

# Notes on *Acacia* Mill. (Leguminosae: *Mimosoideae*), chiefly from Queensland, 6.

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## Summary

Pedley, L. (2019). Notes on *Acacia* Mill. (Leguminosae: *Mimosoideae*), chiefly from Queensland, 6. *Austrobaileya* 10(3): 297–320. *Acacia ammitia* Pedley, *A. anadenia* Pedley, *A. castorum* Pedley, *A. dichromotricha* Pedley, *A. forsteri* Pedley, *A. hierochoensis* Pedley, *A. lithgowiae* Pedley, *A. parvifoliolata* Pedley, *A. philoxera* Pedley and *A. pudica* Pedley are described as new species. All ten species are endemic to Queensland and have restricted distributions. The new species are illustrated with line drawings or photographs and notes are provided on their distribution, habitat and putative affinities.

Key Words: Leguminosae; *Mimosoideae*; *Acacia*; *Acacia ammitia*; *Acacia anadenia*; *Acacia castorum*; *Acacia dichromotricha*; *Acacia forsteri*; *Acacia hierochoensis*; *Acacia lithgowiae*; *Acacia parvifoliolata*; *Acacia philoxera*; *Acacia pudica*; Australia flora; Queensland flora; new species

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## Introduction

*Acacia* Mill. is the most speciose flowering plant genus in both Australia and Queensland with about 950 and 300 species currently recognised respectively. A significant number of undescribed species of *Acacia* from Queensland remain to be formally studied and assessed to determine their taxonomic status (Holland & Pedley 1997; Pedley 2002, 2007, 2010, 2017). Since the account of Pedley (1978), a number of new species have been described (Pedley 2006) and in this the final paper in the series (Pedley 1964a, 1964b, 1969, 1974, 2006), a further ten species are proposed. These are from diverse groups within the genus and for consistency are referred to the previously recognised sections (Pedley 1978). A modified version of this sectional classification was used in the *Flora of Australia* account of *Acacia*.

## Materials and methods

The species described in this paper are based on dried collections at the Queensland Herbarium (BRI). Descriptions follow previous format and style (e.g. Pedley 2006). Common abbreviations in the specimen

citations include Mt (mountain), NP (National Park) and SF (State Forest).

Editorial notes: This manuscript has been supplemented with additional descriptive material and specimen citations. Distribution and habitat information for *Acacia dichromotricha* and *A. philoxera* were largely supplied by Jenny Silcock.

## Taxonomy

**Phyllodes uninerved; heads not in racemes [*Acacia* sect. *Phyllodineae*].**

***Acacia castorum* Pedley sp. nov.** affinis *A. confertae* A.Cunn. ex Benth. a qua phyllodiis latioribus, minus elongatis et plerumque obtusis, leguminibus angustioribus, seminibus parvioribus differt. **Typus:** Queensland. LEICHHARDT DISTRICT: Mt Castor, Gemini Mountain section of Peak Downs National Park, 15 January 2001, R. Fairfax & D. Butler 405 (holo: BRI).

*Acacia* sp. (D.W.Butler 98); Butler & Fensham (2008: 524).

Shrub to 3 m tall. Branchlets with moderately dense crisped hairs; stipules narrowly triangular, 0.4–0.5 mm long, c. 0.1 mm wide, persistent. Phyllodes borne on short projections of stem, irregularly obliquely

whorled, narrowly obovate, unequally obtuse, minutely obliquely apiculate, 5–9 mm long, 1.5–2.4 mm wide, 2.5–5 times longer than wide, glabrous or with scattered adpressed hairs (c. 0.4 mm long) when young, thick, midrib obscure, nearer the upper margin; gland small, 1–2 mm from base; pulvinus 0.5–0.6 mm long. Flowers in globose heads of c. 25 flowers; peduncles single in the axils, 10–12 mm long, glabrous and slightly pruinose when young. Flowers 5-merous, seen only when very young. Pods to c. 30 mm long and 8 mm wide, with up to 8 seeds; valves coriaceous, pruinose, without obvious veins. Seeds longitudinal, 4.3–5 × 3–3.3 mm, shiny black; areole large, central; pleurogram closed; funicle thickened and folded forming clavate aril. **Fig. 1.**

**Additional specimen examined:** Queensland. LEICHHARDT DISTRICT: Gemini Peaks NP, SW side of small peak SW of Mt Pollux, Mar 2005, *Butler 98* (BRI).

**Distribution and habitat:** *Acacia castorum* is known only from the twin peaks of Mt Castor and Mt Pollux in the Gemini Peaks National Park in the Peak Range, northeast of Clermont in central Queensland. It is recorded from cliff-lines and steep slopes on trachyte within an open woodland of *Eucalyptus crebra* F.Muell. and *Corymbia trachyphloia* (F.Muell.) K.D.Hill & L.A.S.Johnson subsp. *trachyphloia*, shrubs such as *Bertya pedicellata* F.Muell. and with *Triodia mitchellii* Benth. dominant in the understorey.

**Notes:** *Acacia castorum* is closely related to *A. conferta* but has denser indumentum on the stems, wider, less elongate, usually obtuse phyllodes and narrower pods with fewer smaller seeds. Interestingly, *A. conferta* is also present at Mt Castor (*viz.* *Butler 148 & McGee*, BRI), although the two species are allopatric with *A. castorum* on the exposed cliff-lines whereas *A. conferta* is on scree at the base.

**Etymology:** The specific epithet *castorum* is the plural genitive of the Latin noun *castor* and is a noun in apposition. It alludes to being “of the Castor twins” or the mountains named after them. The half twins Castor and Pollux of Greek and Roman mythology are referred to in Latin as the *Gemini* or *Castores*.

**Acacia hierochoensis** Pedley **sp. nov.** affinis *A. hendersonii* Pedley et *A. johnsonii* Pedley; ab *A. hendersonii* phyllodiis interdum angustioribus et floribus minoribus et ab *A. johnsonii* ramulis glabris, phyllodiis semper glabris plerumque brevioribus non sigillatim sulcatis longitudinaliter et ab utrisque phyllodiis glandibus parvis 3–5 mm e basi (1 mm intus vel in *A. johnsonii* plerumque carenti) pulvino breviora praeditis et ovario piloso differt. **Typus:** Queensland. SOUTH KENNEDY DISTRICT: Near ‘Blairgowrie’ Station on road to Aramac, 18 August 1999, *A. Marks 325-1* (holo: BRI).

*Acacia* sp. (Jericho G.R. Beeston 1065C); Holland & Pedley (1997: 118; 2002: 114); CHAH (2006); Pedley (2007: 114; 2010: 109; 2017).

