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Two new species of *Ptilotus* (Amaranthaceae) from Western Australia

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Abstract

Davis, R.W. Two new species of *Ptilotus* (Amaranthaceae) from Western Australia. *Nuytsia* 15(2): 221–226 (2004). Two new species of *Ptilotus* (Amaranthaceae) from the central and southern regions of Western Australia are described: *Ptilotus chrysocomus* R.W. Davis, known from one location near the Carnarvon Range in the vicinity of the abandoned Blue Hill Station, Little Sandy Desert; and *Ptilotus halophilus* R.W. Davis, known from the margins of Lake Altham and from Lake Hurlstone Reserve in the Lake Grace to Pingrup and Holt Rock to Hyden areas.

Introduction

Ptilotus R.Br. (Amaranthaceae) is a large genus of about 100 taxa (Townsend, 1993) of shrubs, perennial herbs and annuals. The genus is largely endemic to temperate and tropical Australia. It has been nearly a decade since a new species of *Ptilotus* has been described. Gerhard Benl carried out a long-term study of the genus from 1956 to 1994 including a key to species (Benl 1971). He described numerous new species, the last of which was in Benl (1994), and culminated in a draft treatment for the 'Flora of Australia' (Benl unpubl.). During the authors recent development of an electronic key to Australian *Ptilotus* species using DELTA (DEscription Language for TAXonomy; Dallwitz *et al.*, 1993), possibly five new species were discovered, two of which are described here.

Taxonomy

Ptilotus chrysocomus R.W. Davis, *sp. nov.*

Frutex glaber ad 0.5 m altus. Folia opposita vel in brachyblastis fasciculata, decurrentes, anguste oblanceolata, 4–10 mm longa, 0.8–1.2 mm lata. Spicae ovoideae vel globulares, 5–11 mm longae, 7–10 mm latae, flavae, aureae ad cremeae vel in alabastro roseae. Bracteae ovatae, 1.2–1.5 mm longae, stramineae, modice pilosae sed ad basim dense pilosae. Bracteolae late ovatae vel orbiculares, 2–2.3 mm longae, stramineae, ad apicem pilosae, versus basim glabrae; pili septati, aurei. Tepala exteriora concava, 3.4–4 mm longa, apice integro, rotundato, cucullato. Tepala interiora tepalis exteriora paulo longiora, leviter cucullata, 3.6–4.2 mm longa, macula brunnea supra paginam anteriorem. Stamina 5, ad apice tepalorum extensa. Ovarium orbiculare vel ovatum, 1–1.2 mm longum, compressum, glabrum, stylo ad centro vel ad fer centro inserto, versus basim dilatato ad apice tepalorum extenso.

Typus: 4 km ENE of Blue Hill Station (abandoned), south of Carnarvon Range, Little Sandy Desert, Western Australia, 28 August 1999, D.J. Edinger Nats 66 (*holo*: PERTH 05442532; *iso*: CANB).

Compact *shrub* to 0.5 m high, with erect glabrous stems. *Leaves* glabrous, opposite, decurrent, simple, sessile, narrowly oblanceolate, fasciculate at dwarf stem shoots, 4–10 mm long, 0.8–1.2 mm wide, incurved towards branches. *Spikes* sometimes solitary, commonly in a close panicle, ovoid to globular, 5–11 mm long, 7–10 mm wide, yellow to straw coloured, pink tinged in early bud. *Bracts* ovate, 1.2–1.5 mm long, straw coloured, densely pilose at base sparsely so towards apex; hairs septate, golden. *Bracteoles* broadly ovate to orbicular, 2–2.3 mm long, straw-coloured, densely pilose at apex glabrous towards base; hairs septate, golden. *Outer tepals* concave, shorter than inner tepals, 3.4–4 mm long, apex entire, rounded, hooded, hairy outside, glabrous inside; hairs septate, stiff, golden. *Inner tepals* slightly longer than outer tepals, slightly hooded, hairy outside, glabrous inside 3.6–4.2 mm. long, central brown marking on outer surface; hairs finer than those on outer tepals, septate, white/gold. *Staminal cup* 0.5–0.8 mm long. *Stamens* 5, equal, extending to tepal apex or just beyond. *Stipe* short, compressed to terete, 0.1–0.2 mm long. *Ovary* orbicular to ovoid in outline, 1–1.2 mm long, laterally compressed, glabrous. *Style* straight, inserted centrally or almost centrally, dilated towards ovary, 1.4–1.7 mm long, sigmoid, extending to tepal apex. (Figure 1).

