Studies in the genus *Acacia* (Leguminosae: Mimosoideae)-14. New taxa from north-west Western Australia

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Abstract

Maslin, B. R. Studies in the genus *Acacia* (Leguminosae: Mimosoideae)-14. New taxa from north-west Western Australia. Nuytsia 4(3): 383-410 (1983). Six new species occurring in the region between the Ashburton and Murchison rivers, north-west Western Australia, are described and illustrated viz. *A anastema, A. distans, A. drepanophylla, A. intorta* (all section Juliflorae), *A. galeata* and *A. sibilans* (both section Plurinerves). A putative hybrid between *A. ancistrocarpa* Maiden et Blakely and *A. trachycarpa* E. Pritzel is also described and illustrated. This taxon is known from a few scattered localities in the Pilbara region.

Introduction

The following six species and one putative hybrid are described in order that they may be included in a forthcoming volume of the Flora of Australia. Four occur in section Juliflorae and two in section Plurinerves, as indicated below under each species.

With the exception of the putative hybrid the species are mostly confined to the extreme western part of the arid zone between the Murchison and Ashburton rivers in Western Australia. Arid zone *Acacia* species, especially those from sections Plurinerves and Juliflorae, frequently have what appear to be erratic flowering and fruiting phenologies (seemingly related to the incidence of rainfall) and this certainly applies to most taxa included here. Maslin and Hopper (1982) have interpreted this phenological response to rainfall as being indicative of a long period of evolution of these sections within the arid zone.

The Botanical Districts referred to below are those of Beard (1980).Taxa are also referred to 1:250 000 map sheets (Maslin and Pedley 1982).

1. **Acacia anastema** Maslin, sp. nov. (Figures 1 and 2)

Arbor ad 6 m altus. *Phyllodia* linearia, acuminata, (11)15-25(32) cm longa, 2-6 mm lata, patentia, falcata, multistriata. *Spicae* 2-4 cm longae, ad 8 mm latae. *Sepala* ± libera. *Legumina* linearia, ad 14 cm longa, 2-3 mm lata, teretia. *Semina* in legumine longitudinalia, breviter cylindrica, 5-5.5 mm longa, 2-3 mm lata.

Typus: 35 km S of Gascoyne Junction on the road to Towrana Station, Western Australia. "Tree to 6 m tall, either single-stemmed or dividing into 2(3) trunks at ground level; bark grey, fissured on main trunks, smooth on branches; mature phyllodes falcate, spreading, grey-green; new shoots light yellowish green and slightly resinous; spikes bright golden. Confined to a red sand ridge." 29 July 1981, *B. R. Maslin* 5004 (holo: PERTH; iso: BM, BRI, CANB, G, K, MEL, NSW, NY).

