

# JOURNAL of the ADELAIDE BOTANIC GARDENS

AN OPEN ACCESS JOURNAL FOR AUSTRALIAN SYSTEMATIC BOTANY

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Published by the

**STATE HERBARIUM OF SOUTH AUSTRALIA**

on behalf of the

**BOARD OF THE BOTANIC GARDENS AND STATE HERBARIUM**

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## **DICHROMOCHLAMYS, A NEW GENUS IN ASTERACEAE (ASTEREAE)**

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### **Abstract**

A new monotypic Australian genus, *Dichromochlamys*, is described in the tribe Astereae. The species *D. dentatifolia* (syn. *Pterigeron dentatifolius* F. Muell.), is described and illustrated and a distribution map is provided. The relationships of the genus are discussed.

### **Introduction**

In a recent revision of the genus *Pterigeron* (DC.) Benth. (= *Streptoglossa* Steetz in F. Muell.) (Dunlop, *ined.*) of the tribe Inuleae, *Pterigeron dentatifolius* F. Muell. was recognised as distinct from the rest of the genus. Its position within Inuleae was also seen to be anomalous, possessing as it does characters usually associated with the Astereae rather than the Inuleae. All other species currently recognised under *Pterigeron* are rightly placed in the Inuleae and with the exception of one species, will be transferred to *Streptoglossa* in a forthcoming paper.

*Pterigeron dentatifolius* was described by F. Mueller (1875) and based on a collection of Christopher Giles' from Central Australia. Black (1929, 1957) in his account of *Pterigeron* in the 'Flora of South Australia' was aware that *P. dentatifolius* stood apart from the other species of the genus, distinguishing the achenes as flattened rather than terete. He also made drawings on a herbarium sheet, now in AD, of the conical receptacle of *P. dentatifolius* but failed to note this distinctive and aberrant (in *Streptoglossa*) feature in his 'Flora'.

**Dichromochlamys** Dunlop, gen. nov., *Ixiochlamydi* F. Muell. et Sond. ex Sond. affinis, a qua receptaculo conico, pappo sessili et involucri veteribus incurvis differt.

*Herba* annua. *Folia* simplicia, caulina, alterna, sessilia. *Capitula* heterogama, solitaria. *Phyllaria* multiseriata imbricata. *Receptaculum* conicum, epaleaceum. *Flosculi* numerosi, omnes fertiles. *Flosculi marginales* albi, feminei, multiseriales, ligulati. *Flosculi disci* flavi, hermaphroditici; corollae 5-lobatae; antherae sine caudis; apices steriles lineati ramorum stylorum. *Achenia* complanata, laevia; pappus persistens, multiseriatis, setis breviter plumosis.

*Typus*: *D. dentatifolia* (F. Muell.) Dunlop.

Annual herb. *Leaves* simple, cauline, alternate, sessile. *Capitula* heterogamous, solitary. *Phyllaries* in several series, imbricate, not reflexed at maturity. *Receptacle* conical, epaleaceous. *Florets* numerous, all fertile. *Marginal florets* white to pink, female, multiseriate, ligulate. *Disc florets* yellow, bisexual; corollas 5-lobed; stamens 5, anthers without tails; sterile apices of style branches linear. *Achenes* flattened, smooth; pappus persistent, multiseriate, the bristles shortly plumose.

The generic name, meaning cloak of two colours, refers to the involucre in which the dark coloured backs of the phyllaries contrast with the white scarious margins.

