

The identity of *Acacia microcarpa* F. Muell. (Leguminosae: Mimosoideae) and some related taxa

B.R. Maslin

Western Australian Herbarium, George Street, South Perth, Western Australia 6151

Abstract

Maslin, B.R. The identity of *Acacia microcarpa* F. Muell. (Leguminosae: Mimosoideae) and some related taxa. *Nuytsia* 6(1):35-46 (1987). *Acacia halliana*, a new species hitherto confounded with the eastern Australian species *A. microcarpa* F. Muell. is described and its distribution mapped. Confusion surrounding the application of the name *A. microcarpa* is discussed and the name is lectotypified. Descriptions and distribution maps are provided for *A. microcarpa* and the three species considered most closely related to it, namely *A. acinacea* Lindley, *A. imbricata* F. Muell. and *A. triquetra* Benth. A key to the recognition of these species is given. *Acacia triquetra* is lectotypified; until now this name had been considered synonymous with *A. acinacea*. *Acacia rotundifolia* Hook. is not considered specifically distinct from *A. acinacea*. *Acacia subretusa* Maiden and Blakely is relegated to synonymy under *A. microcarpa*.

Introduction

In the past much confusion has surrounded the application of the name *A. microcarpa* F. Muell. Most authors, including Mueller (1863 and 1887), Bentham (1864 and 1875), Court (1973) and Whibley (1980), included under this name specimens referable to both *A. microcarpa* and a new species described here as *A. halliana* Maslin. The historical reason for this confusion appears to be that Mueller himself confounded the two taxa. The original description published in 1858 was based on a number of fruiting specimens (see below). In the following year Mueller (1859) republished this description (practically unaltered) and in 1863 provided an expanded description in which flower details were included. It is clear from this 1863 account, as well as from specimens examined in the course of the present study, that at least some material referable to *A. halliana* was used to compile this description. For example, at herbs. K, MEL and NSW there are flowering specimens of *A. halliana*, collected from the Murray River, which Mueller has labelled *A. microcarpa*. Another herb. K sheet of interest supports two gatherings, both of which are labelled by Mueller as *A. microcarpa*. The fruiting specimens on this sheet are *A. halliana* and were collected from the Darling River, while the flowering specimen, which was cultivated at the Melbourne Botanic Garden, is *A. microcarpa*. This latter specimen is one of those mentioned by Bentham (1864) as approaching *A. acinacea* Lindley. The Murray and Darling River specimens were perhaps collected by J. Dallachy (Mueller gives the collector simply as "D"). The confusion between these two species, which commenced with Mueller's (1863) interpretation of *A. microcarpa*, has persisted to the present.

Besides *A. halliana*, descriptions are provided in this paper for *A. microcarpa* and three closely allied species, namely *A. acinacea* Lindley, *A. imbricata* F. Muell. and *A. triquetra* Benth. In the past, specimens referable to *A. triquetra* have been included under *A. acinacea*. Lectotypes are selected where necessary.

Acacia halliana Maslin, sp. nov.

Frutex dumosus effusus ad 2.5 m altus. Ramuli plerumque breves, pilis brevibus rectis appressis obsiti, interdum glabri. Surculi juveniles primum pilis pallide flavis appressis tecti. Stipulae (1.5)2-3(4) mm longae, fragiles, basi tantum ad nodos nonnullos persistentes, plerumque nigrescentes. Phyllodia subassymetrica, plerumque anguste oblanceolata usque anguste oblonga vel anguste elliptica, apice in punctum atrobrunneum distinctum oblique attenuata, (2.2)3-7(9) cm x 4-15(30) mm, longitudo: latitudo 4-12, coriacea, recta ad levissime recurva, glabra, uninervia, nervis lateralibus nullis vel valde indistinctis. Glandula (2)5-12(17) mm supra pulvinum sita. Pedunculi (1)2(3-4) per nodum, exsiccando plerumque atrate rubro-brunnei, (3-4)5-10 mm longi, glabri. Florum capitula globularia, aurea, 35-55-flora. Flores 5-meri. Sepala libera. Legumen submoniliforme, plerumque laxe et irregulariter tortum, ad 6 cm longum, 3 mm latum, nigrum. Semina longitudinalia, obloidea ad ellipsoidea, 3-4 x 2-2.5 mm, arillus conicus.

Typus: 10 km N of Bute on the road to Port Broughton, S.A., 22 Sept. 1985, B.R. Maslin 6003 (holo: PERTH; iso: AD, CANB, G, K, MEL, NSW, NY).

Illustrations (as *A. microcarpa*). F. Mueller, Iconography of Australian species of *Acacia* and cognate genera. Decade 4 (1887) — upper left-hand flowering twig and all fruiting specimens; D.J.E. Whibley, Acacias of South Australia 63 figs. A,L,S (1980); G.M. Cunningham et al., Plants of Western New South Wales 367 (1981).

