

***Ptilotus crispus*, a new species of Amaranthaceae
in the Kimberley Division of Western Australia**

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Abstract

Benl, G. *Ptilotus crispus*, a new species of Amaranthaceae in the Kimberley Division of Western Australia. Nuytsia 6(3): 319-323 (1988). A new species of *Ptilotus*, *P. crispus* Benl, from the Kimberley Region of Western Australia, is described and discussed. The taxon is illustrated by analytical drawings; a photograph of the holotype sheet is provided.

***Ptilotus crispus* Benl, sp. nov. (Figures 1 & 2)**

Herba annua inconspicua, caulibus 3-5 gracilibus 2.5 cm usque ad c. 25 cm longis prostratis parce ramosis et foliatis plurispicatis; primo pilis subcrispis laxe puberula tandem glabrescens. Folia plurima opposita oblonga vel lanceolata, ad c. 1.2 x 0.5 cm. Inflorescentiae plerumque solitariae conici-ovoideae vel anguste cylindratae ad 1.5 cm longae; rhachis omnino glabra; flores pedicellati c. 10-60 conferti visu albidi, juveniles subglobulares, adulti rotati. Bractea et bracteolae maiores hyalinae persistentes, longitudinem perianthii maturi haud attingentes, pubescentia parca inaequali insignes: pilis dorsalibus rigidi crassiusculis partim apicem excedentibus fragilibus, pilis marginalibus tenuibus curvatis plus minusve caducis. Perianthium maturum a juvenili parce piloso valde differt, denique parte infera tepalorum pseudotubum obconicum formans. Tepala libera integra subaequalia tandem c. 2-3 x 1.5-2 mm, post anthesin omnia conspicue bipartita: in parte infera lineari pilis minutis crispis intricatis dense obsessa, in parte supera maxime dilatata et explanata parce pilosula. Androecium et gynoecium perianthio multo breviora. Stamina 5 omnia fertilia aequalia; filamenta basi dilatata in cupulam humilem coalita; pseudostaminodia interiecta nulla. Ovarium complanati-globosum glabrum; stylus centralis brevis; stigma primo capitellatum.

Taxon novum praesertim ob formam rotatam florum adutorum, ob modum pubescentiae tepalorum et rhachim glabram ab omnibus speciebus generis adhuc cognitis distinguitur.

Typus: 3.6 km north by road from Kalumburu on road to Pago Mission; Gardner Botanical District; 14° 16'S, 126° 37'E; 1 May 1985, T.E.H. Aplin, R.J. Cranfield, B.L. Rye & J.R. Wheeler 853 (holo: PERTH; iso: M).

Ephemeral and more or less prostrate *herb* spreading to 30 cm or more across when fully in flower; stems and foliage evenly and shortly-hairy when young; tap-root slender, 3-3.5 cm long; floriferous parts unattractive. *Stems* 3-5, wiry, usually with one central stem 8-25 cm long, ascending, becoming prostrate and 2-4 shorter procumbent ones, little-branched, terete to slightly angular and slightly compressed where branched, purplish-tinged, loosely pilose with simple more or less curved to crisp nodulose semi-

