

Studies in the genus *Acacia* (Leguminosae: Mimosoideae)—13. Four new species from north-western Australia

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Abstract

Maslin, B. R. Studies in the genus *Acacia* (Leguminosae: Mimosoideae)—13. Four new species from north-western Australia. Nuytsia 4(3): 367-381 (1983). Four new *Acacia* species, *A. chrysochaeta*, *A. filamentosa*, *A. richardsii* and *A. tenuispica* are described and illustrated. These species all belong to section Juliflorae (Benth.) Maiden et Betche and with the exception of *A. richardsii* which extends to the north-west corner of the Northern Territory, are confined to the northern (Kimberley) region of Western Australia.

Introduction

The following four species from *Acacia* section Juliflorae are described for inclusion in a forthcoming volume of the Flora of Australia.

With the exception of *A. richardsii* which extends to the north-west corner of the Northern Territory, these new species are confined to the Kimberley region of Western Australia. Over the past few years a number of botanical surveys have been conducted in the Kimberley (George and Kenneally 1975 and 1977, Hnatiuk and Kenneally 1981, Kenneally 1983 and McKenzie and Kenneally 1983) resulting in many new records and new taxa, including *A. tenuispica*, coming to light. This remote, northern region is topographically rugged and difficult of access and it is likely that future collecting will extend the geographical ranges of the new species included here.

For each new species all specimens have been cited. In cases where duplicates are known to exist but not examined by the author, the herbaria in which they are lodged are marked with an asterisk (*).

The Botanical District referred to in the distribution citations are those of Beard (1980). Distributions are also expressed in terms of 1:250 000 map references (see Maslin and Pedley 1982).

1. *Acacia chrysochaeta* Maslin, sp. nov. (Figure 1)

Frutex ad 1.3 m altus. *Ramuli* dense tomentosi. *Stipulae* persistentes, anguste triangulares, 2-3 mm longae. *Phyllodia* conferta, late linearia, 20-45 mm longa, 2-3 mm lata, antrorse puberula (phyllodiis juvenilibus pilis plerumque pallido-aureis ornatis), multistriata, apicibus setosis. *Spicae* 25-30 mm longae. *Sepala* \pm libera, pilis plerumque pallide aureis tomentosa. *Legumina* anguste oblonga, ad 6 cm x 1 cm, dense tomentosa (pilis in leguminis juvenilibus pallide aureis). *Semina* in legumine obliqua, 4.5-5 mm longa, 2-3 mm lata, nigra.

Typus: 21 mi [33.8 km] N of Gibb River homestead, Western Australia. "Slender shrub. Creek alluvium—sandy." 27 May 1971, N. Byrnes 2273 (holo: PERTH; iso: K, NSW, NT).

Erect, spindly *shrubs* to 1.3 m tall, branches pendulous or spreading. *Branchlets* straight and rather sparingly divided, terete, finely nerved, brown but yellowish towards their apices, densely tomentose (hairs short, soft, weak and white although normally pale yellow on new shoots). *Stipules* persistent, conspicuously overtopping phyllodes on very young shoots, narrowly triangular, 2-3 mm long, scarious, brown or sometimes yellowish with age, longitudinally nerved, sparsely ciliolate. *Phyllodes* crowded, erect and closely pressed to stems, broadly linear, 20-45 mm long, 2-3 mm wide, antrorsely puberulous (hairs often pale yellow on young phyllodes but soon turning white); *nerves* numerous, parallel, not anastomosing, the central one more pronounced than the rest, marginal nerve yellowish; *apices* setose, 2-3 mm long, delicately curved, light brown, non-pungent; *pulvinus* squat, c. 0.5 mm long; *gland* situated on upper margin of the phyllode 1-1.5 mm above the pulvinus, oblong, c. 0.3 mm long, yellow. *Inflorescences* simple and axillary, 1 per node, numerous on upper part of branchlets. *Peduncles* 6-12 mm long, tomentose; *basal peduncular bracts* absent. *Spikes* 25-30 mm long, flowers densely arranged. *Bracteoles* conspicuously overtopping flowers in the bud; *claws* short (c. 0.5 mm); laminae acuminate, c. 1 mm long, inflexed, sparsely to moderately tomentose with white hairs. *Flowers* predominantly 5-merous (on a few flowers the sepals 6), conspicuously tomentose (hairs pale golden but sometimes turning white with age). *Sepals* about 2/3 the length of the petals, united near their base, the free portion narrowly oblong. *Petals* c. 1.5 mm long, connate for 1/2-2/3 their length. *Legumes* narrowly oblong, to 6 cm long and 1 cm wide, with up to 11 seeds, flat but slightly raised over the seeds, rarely constricted between the seeds, transversely to obliquely reticulate, densely tomentose when immature with pale golden hairs (turning whitish with age) although appearing greenish yellow due to the underlying greyish legume surface, *basal stipe* c. 5 mm long, marginal nerve thickened. *Seeds* obliquely positioned in the legume, more or less obloid, 4.5-5 mm long and 2-3 mm wide, compressed (c. 1.5 mm thick), black, slightly shiny; *pleurogram* obscure, continuous; *areole* narrowly pyriform with the narrow portion facing the hilum, c. 1.3 mm long and 0.5 mm wide, yellowish on young seeds; *funicle* filiform and c. 1 mm long, abruptly expanded into a fleshy, convoluted, pale yellowish aril which is large and pileiform near the hilum, with a thickened callosity at the hilum but this is obscured by the fleshy wings of the *aril*.

Other specimens examined. WESTERN AUSTRALIA: 21 mi (33.5 km) N of Gibb River homestead, *J. R. Maconochie* 1216 (*NSW, NT), 1294 (*AD, *B, *BRI, *CANB, K, *L, *MEL, NSW, NT, *NY, PERTH) and 1295 (NSW, NT); 32 mi (51 km) NE of Karungie Station [now called Pentecost Downs Station], *R. A. Perry* 3089 and *Lazarides* (*BRI, *CANB, NSW, NT); Karungie Station, *D. Rust* 50 (CANB, PERTH).

Distribution. (Figure 6) Kimberley region, northern Western Australia, in the north of the Fitzgerald Botanical District (1:250 000 map E52-1). Known only from the two localities cited above.

Habitat. Sandy alluvium on the side of a watercourse (Maconochie 1294).

Flowering and fruiting period. Near-mature legumes have been collected from late May to early June at which time flowers may also be present. A flowering specimen has been collected in November.