Bushy spreading *shrub*, either domed and procumbent or with a mallee-like habit, to 2.5 m tall and 4-5 m diam. *Bark* dark grey to brownish grey, fibrous towards base of main branches otherwise smooth. *Branchlets* slightly to prominently angled at extremities, soon terete, finely ribbed, occasionally glabrous but usually with a sparse to dense indumentum of very short, straight, antrorsely appressed, fine white hairs. *New shoots* at initiation densely clothed with pale yellow, appressed hairs. *Stipules* linear-triangular, (1.5)2-3(4) mm long, 0.3-0.5 mm wide at base, straight or shallowly incurved, usually drying blackish, glabrous or sparsely appressed-hairy on abaxial surface, slightly thickened and very brittle, frequently absent from some nodes having broken off at base, sometimes persisting at nodes after phyllodes have fallen. *Phyllodes* usually slightly to moderately asymmetric with the upper margin more convex than the lower which is frequently more or less straight, oblanceolate or narrowly oblong to narrowly elliptic, sometimes more or less linear, (2)3-7(9) cm long, 4-15(30) mm wide, l:w = 4-12, coriaceous, usually patent to inclined, straight or (especially near apices) very slightly recurved, usually glabrous or sometimes (especially when young) with a sparse indumentum of short, straight, white, appressed hairs, light green to dark green; *midrib* more or less central; *lateral nerves* absent or scarcely apparent; *marginal nerves* narrow and yellow to light brown, adaxial marginal nerve occasionally bifurcating near the gland; *apex* obliquely narrowed (either somewhat gradually or more usually rather abruptly so) into a distinct, dark brown, brittle, sometimes slightly pungent, acute, straight or slightly curved mucro 1-2 mm long; *pulvinus* 1-2 mm long, drying finely transversely wrinkled and brown. *Gland* situated on adaxial margin (2)5-12(17) mm above the pulvinus, oblong, 0.5-0.8 mm long, not prominent, slightly raised to very shallowly concave, drying medium brown to dark brown. *Peduncles* axillary or less commonly 1-2 on very reduced racemes to 1 mm long, (1)2(3-4) per node, (3-4)5-10 mm long, glabrous, usually drying dark red-brown to black, very occasionally light brown; basal peduncular bracts solitary, caducous, more or less cymbiform, c. 2 mm long, concave, sessile, densely hairy abaxially with indumentum as on branchlets. *Flower-heads* globular, 9 mm diam. at anthesis (fresh), mid-golden, 35-55-flowered. *Bracteoles* similar to sepals. *Flowers* 5-merous. Sepals linear-spathulate, $\frac{1}{3}$ - $\frac{2}{3}$ length of petals, claws glabrous, laminae sparsely hairy and usually brown. *Petals* 2-2.3 mm long, glabrous, sometimes the apices drying blackish, nerveless to very obscurely 1-nerved. *Ovary* glabrous to sub-glabrous. *Legumes* sub-moniliform,

circinnate to sigmoid or more usually loosely and irregularly twisted, to 6 cm long, 3 mm wide, with up to 10 seeds per legume, firmly chartaceous to very thinly crustaceous, glabrous to sparsely appressed-hairy, black. Seeds longitudinal in legumes, oblongoid to ellipsoid, 3-4 mm long, 2-2.5 mm wide, shiny to more or less dull, dark brown; *pleurogram* "u"-shaped, open towards the hilum; *areole* 0.5-1 mm long, 0.3-0.5 mm wide; *funicle* filiform and c. 2 mm long; *aril* conical and situated at top of seed, 2-2.5 mm long, c. 2 mm wide at base, the hard, brown, central core surrounded by a thin layer of creamy tissue which may exfoliate.

Selected specimens examined. SOUTH AUSTRALIA: Gluepot Station north of Waikerie, *N. Gemmell* 312 (AD); Opposite the Electricity Substation at the western end of Kimba on the Eyre Highway, *N. Hall* H80/56 (MEL, PERTH); Yorke Valley, Yorke Peninsula, [*J.G.O.*] *Tepper* 803 (MEL); 1.5 km NE of Murray Bridge-Palmer road (from Pallamana intersection) towards Murray Bridge-Mannum road, 35° 01' 30" S, 139° 13' 00" E, *B.R. Maslin* 5983 (PERTH); Thurlga gate, c. 55 km NE of Minnipa on road to Yardea, *A.E. Orchard* 2320 (AD); About 0.8 km N of Yeelanna, *M.D. Tindale* 579 (NSW, PERTH).

NEW SOUTH WALES: 26 miles [41.8 km] W of Balranald on Euston road, c. 34° 36' S, 143° 47' E, 11 Oct. 1947, *E.F. Constable* s.n. (NSW 51735); 26.9 km E of Monak on Sturt Highway, 34° 26' S, 142° 28' E, *L. Thomson* 55 (NSW, PERTH).

VICTORIA: South-west corner, Hattah Lakes National Park, 13 Nov. 1969, *G.W. Anderson* s.n. (MEL 1500708); Big Desert, 9 km S of Murrayville on Nhill road, 35° 21' S, 141° 11' E, *M.G. Corrick* 6385 (MEL); 21 km along road running west from Sunset Tank-Merrinee track, 34° 43' S, 141° 28' E, *M.G. Corrick* 6622, *P.S. Short* and *B.A. Fuhrer* (MEL, PERTH); Shire of Borung, 10 Oct. 1901, *F.M. Reader* s.n. (MEL 616115); Swan Hill, *W.W. Watts* 1124 (MEL).

Distribution (Figure 1). S.A., N.S.W. and Vic. South Australia: Eyre Peninsula from near Port Lincoln north to the vicinity of Kimba. One collection from Calca and another from Thurlga Gate in the Gawler Ranges (north-western Eyre Peninsula). Northern Yorke Peninsula from Yorke Valley north to near Wallaroo and Bute and eastwards through the Northern Lofty Region to Waikerie and Gluepot Station in the Murray Region. Also from Lameroo-Pinnaroo area near the Vic. border (south-eastern Murray Region). Victoria: Principally in the Mallee and Wimmera Regions of western Vic. from the S.A. border near Murrayville east to Gunbower. New South Wales: Restricted to a small area near the Vic./N.S.W. border in the southern part of the Far Western Plains Region from Mildura to Balranald.

Habitat. Appears to favour flat or gently undulating topography in red or red-brown sand or light brown calcareous loam; with mallee eucalypts.

Flowering and fruiting period. Flowering extends from August to November but the main flush occurs in September and October. Legumes with mature seeds have been collected in December. Dehisced legumes sometimes persist on plants.

Affinities. Formerly confounded with *A. microcarpa* (see below) but *A. halliana* differs significantly in the following ways. Stipules (1.5)2-3(4) mm long and persistent (however, because of their brittle nature they are not always present at all nodes). Phyllode apices acute and eglandulose. Aril conical and situated at top of seed. Considering these differences it is surprising that *A. halliana* and *A. microcarpa* have remained confused for so long. Also, in *A. halliana* the new shoots and usually the branchlets are appressed-hairy and the heads are 35-55-flowered (however, in variant 2 of the species (see below) the indumentum is lacking and the heads are 16-25-flowered — in these two characters the variant agrees with *A. microcarpa*).

