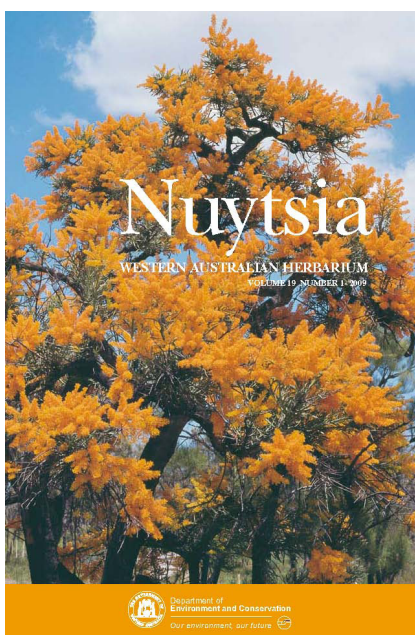


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New taxa of *Ptilotus* (Amaranthaceae) from Western Australia

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Abstract

Lally, T.R. New taxa of *Ptilotus* (Amaranthaceae) from Western Australia. *Nuytsia* 19(1): 53–62 (2009). Two new species, *Ptilotus daphne* Lally and *P. rigidus* Lally, and a new subspecies of *P. polakii*, subsp. *juxtus* Lally are described, with distribution maps and illustrations provided.

Introduction

In the course of a revision of the *Ptilotus parvifolius* (F.Muell.) F.Muell. complex (Lally 2008), two putative new taxa with affinities to *P. beardii* Benl and *P. lazaridis* Benl were identified. Specimens which are here referred to as *Ptilotus rigidus* Lally had previously been included in *P. parvifolius* var. *laetus* Benl, while those here described as *P. daphne* Lally were generally regarded as *P. parvifolius* var. *laetus* or *P. lazaridis*. Both *P. daphne* and *P. rigidus* are low, compact shrubs with stiff branchlets and small leaves, features shared with members of the *P. parvifolius* complex. However, floral morphology, especially of *P. daphne*, align these taxa with *P. beardii* and *P. lazaridis*, two species also occurring in Western Australia.

Ptilotus polakii F.Muell., although not readily confused with any members of the *P. parvifolius* complex, is nevertheless related, and also shares some features with the above two new species. When comparing these new species with *P. polakii sens. str.*, it became apparent that more than one entity was currently included within *P. polakii*. One is described here as a subspecies of *P. polakii*, while the other was found to be more closely related to the *P. drummondii* (Moq.) F.Muell. - *P. schwartzii* Tate complex, and will be the subject of a future paper.

Materials and methods

This study is based on examination of herbarium collections from AD, CANB, MEL, NSW and PERTH. All measurements were made from herbarium material (reconstituted where necessary).

Terminology used here to describe the hairs follows that of Benl (1971), as translated by Burbidge (1972). The hairs are basically of the same type (simple) but vary in the degree to which lateral projections are produced at the septa between the primary cells.

In many *Ptilotus* species the tepals are typically greenish and herbaceous, surrounded by a marginal band of scarious tissue of varying width, including the apical portion. For the purposes of this study, length of the apical portion of the tepal is the distance from the end of the herbaceous portion to the apex of the tepal. Width of the apical portion is measured at the mid-point of the scarious apical portion. Width of the scarious marginal band is measured at its widest extent on the tepal.

Taxonomy

Ptilotus daphne Lally, *sp. nov.*

Affinis *P. beardii* Benl, sed foliis basibus induratis deliquis, ovario dense hirto et cupula staminali dense capillis staminodis fere obscurans, differt.

Typus: Blue Hills Station (abandoned), S of boundary of proposed Carnarvon Range Conservation Park, Little Sandy Desert, Western Australia [precise locality withheld for conservation reasons], 28 August 1999, D.J. Edinger Nats 58 (*holo*: PERTH 05442443).

Ptilotus sp. Carnarvon Range (D.J. Edinger Nats 58), Western Australian Herbarium, in *FloraBase*, <http://florabase.dec.wa.gov.au> [accessed April 2008].