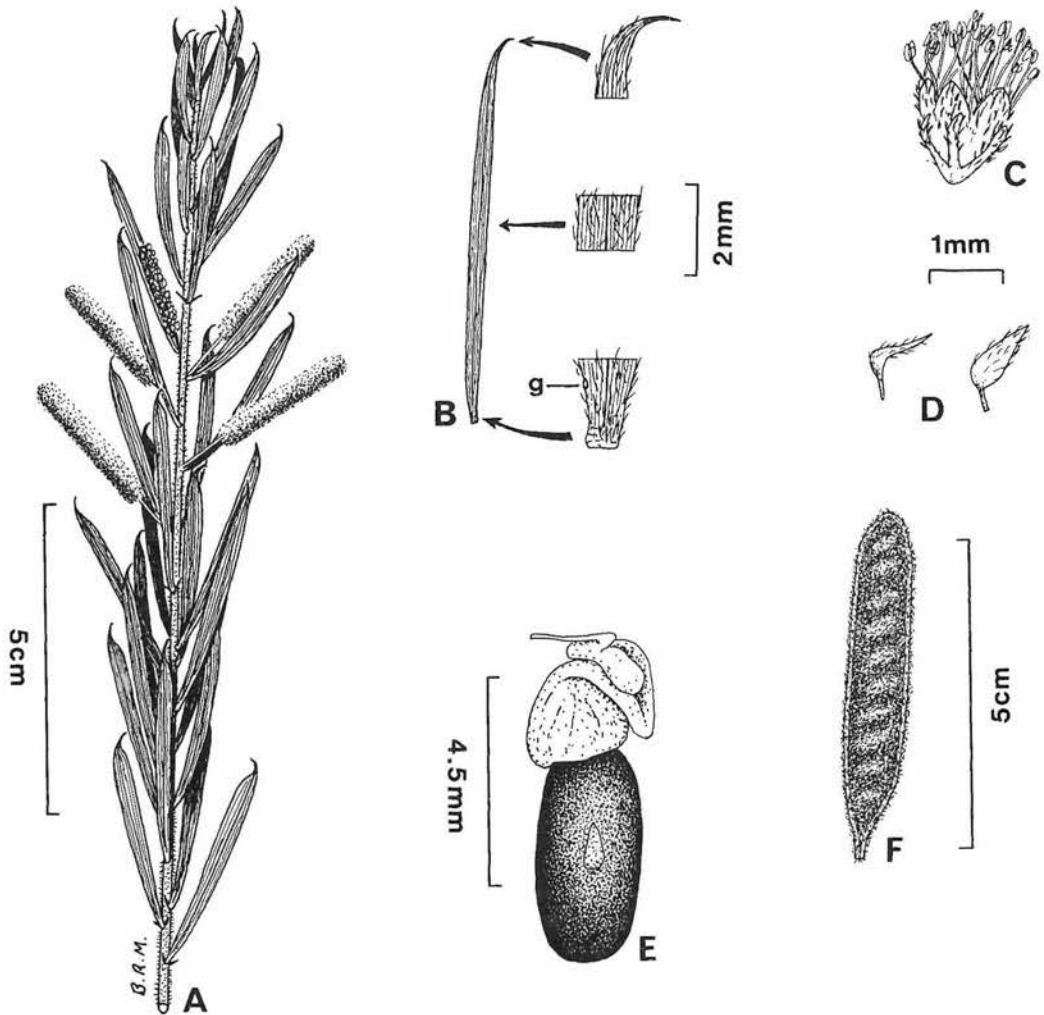


Figure 1. *Acacia chrysochaeta*. A—Portion of branch. B—Phyllode with enlargements showing the base (g-gland), middle and apex. C—Flower (indumentum pale yellow). D—Bracteoles showing large, inflexed laminae. E—Seed showing filiform funicle expanded into a large aril. F—Legume (densely tomentose).

A from *J. R. Maconochie* 1216; B-D from *D. Rust* 50; E from *J. R. Maconochie* 1295; F from *N. Byrnes* 2273 (the type).

The new species is most closely allied to *A. kelleri* F. Muell. and *A. dacrydioides* Tindale. The principal distinguishing features of these species are given in the key below where it is seen that *A. chrysochaeta* is readily recognized by its golden puberulous flowers, its broad, flat, densely tomentose legumes (hairs pale golden at least when young) and its flat, relatively long phyllodes.

Among the specimens cited by Tindale (1975) under *A. kelleri* were a number now referable to *A. chrysochaeta* viz. Byrnes 2273, Maconochie 1216, 1294, and 1295, and Perry 3089. Tindale also cited Gardner 1534 from Wade Creek, Vansittart Bay. This collection may represent a distinct taxon (see key below) but field studies and

further material are required to ascertain this. Because these taxa grow in the remote northern areas of Western Australia where access is difficult and generally little collecting has been done, most are represented by very few herbarium collections. This makes difficult an accurate assessment of the range of morphological variation. Nevertheless, in my view the collections indicate that Tindale's (1975) concept of *A. kelleri* is too broad and the species is therefore segregated into *A. kelleri*, *A. chrysochaeta* and *A. aff. kelleri* (see Gardner 1534). The known geographic range of these three taxa is shown in Figure 5.

Tindale (1975) stated that *A. kelleri* was distinguished from *A. dacrydioides* by its legumes. However, as can be seen from the key below, the carpological characters of these two species are essentially the same. From an examination of all specimens cited in the above work it is evident that Tindale did not see legumes of *A. kelleri* but only those of *A. chrysochaeta*, *A. dacrydioides* and *A. aff. kelleri*.

The specific epithet refers to the characteristic golden hairs of the flowers and young legumes.