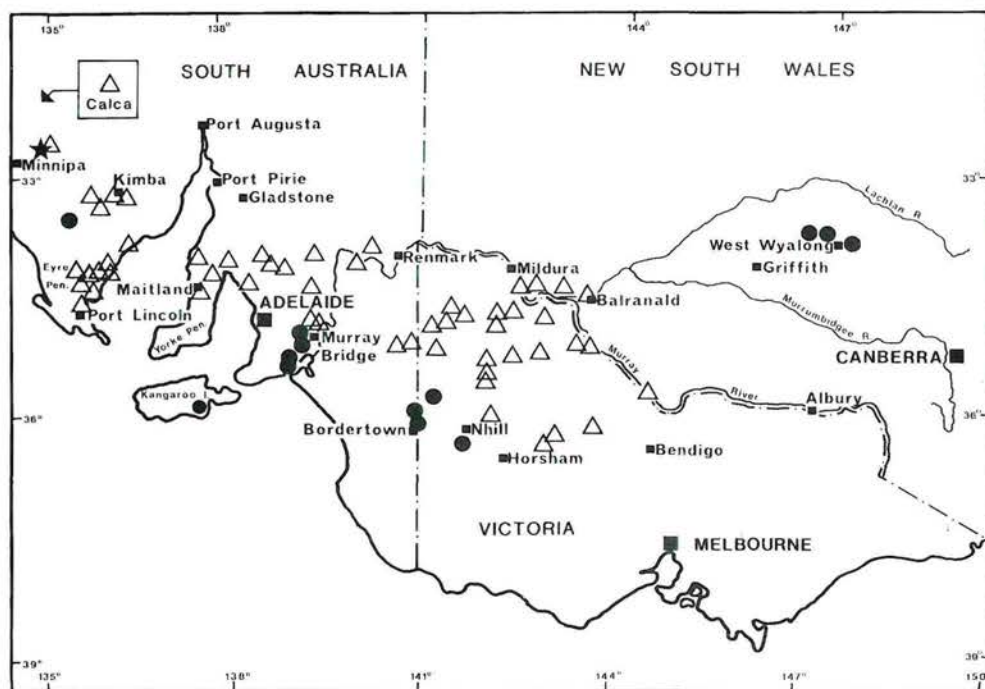


Figure 1. Distribution of *Acacia halliana*. Open triangle — typical variant; closed circle — variant with small flower-heads; closed star — variant with long peduncles.

Acacia halliana appears to be most closely related to the widespread, variable species *A. merrallii* but is readily distinguished by its much longer phyllodes.

Etymology. I am pleased at having this opportunity to name this new species in honour of Mr Norman Hall who has done so much to assist me with *Acacia* projects in recent years.

Variants. The following two variants are not included in the above description but their distribution is mapped in Figure 1.

1. This variant has atypically long peduncles (23-26 mm) and sub-falcate phyllodes (6.5-7.5 x c. 1.5 cm). It is known from a single flowering specimen (*A.E. Orchard* 2314, AD) which was collected from the Gawler Range, S.A., about 40 km north-east of Minnipa on the road to Yardea. Typical *A. halliana* also occurs in the Gawler Range which is the north-western limit of distribution of the species. In the absence of legumes and field studies it would seem best to regard this plant as an aberrant form of *A. halliana* and not attribute formal (infraspecific) rank to it.

2. The second variant is widespread and has been recorded from discontinuous localities in South Australia (Eyre Peninsula — one specimen only, lower Murray and Southern Lofty Regions — common around Monarto South, South-eastern Region — Bordertown area, Kangaroo Island — uncommon), Victoria (Little and Big Deserts) and New South Wales (near West Wyalong) — Figure 1. The disjunction between north-west Victoria and West Wyalong area is similar to that found in *A. microcarpa* (see Figure 3). The variant is distinguished from typical *A. halliana* in the following ways. Branchlets consistently glabrous and often more prominently angled at extremities. New shoots glabrous. Stipules often not drying blackish, usually completely deciduous on specimens from N.S.W.. Phyllodes always oblanceolate, usually 2-4 cm long and (2)3-7 mm wide with l:w = 4-10, rarely a few phyllodes

longer (to 7 cm), shorter (to 1-1.5 cm) or wider (to 13 mm) or more elongate (l:w to 16), ascending to erect, straight or more usually shallowly incurved. Peduncles drying yellowish to black. Flower-heads 16-25-flowered, 8 mm diam. at anthesis, light- to mid-golden. Legumes uniformly strongly curved, terete but not or barely constricted between the seeds.

Selected specimens examined. SOUTH AUSTRALIA: About 10 km N of Wolseley, *K.M. Alcock* 115 (AD); Eyre Peninsula, north of Lock, *R. Bates* 829 (AD); Goolwa, 14 Dec. 1940, *J.B. Cleland* (AD 97427361, MEL 1500364 — mounted on holotype sheet of *A. x grayana*); Finnis Railway Station, 19 Dec. 1964, *J.B. Cleland* s.n. (AD 966061159); Monarto South, about 3 km south of railway crossing on road to Chauncey's line, *Hj. Eichler* 15106 (AD, MEL); Lower Murray River on Lake Alexandrina, ca. 15 km to Milang, *N. Gemmell* 159 (AD); Kangaroo Island, about 1 km S of top of Macgillivray Hill, *G. Jackson* 1457 (AD); Kangaroo Island, about 11 km south of top of Macgillivray Hill, *G. Jackson* 1459 (AD); 3.5 km by road S of Monarto South, *B.R. Maslin* 5977 (PERTH); About 10 km E of Bordertown, *R.L. Specht* 1669 (AD).

VICTORIA: - 8 mi [13 km] S of Red Bluff, *R. V. Smith* (*B.J. Conn* no. 59/220) (MEL 672784); Little Desert, Sept. 1930, *H.B. Williamson* s.n. (MEL 616109).

NEW SOUTH WALES: Wyalong, 22 Sept. 1906, *J.L. Boorman* s.n. (NSW 121885); 3 miles [4.8 km] NE of West Wyalong, *R. Coveny* 2376 (NSW, PERTH); 62 miles (129 km) WSW of Forbes towards West Wyalong on Mid-Western Highway, *R. Coveny* 2546 (NSW, PERTH); Meringreen and other stations in the Lachlan District, *T. Duff* (MEL 616110 and 674568); Kikoiira-Weethalla road, 20 Sept. 1956, *C.K. Ingram* s.n. (NSW 121887).