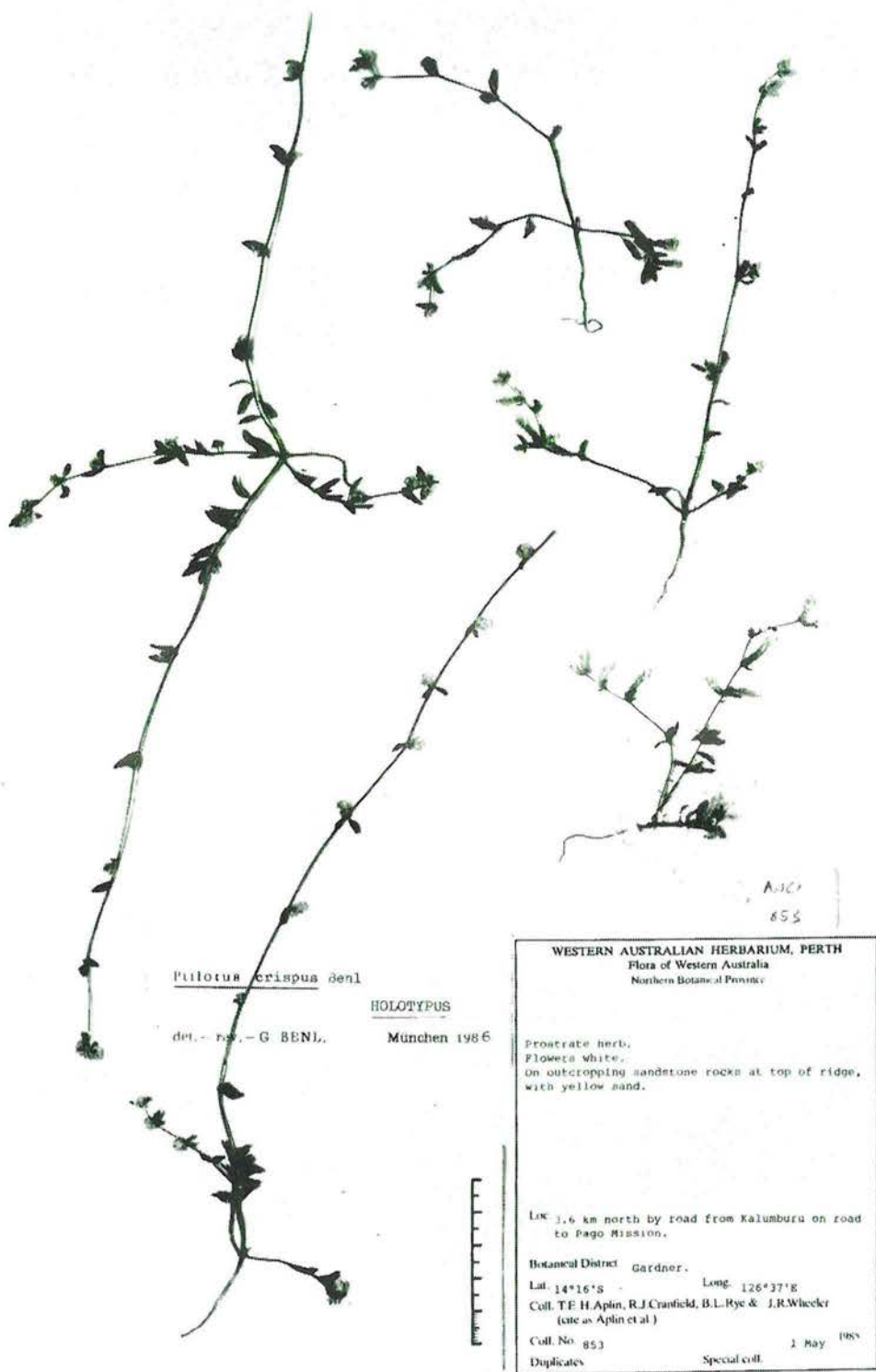


Figure 1. *Pilolus crispus*. - Holotype sheet (PERTH).
Photograph by K. Liedl.

