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NOTES ON AUSTRALIAN TAXA OF *ACACIA* No. 6

MARY D. TINDALE

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ABSTRACT

Tindale, Mary D. (National Herbarium of New South Wales, Royal Botanic Gardens, Sydney, N.S.W., Australia 2000) 1980. Notes on Australian Taxa of Acacia *No. 6: Telopea 1 (6): 429–449. Pl. XVIII–XXV.*—Six new species of *Acacia* (Family Mimosaceae) from Eastern Australia are described, viz. *Acacia constablei* Tindale, *A. costiniana* Tindale, *A. covenyi* Tindale, *A. floydii* Tindale, *A. georgensis* Tindale and *A. kydrensis* Tindale. A note on *A. lucasii* W. F. Blakely is provided.

INTRODUCTION

Six new species of *Acacia* are described so that they may appear prior to the forthcoming census of the Gymnosperms and Angiosperms of New South Wales. The new taxa are classified according to the recent scheme of Pedley (1978), all being members of subgenus *Heterophyllum* Vassal. Reference is also made to their position in the classifications by Bentham (1864) and Maiden and Betche (1916), as they have been widely used.

The flavonoid pattern of the heartwood is cited, where it is known.

SECT. **BOTRYCEPHALAE** (Benth.) Taub.

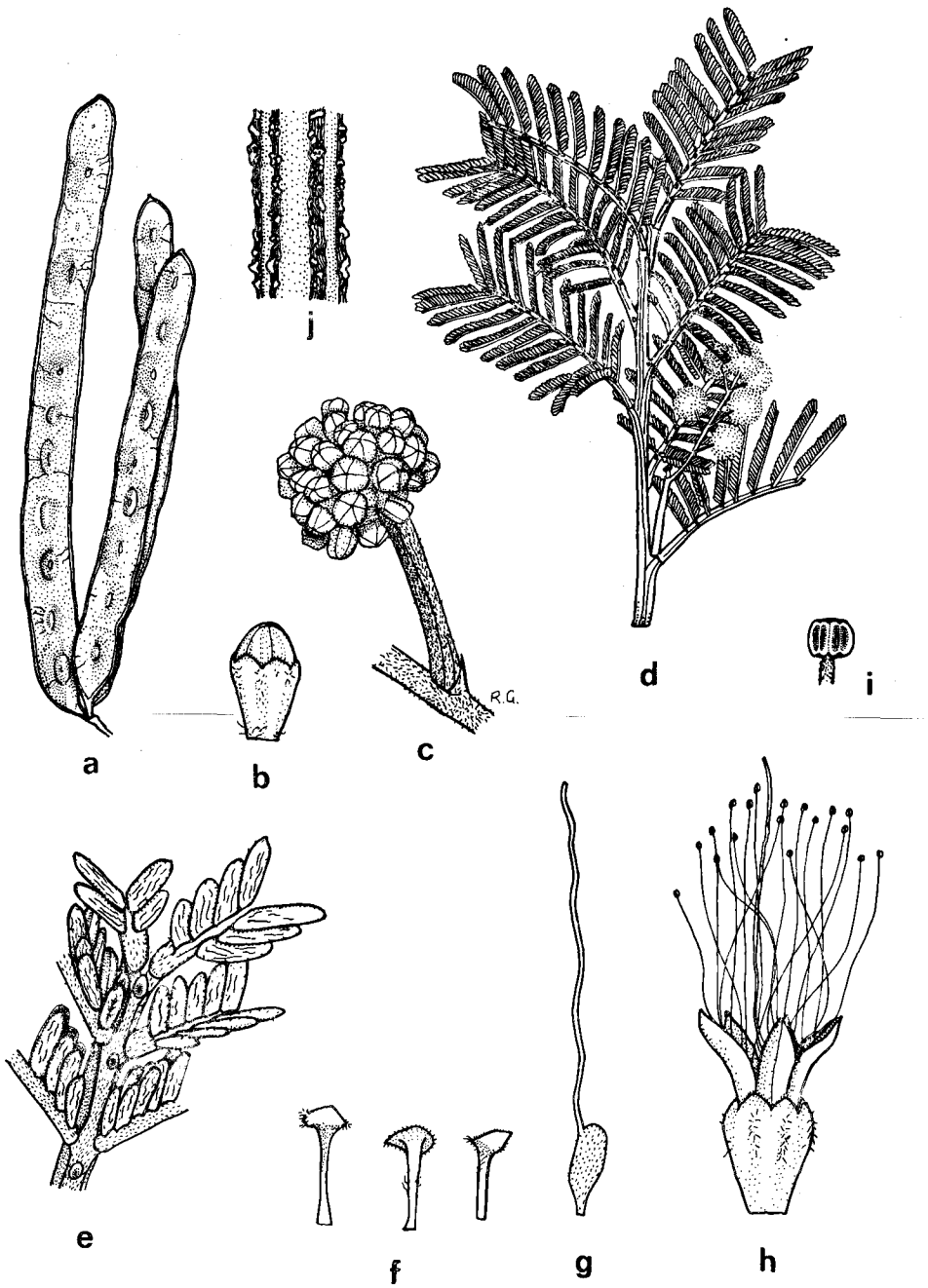
Acacia constablei *Tindale*, **sp. nov.**

Acaciae mearnsii De Wild. arcte affinis sed differt; caulibus gracilibus, ramulorum cristis scabridiusculis, pinnarum paribus paucioribus id est paribus 5–11 (vice 9–20), pinnulis magis carnosis magis numerosis id est paribus 13–28 (vice 16–70), leguminibus junioribus magis tomentosis et lateribus leguminum maturorum fere rectis.

Allied to *Acacia mearnsii* De Wild. but differing in its slender stems, the knobbly ridges of the branchlets, the fewer pairs of pinnae i.e. 5–11 (instead of 9–20) pairs, the more fleshy and more numerous pinnules, i.e. 13–28 (instead of 16–70) pairs, the more tomentose young legumes and almost straight-sided, mature legumes. Plate XVIII.

HOLOTYPE: NEW SOUTH WALES: **South Coast**: the rhyolite hill, SE. of Narrabarba [c. W. of Disaster Bay], straggly shrubs 4–6 ft [1.2–1.8 m] high, flowers pale yellow and very sparse, pods young, light grey in colour, very plentiful, whipstick habit of growth, bark smooth and light grey, plentiful on exposed, knife-edge hill top, some plants growing in sheltered areas, up to 10–12 ft [3–3.6 m] high with thicker stems, appears to be confined to this area, associates:—*Dendrobium speciosum*, *Pyrrosia*, *Veronica* sp., alt. 200 ft [c. 60 m], *E. F. Constable 4325*, 14.viii.1963 (NSW 64644, wood voucher for phytochemical survey), with flowers, young fruit and old dehisced fruit. ISOTYPES: AD, BRI, CANB, K, L, MEL, PERTH, US.

Plate XVIII R. Griffiths del.



Acacia constablei Tindale

a. Legume, × ⅔. b. flower bud, × 10. c. young capitulum, × 6. d. branchlet with pinnae and mature capitula, × ⅔. e. rhachis and pinnae, × 4. f. bracteoles, × 13⅓. g. pistil, × 13⅓. h. flower, 13⅓. i. anther, × 40. j. branchlet, × 4⅔. Vouchers: a. (*Constable 5444*). b–i. (*Constable NSW 53868*). j. (*Constable NSW 30546*).

Erect or straggling, whipstick-like shrubs usually 1.3–2.6 m high but up to 5 m in sheltered situations; bark smooth and light grey (often mottled). *Branchlets* dark brown, with knobbly ridges c. 0.5 mm high, minutely puberulous with grey hairs especially towards the apices. *Young tips* densely clothed with sulphur yellow or dark golden-orange, tomentose hairs. *Leaves:* petiole 0.5–1.2 cm long, somewhat flattened in the vertical plane, ridged, with a grey-puberulous, elevated gland at the base of the lowest pair of pinnae; rhachis 2–6.5 cm long, grey-puberulous, bearing an orbicular, elevated, puberulous gland (with a fawn, slit-like orifice) at the base of each pair of pinnae, interjugary glands rare, mostly with one present between the uppermost 2 pairs of pinnae; rhachis terminating in a seta which is broad, hard, brown, recurved, 0.5–0.6 mm long and usually with an orbicular gland at the apex. *Pinnae* 5–11 pairs, 1–2 cm long, 0.3–0.4 cm broad. *Pinnules* 13–28 pairs, fleshy, coriaceous, dark green, closely spaced and overlapping, concave on drying, 1–2.5 mm long, 0.5–0.6 mm broad, the apices broadly rounded, the surfaces and margins subglabrous or minutely puberulous with white hairs, bearing an apical tuft of white hairs. *Inflorescences* pale yellow, globular, the capitula 4.5–6.5 mm in diam., each composed of 30–32 flowers, borne in axillary racemes or terminal panicles, the peduncles densely puberulous with appressed, short grey or sometimes yellow hairs, 2.0–2.5 mm long and c. 0.5 mm broad. *Bracts* at the base of each peduncle, deltoid, dark brown, clothed on the margins and surface with yellow and white hairs. *Bracteoles* 0.6–0.8 mm long, dark red-brown, with a narrow to broad, ciliolate petiole; the lamina peltate, ciliolate with a fringe of white hairs. *Calyx* red-brown (when dried), obconical, c. 0.8 mm long, c. $\frac{1}{2}$ the length of the corolla, dissected to c. $\frac{1}{5}$ of its length into 5 obtuse or acute lobes ciliolate with white or yellow hairs, the tube glabrous or with a few hairs along the ribs. *Corolla* light brown or red-brown (when dried), c. 1.4–1.5 mm long, dissected to $\frac{1}{2}$ its length into 5 glabrous petals, the margins and apices granulose. *Filaments of the stamens* numerous, 1.8–2.0 mm long. *Anthers* bilocular. *Ovary* subsessile, 0.5–0.6 mm long, dark brown, glabrous or with a few, crisped, white hairs. *Style* fawn, glabrous, laterally attached, 1.5–2.0 mm long, the stigma slightly expanded. *Legumes* stipitate, coriaceous, black, non-glaucous, straight or almost so, 5–7 cm long, 7–9 mm broad, puberulous with short, appressed, grey hairs; young fruit densely tomentose with cream-coloured hairs. *Seeds* (immature) 4–8, longitudinal in each legume.

DISTRIBUTION: NEW SOUTH WALES: **South Coast:** near Narrabarba, Nadgee State Forest, where it forms almost impenetrable whipstick-like scrubs on rocky, knife-edge ridges of Devonian rhyolite and granite.

FLOWERING PERIOD: June to August.

FRUITING PERIOD: November.