In the absence of more detailed studies (especially morphological investigations of closely related taxa in W.A.) it is difficult to ascertain whether or not this variant should be afforded specific rank. It therefore seems prudent to exclude it from the circumscription of *A. halliana*. The variant is most readily distinguished from typical *A. halliana* by its frequently smaller, incurved phyllodes, smaller flower-heads and uniformly curved legumes which are not or only slightly constricted between the seeds. It superficially resembles *A. x grayana* (which also occurs at Monarto South, S.A.) but is distinguished by its usually rather prominent stipules (N.S.W. specimens excluded), its glabrous new shoots, branchlets and peduncles, its narrower legumes and its prominent, conical aril situated on top of the seed. When describing *A. grayana* J.H. Willis (1957) contrasted his new species with *A. microcarpa*. The two specimens (both ex herb. J.M. Black) thought by Willis to be *A. microcarpa* are mounted with the holotype of *A. x grayana* (MEL 1500364), however, neither is *A. microcarpa*. The flowering specimen from Mannum is *A. calamifolia* (specimen with relatively short oblanceolate phyllodes) while the fruiting specimen from Goolwa is this variant 2 of *A. halliana*.

Acacia microcarpa and its allies

Acacia microcarpa belongs to a small group of closely related section *Phyllodineae* taxa which share the following important features. Gland present at phyllode apices adjacent to the innocuous mucro. Racemes extremely reduced, axes 0.5-1 mm long and usually supporting a single peduncle subtended by a solitary basal bract. Flowers relatively few per head (8-22). Sepals free. Seeds longitudinal or almost so, provided with a slight peripheral ridge. Aril clavate and extending down one side of the seed. In addition to *A. microcarpa* this group comprises *A. acinacea*, *A. imbricata* and *A. triquetra*.

Key to *A. microcarpa* and its allies

1. Gland (often small — observe at x10 mag.) present on upper margin of all or most phyllodes near or below their centre.....2

- 1a. Gland absent (very rarely present on a few phyllodes) from lower half of phyllodes; legumes linear and straight to shallowly curved.....3
2. Legumes slightly to prominently curved (not coiled); phyllodes usually 20-55 mm long and 4-10 mm wide with l:w = 4-10, apices obtuse (frequently obliquely so) or retuse; marginal gland rather prominent, greater than 0.5 mm long, usually recessed.....*A. microcarpa*
- 2a. Legumes circinnate to irregularly twisted or spirally coiled; phyllodes usually 4-15 mm long and 2-8 mm wide with l:w = 1-5, apices + obtuse and usually excentrically mucronulate; marginal gland usually not prominent, less than 0.5 mm long and not recessed.....*A. acinacea*
3. Phyllodes 1-2(3) mm wide (and 10-18 mm long with l:w = 5-10), crowded, imbricate and uniformly erect; legumes 4.5-6 mm wide*A. imbricata*
- 3a. Phyllodes 2-6 mm wide (and usually 10-25 mm long with l:w = 3-8), less crowded and not as conspicuously imbricate as above, mostly inclined to ascending; legumes 3-4 mm wide*A. triquetra*

Acacia acinacea Lindley in T.L. Mitch., Three Exped. Australia, edn 1, 2: 265 (1838). Gold-dust Wattle.

Syntypes: Between Hopkins River and Stavely, c. 35 km S of Mt. William, Vic., 19 Sept. 1836, T.L. Mitchell 114 (CGE, K); Near Lake Charm, Vic., 22 June 1836, T.L. Mitchell 187 (CGE, K, MEL).

Acacia obliqua A. Cunn. ex Benth., London J. Bot. 1: 334 (1842), nom. illeg., non Desv. (1841). *Type*: Between the Lachlan and Macquarie Rivers, N.S.W., July 1817, A. Cunningham 410 (holo: K; iso: K).

Acacia rotundifolia Hook., Bot. Mag. 69: t. 4041 (1843). *Type*: Cultivated at Hort. Kew in 1843, comm. J. Backhouse [specimen questionably originating from Hunter River, N.S.W., cf. protologue] (holo: K).

Acacia latrobei Meissner in Lehm., Pl. Preiss. 1: 10 (1844). *Type*: Port Phillip, Vic., C.J. Latrobe (holo: NY; iso: G).

Acacia cyclophylla Schldl., Linnaea 20: 663 (1847). *Type*: Murrayscrub [apparently refers to that part of the Murray Mallee, S.A., south of the modern Truro-Blanchtown highway, towards The Marne River, fide D.K. Kraehenbuehl (1981)], Aug. 1845, H.H. Behr 186 (holo: HAL; iso: NY).

Illustrations. W.J. Hooker (loc. cit.); F. Mueller, Iconography of Australian *Acacia* species and cognate genera. Decade 4 (1887); D.J.E. Whibley, Acacias of South Australia 45 (1980) — as *A. rotundifolia*; L. Costermans, Native trees and shrubs of south-eastern Australia 310 (1981); G.M. Cunningham et al., Plants of Western New South Wales 352 (1981).

Bushy or straggly *shrub* usually to c. 2.5 m tall. *Branchlets* somewhat angled at extremities, glabrous to puberulous or hirtellous. *Phyllodes* somewhat asymmetric, narrowly oblong-elliptic to oblanceolate or widely obovate or circular, more or less obtuse and usually excentrically mucronulate, (3)4-15(25) mm long and 2-8(11) mm wide with l:w = 1-5(7), indumentum as on branchlets, green; *midrib* not prominent or obsolete (on broad, ± orbicular phyllodes a minor second longitudinal nerve may develop on adaxial side of midrib); *lateral nerves* obsolete. *Glands* 2; distal gland adjacent to the mucro; proximal gland near or below middle of adaxial margin, not prominent or recessed as in *A. microcarpa*, 0.2-0.5 mm diam. *Racemes* usually of one flower-head (occasionally 2-4-headed) on axes c. 0.5 mm long, 1-2 per node. *Peduncles*

4-20 mm long, slender, glabrous, cymbiform *basal bract* sub-persistent. *Flower-heads* prolific, globular, bright golden, small, 4-5 mm diam., 8-20-flowered. *Flowers* 5-merous. *Sepals* free. *Legumes* circinnate to irregularly twisted or spirally coiled, 3-4.5 mm wide, glabrous. *Seeds* longitudinal, more or less oblongoid, 4-5 mm long, 2.5-3 mm wide, obscurely ridged; *aril* clavate and extending $\frac{1}{4}$ - $\frac{1}{2}$ down one side of seed.

