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## THE GENUS *PLEUROCARPAEA* BENTH. (ASTERACEAE: VERNONIEAE)

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### Abstract

*Pleurocarpaea* Benth., an endemic genus of the Australian tropics is revised. One new species, *P. fasciculata* Dunlop, a second for the genus, is described and illustrated. Distribution maps are provided for both species.

### Introduction

*Pleurocarpaea* was described by Bentham (1867a) with a single species, *P. denticulata*, based on a Robert Brown collection from Arnhem Bay in the Northern Territory. The species has since been collected in the Kimberley, Western Australia and northern Queensland. A second species, described here, was discovered in 1972; it is known only from a handful of populations in Arnhem Land, Northern Territory.

When describing *Pleurocarpaea*, Bentham (1867a) remarked that it appeared to have no close relatives in Vernonieae though in a later article (Bentham, 1867b) he suggested an affinity with sections of *Vernonia* through the shortly apiculate auricles of the anther bases. The genus however, though possessing all the essential characters of Vernonieae (Jones, 1977), is readily distinguished from other members of the tribe. Features common to the two species which in combination might be regarded as characterising the genus are greatly exerted florets, a vestiture of translucent glands and a variable, often rudimentary, pappus.

*Pleurocarpaea* is the only Australian endemic genus in the Vernonieae (Jones, 1977). The generic key of Bentham (1867a) still serves to distinguish the Australian members of the tribe.

### PLEUROCARPAEA Benth.

*Pleurocarpaea* Benth., Fl. Aust. 3: 460 (1867).

Type: *P. denticulata* Benth.

*Shrubs* or perennial suffruticose *herbs*. Vegetative parts punctate with translucent, minutely stipitate glands which appear sessile; indumentum usually sparse, of appressed thin-walled 2-armed hairs and minute hairs with a short erect stipe and an inflated thin-walled terminal cell. *Leaves* alternate, sessile or shortly petiolate. *Capitula* solitary or loosely corymbose, homogamous; *phyllaries* foliaceous, in 2 or 3 series, imbricate, glandular, glabrescent. *Receptacle* flat, naked or more usually paleaceous; paleae exceeding the achenes, lanceolate to linear, acute to acuminate, similar to the phyllaries in colour, texture and vestiture. *Florets* bisexual, fertile; corollas purple, pink or white, exceeding the involucre by more than half their length, campanulate, 5-lobed, the lobes  $\pm$  half the corolla length, glandular, glabrescent; stamens inserted just below the limb, sagittate, the auricles acute, distal appendage acute; style branches tapered, acute, shortly hairy. *Achenes* prominently  $\pm$  10-ribbed, glandular. *Pappus* absent or of persistent bristles either scattered or cohering in a continuous ring.

*Distribution*

Tropical Australia north of 16° South.

**Key to the species**

Stems annual; leaves 5-50 mm wide; capitula 8-18 mm long..... 1. *P. denticulata*  
 Stems perennial; leaves 2-7 mm wide; capitula 6.4-8 mm long..... 2. *P. fasciculata*

1. ***P. denticulata*** Benth., Fl. Aust. 3: 460 (1867); Benth., Hooker's Icon. Pl. 11: 5, t. 1006 (1867).

*Type*: Mallinson's Is. Arnhem Bay, R. Brown (labelled *F. Bauer*), 1.iii.1803 (lecto: (designated here):K; photo, DNA; isolecto.: BM, CANB, K, MEL, NSW).