Shrub to 30 cm high; stems striate, with moderately dense, cobwebby, dendritic or verticillate hairs, older stems glabrescent. *Leaves* sessile to subsessile, without a hardened base, narrowly elliptic or obovate to ovate, 2–5.5 mm long, 0.5–1.5 mm wide, fasciculate, with sparse cobwebby, dendritic or verticillate hairs (denser on young leaves), green, ± fleshy; apex mucronate, mucro to 0.6 mm long. *Inflorescence* a loosely hemispherical spike to 2.5 cm long, rachis to 0.8 cm long, 7–10-flowered. *Bract* 3–4.5 mm long; *bracteoles* 4.8–6 mm long, bract and bracteoles concave with moderately dense, dendritic or verticillate hairs along midrib, both translucent, pale golden-brown; apex and midrib hardened, mucronate, mucro to 0.6 mm long. *Perianth* 15–19 mm long, purple. *Tepals* linear, curving outwards at the apex; herbaceous with a very narrow (*c.* 1 mm wide) scarious marginal band and apical portion; outer surface with short (to 0.8 mm), moderately dense, simple hairs at base, dense, verticillate or subverticillate hairs on remainder, with sparse, longer (to 4 mm), nodose hairs over-topping these in the upper half of tepals; glabrous apical portion 2–2.5 mm long, apex erose, obtuse to truncate; outer tepals longer than two of the inner by 1–2 mm, glabrous inside; inner tepals with moderately dense, crisped, nodose hairs inside, attached to the margins in the lower quarter. Fertile *stamens* 2, 8.5–10 mm long, glabrous; *staminodes* 3, to 0.6 mm long, obscured by dense, nodose hairs to 1 mm long on the staminal cup. *Anthers* 0.8–0.9 mm long. *Ovary* covered with dense, verticillate hairs; *style* eccentric, sinuate or straight, 9–9.5 mm long, with a few verticillate hairs in lower third. (Figure 1)

Other specimens examined. WESTERN AUSTRALIA: Carnarvon Range [precise locality withheld for conservation reasons], 26 Aug. 1999, M.Hancock 1103 (PERTH).

Distribution and habitat. Apparently restricted to the Carnarvon Range, *c.* 160 km NNE of Wiluna in the Keartland Botanical District (Figure 2). Growing on a stony quartzite ridge. Associated vegetation not indicated.