Key to *Acacia kelleri* and its allies

- 1a. Phyllodes subterete, less than 1 mm wide, 6-13 mm long; legumes submoniliform, to 5 mm wide, red-brown, glabrous, longitudinally striate, margins not thickened; seeds longitudinal in legume; calyx divided for 1/3-1/2 its length, together with petals strongly nerved and glabrous or white hairy *A. dacrydioides*
- b. Phyllodes distinctly flat, 1-3 mm wide; calyx divided to near base into more or less narrowly oblong sepals 2
- 2a. Phyllodes 2-4.5 cm long; legumes 1 cm wide, flat, densely tomentose (hairs pale golden but turning white with age), transversely to obliquely reticulate, margins thickened; petals and sepals pale golden tomentose (hairs sometimes turning white with age; seeds oblique in legume *A. chrysochaeta*
- b. Phyllodes 1-2.5 cm long; legumes 4-6 mm wide, glabrous or white puberulous; sepals and petals glabrous or white hairy; seeds more or less longitudinal in legume 3
- 3a. Legumes submoniliform, red-brown, glabrous (rarely minutely white-puberulous), longitudinally striate, margins not thickened. *A. kelleri*
- b. Legumes flat, raised over but not constricted between seeds, densely minutely white puberulous with the hairs obscuring the obliquely transverse nerves, margins thickened (cf. Gardner 1534 in discussion above) *A. aff. kelleri*

2. *Acacia filamentosa* Maslin, sp. nov. (Figure 2)

Ramuli glabri. *Stipulae* deciduae. *Phyllodia* crasse filiformia, 17-25 cm longa, c. 1 mm diam., obscurissime multistriata. *Spicae* 20-25 mm longae, 6 mm latae (in sicco). *Pedunculi* 5-15 mm longi. *Flores* 5-meri. *Calyx* brevissime lobatus, 5-nervatus. *Petala* 1-nervata. *Legumina* (in statu submaturo) linearia, ad 11 cm longa, 3 mm lata, striata, glabra. *Semina* (in statu submaturo) in legumine longitudinalia, 6-7 mm longa, 2 mm lata.

Typus: Gibb River road (between Derby and Wyndham) near Ellenbrae turn-off, Western Australia. "Shrub to 2 m." 25 August 1980, P. Luscombe s.n. (holo: PERTH; iso: K, PERTH).

Shrubs to 2 m tall (Luscombe s.n.). *Branchlets* sparingly divided, normally slightly flexuose, terete, obscurely nerved, glabrous, red-brown. *Stipules* deciduous. *Phyllodes* coarsely filiform, 17-25 cm long, c. 1 mm diam., terete, ascending, not rigid, curved or shallowly sinuous, glabrous, obscurely longitudinally sulcate, terminating in an innocuous apical callose point which is frequently slightly uncinuate; *nerves* numerous and very obscure, sometimes resinous (resin yellow and translucent); *pulvinus* 1.5-2 mm long, coarsely wrinkled; *gland* obscure, situated on upper surface of the phyllode 1-3 mm above the pulvinus, lamina often slightly swollen about the gland. *Inflorescences* simple and axillary, normally 2 per node. *Peduncles* 5-15 mm long, glabrous; *basal peduncular bracts* deciduous. *Spikes* 20-25 mm long and 6 mm wide (when dry), flowers densely arranged, buds shortly cylindrical and elongating with maturity. *Bracteoles* sub-peltate, c. 1 mm long, claws linear. *Flowers* 5-merous, glabrous. *Calyx* gamosepalous, about 1/2 the length of the corolla, very shallowly divided into broadly triangular, slightly thickened, inflexed lobes, tube 5-nerved. *Petals* 2 mm long, strongly 1-nerved when dry. *Legumes* (few seen and slightly immature) linear, to 11 cm long, 3 mm wide, crustaceous to thinly coriaceous, flat but slightly raised over and slightly constricted between the seeds, longitudinally striate, glabrous, greyish brown; margins yellowish, not thickened. *Seeds* (few seen and slightly immature) longitudinally positioned within the legume, elongated obloid, 6-7 mm long, c. 2 mm wide, brown, marked with an indistinct yellowish peripheral nerve; *pleurogram* obscure, open towards the hilum, bordered by a narrow band of pale coloured tissue; *areole* 5-6 mm long, 1 mm wide; *funicle-aril* turbinate, slightly convoluted, pale yellowish.

Other specimens examined. WESTERN AUSTRALIA: Karungie [now called Pentecost Downs Station], 16°15'S, 127°15'E, B. Gill A1 (PERTH); 21 mi (33.5 km) SW of Kalumburu Mission, N. H. Speck 4923 (*BRI, PERTH.)

Distribution. (Figure 6) Kimberley region, northern Western Australia, in the Fitzgerald and Gardner Botanical Districts (1:250 000 maps D52-9, 13; E52-1). Known only from three collections gathered between Pentecost Downs Station north to near Kalumburu Mission.

Habitat. Top of a sandstone mesa (N. H. Speck 4923).

Flowering and fruiting period. Specimens in bud have been collected in August and September. The type (collected late August) is in bud, has spikes at anthesis as well as legumes with near-mature seeds.

Although the new species is placed in section *Juliflorae* (Benth.) Maiden et Betche, its affinities to the other members of this group are not clear. *Juliflorae* species with long, terete phyllodes are rare in the far north (Kimberley) of Western Australia although further south, particularly in the arid zone, they are more frequent eg. *A. exilis* Maslin, *A. cyperophylla* F. Muell., *A. linophylla* W. V. Fitzg., *A. tenuissima* F. Muell. and *A. wanyu* Tindale. *Acacia filamentosa* is seemingly not closely related to any of these species being characterized by its very long, obscurely