appressed hairs 0.3-0.8 mm long, at length glabrescent. *Leaves* all cauline, sparse up to 20 per stem, 0.2-3.2 cm apart, often opposite with 1 or rarely 2 spikes between, less often alternate, almost vertical to axis, thick and coriaceous, becoming rugose when withering, (4)5-10(12) x (1.5)2-3.5(5) mm, initially pilose on both sides with hairs as for the stems but becoming glabrous sooner; uppermost ones reduced. *Blade* oblong-elliptic to almost linear-lanceolate, bright-green to yellow-green on both surfaces, tapering at base into a petiole up to 1.2 mm long, margins entire, cartilaginous, often recurved, midrib raised underneath. *Flower spikes* up to 30 per plant, axillary or sometimes terminal, usually sessile, solitary or occasionally in pairs, divided at the base, compact, variable in shape and size, ovoid to conical (c. 4-6 x 4.5 mm) with about 10-15 flowers or cylindrical (c. 15 x 4 mm) with up to 60 closely arranged flowers (lower ones falling out as spikes elongate), greenish-white becoming cream. *Rachis* obviously glabrous, yellow-green, sulcate when dry, c. 0.7 mm in diameter. *Flowers* at first more or less globose, ultimately wheel-shaped. *Pedicels* glabrous, 0.15-0.2 mm long, articulate above bracteoles. *Bract and bracteoles* broadly ovate and concave, shorter than mature perianth, membranous-scarious, transparent and shiny, entire, with a greenish blotch at the base which turns brown with age, persistent, with two kinds of hairs; dorsal hairs on the distal half, stout, obscurely septate and often with a more or less club-shaped terminal cell, averaging 0.3-0.4 mm long, projecting in part beyond the bract and bracteole apex by 0.1-0.25 mm, breaking off with age; marginal hairs delicate, curved, 0.1-0.2 mm long, caducous. *Bract* subacute, 0.6-0.9 x 0.4-0.6 mm; bracteoles more obtuse, 1-1.2 x 0.8-0.9 mm. *Perianth* straight at anthesis, with the upper parts of tepals incurved, free down to an open disc-like base, scarious, entire, green fading to brownish in a faintly 3-ribbed lower region, with in the upper portion thick dorsal hairs which overtop the apex in part and thinner marginal hairs matching those of the bract and bracteoles; outer tepals narrowly obovate to narrowly spatulate, 1.3-1.6 x 0.7-0.9 mm; inner tepals almost broadly elliptic, 1.2-1.4 x 0.7-0.8 mm. *Tepals* all enlarging after anthesis to 2.2-2.8 mm long, hardening in their lower portion and becoming conspicuously 3-ribbed, the claws of the tepals together forming a turbinate false tube of 1.2-1.4 mm while fruit is ripening; base and ribs of the rigid claws of perianth finally clothed on the outside with minute curly-entangled hairs (c. 0.15 mm long) and inside with a loose wool of longer crisp hairs (to c. 1 mm long); limbs of tepals remaining scarious but spreading, becoming almost circular or broader, those of the inner tepals expanding to 1.2 x 1.6 mm and those of the outer tepals to 1.4 x 2 mm, often overlapping each other and giving the perianth a wheel-shaped appearance when viewed from above; scant hairiness of limbs includes remnants of the juvenile pubescence and is restricted to the dorsal surface. *Androecium* consistently pentamerous with the short stamens all perfect; free part of filaments flattened in lower half, usually 0.5-0.7 mm long, 0.02-0.03 mm broad at middle, widened downwards to c. 0.06 mm, basally fused with acute angles into a minute cupule; anthers pale yellow, broadly-ellipsoidal, up to 0.2 x 0.15 mm, soon withering; intrastaminal lobes absent. *Pistil* glabrous; ovary at length sessile, complanate-globose, c. 0.3 x 0.25 mm at anthesis, later c. 0.7 x 0.5 mm; style central, short, rigid, 0.2-0.25 mm long by 0.03 mm diameter and thickened at base to 0.05 mm, persistent; stigma initially capitellate-papillose, becoming inconspicuous. *Seed* thick, lenticular, c. 1.4 x 1 mm, reddish brown.

Etymology. The specific epithet of this taxon refers to the crisp external indumentum of the lower region of the mature tepals.

Habitat. Eleven specimens (most of them not reaching 15 cm long) were found growing amongst outcropping sandstone rocks at top of a ridge, with yellow sand.

Distribution. *Ptilotus crispus* is a rare plant represented only by the type collection and is probably endemic to the Kimberley District.