SPECIMENS EXAMINED: NEW SOUTH WALES: **South Coast:** rhyolite hill, c. 3 miles [c. 4.8 km] SE. of Narrabarba, very straggly shrubs from 4–8 ft [1.2–2.4 mm] high, few in sheltered positions up to 15 ft. [4.5 m], whipstick habit, trunks 1–4 inches [c. 2.5–10 cm] in circumference, longest seen was 8 inches [c. 20 cm] in circumference, bark smooth and mottled grey, confined to a very exposed and rocky area and ceases to grow once the rhyolite cuts out, associates: *Melaleuca armillaris, Kunzea ambigua, Casuarina littoralis*, etc., *E. F. Constable 5444*, 2.1964 (A, AD, BRI, CANB, NSW, PERTH, UC, Z), fruiting; a rhyolite ridge, c. 3 miles [c. 4.8 km] S. of Narrabarba, 2 000 ft [c. 600 m] alt., spreading shrub 10–12 ft [c. 3–3.6 m] high, bark smooth and light grey, occasional at this point, sheltered area of ridge, *E. F. Constable NSW 53869*, 6.1960 (NSW), flowering; Narrabarba Hill, 15 miles [24.2 km] N. of Victorian border, *E. F. Constable NSW 30546*, 10.1954 (CBG, K, MEL, NSW, US); a rhyolite ridge, c. 3 miles [c. 4.8 km] S. of Narrabarba, small shrub 4–7 ft [1.2–2.1 m] high, flowers yellow, whipstick growth, bark smooth and greyish, frequent, rocky knife-edge ridge, very exposed area, rhyolite, 2 100 ft [c, 700 m] alt., *E. F. Constable NSW 53868*, 6.1960 (A, AD, B, BM, CBG, L, MEL, NE, NSW, P, US); 751870 E, 587200 N, Nadgee State Forest, shrubs 1–2 m high, with grey to dark grey mottled with lichen, on poor skeletal soil, on high exposed rocky hilltop, 210 m alt., pale yellow flowers, principal associate species: *Melaleuca armillaris, Kunzea ambigua* and *Zieria cytisoides*, *L. A. Newman NSW 108561*, 6.1979 (NSW).

I am indebted to Mr Ernest F. Constable, former Botanical Collector at the Royal Botanic Gardens and National Herbarium of New South Wales, Sydney, for drawing my attention to this species, providing the original field notes and making collections of it over a period of several years. This taxon is named in his honour.

A. constablei would be placed in the *Botrycephalae* according to the classifications of Bentham (1864), Maiden and Betche (1916) and Pedley (1978).

The habit of *A. constablei* is whipstick-like with slender stems but Mr L. Newman, who, at my request in June 1979, examined shrubs of this species at the rhyolite and granite hill on which this wattle was collected by Mr E. F. Constable in 1960 and 1963, was unable to find any lignotubers. Since that time the ageing shrubs had grown very little and few young plants were observed. According to Mr Newman this species occurs both on rhyolite and granite.

A. constablei is closely allied to *A. mearnsii* De Wild., which is important in the tanning bark industry. The latter species is an erect spreading tree usually 4–15 m high, when young with delicately drooping branches. *A. mearnsii* has pale yellow or cream-coloured flowers on the trees between October and early December but mainly in November, although there are two records from Victorian localities for April. *A. constablei* flowers from June to August. In *A. mearnsii* the branchlets are not knobbly but smooth and densely clothed with minute, velvety, grey or (on young branchlets) yellow hairs.

A. constablei is also allied to *A. nanodealbata* J. H. Willis, from which it varies in the whipstick-like habit, knobbly ridges on the branchlets, more fleshy pinnules, more tomentose black legumes and less pouch-like glands on the rhachises as well as the presence of occasional interjugary glands.

The flavonoid pattern of the heartwood in *A. constablei* is mollisacacidin, as is very common in the Botrycephalae (see Tindale & Roux (1969).

SECT. PHYLLODINEAE DC.

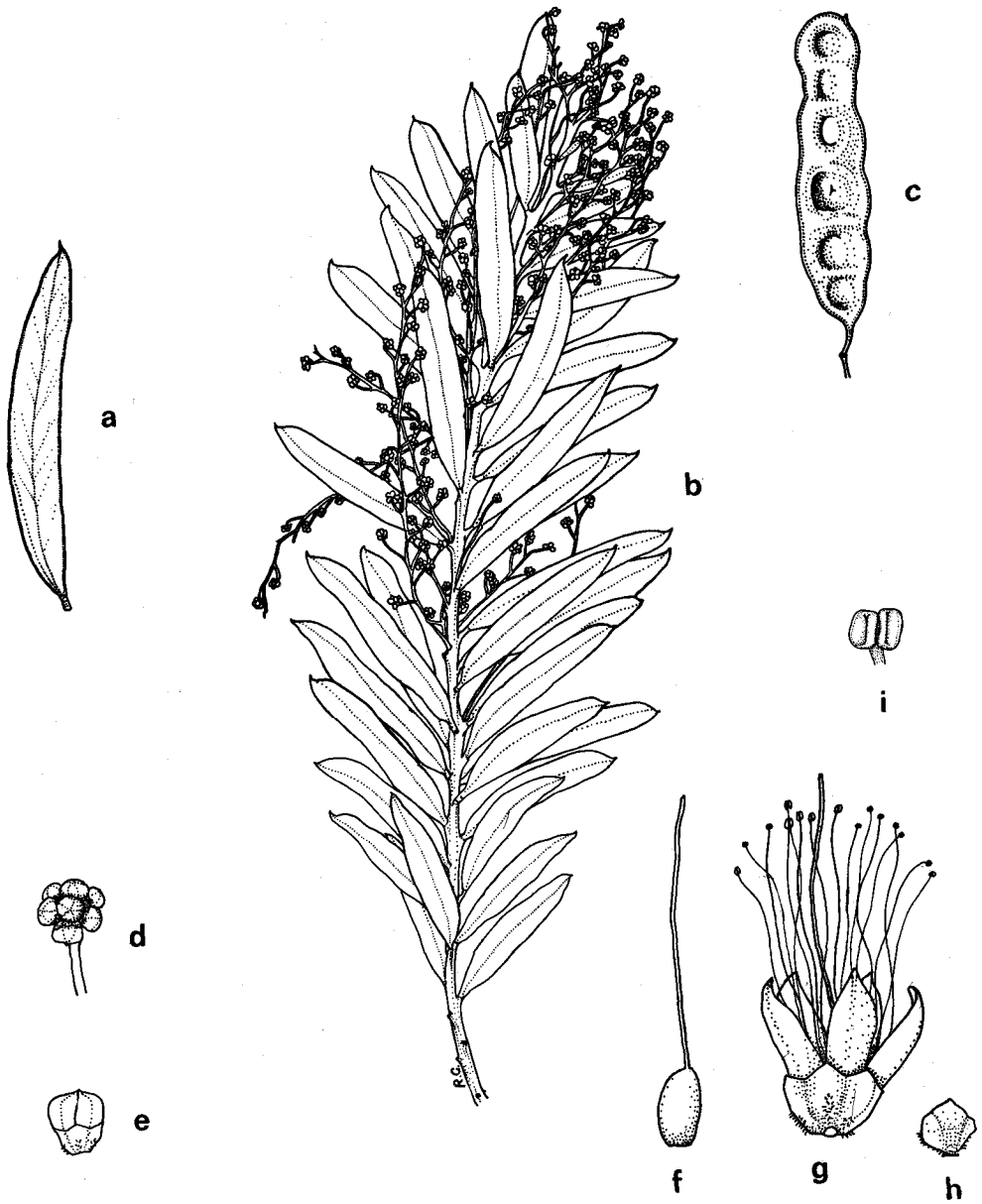
Acacia covenyi *Tindale*, sp. nov.

Acaciae barringtonensi Tindale affinis a qua differt: ramulis glabris, phyllodiis 1.5–6.5 cm longis glabris, inflorescentiis phyllodia aequantibus vel quam phyllodia majoribus, floribus in capitulo paucioribus (5–8), pedunculis inflorescentiarum glabris glaucis, ovariis glabris 0.7–0.9 mm longis, leguminibus submoniliformibus glabris. Ab *Acacia prominente* A. Cunn. ex G. Don phyllodiis confertissimis, ramulis arcte angulosis et glande cujusque phyllodii exiguo non protrudente statim diagnoscenda.

Allied to *Acacia barringtonensis* Tindale from which it differs: the branchlets glabrous, the phyllodes 1.5–6.5 cm long and glabrous, the inflorescences equal to or longer than the phyllodes, the fewer flowers in a head (5–8), the peduncles of the inflorescences glabrous and glaucous, the ovaries glabrous and 0.7–0.9 mm long, the legumes submoniliform and glabrous. Immediately to be distinguished from *Acacia prominens* A. Cunn. ex G. Don by the very crowded phyllodes, by the prominently angular branchlets and by the insignificant, non-protruding gland of each phyllode. Plate XIX.

HOLOTYPE: NEW SOUTH WALES: Con Creek, Bendethera, c. 20 miles [32 km] W. of Moruya [c. 35° 56′ S, 149° 43′ E], alt. 360 m, trees 6–7.5 m high, foliage very glaucous, smooth greyish bark, confined to creek bank and ending at this point about 1 mile [1.6 km] from caves, *E. F. Constable 6877*, 10.v.1966 (NSW), with flower buds and old dehisced fruit. ISOTYPES: CANB, K, US.

Plate XIX R. Griffiths del.



Acacia covenyi Tindale

a. Phyllode, × c. 1. b. branchlet with inflorescences, × ⅔. c. legume, × ⅔. d. young capitulum, × 3⅓. e. flower bud, × 6⅔. f. pistil, × 13⅓. g. flower, × 13⅓. h. bracteole, × 13⅓. i. anther, × 40. Vouchers: a, b, d, e (*Constable 6857*). c. (*Olsen 2986*). f, g, h, i (*Rodway 12338*).