**Dichromochlamys dentatifolia** (F. Muell.) Dunlop, comb. nov.

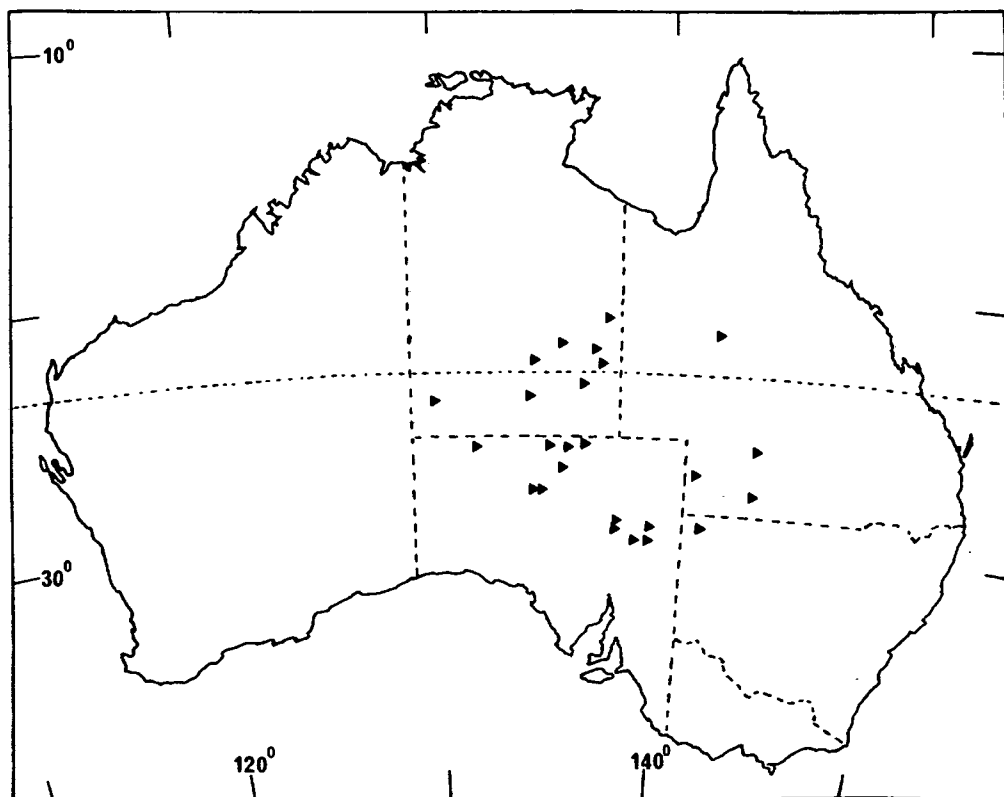
*Pterigeron dentatifolius* F. Muell., Fragm. 9:119 (1875); Black, Fl. S. Austral. ed. 1:616 (1929), ed. 2:894 (1957); *basionym*.

*Type*: between Alice Springs and Charlotte Waters, *C. Giles s.n.*, v. 1875 (MEL 42554, holotype).

*Herb* to c. 25cm high. Stems and leaves villous to woolly, rarely glabrous; glandular. *Stems* branched from the base, decumbent. *Leaves* spathulate, coarsely toothed at apex, rarely entire; 1—3.5cm long, 2—10mm wide at apex, tapering to c. 1mm at the base. *Capitula* held above the foliage on long peduncles; peduncles and involucre densely glandular, dark purple to pale brown. Outer *phyllaries* lanceolate, flat; the median and inner narrower, channelled, with broad white scarious margins. *Receptacle* densely glandular, the edge beset with fine hairs to c. 3mm long. *Florets* 100—150; marginal florets more numerous than disc florets. Ligules of *marginal florets* white to pink, c. 3mm long, c. 0.3mm wide. Corollas of *disc florets* yellow, 4—5mm long, glandular. *Achenes* obovate, symmetrical, constricted below the pappus, sericeous on lower three-quarters with minute scattered glands below the apex; pappus c. 5mm long, bristles uneven with the outer series shortest. (Fig. 1.)

#### *Distribution*

*Dichromochlamys* is restricted to the inland arid regions of the Northern Territory, Queensland, New South Wales and South Australia. (Map 1.)



Map 1. Distribution of *Dichromochlamys dentatifolia* (F. Muell.) Dunlop.