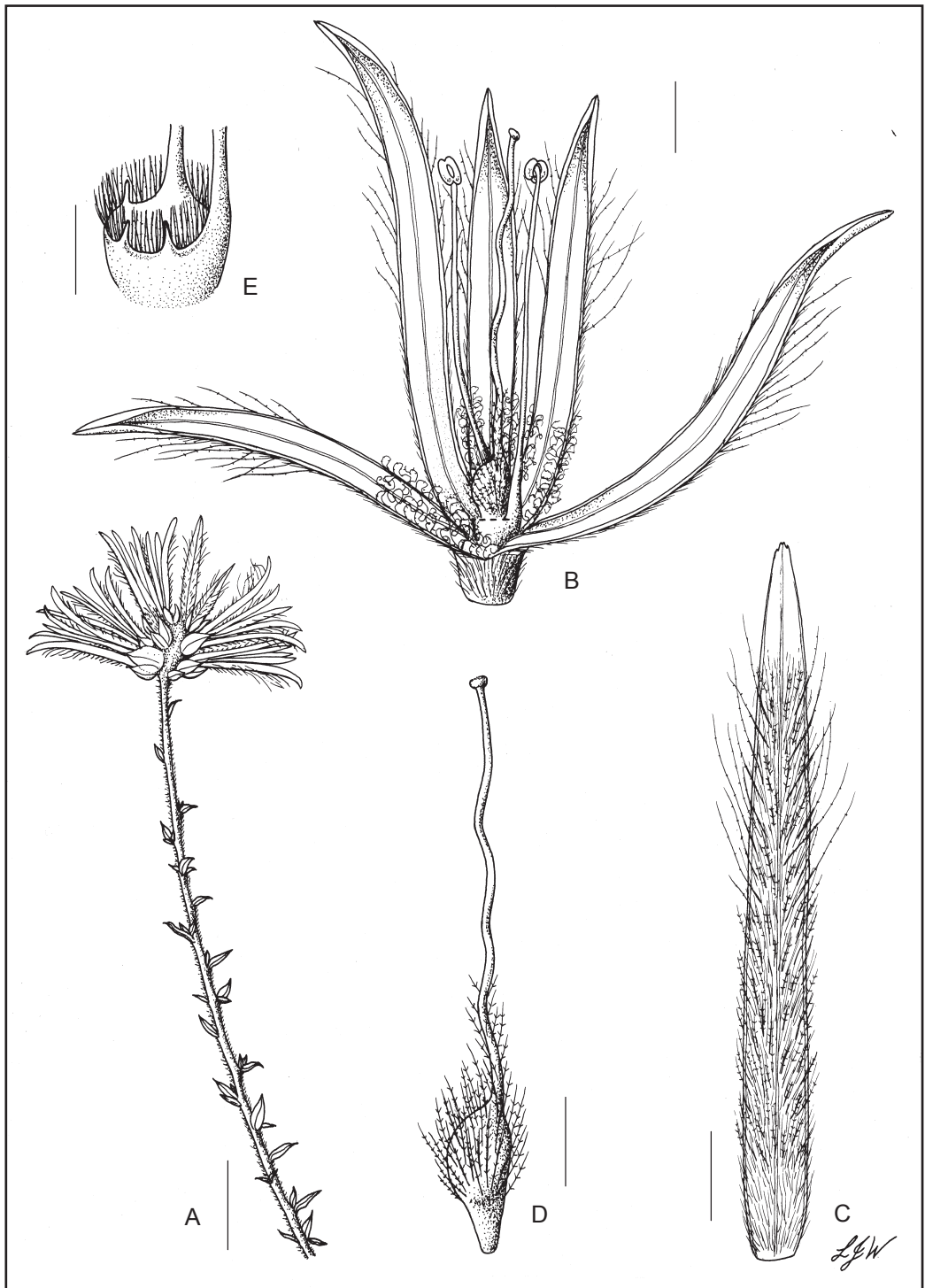


Figure 1. *Ptilotus daphne*. A – portion of branchlet with inflorescence; B – flower (perianth), opened out; C – outer surface of outer tepal; D – ovary and style; E – staminal cup. Drawn from D.J. Edinger Nats 58 (A), M. Hancock 1103 (B–E). Scale = 30 mm (A); 2 mm (B–E).

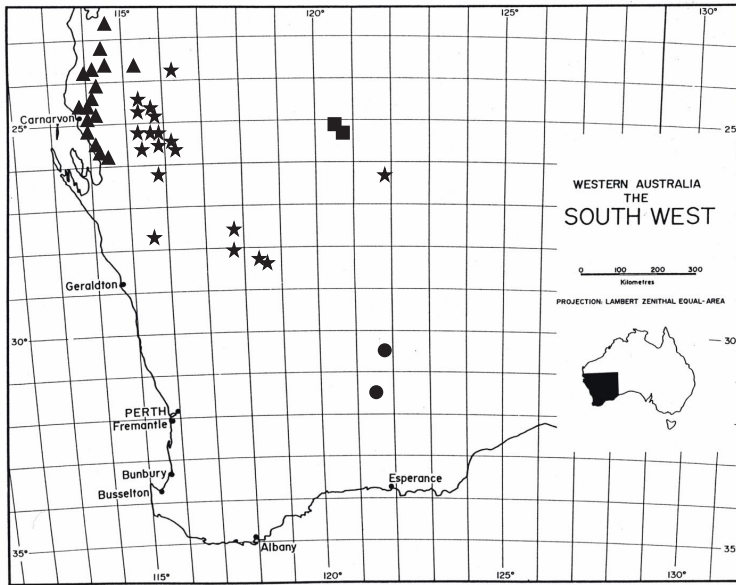


Figure 2. Distribution of *Ptilotus daphne* (■), *P. polakii* subsp. *juxtus* (▲), *P. polakii* subsp. *polakii* (★) and *P. rigidus* (●) in Western Australia.

Conservation status. As this species is only known from two populations on unreserved land, just outside the proposed Carnarvon Range Conservation Park, Western Australia, it was recently listed as Priority One, under *Ptilotus* sp. Carnarvon Range (D.J. Edinger Nats 58), according to the Department of Environment and Conservation (DEC) Conservation Codes for Western Australian Flora.

Etymology. Named for Ms Daphne Edinger, a volunteer at the Western Australian Herbarium, Perth. Daphne has contributed many useful and interesting collections from across Western Australia, often from remote localities, including the type material of this taxon.

Notes. This species is closely related to *P. beardii*, sharing long, linear tepals which curve outwards at the apex when mature and a similar habit, a compact shrub with terminal inflorescences, borne on new growth. It differs from *P. beardii* in its green leaves without a hardened base (grey-green with a hardened, yellowish, decurrent base in *P. beardii*), perianth with long, over-topping nodose hairs in the upper part of the tepal only (long, over-topping nodose hairs all over the tepals in *P. beardii*), densely hairy ovary and partially hairy style (both glabrous in *P. beardii*), inner tepal hairs moderately dense and woolly (very dense and intertwined in *P. beardii*) and dense ring of hairs on the staminal cup with short, barely visible staminodes obscured by hairs (hairs only present between filaments, staminodes longer and more obvious in *P. beardii*).