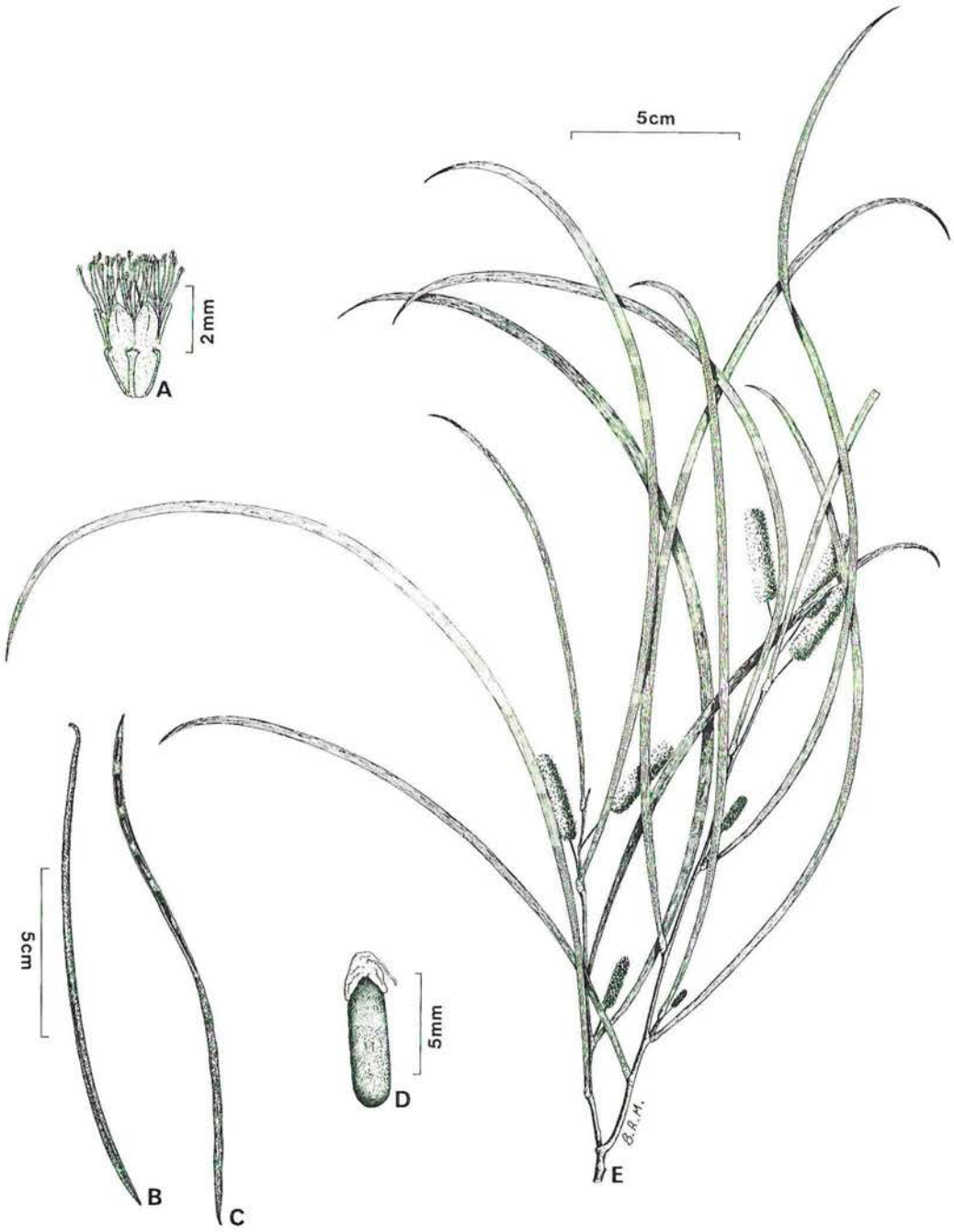

Figure 1. *Acacia anastema*. A—Flower. B—Legume (undehisced). C—Legume valve. D—Seed. E—Portion of branch.

A, E from *B. R. Maslin* 5004 (the type); B—D from *A. Holmes* s.n.