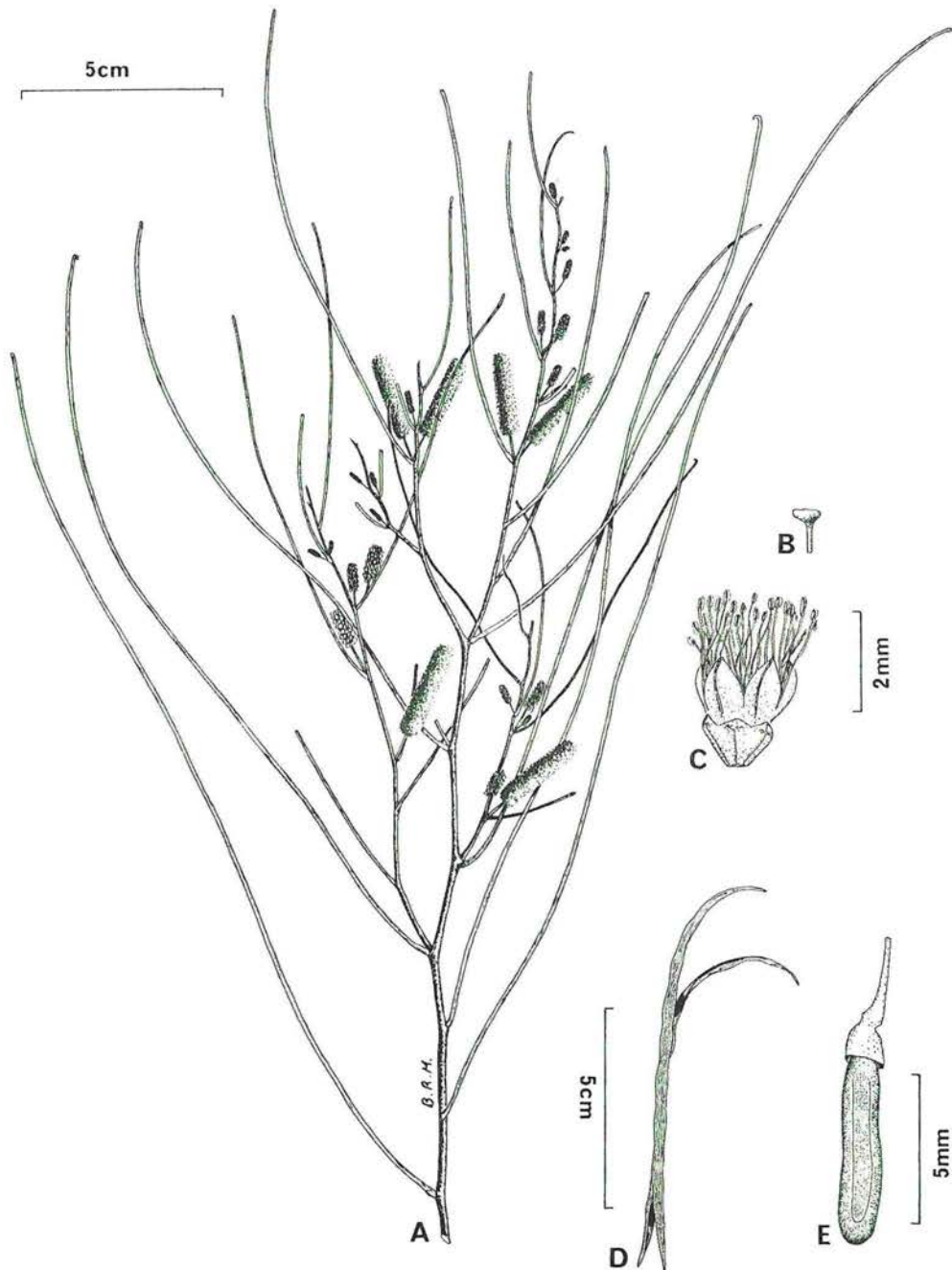


Figure 2. *Acacia filamentosa*. A—Portion of branch. B—Bracteole. C—Flower. D—Legume (slightly immature and partly dehiscent). E—Seed (slightly immature) showing the pleurogram bordered by a band of pale tissue.

All from *P. Luscombe* s.n. (the type).

nerved phyllodes and its narrow, flat, striate legumes. *Acacia orthocarpa* F. Muell. is the only Kimberley Juliflorae species which has relatively long (to 11 cm), terete phyllodes. *Acacia orthocarpa* is readily distinguished from the new species by its punctulate phyllodes, smaller flowers and woody legumes.

The specific epithet refers to the very long, coarsely filiform phyllodes.

3. *Acacia richardsii* Maslin, sp. nov. (Figures 3 and 4)

Frutex 3-4 m altus. *Ramuli* glabri, costis resinosis. *Phyllodia* leviter oblique elliptica ad anguste elliptica, 17-40 mm longa, 4.5-8.5 mm lata, glabra, resinosa, 2-nervata, reticulata, glandibus 2-5. *Pedunculi* 5-10(15) mm longi, glabri. *Spicae* 2-3 cm longae, 2-4 mm latae (in sicco). *Flores* 5-meri. *Sepala* libera. *Legumina* lignosa, anguste alata, badia. *Semina* in legumine obliqua, 4.5 mm longa, c. 1.5 mm lata; *funiculus-arillus* strictus, anguste turbinatus.

Typus: Kelly's Knob Lookout, Kununurra, Western Australia. "Shrub to about 2.5 m; bark hard, grey, moderately rough. Habitat of massive sandstone." 14 August 1981, C. Done 492 (holo: PERTH; iso: DNA).

Rounded to more or less obconic shrubs to 3-4 m tall, either single-stemmed or sparingly branched at ground level, crowns rather dense and bushy, main branches slender and erect. *Bark* light to medium grey, finely longitudinally fissured and sometimes slightly flaking at base of main stem(s), otherwise smooth. *New shoots* either terminal on vegetative branch or arising within axil of phyllode at base of the peduncle, young phyllodes light green with yellow tips. *Branchlets* glabrous, green or yellowish, terete although marked with resin ribs which give an angular appearance especially near their apices, the resin is yellow, translucent, convoluted and drying mealy white. *Stipules* triangular to narrowly triangular, inconspicuous, 0.5-1 mm long, somewhat thickened. *Phyllodes* elliptic to narrowly elliptic, slightly asymmetric, 17-40 mm long, 4.5-8.5 mm wide, length to width ratio 3-6(8.5), ascending, thinly coriaceous, not rigid, subglaucous, glabrous, variably resinous (resin more pronounced on young phyllodes); *nerves* often yellowish and resinous (the resin drying mealy white and rendering the overall venation pattern quite evident), with 2 main longitudinal nerves (one more or less central and a less pronounced one on its adaxial side), main nerves not basally confluent with the margin, minor lateral veins openly anastomosing and trending longitudinally; *apex* rounded and terminating in a laterally positioned, innocuous, callose point; *pulvinus* not prominent, c. 0.5 mm long, yellowish; *glands* 2-5 scattered along upper margin of the phyllode, margin often shallowly indented about the gland, not prominent, circular, c. 0.3 mm diam., yellowish. *Inflorescences* simple and axillary, 1-2 per node. *Peduncles* 5-10(15) mm long, glabrous; *basal peduncular bract* solitary, rather persistent, c. 1 mm long, ovate, acuminate, concave, brown. *Spikes* 2-3 cm long and 2-4 mm wide (on dry specimens), flowers somewhat densely arranged. *Bracteoles* sub-peltate, c. 0.7 mm long, claws filiform. *Flowers* 5-merous, glabrous, slightly resinous. *Sepals* free, about 1/2 the length of the petals, claws filiform and expanded into narrowly ovate laminae. *Petals* c. 1.2 mm long, connate for c. 1/2 their length, obscurely 1-nerved. *Legumes* erect, broadly linear to narrowly oblong although tapering towards their base, to 8 cm long, 5-6 mm wide, woody, straight or slightly curved, neither raised over nor constricted between the seeds, resinous, glabrous, red-brown, obliquely longitudinally nerved, margins narrowly winged on either side of the suture (wing 2-3 mm wide) producing a quadrangular cross-sectional shape particularly noticeable on young legumes, valves opening elastically from the apex and becoming prominently recurved with