*Description*

Perennial suffruticose *herbs* with annual aerial stems, to 80 cm high. Stems and leaves glabrescent or glabrous, rarely the young leaves tomentose. *Stems* erect or decumbent, usually several together; striate to angular, rarely smooth. *Leaves* ovate, elliptic or narrowly elliptic, 20 - 85 mm long, 5 - 50 mm wide, irregularly dentate to denticulate or entire, obtuse or acute. *Peduncles* naked, leafy or bracteate, to 150 mm long. *Capitula* 8 - 18 mm long; *phyllaries* linear-lanceolate or broadly lanceolate or ovate, entire or rarely with one or two coarse teeth, 5 - 9 mm long, acute, acuminate, or rarely cuspidate, the series  $\pm$  equal in length or the outer shorter. *Receptacle* to 7 mm wide, glabrous, paleaceous. *Florets* 15 - 70; corollas purple, pink or white, 6 - 9 mm long; anthers 2.5 - 3.9 mm long. *Achenes* cylindrical to fusiform, truncate, crowned by the persistent annular style base, pubescent to glabrescent, 3.5 - 5 mm long. *Pappus* absent or of 1 - 10 smooth or glandular hairy bristles to 1 mm long or bristles minute in a continuous ring.

*Distribution*

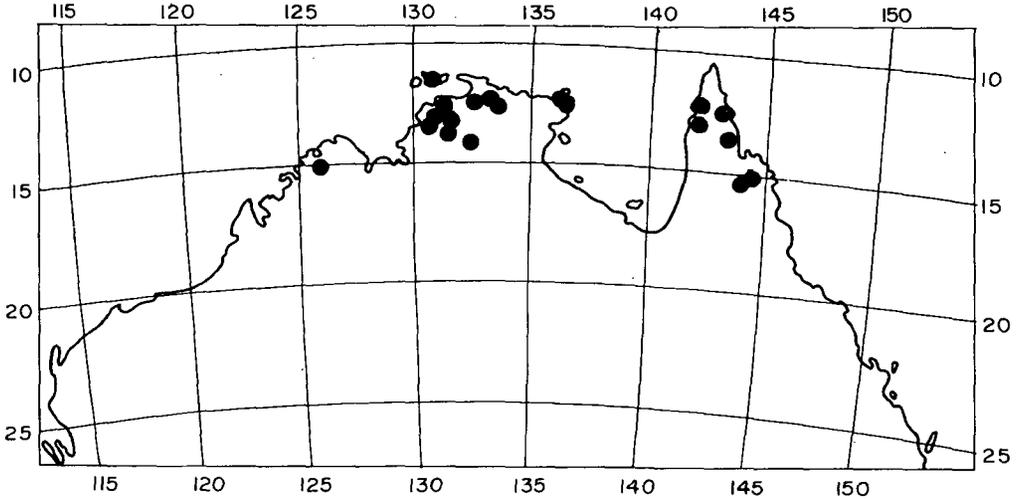
Northern Territory, Queensland, Western Australia. Map 1.

*Selection of specimens examined*

NORTHERN TERRITORY: Darwin, *F.A.K. Bleeser s.n.*, iv.1927 (NSW); Daly R. road, *N. Byrnes 1243*, 19.xii.1968 (DNA, NT); East Alligator R., *C.R. Dunlop 3335*, 23.ii.1973 (AD, BRI, CANB, DNA, K, L, MEL, MO, NT, NSW); Batchelor, *G.F. Hill 52*, 17.vii.1913 (MEL).

QUEENSLAND: N of Laura R., *N. Byrnes 3331*, 16.v.1975 (BRI, QRS); West bank of Jedda Ck., *J.R. Clarkson 4203*, 23.xii.1981 (QRS); between Massy Ck. and Rocky R., *B. Hyland 10301*, 20.ii.1980 (BRI, QRS); 23.5 km ENE of Weipa Mission, *R.L. Specht & R.B. Salt 195*, 9.xii.1974 (BRI).

WESTERN AUSTRALIA: West Kimberley, *F.M. House s.n.*, 1901 (PERTH); Mitchell Plateau, *K.F. Kenneally 5331A*, 24.vi.1976 (CANB, PERTH).