Shrub or tree 1.5–7.5 m high with bluish foliage; bark smooth, dark grey and with whitish patches. *Branchlets* brown or black, glabrous, markedly glaucous, prominently angled with ridges especially towards the apex. *Young tips of the foliage* very glaucous. *Phyllodes* crowded, (1.5–) 3.7–4.5 (–6.4) cm long, (0.3–) 0.5–0.9 (–1.1) cm broad, very narrowly elliptical-cultrate (5:1–8:1), glabrous, very glaucous, light blue-green, straight or slightly falcate, thinly coriaceous, with a central vein and barely visible, reticulate secondary veins, the apex acute, with an obliquely placed, often curved mucro up to 1.5 mm long, the margins pale-coloured and not prominent, the base obliquely and usually abruptly tapered, the upper side usually rounded; gland 0.2–0.5 mm long, reinform-depressed or orbicular-depressed, with a slit-like or slightly rounded orifice, borne on the upper margin of the phyllode c. $\frac{1}{5}-\frac{3}{5}$ of the distance from the pulvinus, glabrous, often subtended by one (rarely three) strong lateral vein(s) from the midrib or the base of the phyllode, the margin often indented, the pulvinus dark blue-green, 1–2 mm long. *Flower-heads* bright yellow, globose, 2.5–5 mm in diam., in racemes as long as or longer than the phyllodes, the axis mostly flexuose, usually 5–16 in a raceme, mostly 5–8 flowers in a capitulum; peduncles 1.5–5 mm long, ridged, glaucous, glabrous. *Bract* at the base of the peduncle deltoid, the apex apiculate and 0.3–0.4 mm long or acuminate and 0.5–0.7 mm long, glabrous or sparsely ciliolate along the margin. *Bracteoles* c. 0.5–0.7 mm long, shortly and broadly petiolate, with cilia along the margin, or sometimes sessile, the lamina spathulate, deltoid or broadly ovate, glabrous or ciliolate towards the base, the apex apiculate. *Calyx* 5-merous, 0.3–0.7 mm long, dissected from $\frac{1}{5}-\frac{1}{3}$ of its length, the deltoid lobes glabrous, the base of the tube and the dark midrib sparsely ciliolate. *Corolla* 1.5–1.7 mm long with 5 free spathulate petals, usually red-brown towards the apex, glabrous, usually with a distinct midrib especially in bud, the margin minutely granulose. *Filaments of the stamens* numerous, 2.5–4 mm long. *Anthers* bilocular. *Ovary* 0.7–0.9 mm long, 0.3–0.4 mm broad, cultrate (6:1) to narrowly oblong (3:1), subsessile, light brown to dark red-brown, glabrous; style reddish, laterally attached, 2.6–3.3 mm long, the stigma scarcely expanded. *Legumes* stipitate, coriaceous, 2–7.3 mm long, 0.9–1.3 mm broad, light bluish-brown or red-brown, glaucous, straight or slightly falcate, unconstricted or slightly and irregularly constricted between the seeds, convex over the seeds, the margins prominent and red-brown, glabrous, the apex rounded with an oblique apiculate or uncinate tip, the base rounded and abruptly tapered. *Seeds* 3–8, black, glossy, 4.0–4.5 mm long, c. 2.5–2.8 mm broad, longitudinal, the pleurogram open, the areole c. 2.2–3.0 mm long, the funicle light brown or cream-coloured, straight at first then with a short loop below the large pileiform aril.

DISTRIBUTION: Bendethera district and east of Kybean in the Southern Tablelands of New South Wales, growing in thickets, mainly on limestone slopes and ridges but also sometimes on quartzite.

FLOWERING PERIOD: August-September.

FRUITING PERIOD: December-April.

SPECIMENS EXAMINED: NEW SOUTH WALES: **Southern Tablelands:** Bendethera Caves, c. 20 miles [32 km] W. of Moruya, alt. 450 m, shrubs 1.5–2 m high, very glaucous predominant shrub on hillside surrounding caves, on limestone, *E. F. Constable 6857*, 5.1966 (NSW); near the head of Deua River, Bendethera district, 35 miles [56.4 km] W. of Moruya, *I. A. Brown NSW 108544*, 2.1929 (NSW); Bendithera [Bendethera] shrub 5–6 feet [1.5–1.8 m] high on limestone, local name "Blue Bush", *F. A. Rodway 2442 per R. King* 5.1930 (NSW); Bendithera [Bendethera] fairly thick scrub on limestone, with large trees here and there, *F. A. Rodway 12109*, 4.1941 (NSW); Bendithera [Bendethera] *F. A. Rodway 12110*, 4.1941 (NSW), seedlings of 12109; Bendithera [Bendethera] bushes thick, rounded and covered in blossom, height to c. 15 feet [4.5 m], "Blue Bush" in thickets on limestone slopes and ridges, *F. A. Rodway 12338*, 9.1941 (NSW); near Bendithera [Bendethera], plentiful on hills, almost confined to limestone areas, old trees 10–12 feet [3–3.6 m] high, *F. A. Rodway 12100 per R. King* 3.1939 (NSW); Deua River, Bendethera, 56 km SSW. of Braidwood, 35° 57′ S, 149° 45′ E, alt. 300 m, shrub 2.5–3 m high, with smooth grey bark, whitish branchlets and glaucous phyllodes, on riverbank amongst quartzite rocks with *Acacia mearnsii*, *A. floribunda*, *Casuarina cunninghamiana*, *Bursaria spinosa*, etc., scattered, *R. G. Coveny 5971 & A. N. Rodd* 1.1975 (NSW 107619, wood block voucher for phytochemical

survey; AD, BRI, CANB, K, MEL, US); Bendethera, on limestone, *M. J. Parris NSW 108434*, 11.1977 (A, CBG, K, MEL, NSW), young fruit; Con Creek, tributary of Deua River, occasional small tree 5 m high, low rocky spur immediately above creek flats, cleared vegetation, *I. Olsen 2986*, 12.1976 (NSW), fruiting; E. of Kybean near Cooma, c. 36° 22′ S, 149° 32′ E, *G. Neville NSW 108543*, 8.1977 (NSW).

This species is named in honour of Mr Robert G. Coveny, Botanical Collector at the Royal Botanic Gardens, Sydney, in recognition of his helpfulness in assiduously obtaining material for my research work especially on the genus *Acacia*.

A. covenyi is characterized by bluish foliage, hence the common name "Blue Bush" by which it is known locally.

This species would be placed in the *Uninerves Racemosae* according to the classifications of G. Bentham (1864) and J. H. Maiden and E. Betche (1916), but in the subgenus *Heterophyllum* section *Phyllodineae* according to L. Pedley (1978).

It is closely allied to *Acacia barringtonensis* Tindale which occurs on the eastern side of the Northern Tablelands of New South Wales, but the branchlets, phyllodes and peduncles of the latter species are clothed with short, white, appressed hairs. In *A. barringtonensis* there are mostly 8–11 flowers in each capitulum, the densely pubescent ovaries are 1.0–1.3 mm long, the legumes are straight-sided and are sometimes clothed sparsely with white appressed hairs.

Another closely related species from New South Wales is *A. prominens* but it varies from a shrub to a large tree up to 18 m high. In the latter species each phyllode has a very prominent, orbicular, exserted marginal gland (see Plate XX), the branchlets are less angular and the phyllodes not so crowded.

In Plate XX the glands of the phyllodes in *A. covenyi* and a number of allied species are depicted. The shape of these glands is an important diagnostic feature in this group.

Acacia kydrensis *Tindale*, **sp. nov.**

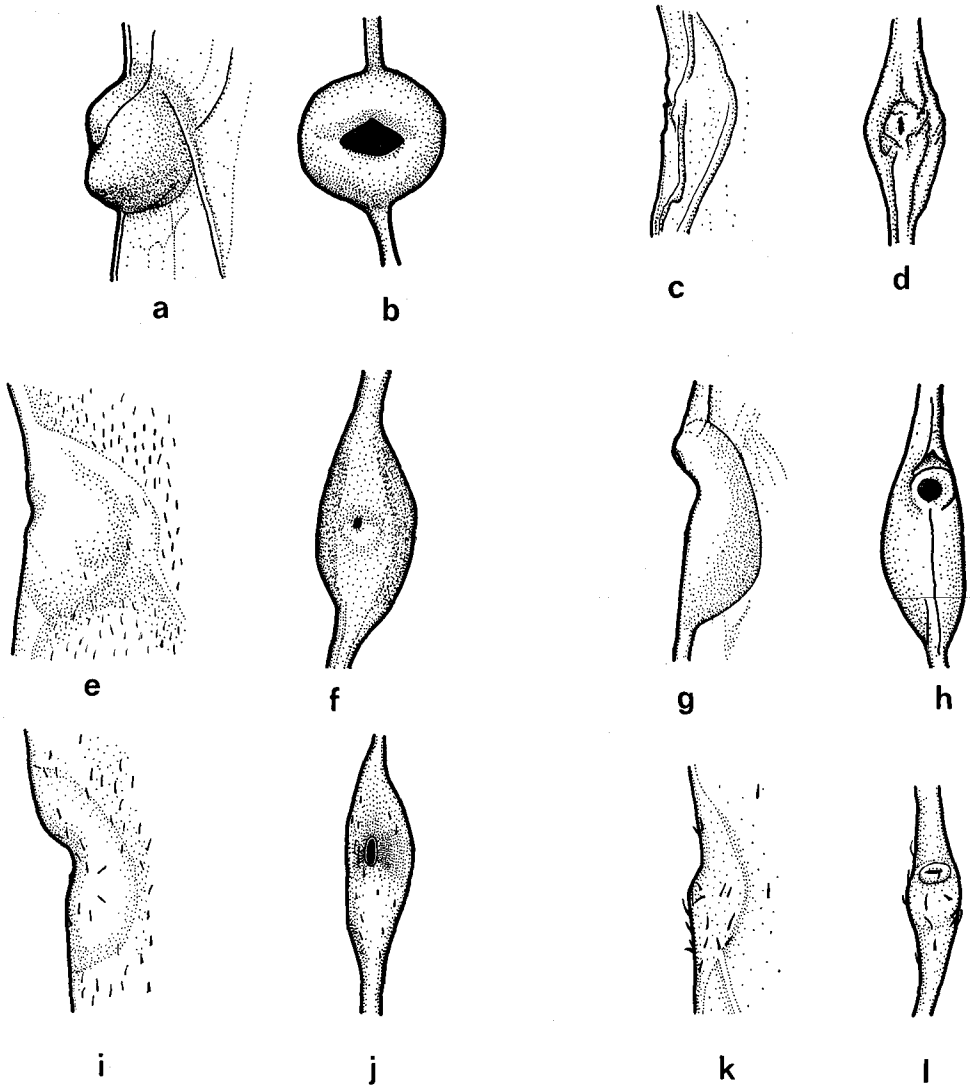
Ab *Acacia amoena* Wendl. capitulis ante anthesin compactioribus, floribus in capitulo pluribus (15–24), capitulis in racemo paucioribus (4–10), leguminibus plerumque latioribus (5–8 mm latis) inter semina non vel minus constrictis differt.

Differs from *Acacia amoena* Wendl. in the capitula being more compact in bud, by the more numerous flowers (15–24) in a capitulum, by the fewer capitula (4–10) in the racemes, by the usually broader legumes (5–8 mm broad) which are unconstricted or less constricted between the seeds. Plate XXI.

HOLOTYPE: NEW SOUTH WALES: Kydra Reefs, 25 km SE. of Cooma, c. 1000 m alt., multi-stemmed shrub 50 cm high, scattered on bare granite outcrop with *Platysace lanceolata*, *Banksia canei*, *Leptospermum* sp. etc., surrounded by a thick heath vegetation of *Banksia canei*, *Casuarina nana* etc., *R. Coveny 5446*, 22.iii.1974 (NSW 107531, wood block voucher for phytochemical survey), with flower buds. ISOTYPES: AD, BRI, CANB, K, MEL, UC, US.

Multi-stemmed woody shrub up to 1 m high with smooth grey bark. *Branchlets* red-brown or blackish brown, slightly angular towards the apex, with not very prominent ridges (up to 0.4 mm high), glabrescent, clothed near the apex with short, scattered, white, appressed hairs. *Phyllodes* 1.8–5.6 cm long, 0.5–1.4 (rarely –1.7) cm broad, obliquely narrowly oblanceolate (6:1) to oblanceolate (3:1), very thick, coriaceous, glabrous, with 1 prominent main vein in the upper third of the phyllode, the lateral veins scarcely discernible, the apex broadly rounded with an obliquely placed, short, hard, obtuse mucro c. 0.1–0.3 mm long, the base oblique and somewhat attenuated, the margins thickened, reddish (when fresh), bearing a prominent, indented, depressed-reniform gland just above the pulvinus on the upper margin which also usually bears another 1 or 2 slightly exserted, orbicular or oblong glands distant from the pulvinus; pulvinus brown or blackish-brown, 1.5–3.5 mm long. *Bracts* at the base of the peduncle ± deltoid, brown or blackish-brown, glabrous

Plate XX. R. Griffiths del.



