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## *Goodenia micrantha* Hemsley ex Carolin, an interesting new record for South Australia.

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### Abstract

The discovery on the western end of Kangaroo Island of a *Goodenia* species new to South Australia is reported and its identification and affinities are briefly discussed. The new occurrence of *Goodenia micrantha* is a major disjunction from the remainder of its distribution in Western Australia and parallels the biogeographical pattern of several other plant species common to both areas that reach their eastern limit at a similar longitude. Although provisionally treated as native, the possibility that this is a recently established alien population resulting from human-aided dispersal warrants investigation.

A new *Goodenia* species for South Australia was discovered on the western end of Kangaroo Island in November 2007 by the author and Thai Te while on a seed collecting trip for the Millenium Seed Bank project. It was identified as *Goodenia micrantha* Hemsley ex Carolin, an annual herb with tiny yellow flowers that is



Fig. 1. Habit of *Goodenia micrantha* (P.J.Lang 2600 & Thai Te).

moderately common and widespread in south-western Western Australia, where it is associated with winter-wet depressions and granite outcrops (Paczkowska 1996).

The South Australian occurrence was in a low-lying flat over an area of several hundred metres, in dense patches comprising a tangle of 5 to 15 cm tall plants with soft filiform leaves and tiny, inconspicuous flowers (Fig. 1–2). The flowers are notable for being even smaller than in the unrelated *G. pusilliflora* F.Muell., with the corolla length from around 2 mm long in dried specimens and up to 4 mm long in some fresh material.

The initial identification was made using the *Flora of Australia* treatment by Carolin (1992) and checked against Western Australian collections of *Goodenia micrantha* held at AD. Duplicate material was sent to PERTH and its identity was confirmed by Leigh Sage.

*Goodenia micrantha* belongs in *Goodenia* subsect. *Ebracteolatae* K.Krause based on the absence of bracteoles and the orbicular seed with a prominent wing. Carolin (1992) noted past confusion of *G. micrantha* with *G. filiformis* R.Br., a species endemic to south-western Western Australia and also its similarity to the widespread arid zone species *G. occidentalis* Carolin. *Goodenia micrantha* may be distinguished from both by its smaller flowers, and from the former in having only sparse short hairs inside the corolla and longer, secund racemes. It differs from *G. occidentalis*, the closest relative in South Australia, by its narrower lanceolate sepals (ovate in *G. occidentalis*) and linear, sub-glabrous to glabrous, entire leaves (oblanceolate, strigose and often lobed in *G. occidentalis*).

A number of Western Australian plants reach their eastern limit in South Australia on Kangaroo Island. Of these, the Saltwater Paperbark, *Melaleuca cuticularis* Labill., like *G. micrantha*, is confined within this State to a small localised occurrence on Kangaroo Island, while *Desmocladus diacolicus* B.G.Briggs & L.A.S.Johnson,



Fig. 2. Flower, bud and fruit of *Goodenia micrantha* (P.J.Lang 2600 & Thai Te).

*Grevillea pauciflora* R.Br., *Hydrocotyle diantha* DC., *Prasophyllum calcicola* R.J.Bates, and *Pultenaea vestita* R.Br. have disjunct occurrences shared between Kangaroo Island and Eyre Peninsula and/or Yorke Peninsula to the north, but extend no further east.

*Goodenia micrantha* has only been encountered at a single location adjoining the main South Coast Road to Flinders Chase. Given the links between the floras of south-western Western Australian and Kangaroo Island, it is reasonable to record it as a native species for South Australia that has hitherto been overlooked because of its small size and limited distribution. This is also

supported by its occurrence in a largely undeveloped part of the Island. Nevertheless, the possibility of it being a post-European introduction cannot be ruled out, particularly since it is an annual plant of muddy areas with small seeds. There remains a chance that it was introduced in mud brought from Western Australia on domestic stock or tourist vehicles. The prospect that new plant discoveries result from recent human-aided dispersal increases as the interval since colonization grows and the effects of development, population growth and greater mobility accumulate. Genetic studies could probably determine the native/alien status of *Goodenia micrantha* in South Australia more conclusively, but treating it as native for the present seems the simplest and most plausible hypothesis.

#### Collection details

SOUTH AUSTRALIA: **Kangaroo Island:** P.J.Lang 2600 & Thai Te, 7 Nov. 2007, c. 100 m W of Little Terror Creek crossing on main South Coast Road, adjoining N side of Kelly Hill Caves Conservation Park (and also extending into the park), in damp sandy mud. Tall Open Shrubland (previously disturbed or cleared) with *Eucalyptus cosmophylla*, *Leptospermum continentale*, *Melaleuca uncinata*, *M. gibbosa* and *M. brevifolia* over a dense layer of native annual herbs (AD 212023, AD 212024, PERTH).

#### Other specimens examined (selection)

WESTERN AUSTRALIA: N.N.Donner 2949, 9 Oct. 1968, Lort River crossing on Ravensthorpe–Esperance main road (AD 9712653, PERTH, SYD, MEL); M.Koch 1822, Dec. 1907, Wooroloo (AD 96750371).

#### References

- Carolin, R.C. (1992). *Goodenia*. *Flora of Australia* 35: 147–281.
- Paczkowska, G. (1996). *Goodenia micrantha*. Brief description, 15 March 1996. In: Dept of Environment & Conservation Naturebase website. <http://florabase.dec.wa.gov.au/browse/profile/12551> [accessed 11 Jan. 2008].