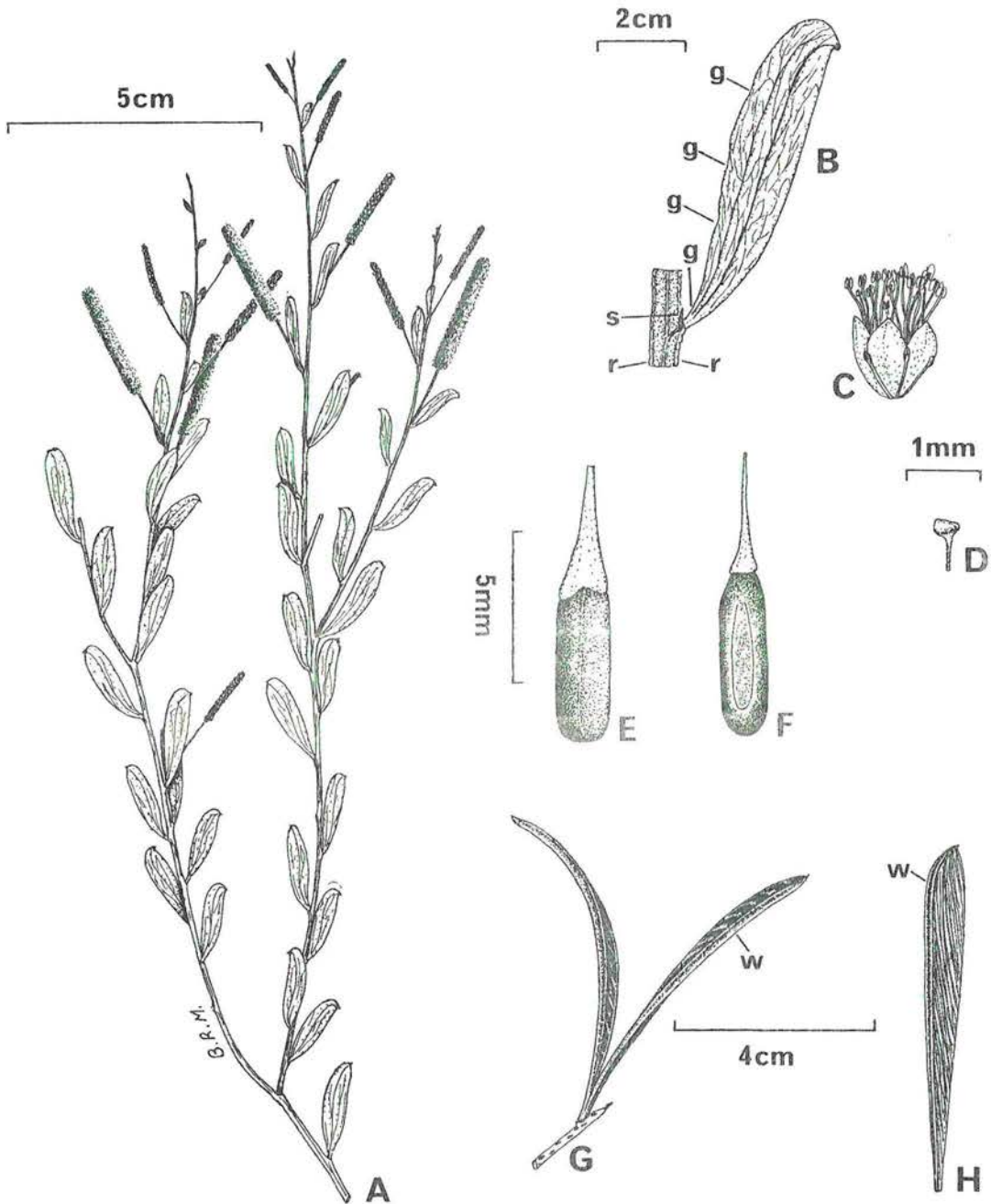


Figure 3. *Acacia richardsii*. A—Portion of branch. B—Node showing convoluted resin-ribs (r), minute stipules and phyllode with multiple glands (g) along upper margin. C—Flower showing free sepals. D—Bracteole. E—Seed (end view) showing obscure, yellowish peripheral nerve. F—Seed (side view) showing pleurogram bordered by a band of yellowish tissue. G—Legume (dehiscent) showing marginal wing (w). H—Legume (undehiscent) showing marginal wing (w) and obliquely longitudinal nervation pattern.

A from C. Done 492 (holotype); B from B. R. Maslin 5144; C—D from T. G. Hartley 14398; E—H from R. J. Petheram 474.

age. *Seeds* positioned obliquely in the legume in pronounced depressions which are separated by thin oblique partitions, elongated obloid, 4.5 mm long, c. 1.5 mm wide, turgid, somewhat shiny, greyish brown, with an obscure yellowish peripheral nerve; *pleurogram* fine, open towards the hilum, bordered by a band of yellowish tissue; *areole* elongated, c. 3 mm long and 0.7 mm wide; *funicle-aril* narrowly turbinate, straight, c. 4 mm long, pale yellow.

Other specimens examined. NORTHERN TERRITORY: Keep River National Park, 5 Aug. 1981, 29 Oct. 1981 and 2 Nov. 1981, *S. King* s.n. (DNA); Keep River National Park, 15°47'S, 129°02'E, *A. S. Mitchell* 314 (DNA).

WESTERN AUSTRALIA: Headwaters of Packsaddle Creek, Northern Carr Boyd Ranges, 15°56'S, 128°40'E, *T. G. Hartley* 14389 and 14403 (both PERTH—dups. ex CANB); Near Hookers Farm, Ivanhoe Crossing Road, Ord River Valley, *K. F. Kenneally* 1896 (PERTH); Kellys Knob, Kununurra, 15°46'S, 128°44'E, *K. F. Kenneally* 7237 (NSW, PERTH) and 7523 (BRI, CANB, K, PERTH); Kellys Knob, Kununurra, *B. R. Maslin* 5144 and 5144A (both PERTH); Hidden Valley, Kununurra, *B. R. Maslin* 5150 (PERTH); Lookout behind Kununurra, 16 Sept. 1966, *C. Palzer* and *R. Fox* 712 (DNA); Kellys Knob, Kununurra, *R. J. Petheram* 474 (K. MEL, PERTH); Hidden Valley, Kununurra, *M. Simmons* 19 (PERTH).