Marginal Glands of Phyllodes

a–b. *Acacia prominens* A. Cunn. ex G. Don, side and front views (*Tindale NSW 55379*), × 20. c–d. *Acacia covenyi* Tindale, side and front views (*Coveny 5971 & Rodd*), × 20. e–f. *Acacia barringtonensis* Tindale, side and front views (*Johnson & McDonald NSW 64635*), × 20. g–h. *Acacia kettlewelliae* Maiden, side and front views (*Cambage 4307*), × 20. i–j. *Acacia cluniesrossiae* Maiden, side and front views (*Rodd 514*), × 20. k–l. *Acacia kybeanensis* Maiden et Blakely, side and front view (*Coveny 6604*), × 20.

except the margin usually clothed with white cilia. *Bracteoles* c. 0.7–1.0 mm long, dark brown or red-brown, the petiole with hyaline, ciliolate margins, the peltate or spathulate lamina fringed with long, white cilia. *Flower-heads* yellow, orbicular, 2.5–4.0 mm in diam., mostly 15–24 flowers in a capitulum, in racemes shorter than the phyllodes, 4–10 heads in a raceme; peduncles 1.5–2 mm long, glabrous or when young clothed with a few, short, white, appressed hairs. *Calyx* 5-merous, dissected almost to the base, 0.6–1.0 mm long, the broadly rounded lobes (with an acute apex) and the midribs of the sepals often with white cilia. *Corolla* 5-merous, 1.2–1.5 mm long, the petals attenuated towards the base, glabrous, with a midrib, the margin minutely granulose. *Filaments* numerous, 1.8–2.5 mm long. *Ovary* shortly stipitate, 0.5–0.7 mm long, 0.3–0.4 mm broad, ± oblong, densely clothed with short, appressed, white hairs but often glabrous towards the base. *Style* c. 2.0–2.5 mm long, glabrous, the stigma scarcely expanded. *Legume* stipitate, c. 3.8–8.0 cm long, (0.5–) 0.6–0.8 cm broad, brownish black or black when mature, the margin red-brown, straight-sided or very slightly constricted between the seeds, glabrous or with a few appressed white hairs towards the base, apex and margins. *Seeds* black, dull or slightly glossy, oblong-elliptical, rather compressed, c. 4–4.5 mm long, c. 2.8–3 mm broad, longitudinal in the legume, 6–9 in each fruit, the pleurogram closed, the areole 2.5–3 mm long, the funicle very dark red-brown, swollen, prolonged, into a loop which partly surrounds the seed, the aril forming an apical cap on the seed.

DISTRIBUTION: Kydra Reefs region, SE. of Cooma, Southern Tablelands, New South Wales, at c. 1000–1100 m alt., on granite outcrops in *Eucalyptus dives* and *E. sieberi* woodland surrounded by *Casuarina nana* heathland.

FLOWERING PERIOD: November.

FRUITING PERIOD: February-April.

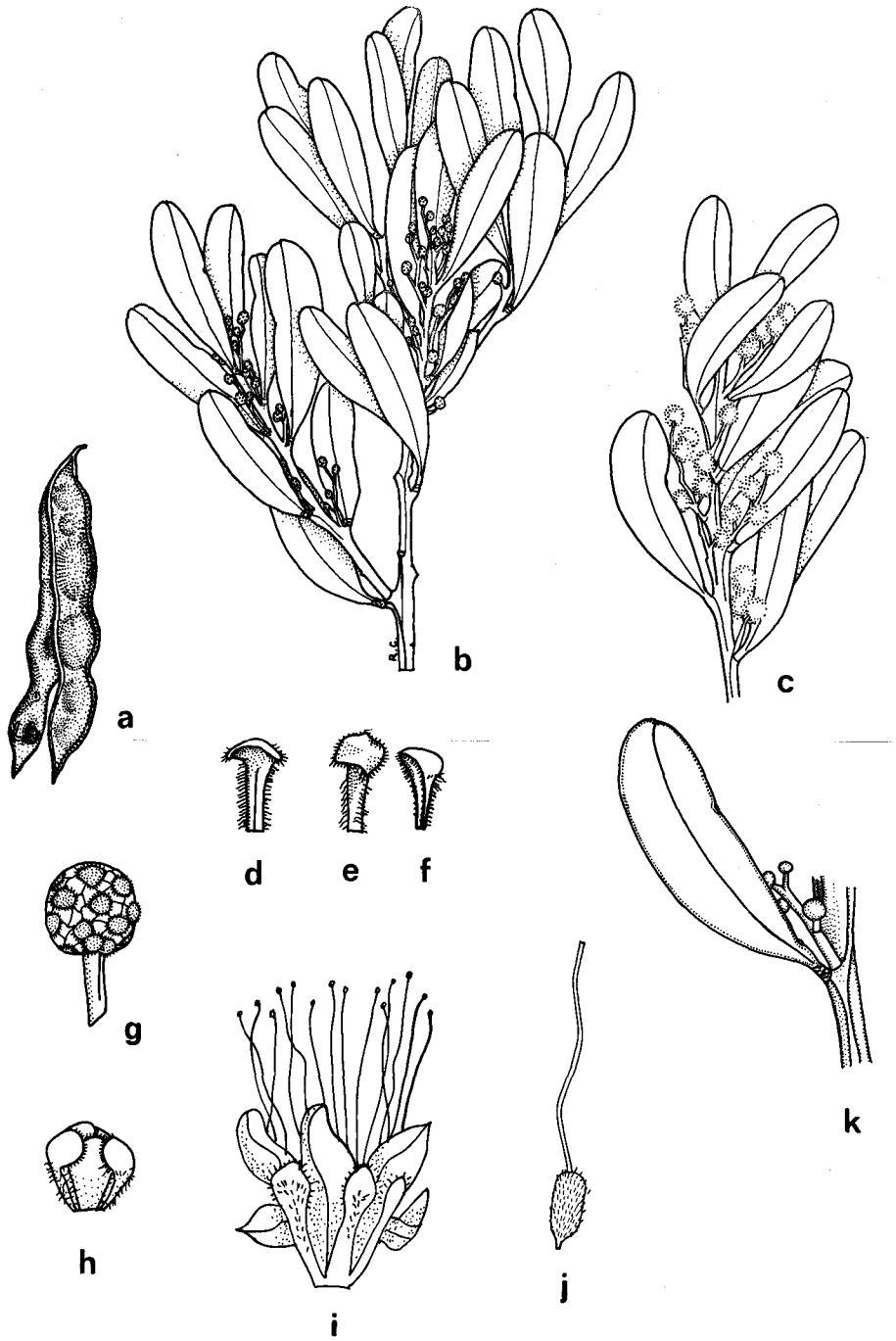
SPECIMENS EXAMINED: NEW SOUTH WALES: **Southern Tablelands:** Kydra Reefs, Grid Ref. GV 100 705, shrub 1 m high with smooth grey bark, phyllodes with red margins, growing on north eastward facing slopes (never on southern slopes), on granite, in *Eucalyptus dives* woodland, old fruit on shrub, *M. D. Tindale 4013, M. Parris & D. Wimbush* 1.1975 (NSW 107623, wood block voucher for phytochemical survey, CANB, K, MEL, US); Kydra Reefs, c. 1110 m alt., woody shrub up to 1 m high, flower-heads yellow, growing only on outcrop of rock, under *Eucalyptus sieberi* and *E. dives*, surrounded by *Casuarina nana* heathland, on NW., NE. and N. slopes, *M. Parris NSW 107045*, 3.1971 (wood voucher for phytochemical survey, A, AD, BRI, CANB, DAR, L, MEL, NSW, NY, PERTH, UC); Kydra Reefs, Throsby Trig area, *M. Parris NSW 108542*, 4.1972 (CBG, NSW).

The specific epithet "*kydrensis*" refers to the Kydra Reefs district of New South Wales, the only region where this taxon has been collected. My attention was drawn to this species by Mrs M. Parris who forwarded material for identification.

Acacia kydrensis belongs to a large Australian group of phyllodinous *Acacia* species known as the *Uninerves Racemosae* according to the classifications of G. Bentham (1864) and J. H. Maiden and E. Betche (1961), but it would be placed in the subgenus *Heterophyllum* section *Phyllodineae* according to L. Pedley (1978).

It is closely allied to *Acacia amoena* Wendl., both species having thick-textured phyllodes with 1–3 glands on the upper margins. In *A. amoena* the phyllodes are more narrowly attenuated at the base, the apices usually acute but sometimes broadly rounded instead of very broadly rounded as in *A. kydrensis*, and there are mostly more capitula in a raceme in *A. amoena* (8–20) instead of 4–10 as in *A. kydrensis*. The young capitula of the latter species are very compact with closely spaced buds protected by long peltate or spathulate bracteoles, whereas in *A. amoena* the buds are loosely arranged on the axis. Unfortunately in the material of *A. kydrensis* there are only 2 seeds with unbroken funicles but the latter appears to be less complex than in *A. amoena* where the funicle completely surrounds the seed instead of being an elongated loop surrounding the base of the seed. In both *A. amoena* and *A. kydrensis* the legumes are brownish black or black, glossy, comparatively flat, and with the margins paler but in the former species the fruit are narrower (4–5 mm wide) and regularly constricted between the seeds, whereas in the latter species the fruit are 5–8 mm wide, straight-sided or very slightly and irregularly constricted.

Plate XXI. R. Griffiths del.



Acacia kydrensis Tindale

a. Legume, × ⅔. b. branchlets with buds, × ⅔. c. branchlet with capitula, × ⅔. d–f. bracteoles, × 13⅓. g. young capitulum × c. 6. h. immature flower bud, × 13⅓. i. flower, × 13⅓. j. pistil, × 13⅓. k. phyllode and axillary shoot, × 1⅓. Vouchers: a. *Coveny 5445*. b, d–k. (*Coveny 5446*). c. (*Parris NSW 107045*).

Acacia kydrensis is allied closely to *A. obtusata* Sieber ex DC. However, it differs from the latter species in the shorter phyllodes (1.8–5.6 cm long) which are less attentuated at the base, the more numerous glands (usually 2–3) on the upper margin of the phyllodes, the reticulate minor veinlets scarcely visible, the fewer flowers in each capitulum (15–24), the calyces of the corollas deeply dissected, the sepals not angled, the ovaries densely pubescent with appressed white hairs, the seeds longitudinal in the legumes and the funicle half surrounding the seed in a loop.