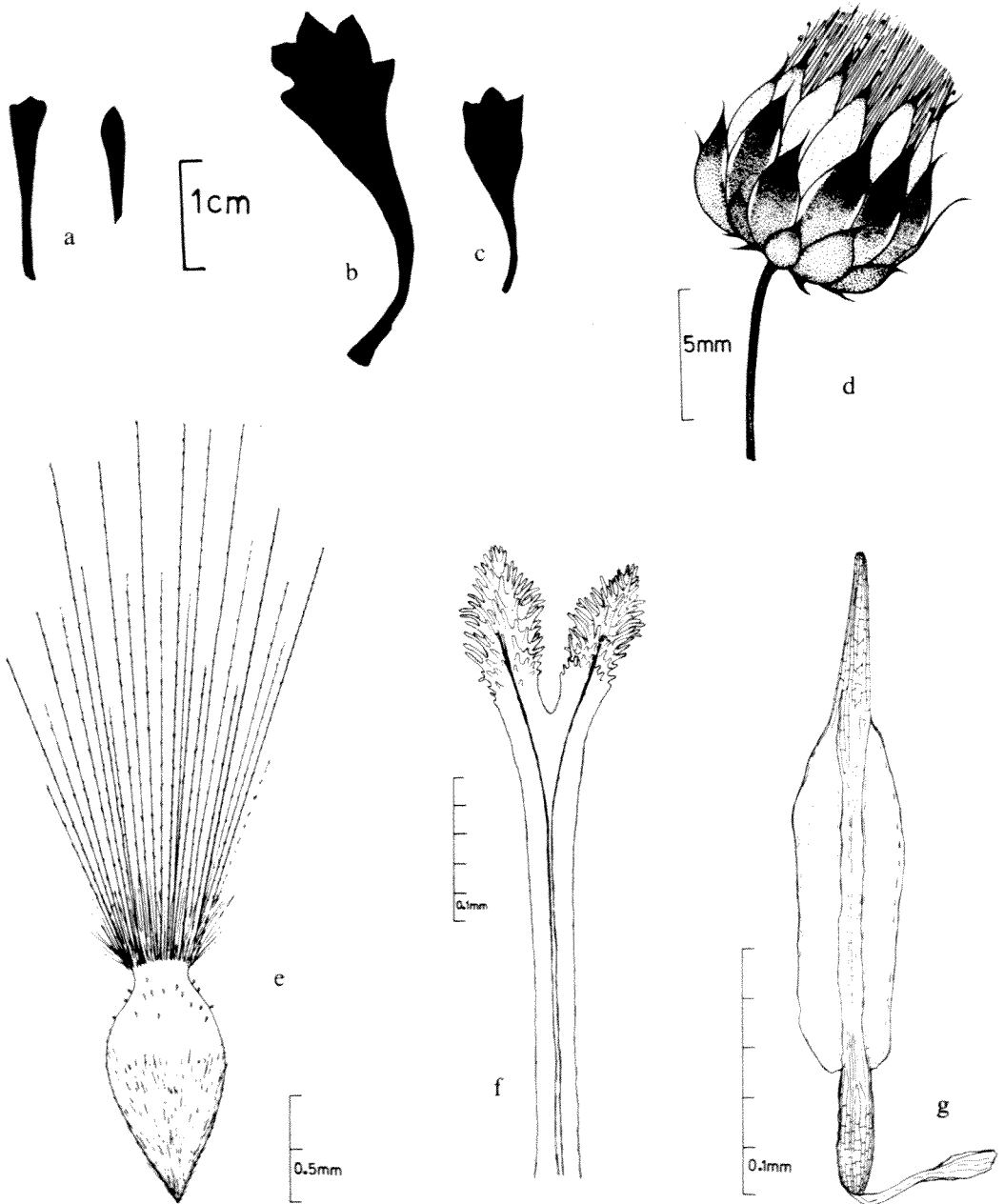


Fig. 1. *Dichromochlamys dentatifolia* (F. Muell.) Dunlop. Leaf outlines: a, from *Ising* 3765; b, from *Lothian* 1515; c, from *Latz* 4389. d, capitulum; e, achene; f, style; g, stamen (d-g from *Latz* 3154).

### Ecology

Specimens from Queensland and the Northern Territory have been recorded from clay soils with a pebbly surface, associated in several instances with gidgee (*Acacia cambagei* R.T. Baker). The species has also been recorded from calcareous clays, saline soils, sandy loam and rocky sites.

### Notes

A minor variant with glabrous leaves was noted amongst collections from South Australia (e.g. *Ising 3735a*, *Symon 9371*). It is neither geographically, nor ecologically distinct (*Symon 9371* consists of glabrous and hairy plants) and in other respects is typical of the species.

### Selection of Specimens Examined

NORTHERN TERRITORY: 20 miles N. Georgina Downs Homestead, *P.K. Latz 1689*, 28.vii.1971 (DNA, K, NT, PERTH); Mt Riddock Stn, *P.K. Latz 3154*, 2.vii.1972 (DNA, L, NT, PERTH); NW. Simpson Desert, *P.K. Latz 4389*, 29.ix.1973 (AD, ADW, NT).

QUEENSLAND: Elderslie Stn, *S.T. Blake 10035*, 29.x.1935 (BRI); Willies Ra., *R.S. Dick WQ349*, iii.1979 (BRI); Greenmulla, *S.L. Everist 7546*, 4.ix.1963 (BRI).

NEW SOUTH WALES: near Depot Glen, *W.E. Mulham 1309*, 9.ix.1978 (NSW). Only record for this State.

SOUTH AUSTRALIA: Oodnadatta, *E.H. Ising 3765*, 16.vii.1955 (AD); c.61km E. Dalhousie Springs, *T.R.N. Lothian 1515*, 9.viii.1963 (AD); 75km W. Maree, *A.E. Orchard 628*, 29.vi.1968 (AD); near Mt Attacherrikanna, *D.E. Symon 9257*, 23.ix.1974 (ADW); Dalhousie Springs area, *D.E. Symon 9371*, 26.ix.1974 (ADW).