Figure 4. *Acacia richardsii*. Photograph of *B. R. Maslin* 5150 at Hidden Valley, Kununurra.

Distribution. (Figure 6) Known only from a small area on either side of the Western Australia-Northern Territory border from near Kununurra (W.A., 15°46'S, 128°44'E) to the Keep River National Park (N.T., 15°47'S, 129°02'E)—1:250 000 maps D52-14, 15.

Habitat. Apparently restricted to rocky sandstone areas.

Flowering and fruiting period. Flowering from (March) June-October. Flowering specimens collected from August to October frequently possess legumes in varying stages of maturity.

Due to its glabrous, resinous branchlets, free sepals, woody, winged, obliquely nerved legumes and seed characters the new species is allied to *A. tenuispica* Maslin, *A. conjunctifolia* F. Muell. and *A. gonocarpa* F. Muell. but is readily distinguished by its small, 2-nerved, openly reticulate phyllodes. In its phyllodes *A. richardsii* superficially resembles the Pilbara "Minni Ritchi" species *A. effusa* Maslin (1982), however, the two taxa, are otherwise quite dissimilar. On account of its small oblique phyllodes, spicate inflorescences and woody, erect, obliquely nerved legumes *A. richardsii* may possibly be mistaken for *A. wickhamii* Benth., however, the latter species is easily distinguished by its non-reticulate phyllodes, its gamosepalous calyx and its legumes which have prominent marginal ribs but which are not laterally winged.

The species is named after Quentin Richards in recognition of his fine work as a botanical assistant at the Western Australian Herbarium from 1980 to 1982.

4. *Acacia tenuispica* Maslin, sp. nov. (Figure 5)

Frutex ad 4 m altus, ut videtur ad *arborem* 6 m altam evolutus. *Ramuli* variabiliter tuberculati, glabri, resinosi. *Phyllodia* oblique anguste elliptica, (3)4-7 cm longa, 6-16 mm lata, glabra, resinosa, multinervia, glandibus 2(3). *Pedunculi* 1.5-3 mm longi. *Spicae* 15-45 mm longae, c. 2.5 mm latae (sub anthesi). *Flores* 5-meri. *Sepala* libera. *Legumina* lignosa, anguste alata, badia. *Semina* in legumine obliqua, ellipsoidea, 4-4.5 mm longa, c. 2.5 mm lata; *funiculus-arillus* strictus, anguste turbinatus.

Typus: Kalumburu Mission, about 4 km N of the Mission buildings, Western Australia. "Spreading, ±infundibular shrub 2.5-3 m tall, trunk dividing just above ground level into 2-3 spreading-erect branches. Bark grey, finely longitudinally fissured on the main branches. Branchlets green, nerves white. Phyllodes patent, distinctly subglaucous. Common on laterite in low-lying area within Eucalyptus woodland. Also common along a nearby sandstone creek." 30 January 1982, B. R. Maslin 5151 (holo: PERTH; iso: CANB, K).

Spreading, openly branched, more or less obconic *shrubs* normally to 4 m tall, apparently growing to a *tree* 6 m tall (A. S. George 13764), trunk dividing just above ground level into 2-3 main branches. *Bark* grey, finely longitudinally fissured on main branches. *Branchlets* terete but rather coarsely ribbed, becoming somewhat angular towards their apices, red-brown but apically greenish, variably tuberculate (tubercles very small and yellowish), glabrous, slightly resinous (resin not confined to the ribs). *Stipules* deciduous. *Phyllodes* asymmetrically narrowly elliptic with the upper margin more convex than the lower margin, narrowed toward the apex into a minute, recurved, innocuous callose point, (3)4-7 cm long, 6-16 mm wide, length to width ratio 4-8, patent to ascending, thinly coriaceous, not rigid, glabrous, slightly