The floral morphology of *P. daphne* is similar to *P. lazaridis* in the long, linear tepals, the outer tepals with long, over-topping nodose hairs in the upper half only, and the hairy ovary. *Ptilotus daphne* differs by having inner tepals with moderately dense, crisped hairs (sparse straight hairs in *P. lazaridis*), staminodes to 0.6 mm (2–2.2 mm in *P. lazaridis*) and ovary densely hairy all over (hairy in upper part only in *P. lazaridis*). In habit, *P. daphne* is quite different, being a hairy, compact shrub, with small, elliptic or obovate leaves, whereas *P. lazaridis* is a glabrous, more open, divaricate shrub with larger, elliptic leaves.

Specimens of this species have previously been determined as *P. parvifolius* var. *laetus* (now *P. remotiflorus* Benl) which it superficially resembles due to its compact habit, stiff branchlets and small leaves. However *P. daphne* differs in its shortly racemose inflorescences to 0.8 cm long, with flowers 15–19 mm long (*P. remotiflorus* has racemes 1–6 cm long, with flowers 9–12 mm long), and tepals being more or less flat, linear and lacking a broad marginal band (*P. remotiflorus* has concave, oblong tepals with a broad marginal band).

Ptilotus rigidus Lally, *sp. nov.*

Affinis *P. beardii* Benl et *P. daphne* Lally, sed floribus minoribus et caulibus glabris, differt. Quoque affinis *P. parvifolio* (F.Muell.) F.Muell. et *P. remotifloro* Benl, sed marginibus scariosis tepalorum deliquis et pilis tepalorum exteriorum ad dimidium inferius limitatis, differt.

Typus: Lake Lefroy, Western Australia, 22 November 1995, G. Barrett 716 (*holo*: PERTH 04308425).

Ptilotus sp. Lake Lefroy (G. Barrett 716), Western Australian Herbarium, in *FloraBase*, <http://florabase.dec.wa.gov.au> [accessed April 2008].

Rigid, subsperescent *shrub* to 25 cm high; stems striate, glabrous, the new stems green. *Leaves* sessile to subsessile, narrowly obovate, 2.5–5.5 mm long, 0.5–1 mm wide, fasciculate, with very sparse, ± crisped, multi-cellular hairs, glabrescent, dark green, fleshy; apex mucronate, mucro to 0.5 mm long. *Inflorescence* an oblong or loosely hemispherical spike to 3 cm long, rachis to 2 cm long, 12–40-flowered. *Bract* 4.5–5.2 mm long; *bracteoles* 5.5–6 mm long, bract and bracteoles deeply concave with moderately dense, verticillate or subverticillate hairs on upper surface, denser at base and along midrib, both translucent, cream to pale golden-brown; apex and midrib hardened, mucronate, mucro to 1.2 mm long. *Perianth* 11–13 mm long, possibly pink. *Tepals* linear or narrowly oblong; herbaceous with a very narrow (*c.* 1 mm wide) scarious marginal band and apical portion; outer surface with short (to 1 mm), moderately dense, nodose or subverticillate hairs at base, dense, short, verticillate hairs on remainder, with sparse longer (to 2.2 mm), nodose hairs over-topping these, mainly in lower half of tepals only; glabrous apical portion 3–4 mm long, apex acute or obtuse; outer tepals longer than inner by *c.* 1 mm, glabrous inside; inner tepals with dense, crisped, nodose hairs inside, attached to the margins of the tepals in the lower quarter. Fertile *stamens* 2, 6–7 mm long, with soft, crisped, nodose hairs on lower third; *staminodes* 3, to 0.6 mm long, obscured among the dense, nodose or subverticillate hairs to 0.6 mm long between the filaments of the staminal cup. *Anthers* 0.9–1.4 mm long. *Ovary* with moderately dense, nodose or subverticillate hairs at apex and along sutures adjacent and opposite style; *style* eccentric, straight or slightly sinuate, 7–8 mm long, with scattered, verticillate hairs along its length. (Figure 3)

Other specimens examined. WESTERN AUSTRALIA: [precise localities withheld for conservation reasons] between Coolgardie and Norseman, 27 Mar. 1968, S.G.M. Carr 589 (AD, PERTH); SW of Jubilee, 30 Mar. 1962, *Forests Dept.*, *Kalgoorlie* 1755/62 (PERTH).