Selected specimens examined. SOUTH AUSTRALIA: Dutton Park, Kapunda, *B. Copley* 3301 (AD, PERTH); Shipley Hill, c. 26 km NE of Keith, *N.N. Donner* 177 (AD); Central Tothill Range, *D.N. Kraehenbuehl* 2148 (AD); 3 mi [5 km] S of Monarto, *M.E. Lawrence* 216 (MEL); c. 15 km N of Overland Corner, *D.J.E. Whibley* 3631 (AD, PERTH); c. 8 km W of American River on road to Kingscote, Kangaroo Island, *P.G. Wilson* (AD, MEL).

NEW SOUTH WALES: Goonoo State Forest, Eumungerie, *G.M. Chippendale* and *E.F. Constable* s.n. (NSW 19474); 1 km N of Sutton turn-off on Federal Highway, *M.D. Crisp* 2194 (AD, MO, NSW); Brocklesby Road, 2 mi [3 km] W of Burrumbuttock, *E.J. McBarron* 3408 (NSW, PERTH).

VICTORIA: 4.5 mi [7.2 km] S of Kamarooka, Bendigo district, *H.I. Aston* 437 (MEL); Chiltern district, c. 3.5 mi [5.6 km] E of township, 4 June 1962, *A.B. Court* and *J.H. Willis* s.n. (MEL 518441); Red Shirt Gully Road, St. Andrews, *R.A. Kilgour* 22 (MEL); Wyperfeld National Park, *J. Landy* and *A.C. Beauglehole* 9685 (MEL).

Distribution (Figure 2). S.A., Vic. and N.S.W. South Australia: Principally confined to the Lofty and Murray Regions from Victor Harbour north to Gulnare and east to the Murray River. Also from the Loxton area (Murray Region) and the Keith-Bordertown-Lucindale area (South-eastern Region). One collection from Melrose (Flinders Ranges) and also near American River (Kangaroo Island). Victoria: Widespread in Vic. (excluding the north-west, south-west and eastern extremities of the state) and extending from Lillimur (near Vic./S.A. border) east to near Bright. New South Wales: Principally confined to the Central and South Western Slopes and South Western Plains from the Goonoo State Forest (Eumungerie) and Gulgong south to Albury and west near and along the N.S.W./Vic. border to Barham. Also from Bathurst and Abercrombie Caves (Central Tablelands). One isolated occurrence near Sutton (Southern Tablelands).

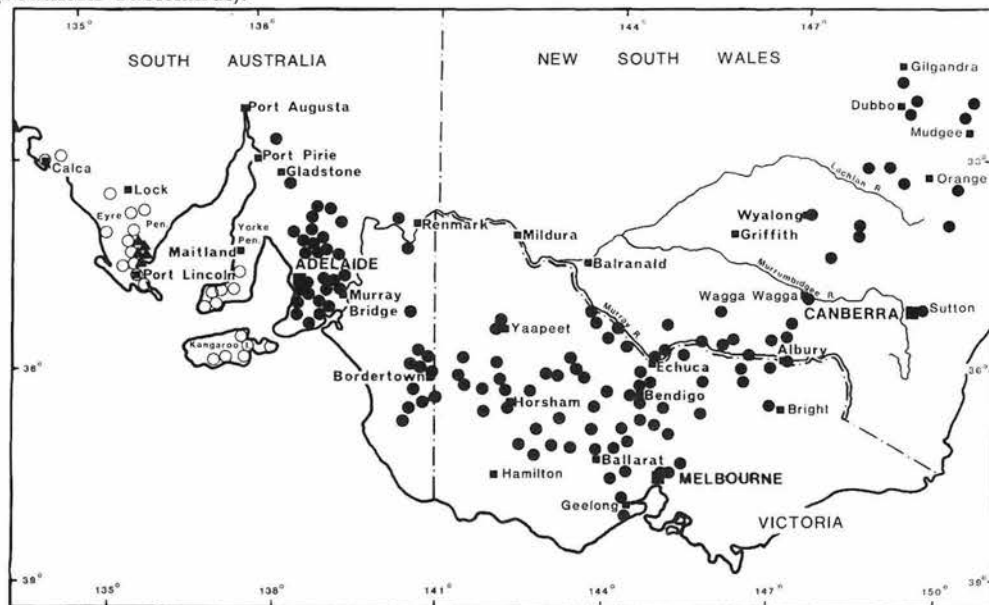


Figure 2. Distribution of *Acacia acinacea*, *A. imbricata* and *A. triquetra*. Closed circle — *A. acinacea*; open circle — *A. triquetra*; closed triangle — *A. imbricata*.

Variation. Very polymorphic with respect to phyllode shape, size and indumentum. Specimens with more or less orbicular phyllodes have sometimes been called *A. cyclophylla* (phyllodes hairy on type) or more commonly *A. rotundifolia* (phyllodes glabrous on type).

A variant known only from flowering material occurs at a few localities in the North Mount Lofty Ranges between Hamley Bridge and Burra, S.A. Its proximal phyllode gland is larger than normal (to 0.9 mm long) and is sometimes recessed. In these respects it resembles *A. microcarpa* from which it is distinguished by its smaller phyllodes (8-16 x 2.5-6 mm) which are usually markedly mucronulate. Specimens referable to this variant are: Manoorra to Auburn, *B. Copley* 5311 (AD); About 3 km N of Waterloo, *R. Hill* 1040 (AD); 1 km S of Alma, *J. Howie* s.n. (AD 98232152); 2.5 km S of Alma, *E.N.S. Jackson* 1688 (AD); Hanson, S.A. Pastoral Board s.n. (AD 97918218); Burra, 1895, ex herb. O. Menzel (AD 97612449); About 8 km N of Manoorra, *D.J.E. Whibley* 2063 (AD). Typical *A. acinacea* also occurs in the North Mount Lofty Ranges.

The few specimens with longer than normal phyllodes (15-25 mm) may resemble *A. microcarpa* but *A. acinacea* is recognized by its phyllodes which have a distinct mucro and a smaller marginal gland and its legumes which are twisted or coiled.