Distribution and habitat. Known from the one location, Blue Hill Station south of the Carnarvon Range. Observed on the plain below the bases of breakaways; growing in open acacia scrubland. (Figure 2).

Phenology. Flowering recorded in late August.

Conservation status. Conservation Codes for Western Australian Flora: Priority One. *Ptilotus chrysocomus* was found in a remote area of Western Australia and has only been collected once. Although this species appeared to be a woody perennial, on revisiting the collecting site it was not found. The population is 1.5 km south of a proposed conservation park.

Etymology. The epithet is from Greek *chryso* – golden and *comus* – hairs, referring to the tepal indumentum of gold–of gold-coloured hairs.

Notes. Previously known by the phrase name *Ptilotus* sp. Blue Hill (D.J. Edinger Nats 66). *Ptilotus chrysocomus* does not appear to be closely aligned with any species, however, it would most likely fit within the shrubby group of *Ptilotus*. This species differs from most other species by having a combination of hooded tepals, which are hairy throughout the outer surface, and by having inner tepals marginally longer than the outer tepals. *Ptilotus chrysocomus* also has septate hairs rather than verticillate hairs, a hair type similarly found in two other species, *P. wilsonii* and *P. holosericeus*.

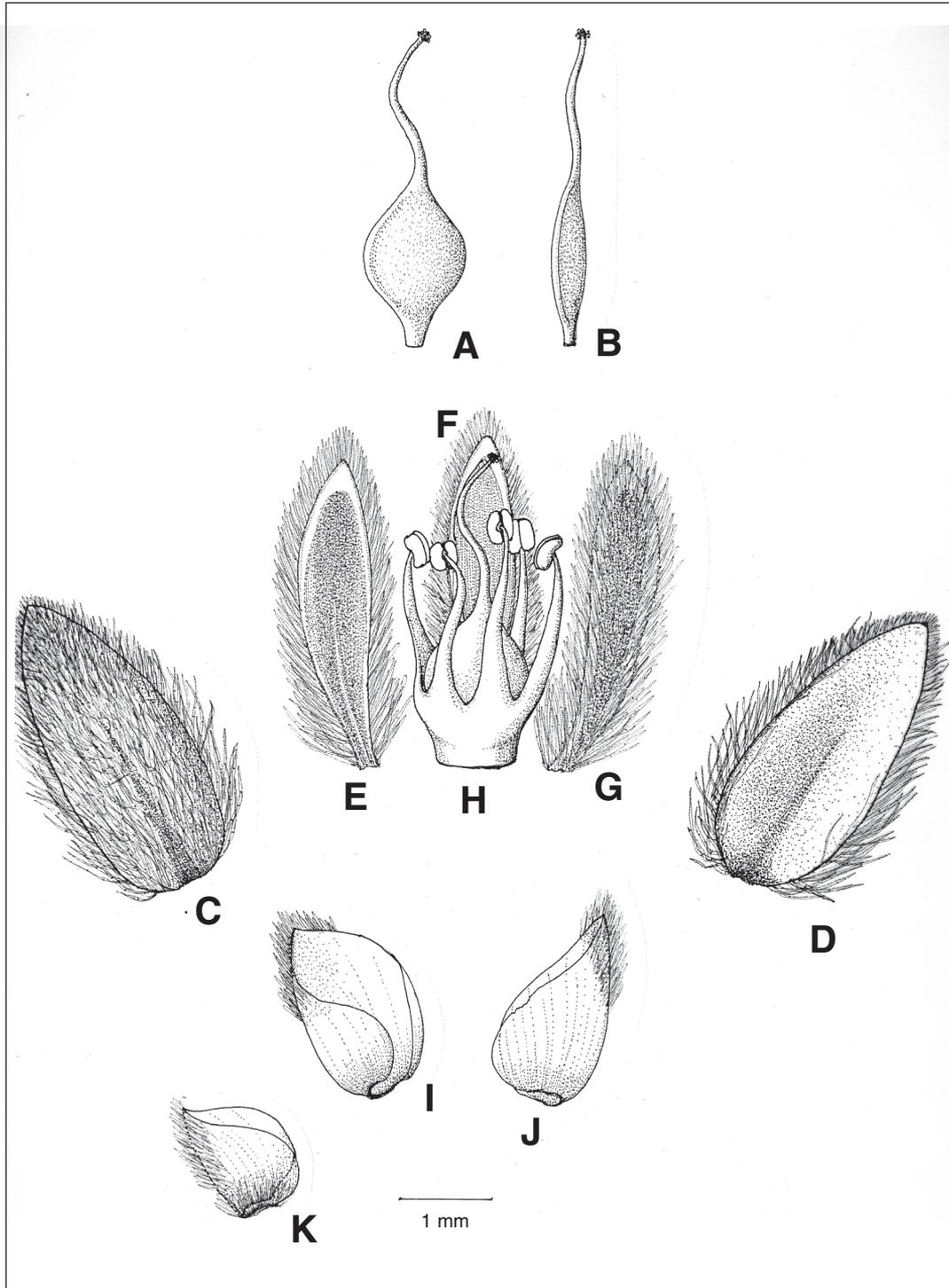


Figure 1. A-K. *Ptilotus chrysocomus* A- ovary front view, B- ovary side view, C- outer view outer tepal, D- inner view outer tepal, E-F inside view inner tepals, G-outer view inner tepal, H- staminal cup encircling ovary of maturing floral parts, I-J-bracteoles, K-bract.

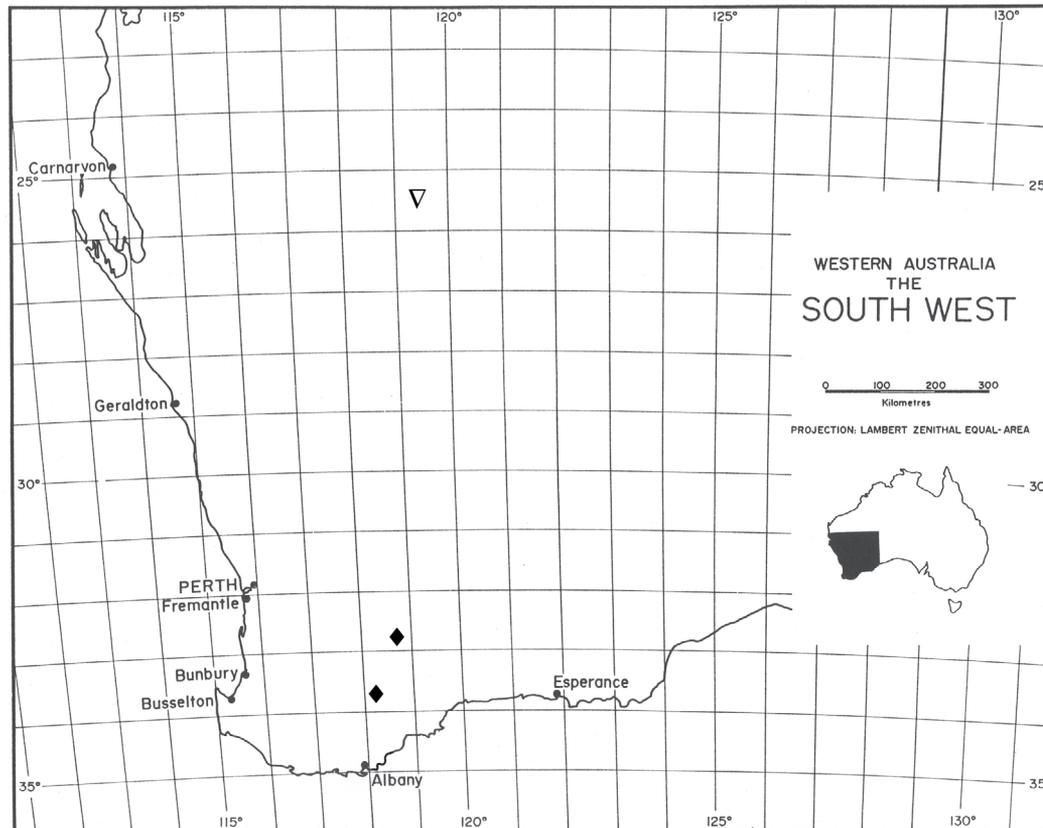


Figure 2. Geographical distributions of *Ptilotus chrysocomus* ▽ and *Ptilotus halophilus* ◆.