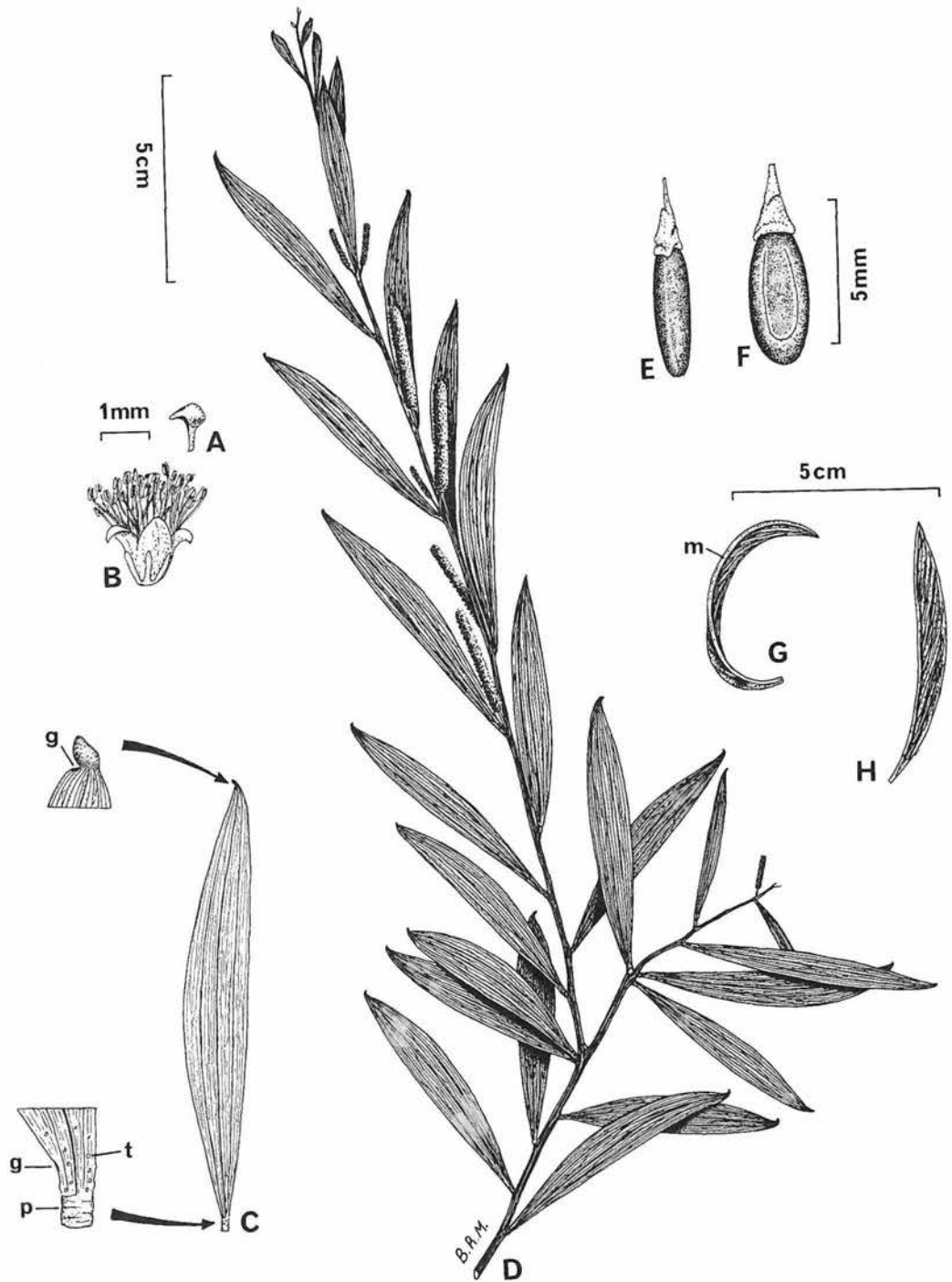


Figure 5. *Acacia tenuispica*. A—Bracteole. B—Flower. C—Phyllode showing 3 nerves more pronounced than the fine intervening venules—enlargements showing apical mucro with gland (g) at its base, and base of phyllode with pulvinus (p), gland (g) and few tubercles (t). D—Portion of branch. E—Seed (end view) showing pale peripheral nerve. F—Seed (side view) showing pleurogram bordered by a band of pale tissue. G—Legume valve showing narrowly winged margin (m). H—Legume showing obliquely longitudinal nervation pattern.

A—D from A. S. George 13841; E—F from B. R. Maslin 5151 (holotype); G—H from A. S. George 13764.

resinous, phyllodes normally brownish green when dry but sometimes subglaucous (cf. the type), sparsely tuberculate; *nerves* longitudinal and not basally confluent with the margin, 3(5) slightly more pronounced than the very fine, parallel, intervening venules which sometimes slightly anastomose; *pulvinus* squat, c. 1 mm long, brown (when dry); *glands* 2(3) on upper margin of phyllodes, proximal gland to 3 mm above the pulvinus, the distal gland situated just below the callose point, sometimes a third gland between the other two. *Inflorescences* simple and axillary, 2 per node. *Peduncles* 1.5-3 mm long, glabrous, resinous, frequently tuberculate; *basal peduncular bract* triangular, c. 1.5 mm long. *Spikes* variable in length, 15-45 mm long, apparently elongating with maturity, narrow (about 2.5 mm diam. just prior to anthesis), resinous (especially when young), flowers dense in the bud but somewhat distant at maturity. *Bracteoles* c. 0.8 mm long, glabrous; *claws* linear; *laminae* inflexed, thickened and concave. *Flowers* 5-merous, glabrous, somewhat resinous. *Sepals* c. 1/2 length of petals, free, narrowly oblong, membranous. *Petals* c. 1 mm long. *Legumes* erect, more or less narrowly oblong although tapering towards their base, to 7.5 cm long and 8 mm wide, woody, straight or slightly curved, neither raised over nor constricted between the seeds, resinous, glabrous, red-brown, obliquely longitudinally nerved, margins narrowly winged on either side of the suture (wing c. 2 mm wide) producing a quadrangular cross-sectional shape particularly noticeable on young legumes, valves opening elastically from the apex and becoming prominently recurved with age. *Seeds* obliquely positioned in the legume in pronounced depressions which are separated by thin oblique partitions, ellipsoid, 4-4.5 mm long, c. 2.5 mm wide, slightly compressed (c. 1.5 mm thick), somewhat shiny, brown, with a fine yellow peripheral nerve; *pleurogram* fine, open towards the hilum, bordered by a band of yellowish tissue; *areole* elongated, c. 3.5 mm long and 1 mm wide; *funicle-aril* narrowly turbinate, straight, c. 3 mm long, pale cream, slightly coarsely wrinkled.

Other specimens examined. WESTERN AUSTRALIA: Blyxa Creek, Prince Regent River Reserve, 15°48'S, 125°20'E, A. S. George 12492 (BRI, PERTH); S end of Ashton Range, near Dromains Creek, Drysdale River National Park, c. 15° 16'S, 126° 43'E, A. S. George 13295 (PERTH); Orchid Creek, below Carson Escarpment, Drysdale River National Park, A. S. George 13630 (PERTH); Near Solea Falls, Drysdale River, Drysdale River National Park, c. 14° 40'S, 127° 00'E, A. S. George 13764 (PERTH); Conical Gorge, Carson Escarpment, Drysdale River National Park, c. 15° 02'S, 126° 49'E, A. S. George 13841 (PERTH); Morgan Falls, Drysdale River, Drysdale River National Park, c. 15° 02'S, 126° 40'E, A. S. George 14046 (PERTH); Boiga Falls, Drysdale River National Park, 15° 08'S, 127° 06'E, K. F. Kenneally 4004 (PERTH); Cracticus Falls, Drysdale River National Park, 14° 47'S, 127° 05'E, K. F. Kenneally 4141 (PERTH); Nymphaea Creek, Drysdale River National Park, 14° 49'S, 126° 55'E, K. F. Kenneally 4279 (PERTH).

Distribution. (Figure 6) Kimberley region, northern Western Australia, in the Gardner Botanical District (1:250 000 maps D51-16; D52-9, 13). Ranging from the Prince Regent River (15° 48'S, 125° 20'E) to the Drysdale River area (c. 15°S, 127°E). In the Drysdale River area the species appears to be common, but around the Prince Regent River it is known only from a single gathering. This may merely reflect collecting activity in the respective areas.

Habitat. Rocky soil (sandstone, siltstone, basalt or laterite) principally in low open *Eucalyptus* woodland or sometimes tall shrubland (see George and Kenneally, 1975 and 1977, where the species is called *A. brevifolia* Benth., *A. aff. leptophleba* F. Muell. and *Acacia* sp.).

Flowering and fruiting period. All collections except the type were made in August at which time specimens were either sterile, in flower or in mature fruit. At the type locality in January most plants were sterile but a few were in flower or possessed mature legumes.

