

## The identity of *Acacia leiophylla* Benth. (Mimosaceae)

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### Abstract

Until now, the name *Acacia leiophylla* has been thought to refer to a Western Australian species and has been generally regarded by most authors as a taxonomic synonym of *A. saligna* (Labill.) H. Wendl. (syn. *A. cyanophylla* Lindl.). It is shown that this species as circumscribed here occurs in South Australia and represents the same taxon that was subsequently described as *A. retinodes* Schlechtendal var. *oraria* J. M. Black ex C. M. Eardley. *Acacia leiophylla* is lectotypified (the type material consists of discordant elements), described and illustrated, its distribution mapped and its probable type locality (Kangaroo Island, S.A.) indicated.

### Introduction

In the past there has been considerable confusion concerning the application of the name, *A. leiophylla*. Generally this name has been regarded as a taxonomic synonym of *A. saligna* (Labill.) H. Wendl. (syn. *A. cyanophylla* Lindl.)—see Bentham (1864 and 1875) and Maiden (1906). In a previous paper, the first author (Maslin 1974) suggested that Bentham may have been incorrect in relegating *A. leiophylla* to synonymy under *A. saligna*. Having now studied both these species and having examined the types of the names involved, we now consider that this suggestion was correct.

The type material of *Acacia leiophylla* at Kew (K) consists of three sheets two of which support flowering specimens and one supports fruiting specimens. These sheets are labelled King George Sound‡, Baxter (erroneously given as "Bagster" on the lectotype sheet—see below). This syntype material is a mixture of two taxa: the flowering specimens are *A. leiophylla* (sensu lectotypico) and the fruiting ones *A. pycnantha* Benth. The lectotype of *A. leiophylla* has been selected from the flowering specimens. It is the lower left hand specimen labelled "King George's Sound, New Holland. Bagster. Hooker, 1835." on a sheet stamped "Herbarium Benthamianum, 1854" and annotated (in Bentham's handwriting) "*Acacia leiophylla* Benth Lond. Journ 1.350".

It will be noted that the collector given on the lectotype label is "Bagster" which is also the citation given in the original description of *A. leiophylla*. However, this is an orthographic error which Bentham corrected (to "Baxter") in *Flora Australiensis* vol. 2, p. 364. Other *Acacia* species for which Bentham made the same error of citation in his original description but subsequently corrected are *A. acuminata* Benth., *A. baxteri* Benth. and *A. triquetra* Benth.

According to Maiden (1909), William Baxter collected along the south coast of Western Australia (particularly around Albany i.e. King George Sound) and also on Kangaroo Island, South Australia. As the two taxa represented by the syntypes of *A. leiophylla* do not occur naturally at Albany but do grow on Kangaroo Island, it is reasonable to assume that the recorded type locality, King George Sound, is an error for Kangaroo Island. The same holds for *A. triquetra* Benth., a species which almost certainly is a taxonomic

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‡ On two of the sheets this citation is abbreviated to "K. G. Sound". This locality is Albany on the south coast of Western Australia, about 400 km SSE of Perth.

synonym of *A. acinacea* Lindl. The type of *A. triquetra* is given as King George Sound, Baxter (sphalm. 'Bagster') but this species does not occur at this locality. It does, however, grow on Kangaroo Island.

The first author has compared the lectotype of *A. leiophylla* with the holotype of *A. retinodes* var. *oraria*. Although the former specimen is in flower and the latter in fruit, there is no doubt that they represent the same taxon.

### Taxonomy

*Acacia leiophylla* Benth., London J. Bot. 1:351 (1842). *Lectotype*: "King George's Sound, New Holland, Bagster"—this is how the lectotype is annotated but it is incorrect, see discussion above (K—lower left hand specimen on sheet, in flower; iso: K, PERTH—fragment), *lecto. nov.* (Figure 1).

*Acacia retinodes* Schlechtendal var. *oraria* J. M. Black ex C. M. Eardley in J. M. Black, Flor. S. Austral., ed. 2 4:945 (1957), *synon. nov.* *Type*: Sleaford Mere, near Port Lincoln, Southern Eyre Peninsula, South Australia, 19 Nov. 1949, E. C. Black s.n. (holo: AD95701001).