Shrub to c. 2 m tall; branchlets pale brown, prominently ribbed, resinous; young tips dark brown, resinous; stipules subulate, c. 1 mm long, persistent. Phyllodes spirally arranged, somewhat crowded, narrowly oblanceolate, straight or slightly recurved, (8–)11–18 mm long, (0.8–)1–1.6 mm wide, (8–)10–13 times longer than wide, short oblique mucro at the obtuse tip, thick, glabrous, with a few small tubercles on lower margin, one prominent longitudinal nerve, usually with a few obscure longitudinal folds on each face when dry; small gland on margin 3–5 mm from base; pulvinus 0.2–0.3 mm long. Flowers in globose heads of c. 30 flowers on glabrous resinous peduncles 6–8 mm long, single in upper axils, no basal bracts; bracteoles ovate, c. 2 mm long, thick, rather rough dorsally with scattered minute adpressed hairs. Flowers 5-merous; sepals glabrous, membranous, 0.7–0.8 mm long, lobes uninerved, united to within c. 0.2 mm of tip, free part triangular, thickened; petals glabrous, uninerved, united to about the middle, 1.5–1.6 mm long; stamens c. 3 mm long; ovary tomentose. Pods not seen.

**Fig. 2.**

**Additional specimens examined:** Queensland. SOUTH KENNEDY DISTRICT: 35 km SE of Jericho, Jul 1993, *Thompson JER141 & Figg* (BRI). MITCHELL DISTRICT: Jericho, Jun 1913, *Boorman s.n.* (BRI [AQ626282], ex NSW); 15 km NE of Jericho, Jul 1975, *Beeston 1065C* (BRI).



Fig. 1. Holotype of *Acacia castorum* (Fairfax 405 & Butler s.n., BRI).



Fig. 2. Holotype of *Acacia hierochoensis* (Marks 325-1, BRI).

**Distribution and habitat:** *Acacia hierochoensis* is only known from a small area within 50 km of Jericho, central Queensland. It has been recorded from woodland dominated by *Eucalyptus cloeziana* F.Muell. and *E. crebra* on shallow sandy soils derived from sandstone.

**Notes:** *Acacia hierochoensis* is mostly closely related to *A. hendersonii*, both of which were included in the concept of *A. johnsonii* by Maslin (2001: 458). It differs from both species in its pilose ovary, its phyllodes with a shorter pulvinus and a gland 3–5 mm from the base. It has smaller flowers and usually shorter phyllodes than *A. hendersonii* and differs from *A. johnsonii* in having glabrous branchlets and usually shorter glabrous phyllodes that are not markedly sulcate.

Maiden (1920) briefly discussed the *Boorman* specimen cited above when he described *Acacia pilligaensis* Maiden.

**Etymology:** The specific epithet is derived from *hierocho*, the Latin name of the biblical city of Jericho.

**Phyllodes uninerved; heads in axillary racemes [Acacia sect. *Phyllodineae*].**

***Acacia forsteri* Pedley sp. nov.** affinis *A. penninervi* Sieber ex DC. var. *penninervi* et distantiore *A. decorae* Rchb. f. ab hac phyllodiis minoribus, ab illo phyllodiis glandulis singulis ornatis, inflorescentiis glabris, capitulis pallidioribus, ab utrisque floribus paucioribus in capitulo saepe aliquantum grandioribus et praecipue leguminibus plerumque brevioribus et latioribus seminibus transverse ordinatis differt. **Typus:** Queensland. BURNETT DISTRICT: 'Bronte', 9 km WSW of Gayndah, 28 June 2000, P.I. Forster PIF25856 (holo: BRI, iso: A, AD, CANB, DNA, K, MEL, MO, NSW, PERTH *distribuendi*).

Spreading shrub 3 m high; branchlets glabrous; young tips brownish; stipules *c.* 0.5 mm long deciduous. Phyllodes grey-green, straight, 43–50(–54) mm long, 6.5–9(–10) mm wide, 5–7(–7.8) times longer than wide, glabrous; one distinct longitudinal nerve and obscurely irregularly penninerved;

gland 10–16 mm from the base, connected to the midrib by a fine nerve, margin slightly indented at gland, tip obtuse or somewhat acute; pulvinus *c.* 1 mm long. Flowers in globose heads of 10–15 flowers in axillary racemes with up to 15 branches; axis to 4 cm long including peduncle 4–6 mm long; branches 4–6 mm long subtended by small bract; all glabrous; bracteole peltate about as long as calyx, lamina fimbriate. Flowers pale yellow, 5-merous; calyx cupular, 0.5–0.6 mm long, sinuolately lobed, fimbriate with fine hairs; corolla 1.4–1.5 mm long, glabrous, lobed to about the middle, lobes uninerved; stamens *c.* 3 mm long; ovary glabrous. Pod oblong, straight, flat, usually 3.5–6 cm long, 16–24 mm wide; valves coriaceous, glabrous, pruinous, faintly transversely veined. Seeds transverse in pod, black, oblong in outline, *c.* 5.5 × 3.3–4.5 mm; areole oblong; pleurogram fine, a little depressed, closed; funicle folded several times, thickened, forming an oblique terminal yellow-brown aril. **Fig. 3.**

**Distribution and habitat:** *Acacia forsteri* is known only from the type collection. At the type locality the species occurs in woodland on a duricrust jump-up, with the dominant canopy species being *Corymbia citriodora* subsp. *variegata* (F.Muell.) A.R.Bean & M.W.McDonald, *C. trachyphloia* subsp. *trachyphloia*, *Eucalyptus decorticans* (F.M.Bailey) Maiden and *Lysicarpus angustifolius* (Hook.) Druce. It co-occurs with one other local endemic – the **Vulnerable** listed *Boronia grimshawii* Duretto, as well as the **Endangered** *Zieria inexpectata* Duretto & P.I.Forst.

**Notes:** *Acacia forsteri* is closely related to *A. penninervis* var. *penninervis*, but differs in having smaller phyllodes and, more significantly, much wider and shorter pods that are not contracted between the seeds. A relationship to *A. decora* is also possible, but is more distant.

**Etymology:** The species is named in honour of Dr Paul I. Forster from the Queensland Herbarium, colleague and friend, who has made many valuable collections, often in remote parts of the state.



**Fig. 3.** *Acacia forsteri*. A. habit of twig with phyllodes and inflorescences  $\times 1.2$ . B. pod  $\times 1$ . C. seed *in situ* with funicle  $\times 4$ . All from Forster PIF25856 (BR1). Del. W. Smith.