***Ptilotus halophilus* R.W. Davis, sp. nov.**

Ptiloto seminudo affinis sed parte inferiore tepalorum pilis verticillatis dense obtecta, ovario orbiculari et stylo brevior differt.

Typus: Lake Altham, southern lake margin, Western Australia, 17 November 1994, M. Graham G 200.28. (*holo*: PERTH 4243463; *iso*: CANB).

Prostrate decumbent perennial *herb* to 8 cm high, 35 cm wide. *Stems* herbaceous, glabrescent. *Basal leaves* in a rosette, spatulate, *stem leaves* glabrescent, alternate, petiolate, spatulate, obovate or elliptical, mucronate, 8–70 mm long, 2–12 mm wide. *Spikes* solitary, spherical to ovoid, 12–30 mm long, 20–30 mm wide, light green, pink tinged and overall silver sheen. *Bracts* ovate to narrowly ovate, 6.2–7.5 mm long, brown, with sparse verticillate hairs mostly on the central portion, apex acuminate. *Bracteoles* broadly ovate, 5–6 mm long, largely translucent, brown tinged along midrib; apex mucronate, reflexed; hairs verticillate, sparsely confined to midrib. *Outer tepals* linear, 10–14 mm long, concave, margins inwardly folded, apex glabrous, flattened, serrate; hairy outside, glabrous inside; indumentum of verticillate hairs to 8 mm long with shorter secondary verticillate hairs beneath, extending to or just exceeding tepal apex. *Inner tepals* shorter than outer tepals concave, appearing acuminate, 8–12.5 mm long, apex glabrous, centrally folded, flattened, serrate; hairy outside, glabrous inside; hairs verticillate, to 8 mm long with shorter secondary verticillate hairs beneath, extending to or just exceeding tepal apex. *Staminal cup* 1.3–1.5 mm long. *Stamens* 2, reflexing outside the tepals at anthesis, 2–2.2 mm long. *Staminodes* 3, yellow, equal to or just longer than fertile stamens. *Stipe*