*Shrub* 1–2.5 m tall, either dense, compact and single-stemmed, or spreading and openly branched with a number of stems arising from near ground level; *branchlets* terete but slightly angular towards apex,  $\pm$  flexuose, finely ribbed, glabrous, reddish. *Phyllodes* lanceolate, (75) 100–130 (165) mm long, (9) 15–22 (25) mm wide (at broadest point—which is generally above the middle of phyllode), falcate, glabrous, pale green, midrib obvious, lateral veins rather obscure; *pulvinus* (5) 9–12 (15) mm long, often slightly twisted, prominently wrinkled. *Gland* not very prominent, situated on upper margin of phyllode either at distal end of pulvinus or to 4–8 (15) mm above it. *Inflorescences* racemose (or sometimes paniculate at ends of branchlets due to phyllode reduction), numerous; *raceme axis* normally slightly flexuose, glabrous; *peduncles* 7–15 (21) per raceme, ca. 4 mm long, longitudinally wrinkled (when dry), glabrous; *flower heads* globular, with (24) 26–28 (31) flowers. *Bracteoles* peltate, conspicuous in inflorescence bud; *laminae* ca. 1 mm diam., medium to light brown, densely ciliolate (hairs golden). *Flowers* 5-merous; *calyx*  $\frac{1}{2}$ – $\frac{3}{4}$  length of corolla, divided for  $< 1/6$ – $1/4$  its length into broadly triangular inflexed  $\pm$  keeled puberulous lobes (hairs white and golden), tube a little angular brown and glabrous; *petals* ca. 2 mm long, yellow, sparsely strigose, obscurely nerved. *Legumes* narrowly oblong, 90–125 mm long, 5–6 mm wide,  $\pm$  straight, firmly chartaceous, raised over seeds, glabrous, dark brown; *margins* slightly thickened, barely contracted between seeds, light brown. *Seeds* longitudinal (or slightly oblique) in legume, obloid, ca. 5 mm long and 2.5 mm wide; *funicle* long and  $\pm$  encircling seed in a double fold, dark coloured, gradually expanded into a pale yellowish curved *aril*.

*Distribution*: (Figure 2) South Australia from the vicinity of Coffin Bay (southern Eyre Peninsula) southeast through southern Yorke Peninsula, Kangaroo Island and The Coorong to near Mount Gambier. Although we have not seen any specimens from Victoria, it is most likely that future sampling of near-coastal regions around the border with South Australia will extend the range of *A. leiophylla* into Victoria.

*Habitat*: Occurs on calcareous sand or shallow, porous, red loam in coastal Mallee or Mallee-Heath vegetation. *Acacia leiophylla* is often associated with *Eucalyptus diversifolia* Bonpl., *Acacia pycnantha* Benth. and *A. longifolia* var. *sophorae* (Labill.) F. Muell.

*Flowering period*: August to November.

*Fruiting period*: November to January.

SOUTH AUSTRALIA: Hundred of Kiana, Flinders Highway, south of Lake Hamilton, C. R. Alcock 2692 (AD); Innes National Park (35°15'S, 136°55'E), C. R. Alcock 4569 (AD); Wooley's Lake, Beach port, 2 Dec. 1917, *Herb. J. M. Black* s.n. (AD); Kangaroo Island,