**Leaves not phyllodinous; heads in axillary racemes [*Acacia* sect. *Botrycephalae*].**

***Acacia anadenia* Pedley sp. nov.** affinis *A. chinchillensi* Tindale et *A. argentinae* Pedley; ab illa foliolis grandioribus latioribus et ab utrisque ramulis pilis crispis obtectis, foliis sine glandulis in speciminibus vidi (forsan non semper speciei), pinnarum axibus ultra foliolis projectis, ovario legumineque glabro differt. **Typus:** Queensland. WARREGO DISTRICT: Mt Mobil House, Chesterton [Range] National Park, 30 August 1996, *C. Dollery* 127 (holo: BRI).

Shrub to *c.* 1 m tall; branchlets ribbed, indumentum of long, moderately dense, crisped hairs; young growing points brownish; stipules deltoid, *c.* 1 mm long. Leaves: glands absent; axis (pulvinus, petiole and rachis included) 2–4 cm long, ridged adaxially; petiole (including pulvinus *c.* 1.5 mm long) 7–11 mm long; 2–4 pairs of pinnae, their axes 22–40 mm long markedly projecting beyond the most distal pair of leaflets; 7–11 pairs of leaflets per pinna; leaflets oblong, obtuse or acutish, rounded at base, (3.5–)6.5–9 mm long, 1.5–2.2 mm wide, 3.5–4.7 times longer than wide, moderately dense crisped hairs beneath, a few scattered hairs above, midrib prominent beneath; petiolules *c.* 0.2 mm long. Flowers in globose heads of 18–24 flowers, *c.* 5 mm diameter, arranged in up to 10-branched axillary racemes; axis usually 2.5–3 cm long (including peduncle 5–10 mm long) with indumentum of branchlets; branches, 2.5–3 mm long, subtended by acute bract 0.7–1 mm long. Flowers 5-merous; calyx obconical, lobed to middle, *c.* 0.8 mm long, tube glabrous, lobes fimbriate; corolla lobed to about level of calyx, *c.* 1.3 mm long, midribs of lobes distinct; stamens 2.5–3 mm long; ovary glabrous. Pods (seen when over-mature, but containing seeds), linear straight or somewhat curved, to *c.* 9 cm long with about 10 seeds, 5.5–6 mm wide; valves smooth, glabrous, pruinose. Seeds arranged longitudinally, oblong in outline, *c.* 7.5 × 3–3.5 mm, with a large oblong areole, pleurogram open; distinct clavate aril. **Fig. 4.**

**Additional specimen examined:** Queensland. MARANO DISTRICT: Chesterton Range NP, Nov 1997, *Dollery s.n.* (BRI [AQ659044], NSW).

**Distribution and habitat:** *Acacia anadenia* is known only from the Chesterton Range National Park some 35 km ENE of Morven in southwestern Queensland. It has been collected in *Callitris* (probably *C. glaucophylla* Joy Thomps. & L.A.S. Johnson) and *Eucalyptus* woodland on “sandy undulating slopes”.

**Notes:** *Acacia anadenia* is related to both *A. chinchillensis* and *A. argentina*, both of which have silvery foliage and hairy branchlets and leaflets. It differs from both in having crisped hairs on branchlets and leaf axes, the lack of foliar glands, the pinna axes projecting conspicuously beyond the most distal pair of leaflets and glabrous pods and ovary. As in others of the group, the lack of glands may not be a constant characteristic of the species.

*Acacia anadenia* is the second endemic vascular plant to be described from the Chesterton Range National Park area; the other being *Bertya calycina* Halford & R.J.F.Hend. The two species are not known to co-occur.

**Etymology:** The specific epithet is a Latin adjective derived from the Greek *adena*, *adenos*, “gland” with the prefix *an-*, “without”, an allusion to the lack of foliar glands on the specimens examined.

***Acacia parvifoliolata* Pedley sp. nov.** quoad ramulos rufescentes pruinosos et pinnas late sejunctos secus rhachidem foliorum affinis *A. pruinosa* A.Cunn. ex Benth. et *A. debili* Tindale autem ab utrisque glandula petiolarum carenti et floribus minoribus et praesertim foliolis multo minoribus differt. **Typus:** Queensland. LEICHHARDT DISTRICT: Boyd Creek, State Forest 46, *c.* 70 km W of Taroom, 10 September 2002, *A.R. Bean* 19248 (holo: BRI [2 sheets]; iso: K, MEL, NSW, *distribuendi*).

*Acacia* sp. (Boyd Creek A.R.Bean 19248); CHAH (2006); Pedley (2007: 114; 2010: 109; 2017).



Fig. 4. Holotype of *Acacia anadenia* (Dollery 127, BRI).



Spindly shrub to *c.* 4 m tall; bark smooth throughout and  $\pm$  pruinose; all parts glabrous, except for one or two short hyaline hairs on some calyx lobes; branchlets terete, dark red-brown (rufescent),  $\pm$  pruinose when young; stipules triangular to 0.5 mm long. Leaves: axis (petiole and rachis included) 6.5–11 cm long; petiole (including pulvinus *c.* 4 mm long) 2.5–3.5(–5) cm long; intrajugal length 15–20 mm; 3–6 pairs of pinnae, their axes 35–45(–55) mm long; (20–)25–35 pairs of leaflets on each pinna; leaflets oblong, obtuse, 3.5–5.5 mm long, 1–1.5 mm wide, midrib obscure beneath. Flowers in globose heads of *c.* 25 flowers, *c.* 7.5 mm diameter, described as bright yellow, arranged in 5–12-branched racemes in the upper axils, the axis usually 3.5–6 cm long, peduncle 5–15 mm long; branches, subtended by stipule-like bract, 5–7 mm long. Flowers 5-merous; calyx turbinate, *c.* 1 mm long, lobes broad, obtuse, slightly inrolled, *c.* 0.3 mm long, occasionally with a hair or two; corolla *c.* 1.5 mm long, lobed to about the middle, the lobes faintly uninerved; stamens *c.* 3 mm long; ovary glabrous. Pods (only detached dehiscent ones seen and broadly similar to those of most other species of *Acacia* sect. *Botrycephalae*) to *c.* 65 mm long, 6–6.5 mm wide, straight, raised over seeds; valves chartaceous, slightly shiny, some transverse anastomosing veins. Seeds not seen, probably longitudinal or slightly oblique in pod. **Fig. 5.**

**Distribution and habitat:** *Acacia parvifoliolata* is known only from the type collection west of Taroom in the central highlands of Queensland. It was noted to be common but localised along a creek in a woodland of *Eucalyptus chloroclada* (Blakely) L.A.S.Johnson & K.D.Hill, *E. mediocris* L.A.S.Johnson & K.D.Hill, *Angophora leiocarpa* (L.A.S.Johnson ex G.J.Leach) K.R.Thiele & Ladiges and *Allocasuarina inophloia* (F.Muell. & F.M.Bailey) L.A.S.Johnson on quartzitic sandstone.