Distribution and habitat. Occurs within an area 100 km north-east, and south, of Kalgoorlie, between Jubilee and just south of Widgiemooltha (Figure 2). Associated with salt lakes, vegetation not indicated.

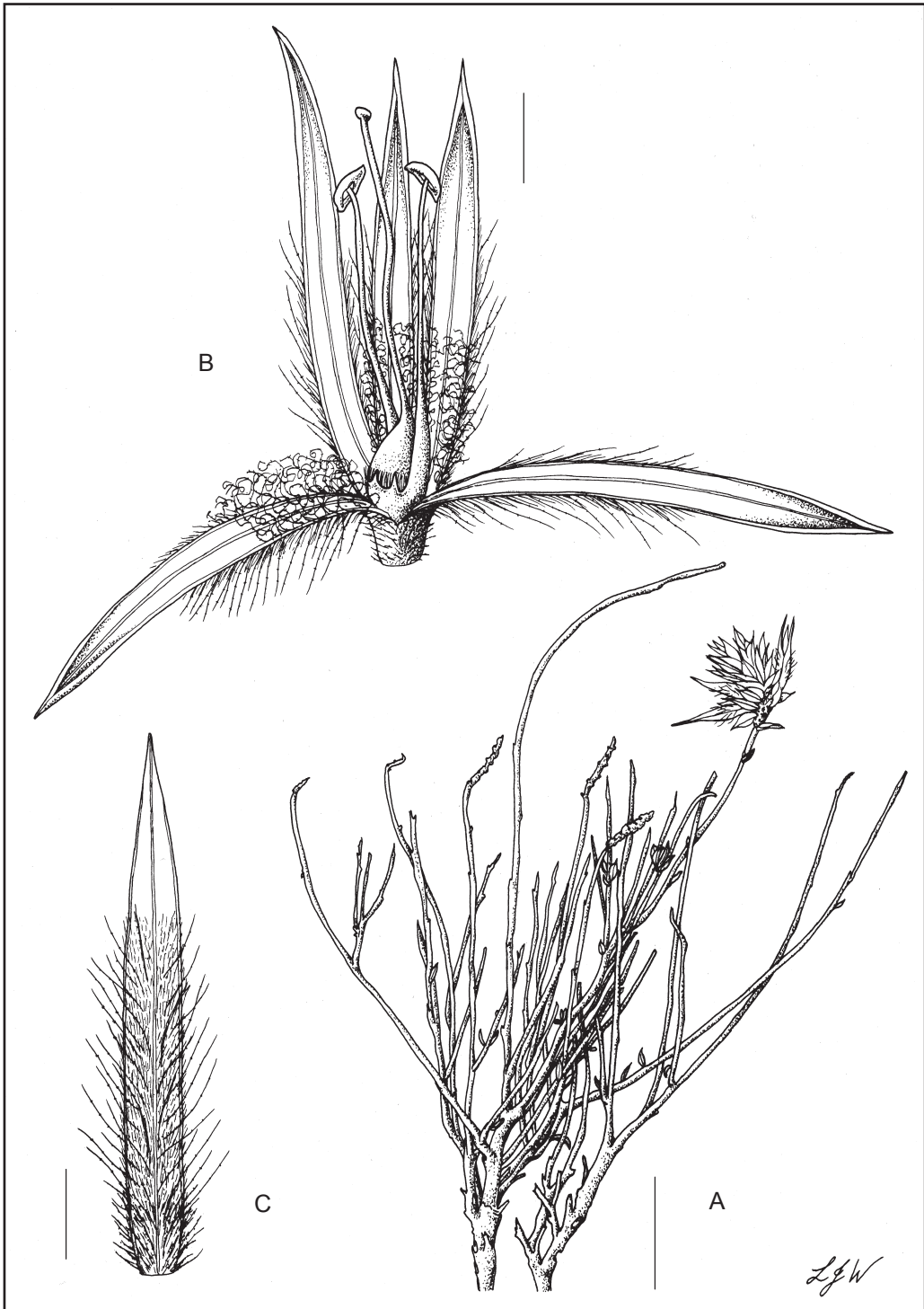


Figure 3. *Ptilotus rigidus*. A – habit; B – flower (perianth), opened out; C – outer surface of outer tepal. Drawn from S.G.M. Carr 589. Scale = 20 mm (A); 2 mm (B, C).