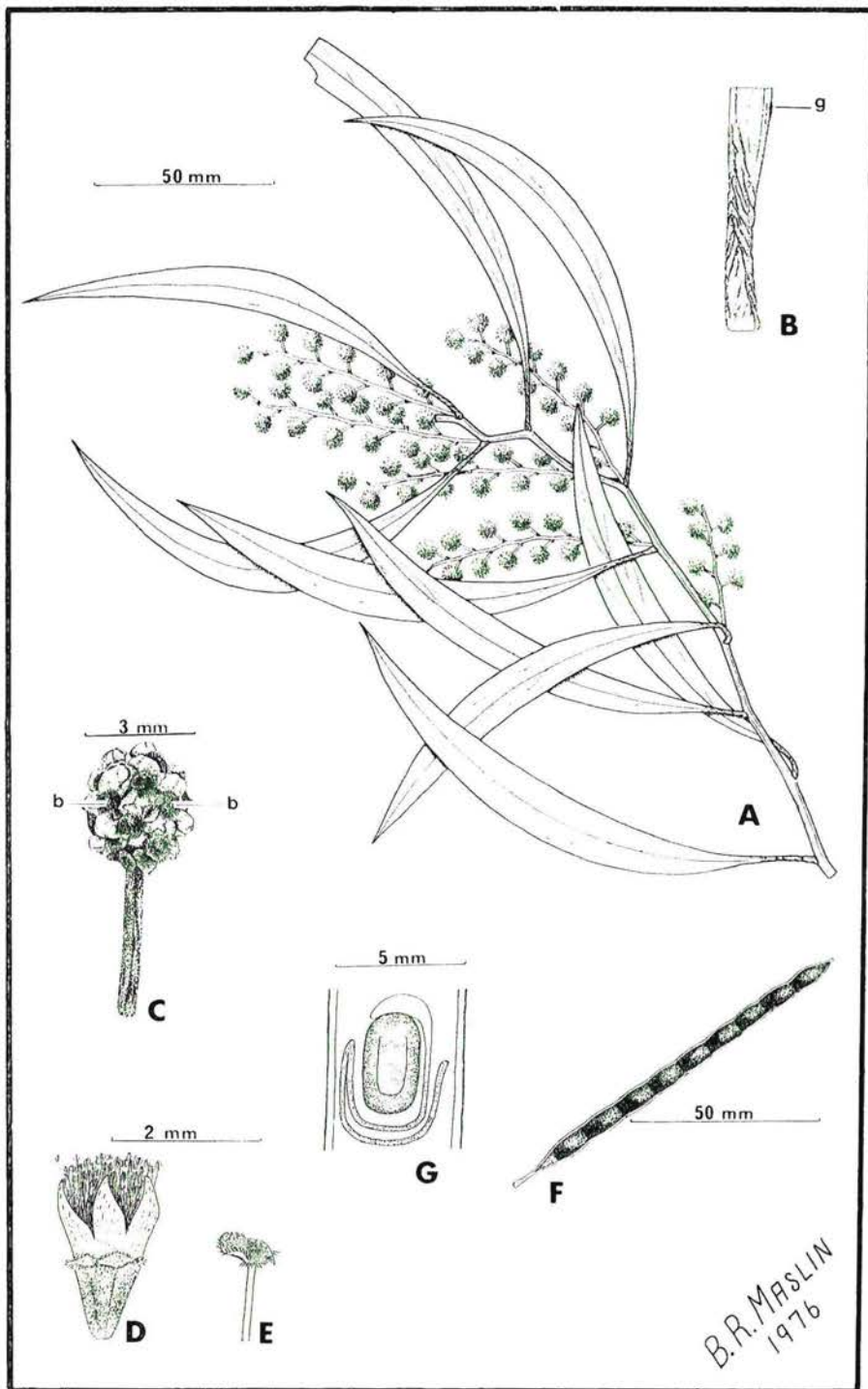


Figure 1—*Acacia leiophylla* Benth. A—Upper portion of branch. B—Base of phyllode showing gland (g) and slightly twisted, prominently wrinkled pulvinus. C—Unopened flower head showing prominent bracteoles (b). D—Flower. E—Bracteole (dry). F—Legume. G—Seed showing prominent funicle. A from L. D. Williams 5108; B, E from G. Jackson 288; C from D. J. E. Whibley 5524; D from C. R. Alcock 2692; F, G from E. C. Black s.n. (Type of var. *oraria*).

Muston (ca. 5 km S of American River), 11 Dec. 1964, *H. M. Cooper* s.n. (AD); Southern Yorke Peninsula, between west coast and Corny Point Stenhouse Bay road, *Hj. Eichler* 13934 (AD); Kangaroo Island, *G. Jackson* 288 (AD); Hundred of Uley Section 19, ca. 6 km S of Big Swamp (which is ca. 15 km ESE of Port Lincoln), *D. J. E. Whibley* 1857 (AD); 35 km S of Stenhouse Bay, *D. J. E. Whibley* 5524 (AD); Younghusband Peninsula, near mouth of Murray River (35°37'S, 139°2'E), *L. D. Williams* 5108 (AD); about 11·3 km due S of Meningie township (35°47·5'S, 139°19·5'E), *L. D. Williams* 5615 (AD).

Because this taxon is rather distinctive morphologically and because it is so widely distributed, we consider it best to be treated as a distinct species, for which the correct name is *A. leiophylla* Benth., rather than as a variety of *A. retinodes* Schlechtendal as Eardley has done. Taxonomically *A. leiophylla* lies between *A. retinodes* and *A. pycnantha* Benth. but has stronger affinities with the former species. All three species are referable to Bentham's *Uninerves-Racemosae* (Bentham, 1864).