**Notes:** *Acacia parvifoliolata* is related to *A. pruinosa* and *A. debilis* both of which have similar reddish brown branchlets and leaf rachises, but it has considerably smaller

leaflets that are more widely separated and the leaf rachises lack foliar glands.

**Etymology:** The specific epithet is derived from Latin *parvus*, “small”, *foliola*, “leaflet” and the adjectival suffix *-ata*, indicating possession or likeness: an allusion to the leaflets of the species, which are remarkably smaller than those of related species.

**Phyllodes plurinerved; flowers in heads [*Acacia* sect. *Plurinerves*].**

***Acacia philoxera* Pedley sp. nov.** affinis *A. papyrocarpae* Benth. et *A. loderi* Maiden a quibus phyllodiis grosse pungentibus nervis plerumque manifestis prominentibus (in plantis exsiccatis), floribus majoribus capitulis in paribus axillaribus, calyce minus profunde diviso differt. **Typus:** Queensland. GREGORY SOUTH DISTRICT: Grey Range, 80 km west of Thargomindah, 15 October 1997, *M. Handley 250* (holo: BRI [AQ659041]).

*Acacia* sp. Boongeen Creek (R. Bennett AQ378136); CHAH (2006).

Bushy shrub to small tree to 5 m tall; branchlets obscurely ribbed, dense indumentum of white minute (< 0.1 mm long) adpressed hairs, glabrescent or hairs persisting in axils of phyllodes; stipules not seen. Phyllodes linear, straight, rigid, terete or slightly flattened, (5–)7–12 cm long, 1–1.4 mm wide, acuminate with a coarsely pungent point, densely adpressed pubescent when young, glabrescent, numerous parallel longitudinal nerves, usually prominent on dried specimens; pulvinus 1–1.5 mm long; gland small, basal or up to 2 mm from base. Flowers in globose heads of 12–20 flowers in pairs in upper axils a rudimentary axis between them, receptacle puberulous, bracteole spatulate; peduncles 5–7 mm long, adpressed pubescent, subtended by basal concave bract *c.* 1 mm long. Flowers 5-merous; calyx 0.7–0.9 mm long, lobed to about the middle, the lobes obtuse, sparsely adpressed pubescent; corolla 1.5–1.6 mm long, lobed to about the middle, scattered adpressed hairs towards the base; stamens *c.* 3 mm long; ovary scurfy and adpressed pubescent. Pods linear,  $\pm$  straight, to 10 cm long, *c.* 5 mm wide, valves coriaceous, glabrous, brown, with longitudinal anastomosing veins. Seeds



Fig. 5. Holotype (sheet 1 of 2) of *Acacia parvifoliolata* (Bean 19248, BRI).

longitudinal, 6–7 mm long, 3–3.5 mm wide, thin; pleurogram faint, open; funicle with about five tight folds forming small terminal aril. **Figs. 6–9.**

**Additional specimens examined: Queensland.** GREGORY SOUTH DISTRICT: Near Boongeena Creek, 10 km E of Cooper Creek, Aug 1984, *Bennett s.n.* (BRI [AQ378136]); 80 km W of Thargomindah, Grey Range, Jul 1999, *Simmons 3958 & Simmons* (BRI); *ibid*, Nov 2000, *Handley 250 & Handley* (BRI [AQ497541]).

**Distribution and habitat:** *Acacia philoxera* is currently known from four (only two currently documented with vouchers) localised populations 80–86 km west of Thargomindah beside the Bulloo Developmental Road in its transect of the Grey Range in southwestern Queensland (J. Silcock, pers. comm. Dec 2018). The population from which Bennett made the 1984 collection has not been relocated (J. Silcock, pers. comm. Dec 2018). Away from the main road, there appears to be suitable habitat directly to the south on Orient Station and to the north on Nockatunga and Norley Stations and searches for the species should be made on these properties (J. Silcock, pers. comm. Dec 2018).

At the populations west of Thargomindah, *Acacia philoxera* is associated with *A. cambagei* R.T.Baker, and to a lesser extent with *A. aneura* F.Muell. ex Benth., *A. ensifolia* Pedley and *A. sibirica* S.Moore, generally on areas of rocky clay on the lower slopes and drainage lines of low rises (**Figs. 7, 8**). The understorey is mainly composed of a sparse cover of chenopods and grasses (J. Silcock, pers. comm. Dec 2018). The Boongeena Creek record was from gibber downs on a low hillside above a creek. *Acacia philoxera* has not been observed to occur on the gentler, sandier slopes with *A. aneura* and *A. sibirica* – the locally dominant species association in this area (J. Silcock, pers. comm. Dec 2018).

**Notes:** The nearest relatives of *Acacia philoxera* are putatively *A. papyrocarpa* and *A. loderi*, from which it differs in having more coarsely pungent phyllodes with more prominent longitudinal nerves (at least when dry), larger heads in axillary pairs and a less deeply divided calyx. It occurs outside the geographic range of these related species that

are distributed widely in the southern arid part of Australia and do not occur in Queensland.

*Acacia philoxera* could be the same taxon discussed by Cowan & Maslin (2001) as “*A. sp. aff. [A.]papyrocarpa*” based on some collections from South Australia. If this proves to be the case, then the widely scattered populations of the species would be unusual, but no more so than for *A. minyura* Randell, *A. laccata* Pedley, *A. cyperophylla* F.Muell. ex Benth. var. *cyperophylla* and *A. catenulata* C.T.White (excluding the Western Australian subspecies which is probably specifically distinct).

