Reinstatement of *Ptilotus parviflorus* (Lindl.) F.Muell. (Amaranthaceae)

A.R. Bean

Summary


Key Words: Amaranthaceae, *Ptilotus obovatus*, *Ptilotus parviflorus*, taxonomy, Australia flora, distribution map

A.R. Bean, Queensland Herbarium, Department of Environment and Science, Brisbane Botanic Gardens, Mt Coot-tha Road, Toowong, Queensland 4066, Australia. Email: tony.bean@des.qld.gov.au

Introduction

*Ptilotus obovatus* (Gaudich.) F.Muell. was described from the west coast of Western Australia, but is known from all mainland states of Australia (AVH 2019), and is quite variable, with a number of recognised morphotypes. Some of these morphotypes may be associated with polyploidy, which has been demonstrated for *P. obovatus* (Stewart & Barlow 1976). These authors also noted gynodioecy (male sterility in some populations) for *P. obovatus*.

Taxonomic treatments of recent decades have relegated *Ptilotus parviflorus* (Lindl.) F.Muell. to varietal rank under *P. obovatus* (Benl 1959) or to synonymy with it (Bean 2008).

During a recent reappraisal of specimens at the Queensland Herbarium identified as *Ptilotus obovatus* (Gaudich.) F.Muell., it was realised that numerous specimens from the eastern edge of the range of *P. obovatus* were distinctly different in morphology. These taxa were initially separated by the features of the hairs on the outer surface of the tepals, and because this correlated well with other characters, it was decided that the two taxa should be recognised at species rank. The more widespread taxon is *Ptilotus obovatus* s. lat., while the other includes the type of *P. parviflorus* (Lindl.) F.Muell. and is reinstated here.

Materials and methods

This study is based on a morphological examination of herbarium specimens at BRI (205 of *Ptilotus obovatus* s. lat., 80 of *P. parviflorus*), originating from Western Australia, Northern Territory, South Australia, Queensland and New South Wales. Specimen images from CANB, CGE, K, MEL and NSW have also been examined. All measurements are based on dried herbarium specimens.

Taxonomy


*Trichinium virgatum* A.Cunn. ex Miq., Prodr. [A. P. de Candolle] 13(2): 286 (1849). **Type:** New South Wales. Swampy plains near...
Lachlan River, July 1817, A. Cunningham 17/1817 (syn: K 000196975).


Sparsely branched woody shrub 30–50 cm high. Branchlets with dense to very dense verticillate hairs 0.1–0.2(–0.4) mm long; older stems sparsely to densely hairy, terete. Leaves alternate, sessile or sub-sessile; lamina narrowly elliptic to spathulate, 23–57 mm long, 5.3–15 mm wide, 3.4–5 times longer than broad, pale green, surface smooth, apex acute; upper surface with hairs sparse to moderately dense, persistent, stellate to rarely verticillate; midrib visible, but no other venation apparent; lower surface with hairs sparse to dense, persistent, verticillate or sometimes stellate; midrib visible, and a few lateral veins often visible. Inflorescence terminal, spicate, spikes ovoid to cylindrical, 1.2–3.7 cm long, many-flowered. Rachis 10–35 mm long with very dense spreading verticillate hairs to 0.4 mm long. Bract broadly ovate, cymbiform, translucent, brittle, 2.6–3.5 mm long, apex mucronate, inner surface glabrous, outer surface densely covered with verticillate hairs. Bracteoles broadly ovate, cymbiform, translucent, brittle, 2.5–3.7 mm long, apex mucronate, inner surface glabrous, outer surface with dense verticillate hairs along midrib, otherwise ± glabrous. Perianth 5.6–7 mm long, grey with pink tip. Sepals linear, hairs spreading verticillate to nodose, 1–1.5 mm long in distal half, 0.3–0.6 mm long at base, apex glabrous. Outer tepals 2, 4.9–6.8 mm long, glabrous on inner surface; inner tepals 3, 4–6.3 mm long, glabrous on inner surface, except for sparse hairs at base of innermost tepal. Fertile stamens 3, filaments of varying length, 1.5–3 mm long, anthers 0.4–0.65 mm long, dorsifixed, versatile; staminodes 2, comprising flattened filaments 2–3 mm long. Ovary glabrous; style conspicuously eccentric, straight, 2.5–2.8 mm long, glabrous; stigma slightly broader than style. **Figs. 1–3.**


**Distribution and habitat:** *Ptilotus parviflorus* is widespread in central-western Queensland, and extends to the coast near Townsville; also in New South Wales, as far south as Forbes, and in central Northern Territory (Map 1). It grows in a variety of habitats, including clay plains with *Acacia cambagei* R.T.Baker, stony hills with red soil dominated by *Acacia aneura* F.Muell. ex Benth., and on mesa slopes with *Eucalyptus leucophloia* Brooker and *Triodia* sp. In New South Wales, it can occur with *E. populnea* F.Muell. and *E. woollsiana* R.T.Baker.

**Phenology:** Flowers are recorded for every month of the year.
Fig. 1. Flowering branchlet of *Ptilotus parviflorus* (Bean 22557, BRI).
Typification: A specimen at K (K 000356788), collected from Lachlan River by T.L. Mitchell is so similar to the lectotype of Ptilotus parviflorus that it is here considered an isolectotype, despite the field label saying “Mitchell 23”; the label of the lectotype includes a number “24”, but this is not in Mitchell’s hand. K 000356789 is also very similar to the lectotype, and is likewise considered to be an isolectotype. Someone has written the year of collection as “1838”, but this must be a mistake as Mitchell was not involved with any exploration in that year.

The type of Trichinium subviride has not been seen, and its placement as a synonym of P. parviflorus is based on the description given in the protologue.

Affinities: In Ptilotus parviflorus, the hairs on the outer surface of the tepals are 1–1.5 mm long (midway along or towards apex of tepal), and 0.3–0.6 mm long at the base of the tepal; the inflorescences are up to 3.7 cm long; the bracteoles are very densely hairy almost throughout and creamy-yellow in colour; and the ovary is glabrous. In Ptilotus obovatus, the tepal hairs are 2–3.8 mm long for most of the tepal length, and 1.2–2.5 mm long at the tepal base (Fig. 4); the inflorescences are up to 2.4 cm long; the bracteoles are sparsely hairy throughout in most variants, or at times glabrous, and often dark brown in colour (one variant can have densely hairy bracteoles); and the ovary always has a cluster of erect hairs (0.25–0.5 mm long) adjacent to the style.

Notes: The geographical ranges of Ptilotus obovatus and P. parviflorus overlap considerably (Map 2), but the author has been unable to detect any evidence of hybridisation or intergradation, and it is postulated that they are reproductively isolated. No evidence of gynodioecy has been observed in herbarium specimens of P. parviflorus, providing another potential difference from P. obovatus (Stewart & Barlow 1976).
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**Conservation status:** Least concern (IUCN 2012).

**Acknowledgements**

I thank Chris Appelman (BRI) for providing the unusual _Ptilotus_ specimen (_P. parviflorus_) that led to this paper. Will Smith (BRI) provided the illustrations and distribution maps.

**References**


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**Fig. 4.** Lateral view of _Ptilotus obovatus_ flower (bract and bracteoles removed) (Cowan 21 & Bushell, BRI).
Map 1. Distribution of *Ptilotus parviflorus* based on BRI records.
Map 2. Distribution of *Ptilotus obovatus* s. lat. based on BRI records.