The large, falcate, 1-nerved phyllodes, long racemose inflorescences, and narrowly oblong, glabrous, firmly chartaceous legumes with longitudinally placed seeds relate *A. pycnantha* to *A. leiophylla*. Indeed, as pointed out above, the fruiting syntype of the latter species is in fact *A. pycnantha*. *Acacia pycnantha* is distinguished from *A. leiophylla* by the following characters: flowers more numerous in the heads (50–80); petals glabrous; bracteole laminae smaller and densely white-ciliolate; funicles shorter, straighter and not encircling seeds; phyllodes darker green and tending to show more conspicuous

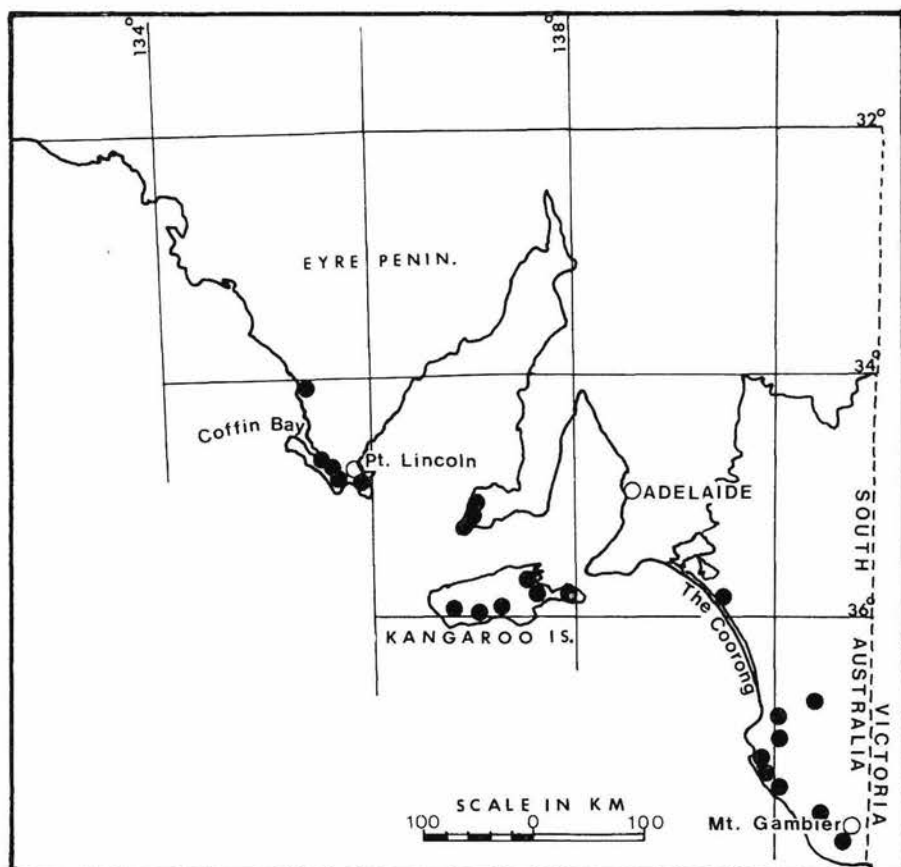


Figure 2—Distribution of *Acacia leiophylla* Benth.



lateral veins. The 1-nerved phyllodes, racemose inflorescences and the general legume characters (especially the long funicles encircling the seeds in a double fold) of *A. retinodes* relate this species to *A. leiophylla*. *Acacia retinodes* is distinguished from *A. leiophylla* by the following characters: pulvini shorter (2–4 mm); bracteole laminae smaller, less conspicuous in the buds and bearing  $\pm$  longer, white to very pale yellow marginal hairs; petals glabrous; flower heads somewhat smaller in diameter (however, the number of flowers may reach 50 per head, thus exceeding those on *A. leiophylla*); phyllodes straighter and less coriaceous; branchlet apices with a tendency to be more acutely angular.

#### Acknowledgements

We wish to express our appreciation for the assistance given by the Director, Royal Botanic Gardens, Kew, for the loan of the type of *A. leiophylla*. The first author also wishes to thank the Australian Biological Resources Study Interim Council for providing the funds for travel to Kew where preliminary work concerning this study was commenced.

#### References

- BENTHAM, G. (1864)—*Flora Australiensis*, vol. 2. Reeve, London.  
BENTHAM, G. (1875)—Revision of the Suborder Mimoseae. *Trans. Linn. Soc. London* **30**: 335–664.  
MAIDEN, J. H. (1906)—*Wattles and Wattle-Barks*. ed. 3. Govt. Printer, Sydney.  
MAIDEN, J. H. (1909)—Records of Western Australian Botanists. *J. W.A. Nat. Hist. Soc.* **2** (6): 5–33.  
MASLIN, B. R. (1974)—Studies in the genus *Acacia*—3. The taxonomy of *A. saligna* (Labill.) H. Wendl. *Nuytsia* **1** (4): 332–340.

#### Publication date of Volume 2 Number 2

The publication date of Volume 2 Number 2 was 25 May 1976.