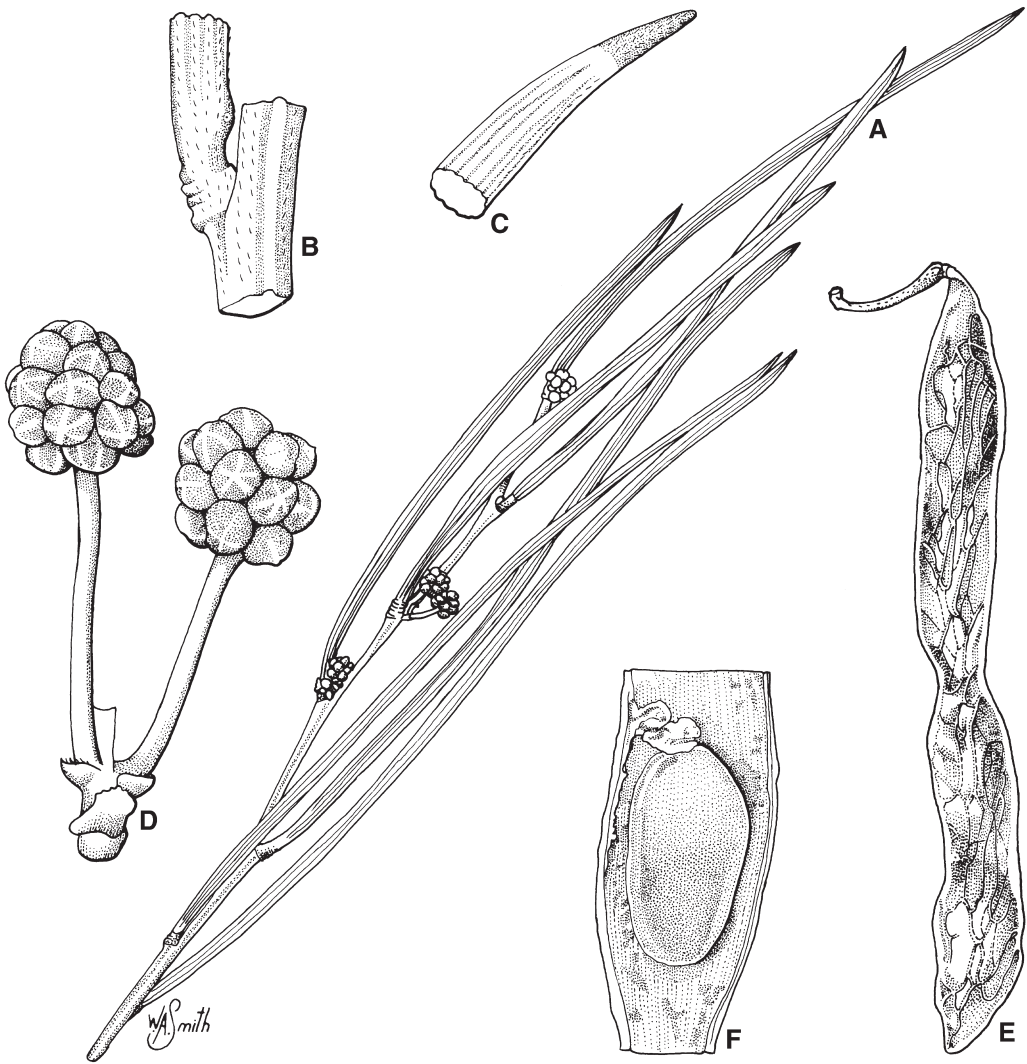
It should be noted that the collector of the type specimen used their collecting number 250 on two different dated occasions. Both collections probably originate from the same individual tree; however, the 17 October 1997 dated collection is clearly indicated above as being the specimen used as the type for this species.

**Etymology:** The specific epithet is formed from a compound of Greek *philo-*, “loving, fond of” and *xeros*, “dry”. The species habitat is particularly arid.

**Phyllodes plurinerved; flowers in spikes [*Acacia* sect. *Juliflorae*].**

***Acacia pudica* Pedley sp. nov.** quoad costas resinamque ramulorum et magnitudinem nervationemque phyllodiorum et leguminum *A. wickhamii* Benth. subsp. *wickhamii* persimilis autem nervis secundariis phyllodiorum inconspicuis magnis intervallis et praecipue calyce in lobos angustos diviso differt. **Typus:** Queensland. BURKE DISTRICT: 32 km NNW of Kajabbi, 29 May 1994, *P.L. Harris 711* (holo: BRI).

Shrub to 2 m tall and half as wide; bark grey, longitudinally fibrous but not minniritchi; branchlets slender, pale brown, with prominent ribs, crenulated when old; young tips brown; stipules minute, early deciduous. Phyllodes thick, ovate, dimidiate, straight or slightly sigmoid, (16–)20–30 mm long, 4.5–7.5 mm wide, 3.5–5 times longer than wide, plurinerved, nerves rather obscure, but two or three more prominent than the rest, secondary



**Fig. 6.** *Acacia philoxera*. A. habit of twig with phyllodes and inflorescences  $\times 1.5$ . B. proximal end of phyllode with attachment to stem  $\times 8$ . C. apical portion of phyllode  $\times 8$ . D. paired inflorescence  $\times 8$ . E. pod  $\times 2$ . F. seed *in situ* with funicle  $\times 4$ . All from *Handley 250* (BRI) [AQ659041]. Del. W. Smith.



**Fig. 7.** *Acacia philoxera* community, 80 km west of Thargomindah (Photo: J. Silcock).



**Fig. 8.** Habit of *Acacia philoxera*, 80 km west of Thargomindah (Photo: J. Silcock).



**Fig. 9.** Habit of *Acacia philoxera* showing bark, 80 km west of Thargomindah (Photo: J. Silcock).

nerves rather widely spaced, few anastomoses, small, well defined, knob-like mucro; pulvinus *c.* 1 mm long, scurfy. Flowers in moderately dense spikes that are single in upper axils, 20–25 mm long, peduncles 8–10 mm long, glabrous, subtended by a concave triangular bract *c.* 1 mm long, rachis somewhat scurfy and with scattered adpressed hyaline and red-glandular hairs; bracteoles obliquely peltate, stipe *c.* 0.4 mm long, lamina acute, *c.* 0.2 mm, a few red-glandular hairs. Flowers 5-merous; calyx 0.6–0.7 mm long, divided almost to the base into linear lobes, tips slightly thickened with red-glandular hairs; corolla *c.* 1 mm long, glabrous, divided to the middle, lobes with distinct midribs; stamens *c.* 2 mm long; ovary densely white-tomentose. Pods oblong, narrowed to base, opening elastically from tip, *c.* 3 cm long, 6–8 mm wide, valves woody, margins thickened, obliquely veined and slightly shiny. Seeds oblique, dark brown

to black, oblong in outline, 4–6 mm long, 1.8–2.2 mm wide; areole oblong, rather large with a pale halo; pleurogram open; funicle grey, folded 3 or 4 times forming a small cupular aril over the seed. **Fig. 10.**

**Additional specimens examined: Queensland.** BURKE DISTRICT: 32 km NNW of Kajabbi, Jun 1993, *Harris 697* (BR1); *ibid.*, Aug 1993, *Harris 701* (BR1).

**Distribution and habitat:** *Acacia pudica* is known only from the type locality in the upper catchment of Eureka Creek, NNW of Kajabbi in north-west Queensland where it was reported to occur on siltstone in an open woodland of *Eucalyptus leucophloia* subsp. *euroa* L.A.S.Johnson & K.D.Hill with an understorey of *Plectrachne* and *Triodia* spp.