Conservation status. As this species is only known from three collections, two from the 1960s and one more recent gathering from 1995, it was recently listed as Priority One, under *Ptilotus* sp. Lake Lefroy (G. Barrett 716), according to the DEC Conservation Codes for Western Australian Flora. Survey work is required to determine if the older populations are still extant, and whether further populations exist, associated with the numerous salt lakes in the area.

Etymology. The epithet is from the Latin *rigidus* (rigid, unbendable), referring to the stiff, stick-like habit of this species.

Notes. Benl (1986) included specimens of *P. rigidus* in his concept of *P. parvifolius* var. *laetus* sens. lat. Superficially this species could be confused with taxa in the *P. parvifolius* complex (especially *P. parvifolius* and *P. remotiflorus*) due to the subspinescent, leafless habit and similarly sized flowers. However, *P. rigidus* can be distinguished by its more or less flat, linear tepals lacking a broad marginal band (*P. parvifolius* and relatives have concave, oblong tepals with a broad marginal band), and sparse, long hairs on the outer tepals confined to the lower half (hairs on the outer tepals of *P. parvifolius* and *P. remotiflorus* are denser and extend to near the glabrous apical portion).

Ptilotus rigidus is closer to *P. beardii* and *P. daphne*, sharing similar floral morphology (linear tepals with a very narrow marginal band and large, glabrous apical portion). The fleshy leaves and barely visible staminodes obscured by short staminal cup hairs are features it shares with *P. daphne*. *Ptilotus rigidus* differs from *P. daphne* in its smaller flowers, 11–13 mm long (15–19 mm long in *P. daphne*), glabrous stems (cobwebby hairy in *P. daphne*), over-topping nodose hairs on the outer tepals longer in the lower half (longer in the upper half in *P. daphne*) and the partially hairy ovary (ovary hairy all over in *P. daphne*). *Ptilotus rigidus* can easily be distinguished from *P. beardii* by its shorter flowers, 11–13 mm long (15–17 mm long in *P. beardii*), glabrous stems and leaves (hairy in *P. beardii*) and barely visible staminodes (longer and more obvious in *P. beardii*).

Ptilotus polakii F.Muell., *Southern Science Record* 274 (1882).

Trichinium polakii (F.Muell.) Diels in F.L.E. Diels & E. Pritzel, *Bot. Jahrb. Syst.* 35: 191 (1904). *Type:* ‘In the vicinity of the Gascoyne River’, *Polak s.n.* (*holo:* MEL 2279187; *iso:* MEL 59257, MEL 2279188).

Ptilotus depressus W. Fitzg., *J. Western Australia Nat. Hist. Soc.* 1: 33 (1904); *Trichinium depressum* (W. Fitzg.) Farman, *Bull. Herb. Boissier*, ser. 2, 5: 1087 (1905). *Type:* Lennonville, W.A., Sept. 1903, *W.V. Fitzgerald s.n.* (*holo:* PERTH 00305006; *iso:* M n.v., NSW 29851, NSW 638132, NSW 676127).

Shrub 0.2–1 m high, 0.3–1.2(–2) m wide; stems striate, with sparse, weak, simple or verticillate hairs, denser on new shoots, new stems green, older grey-brown or grey-black, glabrous or glabrescent. *Leaves* shortly petiolate, petiole 0.5–1(–5) mm long, narrowly elliptic or narrowly to broadly obovate to ± spatulate, (4–)6–17(–28) mm long, 1.5–7(–10) mm wide, sometimes clustered at new stem shoots, glabrous or with sparse, often cobwebby hairs, or sometimes with minute simple or verticillate white hairs (denser on young leaves), grey-green, dull green or green; apex mucronate or acute, mucro to 0.5 mm long. *Inflorescence* a globose, hemispherical or oblong spike to 3.5 cm long, rachis to 2.5 cm long, 6–30-flowered. *Bract* (1.8–)2.5–6(–7) mm long, concave, with sparse to moderately dense, verticillate hairs mainly at base, or glabrescent or glabrous, translucent, pale golden-brown; apex acute; *bracteoles* (2.5–)3.8–6(–8) mm long, concave, with sparse to moderately dense, verticillate

