Baldellia ranunculoides* subsp. *ranunculoides* & subsp. *repens

Stace Edn. 3 (2010) recognises 2 subspecies for *Baldellia ranunculoides* in Britain and Ireland: the relatively widespread (bu uncommon) subsp. *ranunculoides* and subsp. *repens* ("Much rarer than ssp. *ranunculoides* but under-recorded; W. Br. Ir."). The differences are summarised in the following table (after Jones, 2006 and Kozlowski et al, 2008).

Baldellia ranunculoides* subsp. *ranunculoides	***Baldellia ranunculoides* subsp. *repens***
Plant ± 50cm high, almost always erect, rarely with prostrate inflorescences (and then very rarely rooting), with usually robust stems up to 3mm thick	**Plant** weak (but not always) creeping, rooting at the nodes of the inflorescence with leaf rosettes up to 20cm high, with delicate, thin stems up to 1mm thick
Flowers small (±15mm in diameter, rarely up to 18mm)	**Flowers** much larger (up to 22mm in diameter)
Breeding system self-compatible	**Breeding system** self-incompatible
Whorls of inflorescence many-flowered (15-20 flowered)	**Whorls of inflorescence** few (up to 5) flowered
Fruit-stalks (peduncles) erect or arched-ascending	**Fruit-stalks** (peduncles) vertically divergent, the top bent downwards
Fruit-heads large, up to 8mm across	**Fruit-heads** smaller, about 5mm across
Number of fruits per head up to 45	**Number of fruits per head** 15 (-20)
Fruit 2½mm long, without papillae Deeply keeled (> 1mm wide) and smooth, with an acute beak and without numerous hyaline papillae when ripe (x 20 magnification).	**Fruit** 2mm long, with numerous papillae Narrow (< 0.9mm wide) with a persistent hooked beak and numerous hyaline papillae when ripe (x 20 magnification).
Inflorescence upright umbel or tier of 2(-3?) whorls without leaves, growing from c. April - August.	**Inflorescence** decumbent, leafy, indeterminate shoot, usually rooting at nodes and growing throughout the year
Habitat temporary gaps within calcareous or mildly brackish pools, dune-slacks, ditches and mesotrophic water-bodies.	**Habitat** shorelines and long-standing gaps in weakly acidic, Littorelletean heathland pools and oligotrophic lakes.
Flowering period June to July (-August)	**Flowering-period** June to October (-November)
Population structure scattered, detached individuals.	**Population structure** locally-abundant, networks of vegetatively spreading clones

Populations of subspecies *repens* are currently only known from Vc.s 52 (Anglesey) and H1 (South Kerry) but there is convincing herbarium material from Vc.s 88 (Mid Perth), 27 (E. Norfolk) and 113 (Channel Islands) and numerous references to 'var *repens*' in county Floras elsewhere.

Intermediates also occur, though (eg. in Vc. 45 and, historically, Vc. 52), with arcuate stems, small leaves in the inflorescence whorls, moderately self-compatibility (few papillose fruits produced, often towards the end of the season) and c.50% deformed pollen (easily seen under a low-power microscope). These seem to be reasonably clear hybrids between the two subspecies but there is evidence from recent molecular genetic studies of more widespread introgression and there is a need for further work. Specimens of candidate subsp. *repens* and possible hybrid material should be collected for further determination.

References

Jones, R.A., (2006). Creeping water-plantain (Dyfr lyriad ymlusgawl), *Baldellia ranunculoides* subsp. *repens* (Lam.) A .Love & D. Love in Wales. *In*: Leach, S.J., Page, C.N., Peytoureau, Y., Sanford, M.N. (Eds.), Botanical links in the Atlantic arc. BSBI Conference Report No. 24, pp. 311–319.

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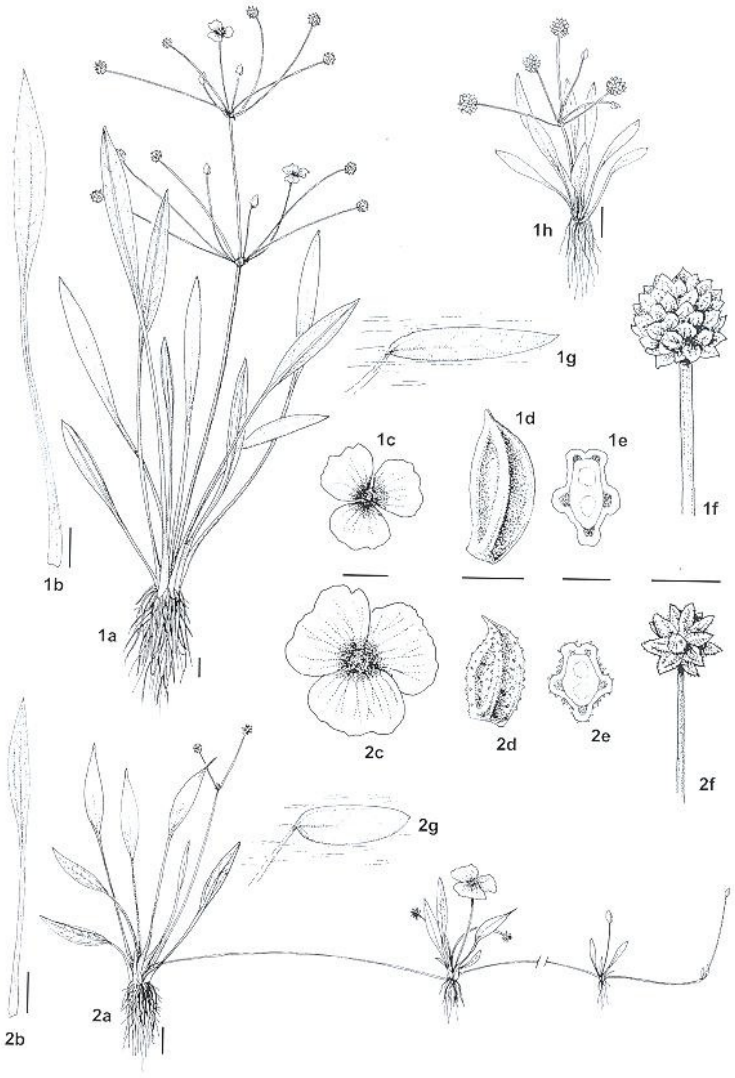

Fig. 1. Morphology of the subspecies: (1) *B. ranunculoides* subsp. *ranunculoides*, (2) subsp. *repens*: a – general habit, b – leaf (scale bar for a and b: 1 cm), c – flower (scale bar: 0.5 cm), d – nutlet (scale bar: 1 mm), e – nutlet cross-section (scale bar: 0.5 mm), f – fruit-head (scale bar: 0.5 cm), g – floating leaf; 1 h – terrestrial form of subsp. *ranunculoides* in nutrient-poor conditions (scale bar: 1 cm). Plant material from Neuchâtel Lake, Switzerland (subsp. *ranunculoides*) and Banen Lake, Netherlands (subsp. *repens*). Drawn by S. Eggenberg.

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