**Notes:** *Acacia pudica* is closely related to *A. wickhamii* subsp. *wickhamii*, differing in the less conspicuous widely spaced secondary nerves of its phyllodes and, possibly more



Fig. 10. Holotype of *Acacia pudica* (Harris 711, BRI).

significantly, the deeply divided calyx. The latter character removes it from *A. wickhamii* and related species in the keys to species in the *Flora of Australia* (Maslin *et al.* 2001).

**Etymology:** The specific epithet is a Latin word meaning “modest” or “bashful”, an allusion to the anonymity of the species.

**Acacia lithgowiae** Pedley, quoad phyllodiorum apices mucrone leviter obliquo ornatos, structuram longitudinemque leguminum seminumque *A. johnsonii* Pedley affine autem phyllodiis capitulis floribusque grandioribus differt. Quoad dimensiones nervationesque phyllodiorum *A. jensenii* Maiden similis autem pedunculis longis, leguminibus angustis sigillatim differt et probabiliter tantum remote cognata. Insuper fortasse affine *A. strictae* Andrews a qua ramulis pubescentibus, phyllodiis minus elongatis crassioribus et itaque nervationibus secundariis minus distinctis, capitulis grandioribus atroflavis singulis in axillis, leguminibus brevioribus differt. **Typus:** Queensland. DARLING DOWNS DISTRICT: Stretchworth State Forest (SF155), c. 40 km SW of Dalby, 6 August 2000, *D.M. Bennie 154* (holo: BRI, two sheets).

Shrub to 2.5 tall, branching from the base. Branchlets puberulous, not noticeably resinous, except for at shoot apices. Stipules lanceolate, 0.7–0.9 mm long, 0.3–0.5 mm wide, noticeably puberulous on margins, less so elsewhere. Phyllodes erect, linear, usually somewhat falcate, more rarely straight, flat, 15–48 mm long, 1.8–3.5 mm wide, narrowed at base; excentrically and obliquely mucronulate to rostellulate; green, sparsely puberulous on margins, soon glabrescent, waxy in irregular patches mainly on margins and midrib; obscurely 3-nerved, midrib fairly pronounced; gland minute, slightly (< 1 mm) above base, elliptic, 0.3–0.4 mm long, c. 0.2 mm wide. Inflorescence simple, single in upper axils; peduncles 4–5 mm long, puberulous and usually resinous near apices; bracteate at base. Flowers in globular heads, 6–7 mm across, 32–40-flowered, golden and somewhat resinous. Flowers 5-merous; sepals c. 2/3 united with acute lobes; corolla lobes lanceolate-ovate, 0.7–1 mm wide, c. 0.5 mm

long; filaments 2–2.5 mm long; anthers c. 0.1 mm long. Pods firmly chartaceous, 10–55 mm long, 3.5–4.5 mm wide, with an irregular marginal suture, reddish-brown and markedly vernicose, apart from cream reddish-brown margins. Seeds longitudinally oblong, 3–3.5 mm long, (1–)1.5–2 mm wide, glossy black; aril oblique, cream. **Fig. 11.**

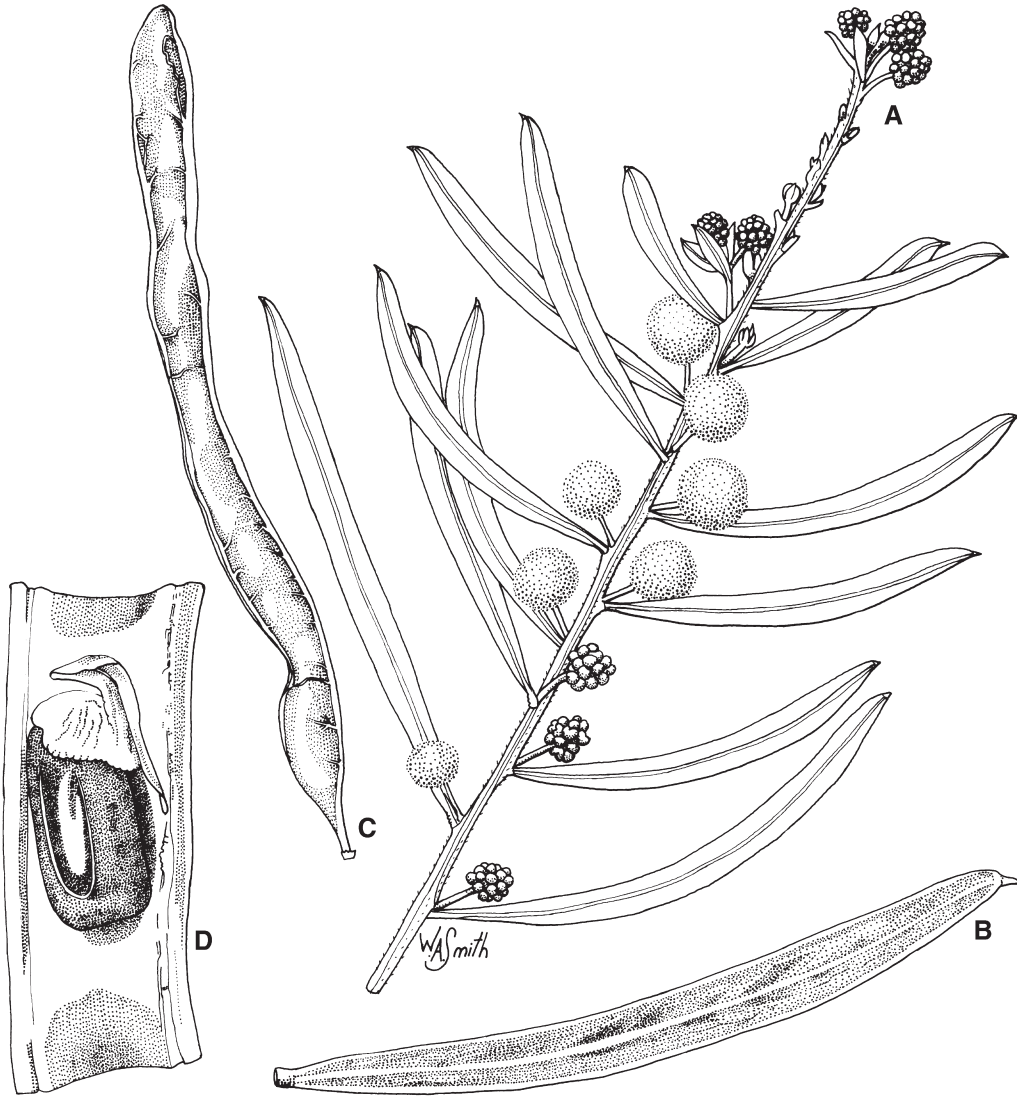
**Additional specimens examined** (all BRI, all from near the type locality): Jun 2000, *Bennie 145*; Aug 2001, *Bennie 181*; Dec 2001, *Bennie 193*.