**Map 1.** Distribution of *P. denticulata*.

*Typification*

With the original description Bentham made the following comment: "The plant is only known from Brown's specimens, one of which, with the tracing of a drawing by Bauer, was given to me in Vienna in 1837, and which I have since seen others in Brown's herbarium." A sheet at K, marked "Herbarium Benthamianum" and with sketches of floral parts later used in Bentham's article, is evidently that referred to by Bentham in the above quotation. The specimen in question is labelled "Australia F. Bauer" but it must be assumed from the foregoing that it is part of Brown's material from Mallinson's Island. This sheet is one of two of Brown's at K; as the probable subject for Bentham's description it is selected as the lectotype.

*Notes*

A species of seasonally wet woodland or open woodland habitats which are subject to burning during the dry season. The plants reshoot from the stem base in the late dry season or early wet (September - December), flowering and setting fruit before the end of the wet (March - April).

Flower colour is variable. Specimens from north Queensland generally are white flowered while those from the Northern Territory are more frequently purple or pink with odd occurrences of white.

Bentham noted in his original description that the pappus bristles were deciduous. In fact in many plants the bristles are entirely absent; when they are present they appear to be persistent as they can be seen on the mature fruit. This condition applies to both species. Bentham also described the receptacle as naked. Paleae however are usually present and quite obvious, greatly exceeding the achenes.

Domin (1929) lists *Lipothrix denticulata* R.Br. ex Benth. as a synonym of *Pleurocarpaea denticulata* Benth. This is an error. *Lipothrix denticulata*, a manuscript name of Brown's, was mentioned by Bentham to point out that Brown had used the generic name elsewhere for another taxon. The combination cannot be regarded as being validly published.

## 2. *P. fasciculata* Dunlop, sp. nov.,

a *P. denticulata* Benth. habitu ligneo, capitulis parvis foliis fasciculatis, et characteribus aliis differt.

*Frutex* sempervirens ad 1 m altus. Caules et folia glabra vel glabrata, plerumque tomento persistent albido in axillis et in gemmis axillaribus. *Caules* erecti, striati; rami breves laterales spinescentes. *Folia* caulium principalium late disposita, fasciculata in surculis brevibus axillaribus, anguste lanceolata, anguste oblanceolata vel anguste elliptica, acuta, 10 - 35 mm longa, 2 - 7 mm lata, integra vel dentes minulos unos ad aliquot habentes, distantes. *Pedunculi* bracteati, ad 40 mm longi. *Capitula* 6.4 - 8 mm longa; *phyllaria* lineari-lanceolata ad late lanceolata, acuta, acuminata vel cuspidata; externa saepe ciliata, 2 - 3 mm longa, intima 4 - 5 mm, raro longiora. *Receptaculum* c. 1 mm latum, tomentosum, nudum vel 1 - 3 paleas habens. *Flosculi* 4 - 7; corollae albae, 4.5 - 5.4 mm longae; antherae 2.5 - 3 mm longae. *Achenia* oblonga-obovata, leviter compressa, costis colliculosis, trans apicem extensis, et cavitas annularis facientibus, dense tomentosa, 2.5 - 4 mm longa. *Pappus* absens vel constans unae ad aliquot setarum glabrae vel pubescentes, ad 1 mm longas.

*Type:* 45 km SE of Ramingining, Arnhem Land, 12° 39'S, 135° 19'E, C.R. Dunlop 8481 & N.G. White, 18.vi.1989 (holo.: CANB; iso.: AD, BRI, DNA, K, L, MEL, MO, NSW, PERTH).