Acacia floydii *Tindale*, **sp. nov.**

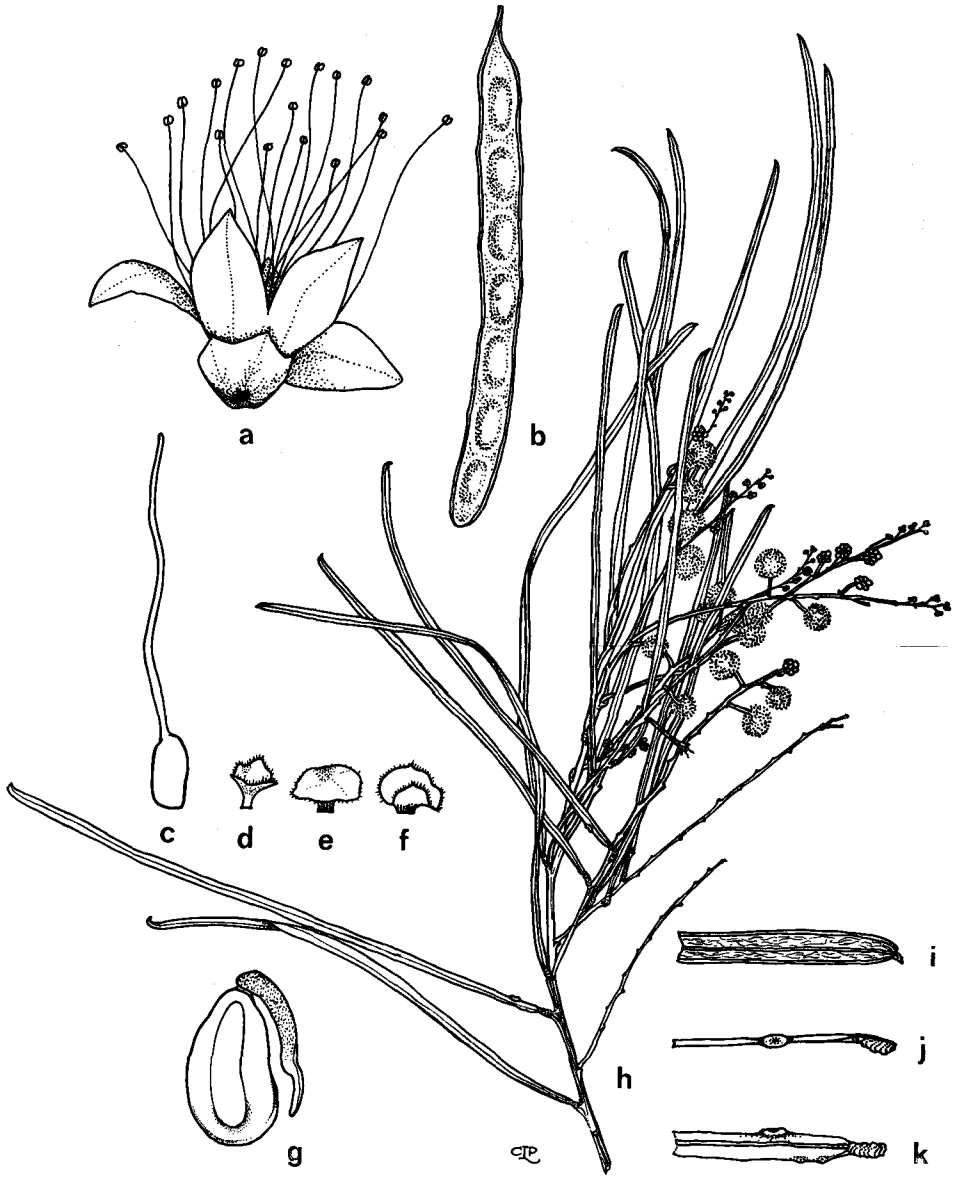
Acaciae betchei Maiden et Blakely arcte affinis sed differt: inflorescentiis cremeis, floribus in capitulo paucioribus (8–11), lobis calycum deltoideis, calycibus decimam usque quartam partem longitudinis tuborum aequantibus, stylis circiter 3.5–4.5 mm longis, corollis circiter 1.7–2.0 mm longis, petiolis bracteolarum diametro laminarum suarum 2–3-plo brevioribus et glande unica marginali phyllodii in lamina ipsa plerumque immersa sed interdum exserta.

Closely allied to *Acacia betchei* Maiden et Blakely but differing in the following respects: cream-coloured inflorescences, fewer flowers in a capitulum (8–11), the lobes of the calyces deltoid, the calyces dissected from $\frac{1}{10}$ to $\frac{1}{4}$ of the length of the tubes, the styles about 3.5–4.5 mm long, the corollas about 1.7–2.0 mm long, the petioles of the bracteoles 2–3 times shorter than the diameter of their laminas and the single marginal gland of the phyllode mostly immersed in its lamina. Plate XXII.

HOLOTYPE: NEW SOUTH WALES: 15 miles [c. 24.2 km] from Tenterfield on the Timbarra road 3 000 ft alt. [c. 915 m], granite, brown loam, near a coachwood stand, *R. J. Turner NSW 121799*, 7.iii.1955 (NSW), flowering and fruiting.

Erect phyllodinous shrub or small tree 1.5–4.5 m high, often with persistent bipinnate foliage, the trunk c. 6 cm in diam., bark dark grey and furrowed. *Branchlets* olive green, brown, reddish black or black, glabrous, terete but becoming triquetrous in the upper parts and flattened towards the apex, the ridges not conspicuous, the areas between the ridges with numerous lenticels. *Young summer foliage* usually tinged with red. *Phyllodes* linear (35:1–45:1), dark green, straight or very slightly falcate, 5.5–11.3 cm long, 1–2.5 mm broad, thinly coriaceous, glabrous, the surface of the lamina slightly rugose and with numerous lenticels, the midrib distinct, the apex acute with a curved mucro c. 0.5 mm long, the base gradually tapered into the pulvinus, the margins paler and rather prominent, the upper margin ornamented with a single, brown or red-brown, oblong or orbicular gland c. 0.5–1 mm long, 0.3–0.5 mm broad, sometimes almost wholly exserted, otherwise sunken in the phyllode and occupying $\frac{1}{2}$ its width, with a semicircular or oval orifice, the pulvinus dark brown, 0.8–2.0 mm long. *Flower-heads* cream-coloured, globular, 4.5–6 mm in diam., 8–11 loosely arranged flowers in a capitulum, c. 8–11 capitula in a raceme, borne in racemes shorter than the phyllodes; peduncles up to 8 mm long, glabrous, with insignificant longitudinal ribs. *Bracts* at the base of the peduncle, very inconspicuous, deltoid, 0.2–0.5 mm long, the apex acute, the margin ciliolate. *Bracteoles* 0.3–0.6 mm long, usually very shortly petiolate, umbraculiform or spathulate, the lamina and stalk sparsely ciliolate along the margin. *Calyx* 0.5–0.8 mm long, 5- to (6-) merous, dissected c. $\frac{1}{10}$–$\frac{1}{4}$ of its length, the lobes broadly deltoid, glabrous or with a few, very short hairs especially along the midrib, sometimes with a few longer hairs near the base. *Corolla* c. 1.7–2.2 mm long, 5- (6–7-) merous, dissected $(\frac{1}{6})$–$\frac{1}{2}$–$\frac{2}{3}$ of its length into lanceolate glabrous petals with a distinct midrib and mostly deflexed over the calyx. *Filaments of the stamens* numerous, 3.5–4.5 mm long. *Anthers* bilocular. *Ovary* subsessile or shortly stipitate, 0.6–0.8 mm long, oblong, glabrous, yellow or orange, the style 3.5–4.5 mm long, laterally attached, the stigma slightly darker than the style. *Legumes* stipitate, 6.8–10 cm long, 0.5–0.9 cm broad,

Plate XXII. C. Payne del.



Acacia floydii Tindale

a. Flower, × 13⅓. b. legume, × ⅔. c. pistil, × 13⅓. d–f. bracteoles, × 13⅓. g. seed with funicle, × 3⅓. h. branchlet with inflorescences, × ⅔. i. apical region of phyllode, × 3⅓. j. base of phyllode with gland (top view), × 3⅓. k. base of phyllode (side view), × 3⅓. Vouchers: a, c, d–f, i–k. (*Constable NSW 75576*). b, g. (*Turner NSW 121799*). h. (*Floyd 832*).

hard, coriaceous, reddish black to black, flat except slightly convex over the seeds, straight-sided except for an occasional indentation between seeds, glabrous, the margins prominent and brown, the apex broadly rounded and prolonged into a narrow elongated portion, the base tapering gradually. *Seeds* black, glossy, elliptical-oblong, compressed, c. 6 mm long, c. 3.0–3.2 mm broad, the pleurogram closed, the areole c. 4.5–5 mm long, the funicle dark brown, thick, expanding into a pileiform aril on top of the seed.

DISTRIBUTION: NEW SOUTH WALES: E. of Tenterfield, on the margin between the North Coast and Northern Tablelands from Malara State Forest and Old Poverty Point gold mine to Smith's Scrub, on granite plateau at 900–1100 m on the deeper, moister, sandy soils, in forests dominated by *Eucalyptus andrewsii* ssp. *andrewsii* and ssp. *campanulata*, and an unusual form of *E. pellita* (pers. comm. L. A. S. Johnson), or near rain forest creeks close to stands of *Ceratopetalum apetalum*.

FLOWERING PERIOD: January-May.

FRUITING PERIOD: January-March.

SPECIMENS EXAMINED: NEW SOUTH WALES: **border between North Coast and Northern Tablelands:** 200 m N. of "Smith's Scrub", Poverty Point, [29° 07′ S, 152° 19′ E], Tenterfield Shire, 2 km N. of Bold Top Mountain, near the head of Duncans Creek, on granite plateau with *Eucalyptus andrewsii* ssp. *campanulata* and an unusual form of *E. pellita*, drainage poor, flowers cream, *A. G. Floyd 832*, 1.1978 (CHF*; NSW); 200 m N. of "Smith's Scrub", Poverty Point, 26 km E. of Tenterfield, alt. 1050 m, erect shrub, 1.5–3 m tall, associate species: *Eucalyptus andrewsii* ssp. *campanulata* and *Leptospermum attenuatum*, *P. Ovenden* (*A. G. Floyd 873*), 3.1978 (BRI, CHF*, K, NSW); 15 miles [c. 24.2 km] from Tenterfield, on the Timbarra Rd, granite, brown loam near a coachwood stand, 3000 ft [c. 915 m] alt. *R. J. Turner 41*, 22.iii.1955 (NSW); 15 mile-peg, Timbarra-Poverty Point road, c. 17 miles [27.4 km] ENE. of Tenterfield, slender shrubs to small trees 8–15 ft [2.4–4.5 m], flowers creamish-yellow, frequent to plentiful along road, and near rainforest creek, *E. F. Constable NSW 75576*, 5.1961 (NSW).

This species is named in honour of Mr Alexander G. Floyd, Forestry Commission of New South Wales, Coffs Harbour, who recently drew my attention to this new taxon and arranged for the collection of further material.