**Distribution and habitat:** *Acacia lithgowiae* is known only from the type locality southwest of Dalby in southern Queensland where it occurs in sandy soil overlying clay. It is associated with *Allocasuarina luehmannii* (R.T.Baker) L.A.S.Johnson and, often *Acacia muelleriana* Maiden & R.T.Baker.

**Notes:** The affinities of the species are obscure. It is probably most closely related to *A. johnsonii*, but has much larger phyllodes with the gland a little distance from the base, larger flowers and consequently larger flower-heads. Though the phyllodes are similar, the pods of *A. johnsonii* and other species related to *A. dictyophleba* F.Muell. are wider with transverse or oblique seeds. It also resembles *A. stricta*, but its phyllodes are thicker in texture with the secondary nervation not at all prominent. Its flower-heads are also larger, deeper in colour and occur in axillary pairs.

**Etymology:** The species is named in honour of Ms Grace Lithgow, a keen naturalist ([https://www.qnc.org.au/QNHA/qnha2007\\_GraceLithgow.htm](https://www.qnc.org.au/QNHA/qnha2007_GraceLithgow.htm)), whose booklet (Lithgow 1997) on the wattles of the Murilla and Chinchilla shires is a fine account of the region’s rich *Acacia* flora. The type locality is a little south of the shires covered by Ms Lithgow’s booklet.





**Fig. 11.** *Acacia lithgowiae*. A. habit of twig with phyllodes and inflorescences  $\times 1.5$ . B. phyllode  $\times 3$ . C. pod  $\times 2$ . D. seed *in situ* with funicle  $\times 8$ . A & B from *Bennie 154* (BRI, holotype); C & D from *Bennie 193* (BRI). Del. W. Smith.

**Acacia ammitia** Pedley **sp. nov.** affinis *A. leptostachyae* Benth. et *A. pubirhachi* Pedley. Ab illa nervis majoribus phyllodiorum basin neque inter se neque in marginem coalescentibus, leguminibus latioribus seminibus praeditis differt. Ab hac spicis distincte pedunculatis rachidibus minus dense pubescentibus, floribus aliquantum minoribus differt. Ab utrisque phyllodiis plus distincte falcatis mucrone prominenti juventute instructis et apprimis nervis longitudinalibus late separatis praeditis, spicis sparsifloris differt. **Typus:** Queensland. COOK DISTRICT: Mt Mulligan, southern end, Branch Creek Catchment, 8 July 1995, *P.I. Forster PIF17193*, *S.J. Figg & R. Jago* (holo: BRI, iso: CANB, DNA, K, MEL, MO, NSW).

*Acacia* sp. (Richards Creek J.R. Clarkson 5249); Holland & Pedley (1997: 118; 2002: 114); CHAH (2006); Pedley (2007: 114; 2010: 109; 2017).

Spreading shrub or tree to 5 m tall; branchlets ribbed below insertion of phyllodes, red-brown when mature, adpressed silvery hairs, on young ones; growing points silvery white; stipules deltoid, 0.7–1 mm long, sometimes persisting after phyllodes have fallen. Phyllodes lanceolate, straight or usually distinctly falcate, (50–)65–100 mm long, (4–)5–9 mm wide, 9.5–14(–18) times longer than wide, 8–13 widely spaced (0.5 mm or more apart) longitudinal nerves, not anastomosing, 1 or usually 2 more prominent than the rest, dense adpressed silvery hairs when young, glabrescent with age, prominent gland with distinct rim at base, mucronulate with thick deciduous mucro 1–2 mm long; pulvinus 2–4 mm long, with indumentum of branchlets. Flowers in interrupted spikes 30–40 mm long, on adpressed pubescent peduncles 2–5 mm long; spikes single or usually in pairs in axils, at the base of a rudimentary shoot which sometimes grows out into a leafy shoot with spikes single in the axils, or with up to 5 spikes on an axillary leafless axis up to 10 mm long; rachis adpressed pubescent; bracteoles brown, ovate, sessile, prominent when spikes very young but deciduous. Flowers 5-merous; calyx cup-shaped, 0.4–0.5 mm long smooth and glabrous except for

obtuse fimbriate lobes *c.* 0.1 mm long; corolla 1.2–1.4 mm long, lobed to about the middle, glabrous, lobes with obscure midrib; stamens *c.* 2 mm long; ovary densely pubescent. Pods (immature), narrowly oblong, to 50 mm long and 8 mm wide; valves chartaceous, glabrous. Seeds (immature) obliquely arranged in pod. **Fig. 12.**

**Additional specimens examined: Queensland.** COOK DISTRICT: Mt Mulligan, Aug 1990, *Clarkson 8896* (BRI; CNS, DNA, K, PERTH *n.v.*); Mt Mulligan, Apr 1995, *Jago 3411 & Jensen* (BRI); Mt Mulligan, *c.* 2 km S of the mine site along the pipe line leading to the falls on Richards Creek, Apr 1984, *Clarkson 5249* (BRI; CNS, DNA, K, MEL, NSW, PERTH *n.v.*); Mt Mulligan, *c.* 40 km NW of Dimbulah, top of mountain, *c.* 0.5 km SE of dam, Apr 1985, *Clarkson 5770* (BRI; CNS, DNA, MEL, MEL, NSW *n.v.*); Mt Mulligan, summit on slopes above Richards Creek downstream from dam, Apr 1985, *Clarkson 5839* (BRI; CNS, K, MEL, NSW, PERTH *n.v.*); Mt Mulligan, the Pepper Pot, Apr 1985, *Clarkson 5913* (BRI; CNS, DNA, MEL, NSW, PERTH *n.v.*).

**Distribution and habitat:** *Acacia ammitia* is restricted to Ngarrabullgan (Mt Mulligan) – a mesozoic sandstone massif, some 60 km WNW of Mareeba in north-east Queensland, where it occurs in an open woodland dominated by *Corymbia leichhardtii* (F.M.Bailey) K.D.Hill & L.A.S.Johnson, *Eucalyptus cullenii* Cambage and *E. cloeziana* with a *Triodia* understorey, invariably on sandstone rock pavements, steep rocky slopes above cliffs and scree slopes.

**Notes:** Duplicates of some collections of *Acacia ammitia* have been previously distributed as *A. leptostachyae* Benth., which in general appearance it resembles, while its pods are similar to those of *A. hammondii* Maiden. However, it is probably more closely related to *A. pubirhachis*. The widely spaced longitudinal nerves of the phyllodes distinguish it from all other juliflorous species with small phyllodes.