hairs, mainly along midrib or apex, or glabrescent or glabrous, translucent, pale golden-brown; apex apiculate. *Perianth* 8–16(–18) mm long, pink, purple or white-cream. *Tepals* linear, shallowly concave; herbaceous with a very narrow (*c.* 0.2 mm wide) scarious marginal band and apical portion; outer surface with short (to 0.8 mm), moderately dense, nodose or subverticillate hairs at base, dense, verticillate or subverticillate hairs on remainder, with sparse, longer (to 5 mm), nodose or subverticillate hairs over-topping these, denser and longer on lower part of tepal; glabrous apical portion of outer tepals 0.5–5(–5.5) mm long, 0.5–1.6(–1.8) mm wide, apex \pm erose, obtuse to truncate; outer tepals longer than two of the inner by 1–2 mm, glabrous inside; inner tepals with dense, crisped, nodose hairs inside, attached to the margins in the lower third, the hairs extending to half, or just near half, the tepal length; glabrous apical portion of inner tepals 0.5–3 mm long mm long, apex \pm erose, obtuse to truncate. Fertile *stamens* 2, 4–7.5(–9) mm long, glabrous; *staminodes* 3, 0.5–1.8 mm long, obscured among the dense, nodose hairs to 1.1 mm long on the staminal cup. *Anthems* 0.5–1.2 mm long. *Ovary* glabrous; *style* eccentric, sinuate or straight, 4–9(–10.5) mm long.

Two subspecies are recognised.

1. Glabrous apical portion of outer tepals 3–5(–5.5) mm long and 1–1.6(–1.8) mm wide; bract usually \pm equal in length to bracteole; inland, Gascoyne Junction to Cue..... subsp. **polakii**
- 1: Glabrous apical portion of outer tepals 1–2 mm long and <1 mm wide; bract shorter than bracteole; coastal, S of Onslow to Overlander Roadhouse subsp. **justus**

Ptilotus polakii* F.Muell. subsp. *polakii

Illustration. Moore (2005: 259).

Shrub 0.2–0.9 m high, 0.3–1.2 m wide. *Leaves* (5–)6–11(–15) mm long, 1.5–4.2 mm wide, usually with sparse, often cobwebby, simple or verticillate white hairs (denser and more visible on young leaves), or glabrescent or glabrous. *Bract* usually \pm equal to bracteole, 4–6(–7) mm long; *bracteoles* 3.8–6(–8) mm long. *Perianth* 10–16(–18) mm long. Outer *tepal* glabrous apical portion 3–5(–5.5) mm long and 1–1.6(–1.8) mm wide, inner tepal glabrous apical portion 2–3 mm long. *Stamens* 6–7.5(–9) mm long. *Style* 6–9(–10.5) mm long.

Selected specimens examined. WESTERN AUSTRALIA: 9 km W of Jimba Jimba homestead, 7 May 1995, *R.J. Cranfield* 9706 (CANB, PERTH); 10 km from Wongawol homestead on the Wiluna road, 7 Sep. 1982, *L.A. Craven* 7519 (CANB); 31 km ESE of Gascoyne Junction, 13 Sep. 1987, *J.W. Green* 5387 (CANB, PERTH); Cue, Oct. 1909, *J.H. Maiden s.n.* (MEL, NSW); 21 km NW of Mt Sandiman, 21 Aug. 1987, *K.R. Newbey* 11667 (PERTH); Windimurra Station, 60 km E of Mount Magnet, 24 Sep. 1998, *P. van der Moezel & S. Maxwell* 010 (PERTH); *c.* 38 km E of Coolcalalaya Station homestead on road to Yallalong Station and ca 50 metres S of road, 16 Sep. 2004, *F. Obbens & F. Hort* FO 52/04 (CANB, MEL, PERTH); Mullewa-Mount Augustus Road at 110 km S of Cobra homestead, 8 Aug. 2000, *S. Patrick & A. Cochrane* SP 3504 (CANB, PERTH); Glenburgh Station, Carnarvon–Mullewa Road, at 31 km SE of turnoff to Dairy Creek homestead, 10 Aug. 2000, *S. Patrick & A. Cochrane* SP 3545 (PERTH); 8 miles SW of Dalgety, *s. dat., N.H. Speck* 1505 (CANB, PERTH); 39 km N of Lyons River homestead, 27 Sep. 1979, *H.R. Toelken* 6410 (AD); Mt Warren, 1893, *I. Tyson s.n.* (MEL); Near Gascoyne Junction, Kennedy Range National Park near campground, 26 July 2002, *J.E. Wajon* 539 (PERTH); at base of Mt Magnet, 14 Oct. 1981, *J.G. West* 4476 (CANB, PERTH).