Acacia betchei is very similar in appearance to *A. floydii*, being a slender shrub or small tree up to 5 m high with linear, 1-nerved phyllodes and capitula borne in racemes shorter than the phyllodes. The former species occurs in South Eastern Queensland as well as on the Northern Tablelands and North Western Slopes of New South Wales. It is very common in sandy soil overlying acid granite in the Wallangarra district of Queensland and in the Tent Hill-Torrington region of New South Wales.

Both *A. betchei* and *A. floydii* would be placed in the *Uninerves Racemosae* according to the classifications of Bentham (1864) and Maiden and Betche (1916). In Pedley's classification (1978) they would be in the Section *Phyllodineae*.

A. betchei differs from *A. floydii* in the following respects: the pale yellow (instead of cream-coloured) inflorescences, each capitulum composed of 20–25 flowers, the calyces split almost to the base, the styles 3.0–3.2 mm long, the corollas c. 1.2–1.6 mm long, the length of the petioles of the bracteoles mostly greater than the diameter of the laminas and the marginal gland of the phyllodes sometimes absent.

Acacia costiniana *Tindale*, sp. nov.

Acaciae lucasii W. F. Blakely arcte affinis sed differt: ramis pendulis, phyllodiis basi valde asymmetricis, 0.5–2.0 cm longis, 3–10 mm latis et in utraque superficie pilis paucis brevibus albis appressis sparse ornatis, inflorescentiis 3–6 mm longis et latis, floribus in capitulo circiter 17–26, sepalis 0.5–0.9 mm longis, incanis (interdum tantum basin versus), petalis 1.0–1.6 mm longis, glabris vel pilis paucis in tubo ornatis, staminibus 2.5–3.5 mm longis et ovariis late obovatis.

*CHF: Herbarium of the Research Section, Forestry Office, Coffs Harbour Jetty, N.S.W.

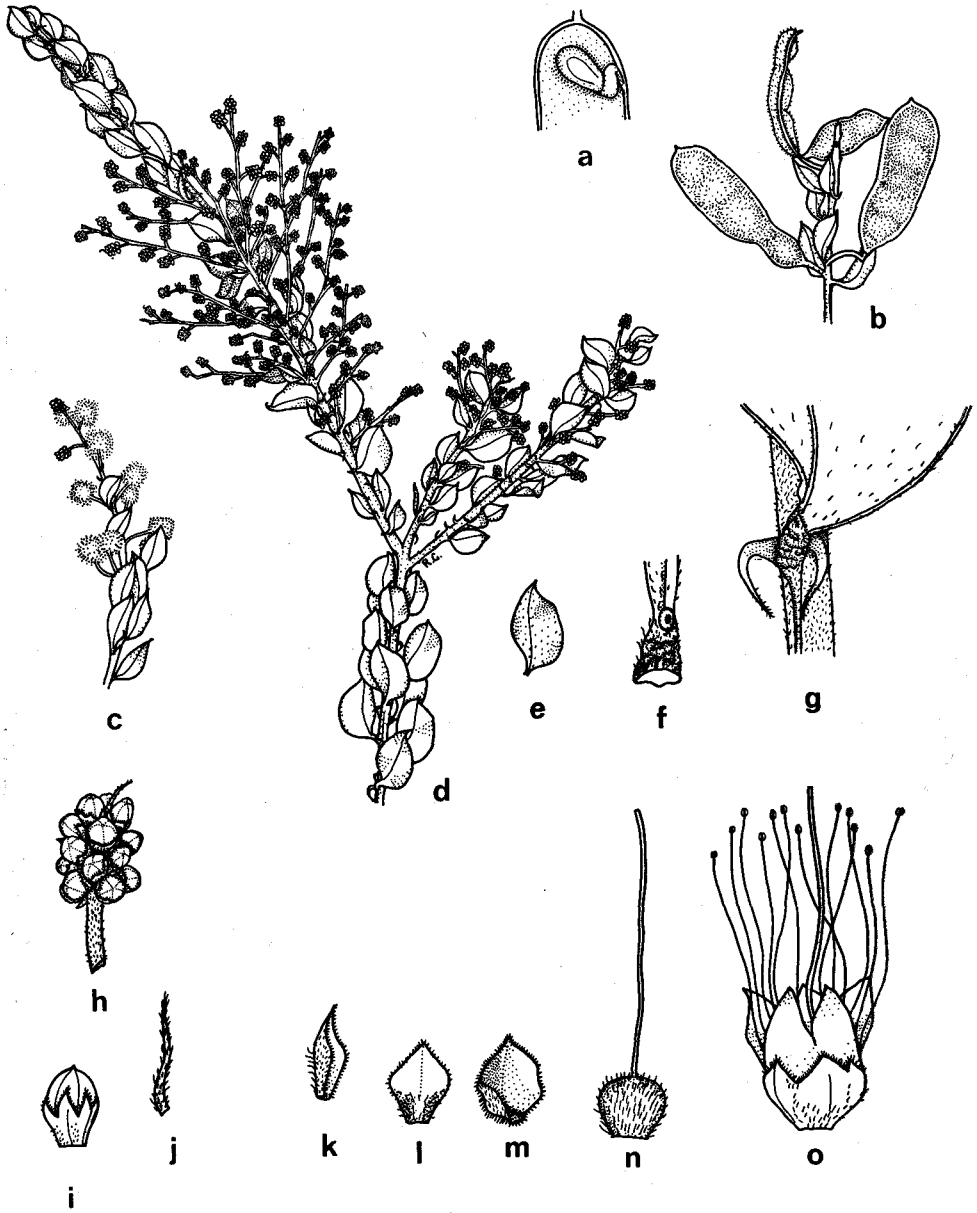
Closely allied to *Acacia lucasii* but differing in the following respects:—the branches of the shrubs pendulous, the phyllodes markedly asymmetrical at the base, 0.5–2.0 cm long, 3–10 mm broad and sparsely clothed on both surfaces with a few, short, white, appressed hairs, the inflorescences 3–6 mm long and broad, c. 17–26 flowers in a head, the sepals 0.5–0.9 mm long, hoary (sometimes only towards the base), the petals 1.0–1.6 mm long, glabrous or clothed with a few hairs on the tube, the stamens 2.5–3.5 mm long and the ovaries broadly obovate. Plate XXIII.

HOLOTYPE: NEW SOUTH WALES: **Southern Tablelands:** Tinderry Mountains, 13.2 km by road ESE. of Michelago on the Jerangle Road, 35° 44′ S, 149° 16′ E, alt. 1230 m, multi-stemmed shrub to 1.5 m high with deep yellow flowers, smooth grey bark and pendulous branches, in heath behind granite boulders with *Epacris robusta*, *Micrantheum hexandrum* etc., common, *R. Coveny 6586*, *P. Hind & M. Parris* 2.viii.1975 (NSW), flowering and with mature fruit. ISOTYPES: BRI, CANB, K, L, US.

Multi-stemmed, spreading shrub 0.6–2 m high with pendulous branches; bark smooth and grey or grey-brown. *Branchlets* terete, dark red-brown, purplish to almost black, sometimes pruinose, the surface often rough and scabrous, with numerous, inconspicuous, longitudinal ridges, the branchlets densely clothed with short, white, crisped, fugacious hairs especially towards their upper portions. *Phyllodes* 0.5–2.0 cm long, 3–10 mm broad, bright yellowish green to dark green, coriaceous, glossy, stiffly erect, numerous and crowded on the branchlets, slightly falcate and often twisted, narrowly elliptical (3:1) to elliptical (2:1), the midrib conspicuous, the apices broadly rounded to acute with an oblique curved mucro 0.5–1 mm long, the base very unequally-sided, the lower much broader, the margins yellowish, prominent, strongly undulate or sinuate (especially the lower margin), rarely flat, both surfaces of the phyllodes sparsely clothed with a few, short, white, appressed hairs, the gland 0.2–0.4 mm long, orbicular to oval with yellow lips, borne on the upper margin c. 0.5–0.7 mm above the pulvinus; pulvinus 1.5–2.0 mm long, pubescent with short, crisped, white hairs. *Stipules* 2 at the base of each phyllode, black, 0.5–2.0 mm long, narrowly deltoid to almost acicular, clothed with a few hairs towards the apex. *Inflorescences* deep yellow or rich lemon-coloured, globose to shortly cylindrical, 3–6 mm long and broad, solitary or in racemes of up to 10 heads, borne in the axils of the phyllodes, c. 17–26 flowers in a head; peduncles 1.5–10 mm long, terete, clothed with white crisped hairs. *Bracts* at the base of the peduncles lanceolate, c. 1.0–1.3 mm long, pubescent. *Bracteoles* subsessile to petiolate, 0.7–1.4 mm long, awl-shaped, spathulate or diamond-shaped; lamina usually convex adaxially, densely hoary over the whole surface or sometimes glabrous towards the apex, the margin with long, white, often crisped hairs. *Calyx* 0.5–0.9 mm long, 5- (or rarely 6-) merous, dissected from $\frac{1}{3}$ to $\frac{1}{2}$ of its length into deltoid sepals with long, white, crisped hairs along the margin, the tube clothed with white or grey, crisped hairs over the whole surface or concentrated on the lower portion of the midrib and glabrous towards the apex. *Corolla* 1.0–1.6 mm long, dissected from $\frac{1}{3}$–$\frac{2}{3}$ of its length into 5 lanceolate petals, glabrous or with a few hairs on the tube; petals with a prominent yellow midrib and granulose yellow margins. *Stamens* numerous, 2.5–3.5 mm long. *Anthers* bilocular. *Ovary* subsessile, 0.6–1.0 mm long, rounded to oblong, densely clothed with long, cream-coloured hairs; style 2.5–3 mm long, the stigma scarcely expanded. *Legumes* stipitate, dark red-brown, coriaceous, cultrate to narrowly oblong, 1.5–4.8 cm long, 0.7–1.0 cm broad, straight-sided or almost so, convex over the seeds, clothed with silvery-ferruginous to dark ferruginous, villous hairs especially above the seeds and at the prominent margins, the apex rounded with a curved mucro, the base rounded. *Seeds* 2–7, black, smooth, glossy, ovoid, compressed, 4–6 mm long, 2.5–3 mm broad, horizontal to oblique in the legume, the funicle filiform, about half of the length of the seed, with 1 fold, expanded into an orange-brown or light brown, pileiform aril, the pleurogram open and inconspicuous, the areole 3–4 mm long.

DISTRIBUTION: NEW SOUTH WALES: Tinderry Mountains, Southern Tablelands on rocky talus slopes, in windswept areas amongst boulders or in sheltered gullies, usually on granite but sometimes on metamorphic rocks, in heath, at the edge of swamps, in *Eucalyptus dalrympleana*—*E. pauciflora* forest or in eucalypt woodland (*E. dives*—*Acacia obliquinervia* association), mainly at altitudes between 1190–1230 m.

Plate XXIII. R. Griffiths del.



Acacia costiniana Tindale

a. Seed, × 1½. b. legumes, × ⅔. c. branchlet with mature capitula, × ⅔. d. branchlets with capitula in bud, × ⅔. e. phyllode, × ½. f. pulvinus and gland, × 3⅓. g. base of phyllode and 2 stipules, × 3½. h. inflorescence in bud, c. × 6⅔. i. bud, × 10. j. seta from apex of inflorescence, × 10. k–m. bracteoles, × 13⅓. n. pistil, × 13⅓. o. mature flower, × 13⅓. Vouchers: a–b. (*Costin NSW 108128*). c. (*Coveny 6582*). d–o. (*Coveny 6586*).