### Affinities

The position of *Dichromochlamys* within Asteraceae is clearly with the tribe Astereae. The genus has the typical ecaudate anthers and sterile style appendages of the tribe as outlined by Grau (1977) in the most recent review of the tribe. In common with other Australian members of Astereae (e.g. *Vittadinia*, *Ixiochlamys*), *Dichromochlamys* has decidedly flattened achenes with a combination of duplex and glandular hairs. By contrast, *Streptoglossa* (Inuleae), with which this taxon was originally placed by Mueller, has tailed anthers and terete achenes with duplex hairs. The conical receptacle and yellow disc florets of *Dichromochlamys* further distinguish it from *Streptoglossa* which has a flat receptacle and purple disc florets.

Within Astereae, *Dichromochlamys* is most closely allied to *Ixiochlamys* F. Muell. et Sond. ex Sond. with which it bears a superficial resemblance in habit and foliage. Both have similar achenes which are flattened and smooth, without striations or protuberances of related genera such as *Vittadinia*, *Brachycome* and *Calotis*. The achenes of *Ixiochlamys* are consistently beaked, presenting the most obvious character for distinguishing the two genera.

*Dichromochlamys* is also distinguished by the conical receptacle and the characteristic way in which the involucre bracts remain incurved after fruiting. In *Ixiochlamys* the receptacles are flat and the involucre reflexed on drying. The form and texture of the involucre bracts are also markedly different. In *Ixiochlamys* the bracts are flat with a relatively uniform, thin, texture while those of *Dichromochlamys*, particularly in the median and inner series, are inward curved or channelled along the bony and rigid central part and have flat, scarious margins.

### Acknowledgements

I am indebted to Dr H.J. Eichler for the opportunity to undertake this study at Herbarium Australiense during October 1979. My stay in Canberra was both profitable and enjoyable and I thank Dr Eichler and the staff of the herbarium for their hospitality. Mr Lyn Craven deserves my special thanks for his advice and help which in many ways contributed to this study.

I would like to thank the heads of the following herbaria for the loan of material and, in the case of several herbaria, for the opportunity to visit their institutions: AD, ADW, BRI, CBG, MEL, NSW, NT.

My thanks are also due to my wife, Adrienne, for preparing the illustrations.

### References

- Black, J.M. (1929). "Flora of South Australia" ed. 1:616. (Government Printer: Adelaide.)  
Black, J.M. (1957). "Flora of South Australia" ed. 2:894. (Government Printer: Adelaide.)  
Grau, J. (1977). Astereae-systematic review. In Heywood V.H., Harborne J.B and Turner, B.L. (eds). "The Biology and Chemistry of the Compositae", vol. 1:539-565. (Academic Press: London.)  
Mueller, F.J.H. v. (1875). "Fragmenta Phytographiae Australiae" 9:119. (Government Printer: Melbourne.)

### Index to Collections

The following index is to all specimens examined. Herbaria from which specimens have been seen are indicated by the usual acronyms.

*Basedow* 306 (NSW); *s.n.* (AD). *Blake* 10035 (BRI). *Chalmers s.n.* (AD). *Chippendale* NT2736 (CANB, MEL, NT). *Dick* WQ349 (BRI). *Dunlop* 2553, 2601 (NT). *Everist* 7546 (BRI). *Giles s.n.* (MEL). *Henry s.n.* (MEL). *Hill* 237, 1538 (AD). *Ising* 3735 (AD); 3735a (ADW); 3764, 3765 (AD); *s.n.* [1931 (AD); 23, 28, vii.1936 (AD); ix.1950 (ADW); x.1950 (AD, ADW); viii.ix.1952 (AD); i.x.1953 (AD); 8.x.1953 (ADW); 1954 (AD); vii, viii.x.1955 (AD)]. *Koch* 349/399 (NSW); *s.n.* (AD). *Latz* 1689 (DNA, K, NT, PERTH); 3154 (DNA, L, NT, PERTH); 4241 (DNA, NT); 4389 (AD, ADW, NT). *Lothian* 1064 (AD); 1086 (AD); 1515 (AD); 1590 (AD). *Mulham* 1309 (NSW). *Orchard* 628 (AD). *Richards s.n.* (MEL). *Symon* 5596, 5739, 5909B, 5921A, 9103, 9257, 9371 (ADW).