Affinities. As discussed below, many South Australian specimens referable to *A. triquetra* were formerly included under *A. acinacea*.

Acacia imbricata F. Muell., *Fragm.* 1:5 (1858).

Type citation: "In fruticetis prope sinum Tumbey Bay litoris Spencer's Gulf." *C. Wilhelmi*.
Type: n.v.

Illustration. D.J.E. Whibley, *Acacias of South Australia* 53 (1980).

Dense, spreading, glabrous *shrub* 1-2 m tall, branches somewhat willowy. *Branchlets* very acutely angled towards apices, ribbed below raised leaf bases. *Phyllodes* narrowly oblong to oblanceolate, abruptly narrowed (more or less truncate) at the excentrically rostellate apices, 10-18 mm long, 1-2 mm wide (rarely 3 mm), l:w = 5-10, crowded, imbricate, erect, straight, dark green, *midrib* not prominent, *lateral nerves* absent. *Gland* solitary, adjacent to apical mucro. *Racemes* of 1 flower-head, 1-2 per node, axes c. 0.5 mm long. *Peduncles* 4-10 mm long, slender. *Flower-heads* prolific, globular, bright yellow, 9-15-flowered. *Flowers* 5-merous. *Sepals* free. *Legumes* linear, to 7 cm long, 4.5-6 mm wide, more or less straight, firmly chartaceous, light brown to medium brown. *Seeds* more or less longitudinal, oblongoid to widely ovoid-ellipsoid, 3.5-4 mm long, 2.5-3 mm wide, slightly ridged.

Selected specimens examined. SOUTH AUSTRALIA: Ungarra to Yeelanna road, *B. Copley* 2979 (AD); Between Yalunda Flat and Tumbey Bay, *D.J.E. Whibley* 1945 (AD).

Distribution (Figure 2). Restricted to a small area on southern Eyre Peninsula, S.A., from Koppio and Warunda north to the Yeelanna-Ungarra road.

Affinities. Closely allied to *A. triquetra* and perhaps not specifically distinct from it. *Acacia imbricata*, however, can be recognized by its broader legumes and by its narrower, more uniformly erect phyllodes. *Acacia triquetra* is more widespread than *A. imbricata*. The two species are not known to be sympatric.

Bentham (1864) considered *A. imbricata* to be conspecific with *A. lineata* A. Cunn. ex Don. As pointed out by Maiden (1916) the South Australian specimens cited by Bentham

under *A. lineata* are *A. imbricata*. *Acacia lineata* is widespread in S.A., Vic., N.S.W. and Qld (Maslin and Pedley 1982) and is readily distinguished from *A. imbricata* by its phyllodes with prominent, excentric midribs and eglandulose apices.

Acacia microcarpa F. Muell., *Fragm.* 1:6 (1858); 2nd Gen. Rep. 11 (1854), nom. nud. Manna Wattle.

Type citation. "Ad margines dumetorum juxta Tumbey Bay. *C. Wilhelmi*. Prope flumina Avoca et Murray." *Lectotype* (here selected): Near Port Lincoln (Port Lincoln is 50 km south of Tumbey Bay), S.A., *C. Wilhelmi* (MEL 616142). *Para-lectotypes*: MEL 501392 and 616143 (see discussion below).

A. subretusa Maiden and Blakely, J. and Proc. Roy. Soc. W. Australia 13: 11, pl.8, figs. 7-11 (1928), *synon. nov.* *Type*: Victorian Expedition, June 1861, comm. *F. Stoward* from herb. MEL (holo: NSW).

Illustrations. J.H. Maiden and W.F. Blakely (loc. cit.); F. Mueller, *Iconography of Australian species of Acacia and cognate genera*. Decade 4 (1887) — right-hand flowering twig; D.J.E. Whibley, *Acacias of South Australia* 63 (1980) — upper right-hand twig.

Bushy, spreading, glabrous *shrub* to 2.5 m tall. *Branchlets* somewhat angled at extremities. *Stipules* insignificant. *Phyllodes* usually oblanceolate, obtuse but frequently obliquely so, often retuse, (1.6)2-5.5(6.5) cm long and (3)4-10(19) mm wide with l:w = (2.5)4-10(13), smooth, slightly thickened, patent to erect, straight to shallowly incurved, green; *midrib* not prominent; *lateral nerves* absent or very obscure. *Glands* 2, one at phyllode apex, the second near or below middle of adaxial margin 3-13 mm above the pulvinus, lower gland usually shallowly concave. *Racemes* of one flower-head on axes usually c. 0.5 mm long, 2-5 per node. *Peduncles* 4-10 mm long, drying yellow or blackish. *Flower-heads* globular, bright mid-golden, 14-22-flowered. *Flowers* 5-merous. *Sepals* free. *Legumes* linear, prominently raised over seeds and slightly constricted between them, to 8 cm long, 2-5 mm wide, slightly to prominently curved (not coiled), firmly chartaceous. *Seeds* longitudinal, ellipsoid to ovoid-oblongoid, 3-4 mm long, 2-2.5 mm wide, turgid, with a slightly raised peripheral ridge; *aril* more or less clavate and extending $\frac{1}{4}$ - $\frac{1}{3}$ down one side of seed.

Selected specimens examined. SOUTH AUSTRALIA:- On side track about 6 km along Beetaloo Reservoir Road from Gladstone, *R. Bates* 796 (AD); Chauncey's Line, c. 20 km SW of Murray Bridge, 30 Nov. 1963, *J.B. Cleland* s.n. (AD 96444019); c. 6 km N of Arthurton, *B. Copley* 2789 (AD); Wudinna, *R.H. Kuchel* 3302 (AD, PERTH); c. 0.5 km N of Port Vincent, *J.Z. Weber* 3941 (AD); Roadside near southern end of Marble Range, *D.J.E. Whibley* 1892 (AD); Between Cambrai and Sedan, *D.J.E. Whibley* 4474 (AD, MEL); 22 km ESE of Canopus Homestead, 33° 39' 30" S, 140° 50' E, *L.D. Williams* 7782 (AD).