FLOWERING PERIOD: August-October.

FRUITING PERIOD: August, December-January.

SPECIMENS EXAMINED: NEW SOUTH WALES: **Southern Tablelands:** Tinderry Mountains, 13.2 km by road ESE. of Michelago on the Jerangle Road, 35° 44′ S, 149° 16′ E, alt. 1230 m, multi-stemmed shrub, 1 m high and 2 m across, deep yellow flowers, branches pendulous, smooth grey-brown bark, junction of heath and eucalypt woodland on granite, growing with *Grevillea victoriae*, *Acacia obliquinervia*, *Eucalyptus dives*, etc., very common, *R. Coveny 6582*, *P. Hind & M. Parris* 8.1975 (NSW 107789, wood block voucher for phytochemical survey; A, AD, B, BR, CANB, CBG, CHR, DAR, E, G, ISC, K, LE, Macquarie, MEL, NE, NU, PERTH, TL, TNS, UC); Tinderry Mountains, bushy shrub (multi-stemmed) to 2 m high, branch tips pendulous, smooth grey bark; in *Eucalyptus dives* forest among granite boulders with *Daviesia mimosoides*, *Boronia algida*, etc, scattered, *Acacia dealbata* occurred nearby, growing in swampy area to bare granite outcrops (more common in the windswept area), *R. Coveny 6333*, *P. Hind & M. Parris* 5.1975 (NSW 108127, voucher of wood block for phytochemical survey; AD, B, BRI, CANB, CBG, K, Macquarie, MEL, P, RSA, UC, US, Z); Tinderry Range near Michelago, spreading shrub 2–3 ft [0.6–0.9 m], frequent colonies in sheltered areas and gullies, amongst granite rocks, *T. & J. Whaite 3125*, 10.1966 (NSW); on the Jerangle-Michelago Road, below South Tinderry Peak, 35° 43′ S, 149° 17′ E, alt. c. 4000 ft [1220 m], weeping shrub c. 1.3 m high with smooth grey bark and undulate phyllodes, in bud and fruit, in grey-brown podzolic soil, at edge of swamp, in *Eucalyptus dalrympleana — E. pauciflora* association, *M. D. Tindale 4051*, *M. Parris & D. Wimbush* 1.1975 (CANB, K, NSW, US) fruiting; Tinderry Mountains, c. 6 miles [9.7 km] ESE. of Michelago, alt. c. 3900 ft [1190 m], rare in stony soil amongst rocks, on metamorphics, low spreading shrub to c. 1 m high, phyllodes bright yellow-green with strongly undulate margins, flowers rich lemon yellow, *L. G. Adams 1940*, 9.1967 (CANB, K, L, MEL, NSW, US); Tinderry Mountains, *A. B. Costin NSW 108128*, 1.1950 (NSW); Tinderry Mountains, 8.1 miles [13 km] from Michelago towards Little Tinderry Homestead, spreading shrub c. 1 m high, *E. M. Canning 3159*, 6.1970 (CBG, MEL, NSW); Tinderry Mountains, *E. Canning B175*, 12.1972 (CBG, NSW), spreading shrub 1.5 m tall on rocky talus slope, leaves dark green above and below, with sinuate margins; flower-heads (mostly past anthesis) bright yellow, *T. G. Hartley 13388*, 10.1971 (CANB, NSW).

This species is named in honour of Dr Alexander B. Costin who has made an outstanding contribution towards our ecological knowledge of the southern tablelands of New South Wales. Amongst his botanical collections from the Tinderry Mountains was a fruiting specimen of the new taxon which he forwarded to me for identification in 1950. This material with its dark red-brown, villous legumes displayed an affinity to *A. lucasii* which was poorly collected and little known at that time. In 1975 I had an opportunity to study both taxa in the field. The habits of these species are different, *A. lucasii* being an erect shrub whereas the branches are pendulous in *A. costiniana*. The individual flowers are much larger in the former species, and the capitula each composed of 12–20 flowers.

The flower-heads in *A. costiniana* and *A. lucasii* vary from shortly cylindrical to globose as in *A. cultriformis* A. Cunn. ex G. Don. In Bentham's classification (1864) these species would be placed in the *Uninerves Racemosae* but in Section *Phyllodineae* in Pedley's classification (1978). The flavonoid pattern of the heartwood in *A. lucasii* (NSW 107624 and NSW 107788) and of *A. costiniana* (CANB 38281) is leucofisetinidins (D. G. Roux, pers. comm.). These results are typical for a large group of the *Uninerves Racemosae*.

Both *A. costiniana* and *A. lucasii* are characterized by dark red-brown legumes which have a dense villous vestiture and are straight-sided or almost so. No other species from New South Wales have similar fruit.

Acacia lucasii W. F. Blakely

Acacia lucasii W. F. Blakely in J. Roy. Soc. N.S.W. 62: 215, t. 20 (1928); A. B. Court in J. H. Willis, Handb. Pl. Victoria 2: 221 (1973).

HOLOTYPE: NEW SOUTH WALES: Bumbury Creek and Green Hill, 3 miles [4.5 km] towards Wadbilliga, Tuross River district, (Miss) *M. A. Harnett* 16.i.1928 (NSW), fruiting.

DISTRIBUTION: NEW SOUTH WALES: **Southern Tablelands:** in the Kybean and Great Dividing Range in the vicinity of the upper Tuross and Wadbilliga Rivers and Bumberry Creek southwards to the Back River. VICTORIA: Nunniong Plateau, East Gippsland. This species grows in

Plate XXIV. R. Griffiths del.

Acacia lucasii Blakely

a. Branchlets with inflorescences, × ⅔. b. seed, × 1½. c. branchlet with legumes, × ⅔. d. bud, × 10. e. leaf and young inflorescence, × c. 2⅔. f, g. bracteoles, × 13½. h. pistil, × 13½. i. flower, × 13½. j, k. anthers, × 40. Vouchers: a, d, e, f, g, h, i, j, k. (*Rogers NSW 78878*). b. (*Willis & Rogers NSW 108455*). c. (*Beauglehole 41364*).

eucalypt woodland or forest often forming an understory, being commonly associated with *Eucalyptus dalrympleana, E. dives, E. fastigata, E. fraxinoides, E. radiata* and *E. sieberi*. Otherwise it is found in *Casuarina nana* in heathland. *A. lucasii* usually occurs on granite or quartzite.

FLOWERING PERIOD: August–November.

FRUITING PERIOD: November–February.

SPECIMENS EXAMINED: NEW SOUTH WALES: **Southern Tablelands:** along Wadbilliga fire trail, grid reference 936 W6, shrub up to 1–2 m high, stems 2.5–5 cm diam. at 30 cm high, bark smooth and grey, fruiting sparsely, in light brown stony soil, forming an understorey in *Eucalyptus dalrympleana—E. pauciflora* woodland with *Poa* spp., *M. D. Tindale 4033, M. Parris & D. Wimbush* 1.1975 (NSW 107624, wood voucher for phytochemical survey; AD, BRI, CANB, K, MEL, US); Upper Bumberry Creek, Tuross, Wadbilliga area, 36° 18′ S, 149° 33′ E, alt. 950–1000 m, shrub 2 m high, frequent in open forest of *E. dives, E. radiata* and *E. sieberi, I Olsen 2351*, 10.1974 (NSW); Wadbilliga Rd, Kybean Mountains, via Nimmitabel, low shrub under ½ m high, associated with *Casuarina nana* in low heath formation, *D. Wimbush NSW 108546*, no date (NSW); Wadbilliga fire trail between Tuross River and Bumberry Creek, 37 km ESE. of Cooma, 36° 18′ S, 149° 33′ E, alt. 1000 m, shrub to 2 m high, usually multi-stemmed with deep yellow flowers, smooth grey bark and hairy phyllodes, common in *Eucalyptus dalrympleana—E. pauciflora—E. dives* forest with *Grevillea lanigera, Persoonia silvatica, Daviesia ulicifolia, Bossiaea foliosa, Chloanthes parviflora, Persoonia chamaepeuce* etc, granite, *R. Coveny 6595, P. Hind & M. Parris* 8.1975 (NSW 107788, wood voucher for phytochemical survey; AD, B, BM, BR, BRI, CANB, CHR, K, L, MEL, NU, P, PERTH, S, TNS, UC, US, Z); upper Tuross River, 36 km ESE. of Cooma, alt. 910 m, dry sclerophyll forest, small spreading bush to 1.2 m, flowers very bright yellow, *H. Streimann 183 & I. R. Telford* 9.1973 (BRI, CBG, L, K, MEL, NSW); Conway's Gap, between Wadbilliga R. and Bumberry Creek, 15 km SSE. of Countegany, shrubs 3–4 m tall, locally abundant in forest in flat ridge-top, with *Eucalyptus fastigata, E. radiata*, some *E. fraxinoides*, brown soil, somewhat stony, on quartzite, *A. Rodd 1675*, 4.1971 (BRI, K, NSW, US); near Back River, 36° 19′ S, 149° 32′ E, alt. 900 m, locally abundant shrub 1.5 m high with rusty brown fruits, in low hills, shallow stony soil, ? granite, *Eucalyptus pauciflora* forest, *I. Olsen 3012*, 12.1976 (NSW).

VICTORIA: GRID REFERENCE W7: Brumby Point, Nunniong Plateau, East Gippsland, between Reedy and Little Reedy Rivers, alt. c. 1150 m or 3700 ft., bushes about 6 ft [1.8] high, with smooth grey-brown trunks (old samples widely spreading), extremely localized over about 1 acre on a high, rocky, quartzite knob overlooking the Reedy River gorge, no other occurrence known in Victoria, *J. H. Willis & K. C. Rogers NSW 108455*, 11.1964 (MEL, NSW); East Gippsland, Nunniong Plateau, Reedy River chasm area, *A. C. Beauglehole 41364*, 2.1973 (NSW,) fruiting; Brumby Point, Nunniong Tableland, *K. C. Rogers NSW 108547*, 10.1964, flowering, "fruiting sprays on Jan 5th 1965" (NSW); Brumby Point, Nunniong Tableland, alt. 3700 ft. [1150 m], woolly shrub 6–8 ft [1.8–2.4 m] high, growing on rocky outcrop, *K. C. Rogers NSW 78879*, 1.1965 (NSW), fruiting.

This species, which is closely allied to *Acacia costiniana* Tindale, was considered rare for many years but recent collections have shown that it is not uncommon in the Southern Tablelands of New South Wales and there is also an isolated colony at the Nunniong Plateau, Victoria. It is an erect, usually multi-stemmed shrub up to 2 m high with smooth grey bark and bright yellow inflorescences. Plate XXIV.

