

SHORT COMMUNICATION

***Ptilotus yapukaratja* (Amaranthaceae), a new species from the Gascoyne bioregion of Western Australia**

Ptilotus yapukaratja R.W.Davis & T.Hammer, *sp. nov.*

Type: Lorna Glen, Western Australia, 16 June 2017, *K. Millet* 346 (*holo*: PERTH 08904618; *iso*: CANB, MEL).

Low, compact, woody, perennial *shrubs* to 30 cm high, 35 cm wide. *Stems* terete, glabrescent, with moderately dense, ascending, sub-verticillate hairs to 0.3 mm long. *Basal leaves* absent. *Cauline leaves* scattered, incurved, narrowly oblanceolate, boat-shaped in cross section, fasciculate at dwarf stem shoots, 4–10 mm long, 0.9–1.5 mm wide, with ascending, sparse, stiff, sub-verticillate hairs to 0.2 mm long; apex mucronate. *Inflorescences* spiciform, terminal, solitary, pink, ovoid, 20–32 mm long, 28–32 mm diam., 15–25 flowers per inflorescence. *Bracts* translucent, pink along midrib, 5.7–6.7 mm long, ovate, with verticillate hairs becoming glabrous towards margins; midrib prominent. *Bracteoles* translucent, pink along midrib, 4.8–5.9 mm long, broadly ovate, with verticillate hairs along central portion; midrib prominent. *Flowers* curved slightly upwards. *Outer tepals* pink fading white towards the base, narrowly oblanceolate, concave, flattening towards the apex, 13–14 mm long; outer surface hairy except at the apex, with dense, appressed to slightly spreading, sub-verticillate hairs to 3 mm long; inner surface glabrous; apex shortly tapering, entire. *Inner tepals* pink fading white towards base, narrowly oblanceolate, concave, 12–13 mm long; outer surface hairy except at the apex with dense, appressed to ascending, sub-verticillate hairs to 2 mm long; inner surface glabrous except for a basal tuft of tangled sub-verticillate hairs on the margins; apex centrally folded, attenuate, entire. *Staminal cup* symmetrical, 1.2–1.5 mm long, with sub-verticillate hairs to 1 mm long. *Stamens* 2; filaments glabrous, straight, dilating towards base, 6.5–7.8 mm long; *anthers* 0.5–0.7 mm long. *Staminodes* 3, 0.9–1.1 mm long. *Ovary* ellipsoid, gibbous, 2.9–3.1 mm long, 1.6–1.8 mm wide, with a row of verticillate hairs across the summit; *stipe* terete, 0.7–0.9 mm long. *Style* straight to slightly sinuate, excentrically fixed to ovary, 7.7–8 mm long, with verticillate hairs on the basal portion. *Seed* glossy, brown, 1.9–2.1 mm long. (Figure 1)

Other specimens examined. WESTERNAUSTRALIA: [localities withheld for conservation reasons] 22 Oct. 2013, *M. Griffiths & S. Cherriman s.n.* (PERTH); 17 Feb. 2016, *J. Jackson & V. Jackson* 330 (PERTH); 17 Feb. 2016, *J. Jackson & V. Jackson* 331 (PERTH).

Diagnostic features. *Ptilotus yapukaratja* can be distinguished from all other *Ptilotus* R.Br. species by the following combination of characters: a rigid habit, glabrous incurved leaves, bracts longer than bracteoles, two fertile stamens, an excentrically placed style on the ovary, and a hairy ovary.

Phenology. The new species is only known from two flowering and fruiting collections made from the same locality, one made in October and the other in June. This would suggest flowering times are in response to random rain events.



Figure 1. *Ptilotus yapukaratja*. A – plant *in situ*, showing habit and habitat; B – a close-up showing an inflorescence with an open flower. Images by K. Millet from K. Millet 346.

Distribution and habitat. Currently only known from north of Lorna Glen Station, where it is found at the base of breakaways on shallow rocky slopes in open scrub on brown clayey-sandy soils.

Conservation status. To be listed as Priority One under Conservation Codes for Western Australian Flora (M. Smith pers. comm.). *Ptilotus yapukaratja* is only known from the one remote location north of Lorna Glen Station.

Etymology. The epithet derives from the Matuwa words *yapu* (rock) and *karatja* (belonging to), referring to the rocky habitat where the species occurs (see Figure 1A).

Affinities. The new species is clearly aligned with the *P. parvifolius* (F.Muell.) F.Muell. complex (subclade D2 in Hammer *et al.* 2015), and it is morphologically most similar to *P. rigidus* Lally and *P. daphne* Lally (see Lally 2009). It differs from *P. rigidus* in having narrowly oblanceolate leaves 4–10 mm long (*cf.* narrowly obovate, 2.5–5.5 mm long) and longer bracts (5.7–6.7 mm long vs 4.5–5.2 mm long); it varies from *P. daphne* in having much longer bracts (5.7–6.7 mm long vs 3–4.5 mm long), many more flowers per inflorescence (15–25 vs 7–10), pink tepals fading white towards base (*cf.* purple throughout), and a row of hairs along the ovary summit (*cf.* hairy ovary throughout). It could also be confused with the morphologically similar *P. polakii* F.Muell. subsp. *polakii*; however, it differs from this taxon in having incurved leaves and an ellipsoid, gibbous and hairy ovary (*cf.* straight leaves and an obovoid, glabrous ovary).

Ptilotus yapukaratja has had its ITS (nrDNA) and *matK* (cpDNA) markers sequenced for a forthcoming PhD thesis on the molecular systematics of the genus (Hammer in prep.), and is most similar in its nucleotide sequence to *P. disparilis* Lally and *P. fasciculatus* W.Fitzg. (which are also members of subclade D2). Unlike the new species, *P. fasciculatus* is a prostrate perennial herb that occurs on the margins of salt lakes in the Geraldton Sandplains, Avon Wheatbelt and Mallee bioregions of Western Australia. *Ptilotus disparilis* differs from the new species in having tepals less than 6.5 mm long with dense, wavy hairs at the apex and is endemic to South Australia (Lally 2008). Also included in a forthcoming molecular study were *P. rigidus* and *P. daphne*, which were resolved in the same clade as the new species, but despite their morphological similarity, they were found to be more varied in the nucleotide sequence (in ITS and *matK*) than the new species. This suggests that the new species can be distinguished in both morphological and molecular characters.

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