NEW SOUTH WALES: Near Weethalle, *G.W. Althofer* 17A (NSW); Mid Western Highway, 42 mi [67.5 km] WNW from West Wyalong towards Rankin Springs, *R. Coveny* 2553 (NSW, PERTH); 5 km NE of Goolgowi, *G.M. Cunningham* 3347 and *P.L. Milthorpe* (NSW, PERTH).

VICTORIA: Moonlight Tanks, the Big Desert, 30.6 mi [49 km] N of Yanac on the Yanac-Murrayville track, *H.I. Aston* 1042 (MEL); Wyperfeld National Park, *A.C. Beauglehole* 28768 (MEL); Big Desert, 21 km N of Broken Bucket bore, *M.G. Corrick* 6344 (MEL, PERTH); 3.3 km W of Walpeup on Ouyen Highway, *N. Hall* H80/40 (MEL, NSW, PERTH); Gunbower, Oct. 1913, *Anon.* s.n. (MEL 1500691).

Distribution (Figure 3). S.A., N.S.W. and Vic. South Australia: Eyre Peninsula from slightly south of Port Lincoln north to Wudinna and Kimba. Yorke Peninsula from Yorketown north

to near Wallaroo then north to the Northern Lofty Region as far as Gladstone. Murray Region from near Sedan south to the Murray Bridge-Tailem Bend district and east to Pinnaroo near the S.A./Vic. border. Just extending into the south-eastern portion of the Southern Lofty Region to Finnis and Goolwa. It has also been collected from Canopus Station in the Murray Region, c. 160 km N of Pinnaroo. The south-eastern limit of distribution in S.A. occurs in the South-eastern Region near Tintinara. Victoria: Occurring in the Mallee and Wimmera Regions of north-western Victoria from near Meringur south to Lillimur and east to Sea Lake. One isolated occurrence in the Murray Valley Region at Gunbower, c. 140 km ESE of Sea Lake. New South Wales: Known only from two areas:- Montarna, c. 35 km NE of Mildura in the South Far Western Plains Region and between Goolgowi and West Wyalong on the border of the South Western Plains and Central Western Slopes Regions.

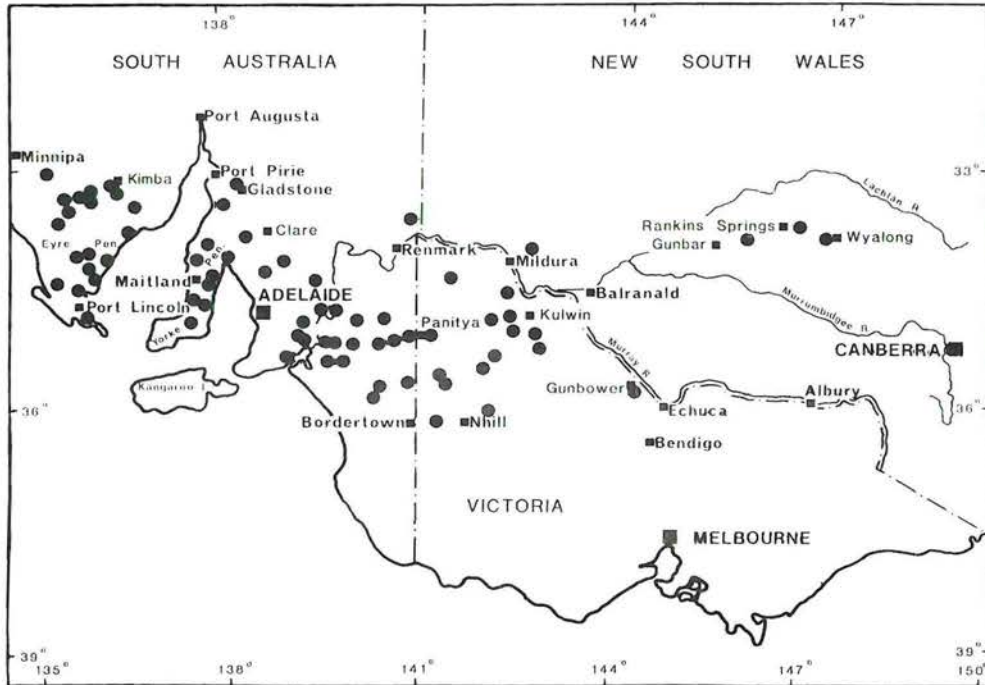


Figure 3. Distribution of *Acacia microcarpa*.

Type specimens. The herb. MEL specimen selected as the lectotype of *A. microcarpa* is labelled by Mueller thus: "Acacia microcarpa... Near Port Lincoln, Wilhelm." This specimen is in fruit and agrees with the protologue. There are two other probable syntypes at MEL. One (with two labels, viz. "Murray!" and "... near the Avoca" - MEL 501392) is sterile and may represent *A. acinacea*. The other (labelled "Dombey bay" - MEL 616143; I am unsure as to who collected this plant) is an excellent match for the lectotype. My experience with Mueller collections has often been that the extant specimens do not always match exactly those cited in his original descriptions. It is therefore assumed that although the label accompanying the lectotype is not annotated exactly as in the protologue, the specimen nevertheless formed part of the collection upon which the name *A. microcarpa* was based. There are no types of this name at herb. K.

Affinities. Short phyllode forms (around 2 cm long) approach *A. triquetra*, however, *A. microcarpa* is distinguished by its generally less acutely angled branchlets, its phyllodes with a marginal gland on their lower half and its generally more obviously curved legumes. Short phyllode forms may also resemble *A. acinacea*.

In parts of Eyre Peninsula, S.A., the phyllodes of *A. microcarpa* are sometimes unusually broad (10-19 mm) and superficially resemble *A. anceps* DC. However, *A. anceps* is readily recognized by its thick peduncles which are not racemosely arranged, its larger flower-heads (60-130-flowered) and its more or less woody legumes with transverse seeds which are c. ½ encircled by their funicles.

The name *A. microcarpa* var. *linearis* J. Black is considered synonymous with *A. x grayana* J.H. Willis.

Acacia triquetra Benth., London J. Bot. 1: 358 (1842).

Type citation: "K. George's Sound, Bagster." *Lectotype* (here selected): Probably Kangaroo Island, S.A., *W. Baxter*; K (fruiting specimen on sheet stamped Herbarium Hookerianum 1867). *Para-lectotype*: K — flowering specimens. See discussion below.