Evergreen *shrub* to 1 m high; stems and leaves glabrous or glabrescent, often with a persistent whitish tomentum in the axils and on axillary buds. *Stems* erect, striate; the short lateral branches spinescent. *Leaves* widely spaced on main stems, clustered on short axillary shoots; narrow-lanceolate, -oblanceolate or -elliptic, 10 - 35 mm long, 2 - 7 mm wide, entire or with one to several minute distant teeth, acute. *Peduncles* bracteate, to 40 mm long. *Capitula* 6.4 - 8 mm long; *phyllaries* linear-lanceolate to broadly lanceolate, outer often ciliate, 2 - 3 mm long, inner 4 - 5 mm, rarely longer, acute, acuminate or cuspidate. *Receptacle* c. 1 mm wide, tomentose, naked or with 1 - 3 paleae. *Florets* 4 - 7; corollas white, 4.5 - 5.4 mm long; anthers 2.5 - 3 mm long. *Achenes* oblong-obovoid, slightly compressed, ribs colliculate and extending beyond the apex to form an open cavity, densely tomentose, 2.5 - 4 mm long. *Pappus* absent or of 1 to several glabrous or hairy bristles to 1 mm long. Fig. 1.

### *Distribution*

Arnhem Land, Northern Territory. Map 2.

### *Other specimens examined*

NORTHERN TERRITORY: Goyder R., C.R. Dunlop 8678 & N.G. White, 26.vi.1990 (AD, CANB, DNA, MEL); 5 miles E of Goyder R. crossing, P.K. Latz 2818, 17.vi.1972 (DNA, NT); 18 miles NE Wilton R., Bulman Crossing, J.R. Maconochie 1449, 15.vi.1972 (BRI, CANB, NT); Groote Eylandt, J. Waddy 500, 4.iii.1976 (DNA); Groote Eylandt, J. Waddy 620, 11.i.1977 (DNA); Groote Eylandt, J. Waddy s.n., 5.iv.1977 (DNA, K, MEL, NSW).