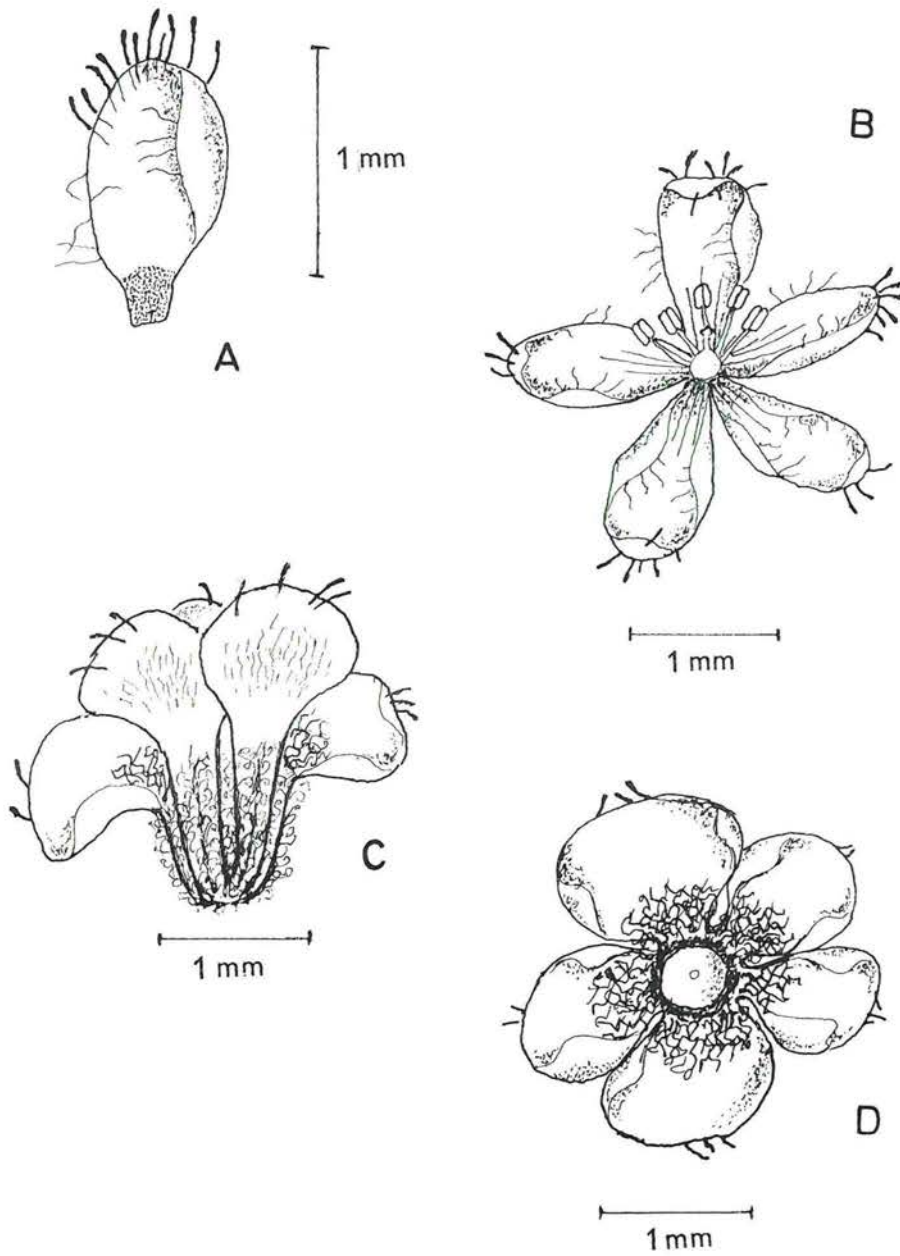


Figure 2. *Ptilotus crispus*. A - Bracteole. B - Newly opened flower with mature anthers but immature style. C - Side view of mature perianth. D - Flower with mature gynoecium, androecium shed.

Drawn by R. Mader from the holotype.

Discussion. Thickly rigid hairs on the distal zone of bracts and tepals are also characteristic of *Ptilotus comatus* Benl and *P. rotundatus* Benl, the rounded tepals of the latter being fringed by a unique wreath of very short hairs (Benl 1984, Figure 2C). Regarding the kind of flower pubescence the new taxon bears more resemblance to *P. comatus* where, however, the hairs form a distinct and persistent brush-like vestiture on tepal apices (Benl *ibid.*, Figure 2B). On the other hand *P. comatus* lacks the finely curled external indumentum on the ribs and the coarser internal wool in the middle of all mature tepals as well as the inconspicuous strongly appressed, more or less substraight minute hairs on the dorsal face of the limbs in ripened flowers. In both species, *P. comatus* and *P. rotundatus* adult tepals are not clearly bipartite, the mature perianth is not markedly wheel-shaped. There are a number of additional differences concerning general habit as well as vegetative and floral details. The glabrous rachis in *Ptilotus crispus* must be emphasized: it is a significant feature evidently unknown elsewhere in the genus. Furthermore, I do not know another *Ptilotus* where each flower tepal develops five distinct kinds of hair.

Hence *Ptilotus crispus* is clearly defined as a new species, although there are affinities with a group of *Ptilotus* taxa showing more or less comose tufted perianth hairs and having a structure of inner floral organs similar to that of *P. crispus*.

Reference

- Benl, G. (1984). New taxa in *Ptilotus* R.Br. (Amaranthaceae) from the Northern Territory. *Muelleria* 5: 249-261.