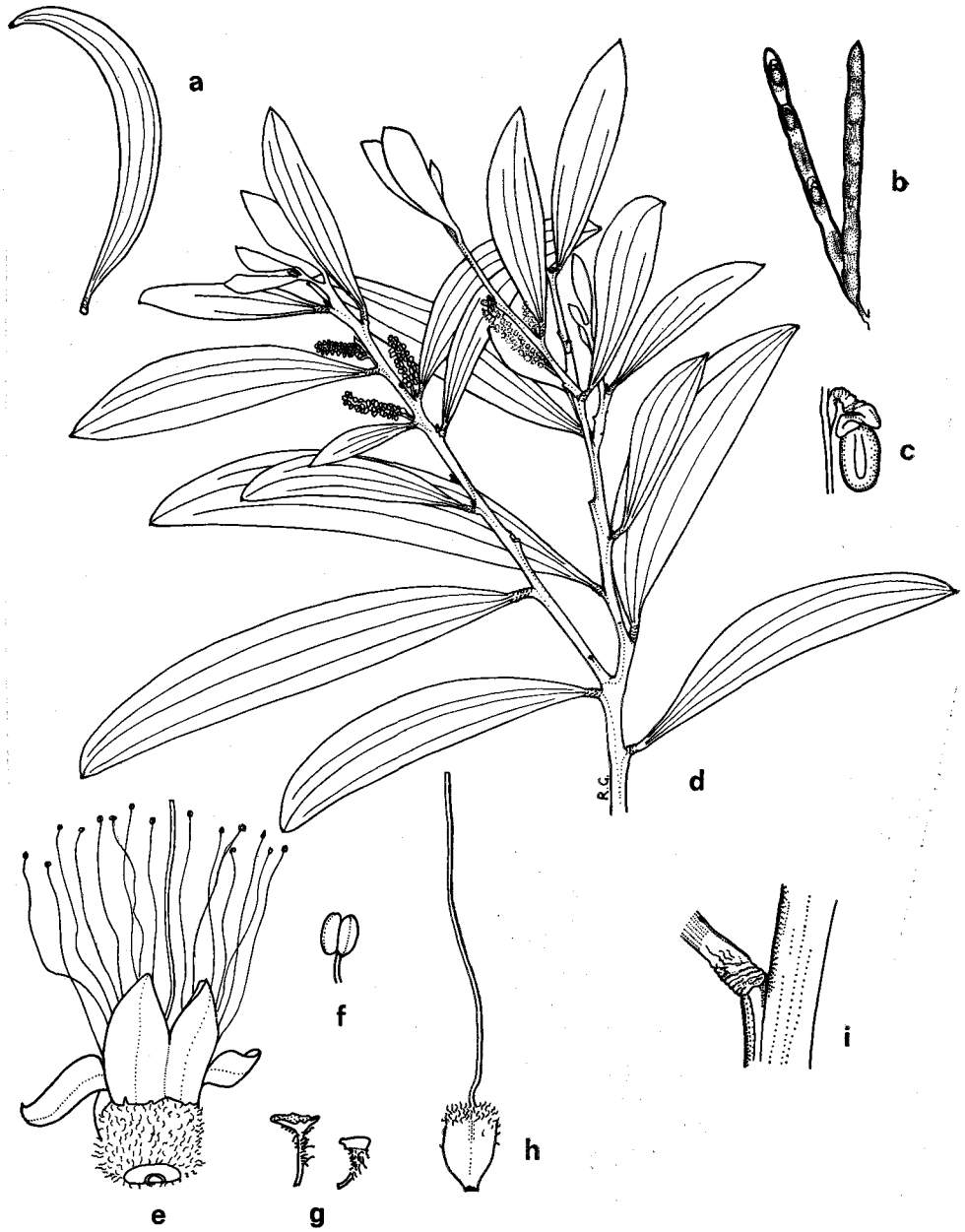
SECT. **JULIFLORAE** (Benth.) Maiden & Betche

Acacia georgensis *Tindale*, **sp. nov.**

Ab *Acacia cheelii* W. F. Blakely cortice truncorum praesertim basin versus in arboribus vetustioribus corrugato, inflorescentiis luteolis semel vel bis brevioribus (plerumque usque 3.5 cm longis), calycibus corollis circiter duplo vel triplo (nec quadruplo vel quintuplo) longioribus, ovariis non nisi apicem versus pubescentibus, leguminibus furfuraceis et basin versus sine pilis albis statim diagnoscenda.

Immediately to be distinguished from *Acacia cheelii* W. F. Blakely, by the corrugated bark especially towards the base in older trees, by the pale yellow inflorescences which are single or in pairs and usually up to 3.5 cm long, by the longer calyces being ½ or ⅓ of the length of the corollas instead of ¼–⅓, by the ovaries pubescent only towards the apex, by the legumes scurfy and without white hairs towards the base. Plate XXV.

Plate XXV. R. Griffiths del.



Acacia georgensis Tindale

a. Falcate phyllode, × ⅔. b. legume, × ⅔. c. seed, × 2⅔. d. branchlets with spikes, × ⅔. e. flower, × 13⅓. f. anther, × 33⅓. g. bracteoles, × 13⅓. h. gynoecium × 13.⅓ i. pulvinus, × 3⅓. Vouchers: a, d, i. (*Wheeler NSW 108136*). b, c. (*Coveny 7306*). e, f, g, h. (*Coveny 5823 & Armstrong*).

HOLOTYPE: NEW SOUTH WALES: **South Coast:** Dr George Mountain, 36° 40′ S, 149° 54′ E, at 300 m alt., tree 12 ft [3.6 m] high with one trunk, also common near Trig, often flowering at 4 ft [1.2 m] high, *C. Wheeler NSW 108136*, 27.viii.1977 (NSW), flowering. ISOTYPES: BRI, CANB, K, MEL.

Shrub or tree 3–10 m high; bark grey, very corrugated towards the base especially in older trees. *Branchlets* terete becoming flattened-triquetrous in the upper regions, red-brown, greenish brown or dark grey, often very glaucous, smooth, sometimes sparsely clothed with white squamules and red-brown scurfy hairs towards their apices. *Phyllodes* not dimorphic; young phyllodes with red-brown scurfy hairs towards their apices; mature phyllodes darker yellowish green, slightly glossy, very narrow elliptical (10:1), falcate, coriaceous, 7.4–16.8 cm long, 1.5–3 cm broad, with 3 fairly prominent, parallel main veins and 2 semiprominent, parallel, subsidiary veins continuous to the base of the phyllode or almost so, the minor veinlets fine, parallel and rarely anastomosing, almost glabrous, sometimes with dense, red-brown or whitish, scurfy hairs, the apex attenuated ending in a short, knob-like, often oblique mucro with a round terminal gland, the base obliquely tapering, usually with an inconspicuous, reniform-depressed, marginal gland 1–3 mm above the pulvinus; pulvinus 2–8 mm long, often twisted, red-brown, greenish brown or greyish purple, usually glaucous, rarely clothed with white squamules. *Inflorescences* spicate, pale yellow, 0.7–3.5 cm long, 5–7 mm broad, occurring singly in the axils of the phyllodes or in pairs on scurfy axillary branchlets often bearing phyllodes; peduncles 1.5–4 mm long, greenish brown or dark red-brown, terete, mostly glabrous or sometimes scurfy. *Bracts* usually 1 or rarely 2 at the base of the peduncle, 1.0–1.8 mm long, broadly deltoid, reddish brown or greenish brown, sometimes with a few, short, white hairs along the margin and towards the apex. *Bracteoles* c. 0.5–0.7 mm long, spathulate or peltate, dark red-brown, fimbriate with long white hairs on the lamina and on the broad to narrow whitish petioles. *Calyx* 0.4–0.6 mm long, c. 1.0–1.4 mm broad, cupular, scarcely dissected to about $\frac{1}{10}$ of its length into 5 very short lobes, the tube and lobes clothed with short white hairs and red-brown squamules as well as a tomentum of pale yellow, hyaline, matted hairs. *Corolla* 1.6–2.0 mm long, eventually splitting almost to the base into 5 acute glabrous petals with paler papillose margins and each with a paler midrib. *Filaments of the stamens* numerous, pale yellow, 3.2–6.4 mm long. *Anthers* bilocular. *Ovary* shortly stipitate, very dark brown, 0.5–0.7 mm long, ± oblong, very densely clothed towards the apex with long white hairs, the style 2.5–4 mm long, the stigma slightly expanded. *Legume* shortly stipitate, submoniliform, thinly coriaceous, dull greyish brown, slightly glaucous, the surface rather wrinkled longitudinally, almost flat except slightly convex over the seeds, scurfy towards the base, the margins fawn and rather prominent. *Seeds* black, glossy, oblong-elliptical, rather compressed, 3–4.5 mm long, 1.8–2.5 mm broad, longitudinal in the legume, the pleurogram open and fairly prominent, the areole 2.5–3 mm long, the funicle cream-coloured, filiform, with 3–4 folds above the orange-fawn or cream-coloured pileiform aril, pendulous from the legume when it dehisces.

SPECIMENS EXAMINED: NEW SOUTH WALES: **South Coast:** Dr George Mountain, 6 km c. E. of Bega on the Bermagui road, tree 6–8 m high, bark corrugated, branchlets very glaucous, brown pods and young phyllodes with orange-brown tips; common on NW. facing hillside with *Kunzea ambigua*, *Boronia anemonifolia*, *Phebalium carruthersii*, *Prostanthera violacea*, *Eriostemon myoporoides*, *Eucalyptus* sp. aff. *stricta* (e.g. RGC 7307) etc., *R. G. Coveny 7306*, 12.1975 (NSW 107898); Dr George Mountain, alt. 313 m, small bushy shrub 3 m high (up to 10 m) with glaucous branchlets, sparsely flowering, pale yellow flowers, bark becoming very corrugated towards the base in older trees; on granite outcrop with *Acacia ulicifolia*, *Correa reflexa*, *Boronia anemonifolia*, *Acacia mearnsii*, *Kunzea ambigua*, *Platysace lanceolata*, etc., common, *R. Coveny 5823 & J. Armstrong* 10.1974 (NSW 107897, wood block voucher for phytochemical survey; A, AD, BRI, CANB, K, L, MEL, US), fruiting; Dr George Mountain, in dry scrub (*Kunzea ambigua*), *M. Parris NSW 108545*, 10.1978 (BRI, CANB, K, MEL, NSW), flowering; Dr George Mountain, near Bega, shrub 2 m high, but others nearby are trees up to 10 m high, on granite, flowers pale yellow-cream, *D. F. Blaxell 1330*, 4.1974 (NSW).

DISTRIBUTION: AUSTRALIA: NEW SOUTH WALES: **South Coast:** Dr George Mountain, near Bega, locally abundant on granite hillsides in tall dense scrub, on rather dry slopes exposed to the north west.

FLOWERING PERIOD: August–October.

FRUITING PERIOD: December.

The specific epithet "*georgensis*" refers to Dr George Mountain (also known as Dr George Mount), the only locality in which this species has been found to date.

According to Bentham's classification (1864) and Maiden and Betche's (1916) this species would be a member of the *Juliflorae Falcatae* which is well represented in New South Wales. In Pedley's classification (1978) *A. georgensis* would be placed in the Section *Juliflorae.*

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