Distribution and habitat. This subspecies has its main distribution from the Kennedy Range near Gascoyne Junction in the north, to Coolcalalaya and Yallong Stations (c. 100 km E of Kalbarri) in the south, and inland to Wongawal Station, c. 180 km E of Wiluna, and the Mt Magnet area. There is also a collection from Mt Warren, near Cosmo Newberry, a further 150 km inland (*I. Tyson s.n.*, 1893) (Figure 2).

Recorded growing in well-drained, red or red-brown sandy loam or clay loam, often in stony sites (including lateritic and quartzic substrates), on plains, foothills or ridges. Occurs in open shrubland of *Acacia* and *Eremophila* with *Maireana*, *Chenopodium*, *Atriplex*, *Grevillea*, *Hakea* and *Gnephosis*.

Notes. This subspecies differs from subsp. *juxtus* in its usually larger flowers with longer and wider, prominent apical portion on the tepals, which are often incurved. It also has the bract usually \pm equal to the bracteoles and usually has hairier leaves and stems, the hairs persisting longer on these parts with age.

Ptilotus polakii* subsp. *juxtus Lally, *subsp. nov.*

Affinis subsp. *polakii*, sed floribus minoribus cum brevioribus et angustioribus apicibus tepalorum, differt.

Typus: 43 km E of Carnarvon on road to Gascoyne Junction, Western Australia, 27 September 1987, *P.G. Wilson* 12658 (*holo:* PERTH 02160773 *n.v.*; *iso:* CANB, CBG 9212606).

Illustration. Mitchell & Wilcox (2008: 328–329).

Shrub 0.3–1 m high, 0.4–1(–2) m wide. *Leaves* (4–)9–17(–28) mm long, 3.5–7(–10) mm wide, usually glabrous or with barely visible simple hairs, or younger growth sometimes with simple or verticillate white hairs, becoming glabrous with age. *Bract* usually shorter than bracteole, (1.8–)2.5–4 mm long; *bracteoles* (2.5–)3.8–5 mm long. *Perianth* 8–13 mm long. Outer *tepal* glabrous apical portion 1–2 mm long and <1 mm wide, inner *tepal* glabrous apical portion 0.5–1 mm long. *Stamens* 4–6 mm long. *Style* 4–5.5 mm long.

Selected specimens examined. WESTERN AUSTRALIA: Approx. 20 km NE of Carnarvon, 16 Oct. 1986, *B. Archer s.n.* (MEL); c. 40 km S of Carnarvon, Onslow Road junction, 17 Aug. 1969, *A.M. Ashby* 2958 (AD); Winning Pool repeater station, North West Coastal Highway, 56.2 km S of the Yannarie River, 12 Oct. 2005, *G. Byrne* 1696 (PERTH); Lyndon–Williambury track, E side of Williambury Station, 9 Aug. 1981, *R.J. Cranfield* 1841 (PERTH); Wandagee Station, N of Yalobia Well, west of West Coast Highway, Sep. 1959, *S.J.J. Davies* 6 (PERTH); Booloogooro, 1 km NW of homestead, 89 km N of Carnarvon, 13 Oct. 1983, *S.J. Forbes* 1578 (MEL, PERTH); 28 km W of Wahroonga homestead near North West Coastal Highway, 15 Sept. 1987, *J.W. Green* 5416 (CANB, PERTH); c. 14 km by road NNE of Minilya Roadhouse (Minilya River crossing) on North West Coastal Highway, 30 Aug. 1977, *E.N.S. Jackson* 3073 (AD, M); 135 mile peg between Onslow–Carnarvon, 26 Oct. 1963, *F. Lullfitz & P. Fairall* 2808 (PERTH); 45 miles S of Carnarvon, *s. dat.*, *N.H. Speck* 765 (PERTH); c. 30 km W of Minnie Creek homestead, 30 Sep. 1975, *J.Z. Weber* 4844 (AD, PERTH).

Distribution and habitat. This taxon occurs from near Onslow in the north to Gladstone in the south, and from Carnarvon inland to just beyond the North West Coastal Highway, with its most inland locality west of Minnie Creek Station (Figure 2).

Recorded in red-brown rocky or quartzitic loam, clay or sand, on flats and plains in areas subject to periodic inundation. Associated with *Acacia* and *Eremophila* shrubland with *Triodia* and *Calandrinia*.

Etymology. From the Latin *juxta* (nearby or next to), referring to the geographical proximity of this subspecies, to the typical subspecies.

Notes. This subspecies usually has flowers with a shorter and narrower apical portion on the tepals than the typical subspecies. The bract is usually shorter than the bracteoles, and the leaves and stems are generally glabrous or glabrescent.

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