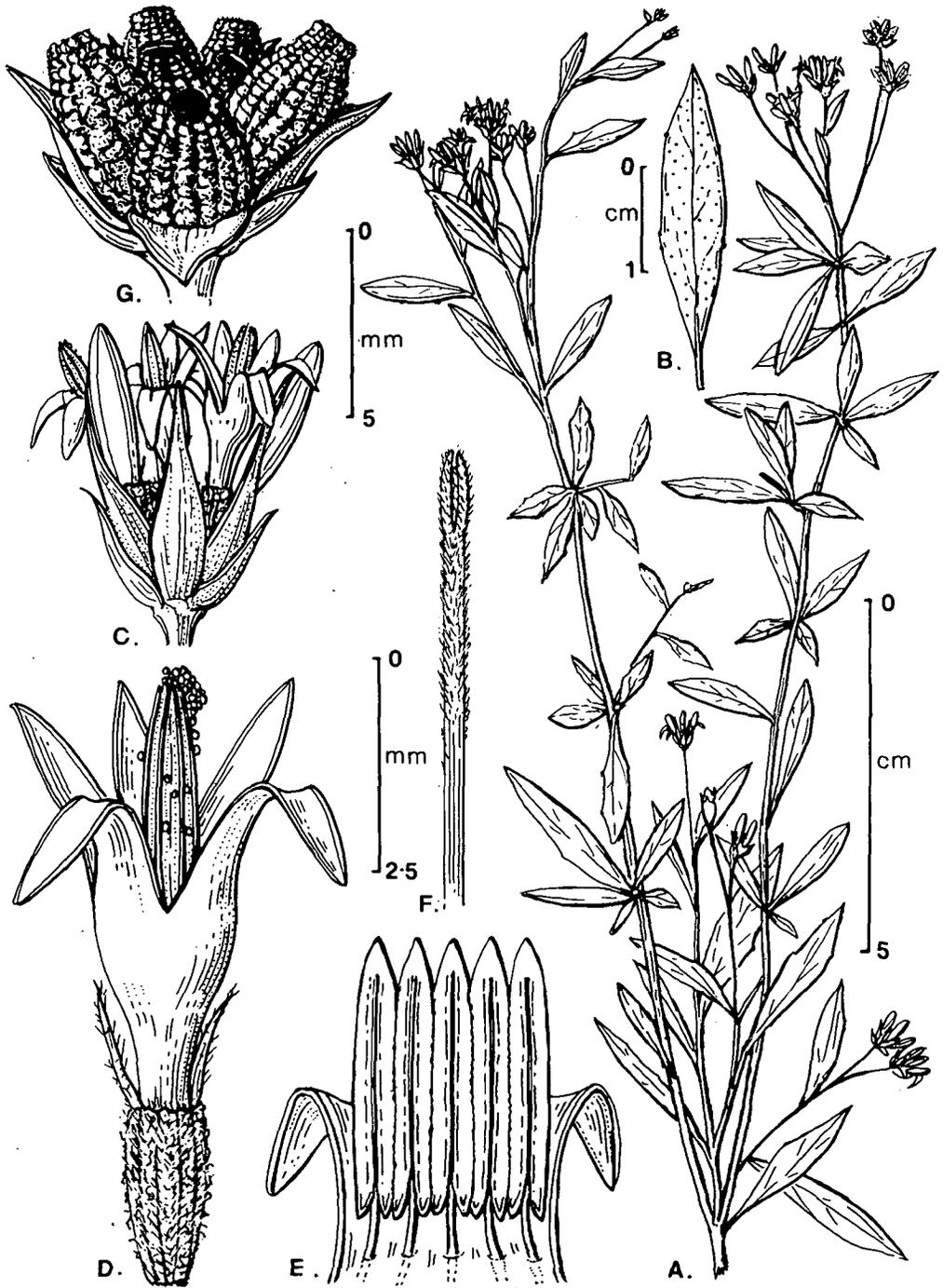
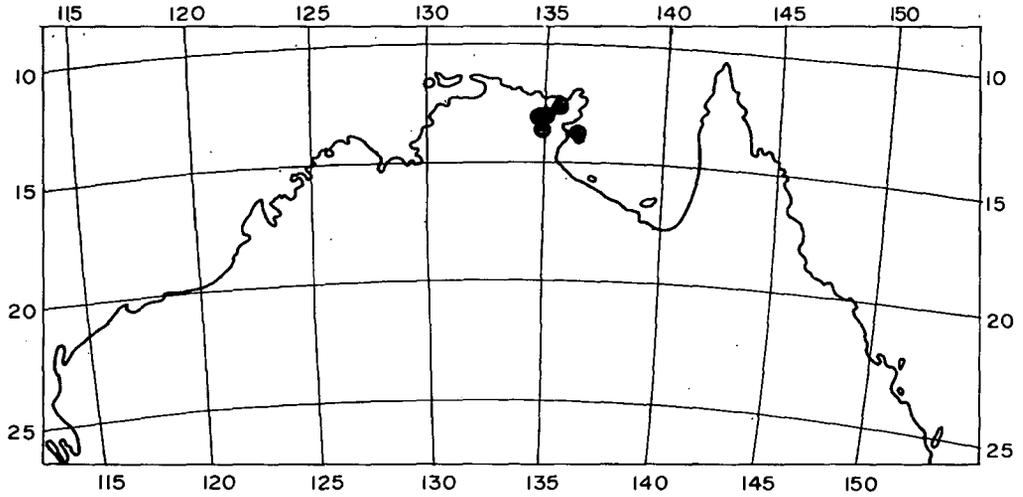


Plate 1. *Pleurocarpaea fasciculata*. A, flowering branch; B, leaf; C, capitulum; D, floret; E, stamens; F, style. All from C.R. Dunlop 8481.



Map 2. Distribution of *P. fasciculata*

#### Notes

*P. fasciculata* usually grows in discrete colonies in run-on areas which are waterlogged during the Wet season and which remain moist, at least at depth, for much of the Dry season. These habitats, which frequently support an overstorey of *Melaleuca* spp., have a sparse grass cover and are rarely burnt. Flowering material has been collected from January to June.

#### Conservation status

On the basis of current records, a coding of 3R (Briggs & Leigh, 1989) would be appropriate for this species.

#### Acknowledgements

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