Its carpological characters, narrow spikes and free sepals relate *A. tenuispica* to *A. richardsii* but the new species is readily distinguished by its larger, differently shaped phyllodes with their more numerous, rarely anastomosing nerves (compare Figures 3 and 5). The known ranges of these two new species do not overlap. Other allied Juliflorae species with similar floral and legume characters are *A. conjunctifolia* F. Muell. and *A. gonocarpa* F. Muell. From the former species *A. tenuispica* is distinguished by its much larger, non-clustered phyllodes and from the latter by its more narrowly winged legumes and much broader phyllodes. *Acacia lentiginea* Maiden et Blakely seems also to be related to the new species but the latter is distinguished by its generally shorter and broader phyllodes and its more coarsely ribbed branchlet apices. *Acacia lentiginea* is known only from the two collections (both of which I have examined) cited in the protologue viz. Prince Regent River, C. A. Gardner 1369 (NSW, PERTH) and Brunswick Bay, A. Cunningham 296 (K). I have not seen legumes of *A. lentiginea*.

The specific epithet refers to the narrow spikes.

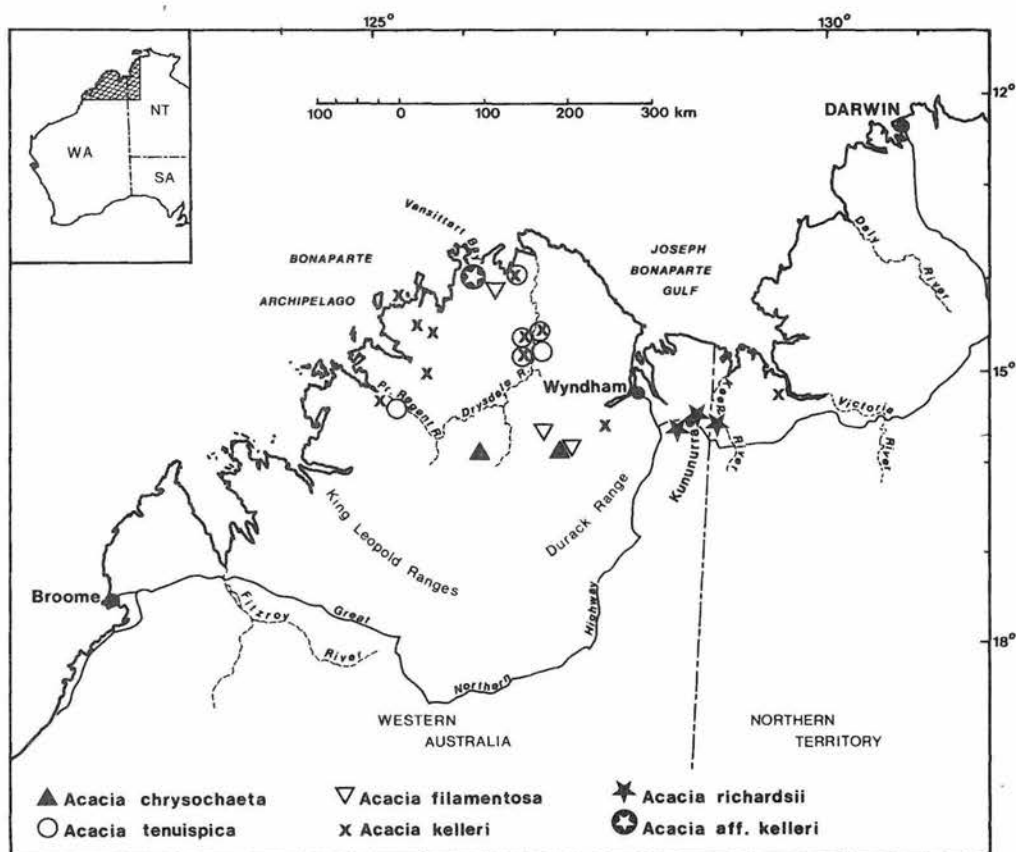


Figure 6. Distribution of *Acacia chrysochaeta*, *A. kelleri*, *A. aff. kelleri* (based on C. A. Gardner 1534), *A. filamentosa*, *A. richardsii* and *A. tenuispica* N.B. The distribution shown for *A. kelleri* includes 2 specimen records for which the localities are rather vague, viz. Prince Regent River, W. T. Allen s.n.; lower part of the Victoria River, R. J. Winters 16.

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Index to specimens studied

This index is arranged alphabetically according to the name of the collector. Numbers in parentheses refer to the corresponding numbered species in the text. Specimens marked with an asterisk (*) have not been examined by the author. Unless otherwise indicated, the specimens cited are housed at the Western Australian Herbarium (PERTH). Abbreviations for herbaria are those given in Index Herbariorum, Part 1, Edition 7 (1981). In the case of Kings Park and Botanic Garden, Perth there is no formal abbreviation so KP is used informally here.

Byrnes, N. 2273(1-Type: K, NSW, NT, PERTH)

Done, C. 492(3-Type: DNA, PERTH)

George, A. S. 12492(4-Bri, PERTH), 13295(4), 13630(4), 13764(4), 13841(4), 14046(4)

Gill, B. A1(2)

Hartley, T. G. 14389(3), 14403(3)

Kenneally, K. F. 1896(3), 4004(4), 4141(4), 4279(4), 7237(3-NSW, PERTH), 7523(3-BRI, CANB, K, PERTH)

King, S. s.n. 5 Aug. 1981, 29 Oct. 1981, 2 Nov. 1981 (all 3-DNA)

Luscombe, P. s.n. 25 Aug. 1980 (2-Type: K, PERTH)

Maconochie, J. R. 1216(1-NSW, NT), 1294(1-*AD, *B, *BRI, *CANB, K, *L, *MEL, NSW, NT, *NY, PERTH), 1295(1-NSW, NT)

Maslin, B. R. 5144(3), 5144A(3), 5150(3), 5151 (4-Type: CANB, K, PERTH)

Mitchell, A. S. 314(3-DNA)

Palzer, C. and Fox, R. 712(3-DNA)

Perry, R. A. with Lazarides, M. 3089(1-*BRI, *CANB, NSW, NT)

Petheram, R. J. 474(3-K, MEL, PERTH)

Rust, D. 50(1-CANB, PERTH)

Simmons, M. 19(3)

Speck, N. H. 4923(2-*BRI, PERTH)

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