Illustration. D.J.E. Whibley, *Acacias of South Australia* 55 (1980) — as *A. acinacea*.

Spreading glabrous *shrub* to 1.5 m tall. *Branchlets* acutely angled towards apices, ribbed below raised leaf bases. *Phyllodes* narrowly oblong to oblanceolate or narrowly elliptic, rarely linear, abruptly narrowed at the more or less rounded and excentrically rostellate apices, (6)10-25(28) mm long, 2-6 mm wide, l:w = 3-8 (an elongate phyllode variant is discussed below), patent to erect but usually inclined to ascending, straight or slightly curved, dark green; *midrib* not prominent; *lateral nerves* absent or few and very obscure. *Gland* adjacent to apical mucro, rarely a few phyllodes with an additional gland near middle of upper margin. *Racemes* of 1 flower-head on axes 0.5-1.5 mm long, 1-2 per node. *Peduncles* 3-8 mm long, slender. *Flower-heads* globular, 10-18-flowered. *Flowers* 5-merous. *Sepals* free. *Legumes* linear, to 6 cm long, 3-4 mm wide, straight to shallowly curved, firmly chartaceous, mid-brown to dark brown. *Seeds* more or less longitudinal, mostly oblongoid, 2.5-3.5 mm long, 1.3-2.5 mm wide, slightly wide.

Selected specimens examined. SOUTH AUSTRALIA: c. 3 km N of Elliston, *N.N. Donner* 2430 (AD); About 8 km SE of Bascombe Well Homestead, Eyre Peninsula, *E.N.S. Jackson* 1165 (PERTH); Formby Bay road area, Southern Yorke Peninsula, 15 Sept. 1962, *M.J. Hancock* s.n. (AD 96302162); Bay of Shoals, Kangaroo Island, *J.C. Noble* 624 (AD).

Distribution (Figure 2). Endemic in South Australia on the Eyre Peninsula, southern Yorke Peninsula and Kangaroo Island. Eyre Peninsula: Lincoln National Park north to near Tooligie and Bascombe Well Conservation Park. Also in the Elliston Conservation Park, c. 150 km NW of Tooligie. Yorke Peninsula: Cape Spencer north to Port Rickaby. Kangaroo Island: Hanson Bay east to Cape Willoughby.

Typification. The type collection at herb. K comprises both flowering and fruiting specimens and although this material is not in a good state of preservation it all seems to represent the one taxon. The lectotype is a fruiting specimen labelled by W. Hooker "K.G. Sound N. Holl. Baxter" and annotated "triquetra" by Bentham. As discussed by Maslin and Whibley (1977) it is probable that this specimen (as well as the types of *A. leiophylla*) was collected from Kangaroo Island, South Australia, not King George Sound, Albany, Western Australia as given in the protologue. Although Bagster is given as the collector of the type in the protologue, Bentham (1864) correctly altered this to read Baxter.

Bentham (1864) erroneously regarded *A. triquetra* as a Western Australian species. This resulted in part from the incorrectly labelled type collection (see above) and also from Bentham's regarding of *Drummond* 109 and 292 as *A. triquetra* (these two collections are in fact *A.*

meisneri, a W.A. species). Whibley (1980) treated *A. triquetra* as a synonym of *A. acinacea*. However, *A. triquetra* is distinguished from the more easterly distributed *A. acinacea* by its straight to shallowly curved legumes and its phyllodes which lack a marginal gland near or below their middle. Furthermore, on *A. triquetra* the branchlets and phyllodes are always glabrous, its phyllodes are frequently longer and more parallel-sided and its seeds are slightly smaller. *Acacia triquetra* is most closely allied to *A. imbricata* (see latter species for discussion).

Variation. There occurs on Kangaroo Island a variant with unusually elongate, linear phyllodes (23-38 mm long, 2-3 mm wide, l:w = 8-16). Typical *A. triquetra* also occurs on the Island.

Acknowledgements

Prof. K.H. Rechinger is gratefully acknowledged for providing the Latin description of *A. halliana*. The Directors of herbaria cited are thanked for allowing me access to specimens. Mr D.J.E. Whibley provided useful comments on the taxonomic status of the included species. Suzanne Curry is thanked for competent technical assistance. The work was conducted at the Western Australian Herbarium (PERTH) as part of the Flora of Australia project and was partially funded by the Bureau of Flora and Fauna.

References

- Bentham, G. (1864). "Flora Australiensis." Vol. 2. (Reeve: London).
Bentham, G. (1875). Revision of the suborder Mimosaceae. Trans. Linn. Soc. London 30: 335-664.
Court, A.B. (1973). In: Willis, J.H. "A Handbook to Plants in Victoria." (Melbourne Univ. Press) (*Acacia*: pp. 211-245).
Krachenbuhl, D.N. (1981). Dr H.H. Behr's two visits to South Australia in 1844-45 and 1848-49. J. Adelaide Bot. Gard. 3: 101-123.
Maiden, J.H. (1916). Notes on *Acacia*, (with description of new species), no. 1. J. and Proc. Roy. Soc. New South Wales 49: 463-513.
Maslin, B.R. and Pedley, L. (1982). The distribution of *Acacia* (Leguminosae: Mimosoideae) in Australia. Part 1. Species distribution maps. W. Austral. Herb. Res. Notes No. 6: 1-128.
Maslin, B.R. and Whibley, D.J.E. (1977). The identity of *Acacia leiophylla* Benth. (Mimosaceae). Nuytsia 2: 162-166.
Mueller, F. (1858). Fragmenta Phytographiae Australiacae, vol. 1 (Govt. Printer: Melbourne).
Mueller, F. (1859). Contributiones ad Acaciarum Australiacae cognitionem. J. Proc. Linn. Soc. Bot. 3: 114-148.
Mueller, F. (1863). "The Plants Indigenous to the Colony of Victoria." Vol. 2 (*Acacia*: pp. 2-36).
Mueller, F. (1887). "Iconography of Australian Species of *Acacia* and Cognate Genera." Decade 4. (Govt. Printer: Melbourne).
Whibley, D.J.E. (1980). "Acacias of South Australia." (Govt. Printer: Adelaide).
Willis, J.H. (1957). "Vascular flora of Victoria and South Australia." Victoria Nat. 73: 149-160.