Ngarrabullgan (Mt Mulligan) hosts several vascular plant endemics, namely *Boronia montimulliganensis* Duretto, *Hibbertia mulliganiana* S.T.Reynolds, *Labichea mulliganensis* A.R.Bean, *Plectranthus minutus* P.I.Forst. and *Prostanthera mulliganensis* B.J.Conn & T.C.Wilson. These plants are all small shrubs or subshrubs (low



**Fig. 12.** *Acacia ammitia*. A. habit of twig with phyllodes and inflorescences  $\times 1.2$ . B. phyllode  $\times 2$ . C. proximal end of phyllode showing gland  $\times 8$ . D. pod  $\times 2$ . A–C from *Clarkson 5913* (BRI); D from *Clarkson 8896* (BRI). Del. W. Smith.

bushes), whereas *Acacia ammitia* is currently the only endemic large shrub or small tree.

**Etymology:** The specific epithet is derived from Greek *ammites* “sandstone”, with suffix *-ia* “characteristic of”, a reference to the habitat of the species.

**Acacia dichromotricha** Pedley *sp. nov.* affinis *A. sparsiflorae* Maiden et *A. pubirhachii* Pedley autem ab illa rhachide spicae dense pubescente, lobis calycis plus profunde lobatis, nervis phyllodii plus crebris et ab hac ramulis pilis adpressis obsitis non dense villosis, phyllodiis certe falcatis non plus minusve rectis carentibus prominentes longitudinales nervos, spicis sparsifloris rachide pilis aureis non albis, floribus aliquantum parvioribus differt. **Typus:** Queensland. GREGORY NORTH DISTRICT: ‘Rangelands’, 15 km N of Winton, 7 May 1999, *B. Wilkinson AZII581* (holo: BRI).

*Acacia* sp. (Fermoy Road I.V. Newman 487); Holland & Pedley (2002: 114); CHAH (2006); Pedley (2007: 114; 2010: 109; 2017); Silcock & Fensham (2014); Silcock *et al.* 2014).

Tree to 15 m tall; bark furrowed. Branchlets reddish, angular with yellowish ribs on angles, densely adpressed white hairs, becoming glabrous. Phyllodes linear to narrowly elliptic or oblanceolate, strongly falcate, 9–12 cm long, 4.5–7 mm wide, 10–25 times longer than wide, densely adpressed pubescent when young, hairs restricted to base when old, longitudinally striate with close longitudinal nerves (14–15 per mm), one or three sometimes somewhat more prominent than rest, marginal nerve prominent; tapered into pulvinus 1.5–2.5 mm long; gland prominent, basal or up to 2.5 mm from base. Flowers in interrupted spikes 25–40 mm long on peduncles 1–3 mm long, in pairs in upper axils, concave brown deciduous bract *c.* 1.5 mm long at base of peduncle, occasionally minute axis bearing spikes growing out into leafy shoot, peduncles and rachis pubescent with dense golden-yellow matted and ascending hyaline hairs *c.* 0.2 mm long. Flowers 4- or 5-merous; bracteoles  $\pm$  sessile, concave, obtuse, *c.* 0.4 mm long, golden pubescent on back; calyx saucer-shaped, *c.* 0.5 mm long, lobed to about the middle, the lobes wide, obtuse, golden

pubescent, hairs sometimes absent from base; corolla 1.3–1.5 mm long, lobed to about the middle, glabrous except for a few long ascending hairs on free part; stamens 2–2.2 mm long; ovary with indumentum of dense short thick hairs. Pods and seeds not seen. **Figs. 13–15.**

**Additional specimens examined (all BRI):** Queensland. GREGORY NORTH DISTRICT: ‘Rangelands’ *c.* 20 km from Winton on road to Hughenden, Jun 2000, *Johnstone s.n.* [AQ668037]; ‘Rangelands’, Jun 2002, *Milson A211617*; Scrammy Gorge, Bladensberg NP, Jun 2006, *Cumming 24300*. GREGORY SOUTH DISTRICT: Stoneleigh Outstation, northern section of ‘Thylungra’, Aug 2010, *Silcock JLS682*; In vicinity of Stoneleigh Outstation, ‘Thylungra’, Aug 2011, *Silcock JLS994*. MITCHELL DISTRICT: ‘Noonbah’, Jun 1989, *Voller s.n.* [AQ457758]; Stonehenge Nature Drive, Stonehenge, Jun 2002, *Melzer RM1482*; S of Winton on ‘Fermoy’ road, Jun 1971, *Newman 487* (ex NSW); Yang Yang Range, *c.* 3 km S of ‘Yaraka’, May 2010, *Silcock JLS637*; SE Corner of ‘Budgerygar’, S of Powell Creek, Jun 2015, *Silcock JLS1685 & McDermott*.

**Distribution and habitat:** *Acacia dichromotricha* occurs in central western Queensland where it is endemic to an area between *c.* 20 km north of Winton to *c.* 20 km south-east of ‘Budgerygar’ homestead with eight populations recorded that are supported by herbarium vouchers. Silcock & Fensham (2014) indicated that the species occurred in 25 populations with an estimated 750,000+ individuals.

Plants grow in skeletal reddish soils characteristic of the lateritic plateaux in this area, in association with open woodland dominated variously by *Acacia aneura*, *A. catenulata* C.T.White, or *Corymbia blakei* subsp. *rasilis* K.D.Hill & L.A.S.Johnson, and numerous shrub species from the genera *Dodonaea* and *Eremophila*.

**Notes:** *Acacia dichromotricha* is related to *A. sparsiflora* and *A. pubirhachis*. It is distinguished from the former in having the rachises of the spikes densely pubescent, more deeply lobed calyxes and phyllodes with more crowded longitudinal nerves, and from the latter in its branchlets with adpressed hairs, interrupted spikes with hairs of the rachis yellow rather than white, and somewhat smaller flowers.



**Fig. 13.** *Acacia dichromotricha*. A. habit of twig with phyllodes and inflorescences  $\times 0.8$ . B. proximal end of phyllode  $\times 6$ . All from *Cumming 24300* (BRI). Del. W. Smith.



**Fig. 14.** Adult of *Acacia dichromotricha* (population voucher: *Silcock JLS1685 & McDermott*, BRI). Photo: J. Silcock.



Fig. 15. Adult of *Acacia dichromotricha* (population voucher: *Silcock JLS994*, BRI). Photo: J. Silcock.

**Etymology:** The specific epithet is derived from the Greek, prefix *di-* “two”, *chroma* “colour” and “*tricha*” hair. The hairs of the young branchlets are white, while those of the spike-rachises are golden yellow.

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