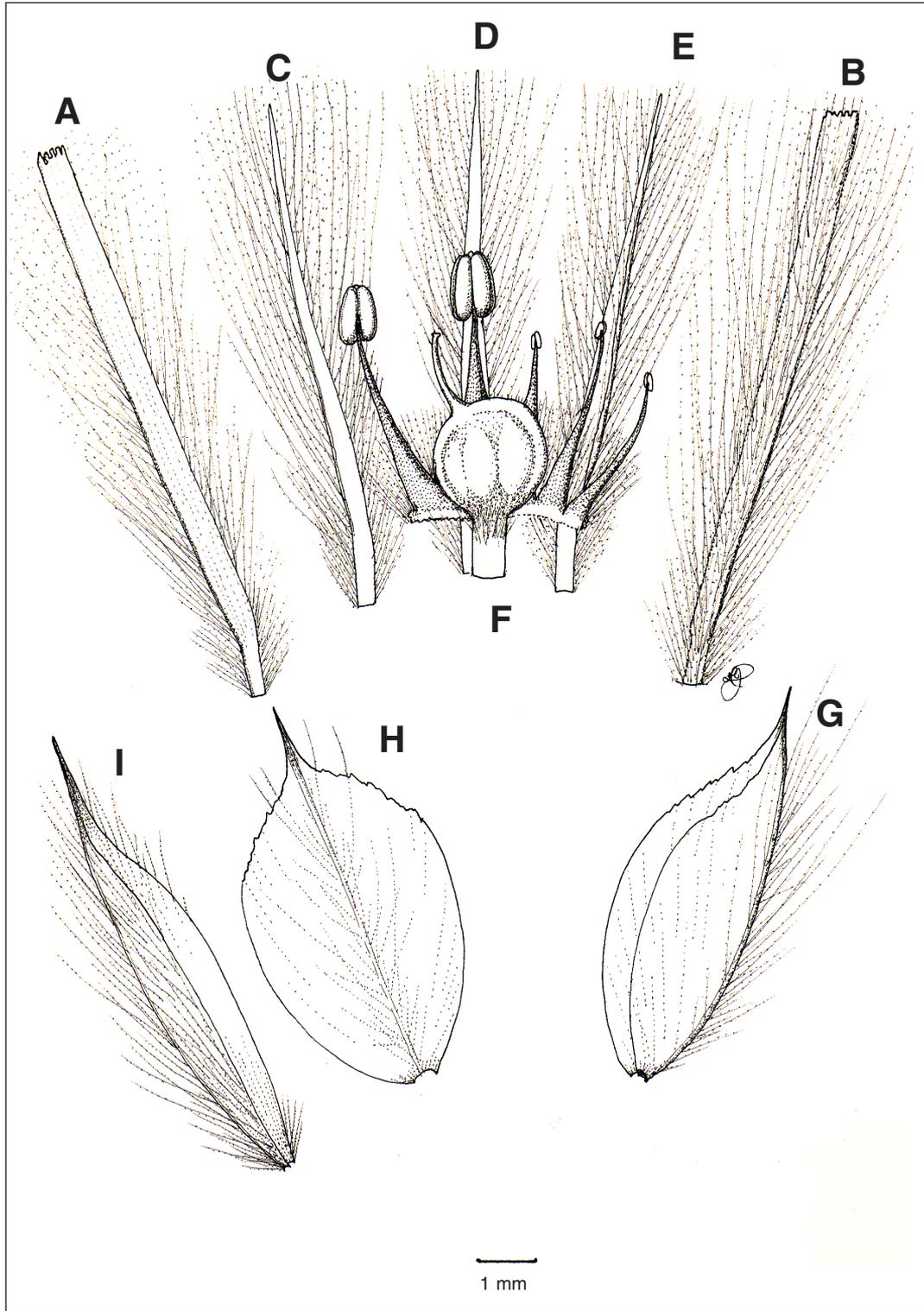


Figure 3. A-J. *Ptilotus halophilus* A-inner view outer tepal, B-outer view outer tepal, C-D inner view inner tepal, E-outer view inner tepal, F-foreground ovary, background staminal cup, stamens and staminodes, G-H bracteoles, I-bract..

compressed to terete 0.8–1 mm long *Ovary* orbicular to ovoid in outline, laterally compressed, 1–1.3 mm long, glabrous or with a few verticillate hairs at summit. *Style* falcate inserted eccentrically, 0.9–1 mm long. *Seeds* brown, ovoid, 1.7–1.8 mm long, minutely rugose. (Figure 3).

Distribution and habitat. There are currently only two collections of *Ptilotus halophilus* at Lake Altham and Lake Hurlstone in the Roe Botanical District. However, Mike Lyons (pers. comm.) has confirmed that several populations of this species were observed during his survey work for the Salinity Action Plan. These populations have been recorded growing on or near sand dunes along the margins of salt lakes within this region. The species can also be found growing in open mallee woodlands or scrubland on grey sandy soils near salt lakes. (Figure 2).

Other specimen examined. WESTERN AUSTRALIA: Lake Hurlstone reserve, 18 June 1998, E. Bennett & K. Del Fante HS 23.11 (PERTH).

Phenology. Flowering from June through to November.

Conservation status. Conservation Codes for Western Australian Flora: Priority Four. Although not immediately threatened, there is potential for this species to be threatened mainly due to it inhabiting areas in close proximity to salt lakes, which may make plants vulnerable to rising water tables.

Etymology. The epithet is from Greek *halophilus*, meaning salt loving, a reference to this species growing near salt-lakes.

Notes. Previously known by the phrase name *Ptilotus* sp. salt lake (M.Graham G 200.28). The first recognised collection of *Ptilotus halophilus* had originally been identified as *P. spathulatus*; however, it can be easily separated from *P. spathulatus* by having white globular spikes. The closest relative to *P. halophilus* is *P. seminudus* from which it differs by having an indumentum of verticillate hairs on the lower portion of the tepals, and by an ovoid ovary and shorter style.

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