually becoming reddish; leaves lax, straight, narrow-linear, acute, 1–4 cm long, to 1 mm wide. **Reproductive** units numerous, scapose or rarely sessile; scapes erect, filiform, unbranched, accrescent, to 5 cm high, leafless, glabrous; involucre spreading; bracts 4–6, acuminate, 1-veined, subequal, 3–4 mm long, glabrous; male florets 2–5; anther oblong, c. 0.6 mm long, purple; filament 1–2 mm long, rigid; female florets 10–25, c. 2 mm long, densely packed in a hemispherical cluster; ovary ovoid to trigonous, style apparently absent, stigmatic hairs 3–6. **Fruit** a capsule, obovoid-trigonous, c. 0.6 × 0.3 mm, splitting along the 3 ribs, with 3 panels attached at the apex and opening outwards from the base after falling from the pedicel; seed ovoid, c. 0.4 ×

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0.25 mm, rugose, brown. **Trithuria. Pl. 1.**

S.A.: EP, MU, KI, SE; W.A.; N.S.W.; Vic.; Tas. Winter annual on mud of stream margins, seasonal swamps and pools. Flowers: Sep.–Nov.

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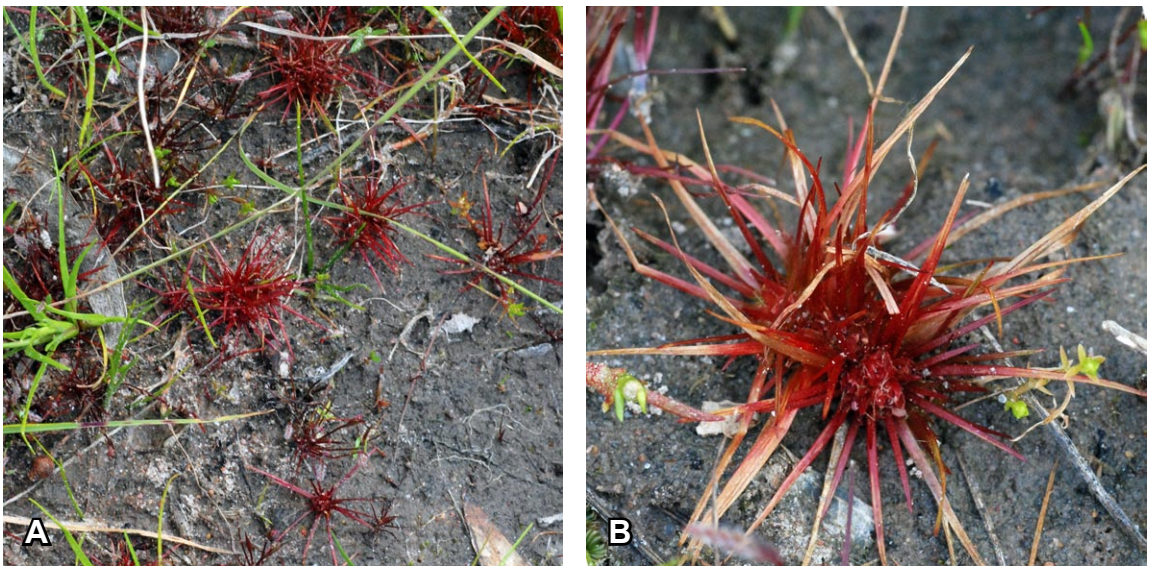

Pl. 1. ***Trithuria submersa*** in natural habitat. Photos: J.G. Conran.