More or less obconic *trees* to 6 m tall, with a single trunk or sometimes 2(3) branched at ground level. *Juvenile plants* single- or multi-stemmed with straight, erect trunks, habit sometimes conifer-like with more or less horizontal branches diverging from the main trunk(s). *Bark* grey and fibrous, longitudinally fissured on main trunks but smooth on branches. *Branchlets* terete, finely ribbed (ribs slightly resinous when very young), dark grey and glabrous except towards their apices where they may be reddish brown and hoary between the ribs (hairs golden when very young). *New shoots* pale citron-sericeous and slightly resinous. *Stipules* widely deltate, c. 1 mm long, somewhat persistent, brown. *Phyllodes* linear but gently tapered to delicately curved and non-pungent apices, (11)15-25(32) cm long, 2-6 mm wide, length to width ratio 30-95, spreading, falcate, not rigid, hoary when young, hairs becoming restricted to between the nerves with age, greyish green or pale green; *nerves* very fine and close together, uniform or sometimes the midrib and a nerve on either side of it slightly more evident than the rest; *pulvinus* 1 mm long, slightly dilated at the base, transversely wrinkled, yellowish, resinous when young; *gland* obscure, situated at the distal end of the pulvinus within a shallow depression formed by the bifurcation of the adaxial marginal nerve, submerged within and surrounded by a swelling of the lamina, lip yellowish but not raised, orifice absent. *Inflorescence* a simple, axillary pedunculate spike, the peduncles 1-2 per node and often arising from the base of new shoots. *Peduncles* 1-2 cm long, resinous-strigillose, hairs white or golden; *basal peduncular bracts* sub-persistent, ovate, c. 1 mm long, concave, brown. *Spikes* bright golden, 2-4 cm long and to 8 mm wide at anthesis, flowers densely arranged. *Bracteoles* sub-peltate, 1 mm long; *claws* linear; *laminae* incurved, thickened, dark brown and sparsely ciliolate. *Flowers* 5-merous. *Sepals* 1/2 the length of the petals, free or united at their extreme base; *claws* glabrous, linear to narrowly oblong; *laminae* inflexed, often brown, sparsely ciliolate otherwise glabrous. *Petals* 2.5-3 mm long, connate for 2/3 their length, very obscurely 1-nerved, glabrous, granulose along margin at the apex, apices often inrolled when dry. *Ovary* densely white villose. *Legumes* linear-terete, very slightly constricted between the seeds, to 14 cm long, 2-3 mm wide, slightly chartaceous to somewhat crustaceous, straight to slightly curved, valves often twisted or shallowly curved to shallowly sinuous following dehiscence, light brown, glabrous or sparsely hoary, margins not thickened, constricted at apex into a bluntly acute point. *Seeds* longitudinally placed in the legumes, shortly cylindrical, 5-5.5 mm long, 2-3 mm wide, 1.5 mm thick, brown to greyish brown, somewhat shiny, possessing an obscure, depressed, peripheral line; *pleurogram* very obscure, open towards the hilum; *areole* 0.4-0.6 mm long, 0.2-0.3 mm wide; *funicle* filiform, expanded into a convoluted *aril*.

Other specimens examined. WESTERN AUSTRALIA: 29.3 mi (47 km) S of Gascoyne Junction, *A. M. Ashby* 4610 (AD, CBG, PERTH); Woodleigh Station, *H. Demarz* D3329 (KP, PERTH); Ellavalla Station, *H. Demarz* 5184 (KP, PERTH); Marron Station, 28 Nov. 1980, *A. Holmes* s.n. (PERTH); 35 km S of Gascoyne Junction on the road to Towrana Station, *B. R. Maslin* 5004A (PERTH); 47 km E of North West Coastal Highway on the Woodleigh Station-Yalardy Station road, *B. R. Maslin* 5163 (PERTH).

Distribution. (Figure 14) Appears mainly confined to the Yabalgo Plain (Beard 1976) in the southern part of the Carnarvon Botanical District between Woodleigh Station (26°11′S, 114°33′E) and Ellavalla Station (25°05′S, 114°23′E)-1:250 000 maps G50-5,9.

Habitat. Confined to red sand dunes where it frequently forms pure stands. Towards the southern limit of its distribution, on Woodleigh Station, the species occurs in association with *Acacia ramulosa* W. V. Fitzg., *A. sclerosperma* F. Muell. and *A. tetragonophylla* F. Muell.

Flowering and fruiting period. Flowers from late July to September. Mature legumes have been collected in late November.

On account of its spicate inflorescences and its multinerved phyllodes the species is placed in section Juliflorae (Benth.) Maiden et Betche. Using Bentham's (1864) classification *A. anastema* is placed in series Juliflorae subseries Falcatae where it occurs in the *A. doratoxylon* A. Cunn. group. This is a large, Australia-wide species-complex which includes, among other species, *A. lasiocalyx* C. Andrews to which *A. anastema* seems most closely related. Both these species grow to small trees, possess long, finely multistriate phyllodes and have rather dense, showy spikes. *Acacia lasiocalyx* is distinguished by its united sepals and flat, broad legumes (to 5 mm wide). The two species do not occur sympatrically. Except for being much longer, the legumes of *A. anastema* are very similar to those of *A. coolgardiensis* Maiden but the former is recognized by its shorter, often terete phyllodes, its sessile, shorter spikes, its smaller seeds and its fluted trunks.

The specific epithet refers to the tall growth habit.

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

Arbor 5-8 m altus. *Phyllodia* angustissime elliptica, acuminata, plerumque 6-11 cm longa, 4-10(11.5) mm lata, modice falcata, multistriata, dense appresse in statu juvenili puberula. *Spicae* ad 11 cm longae, 4-5 mm latae, floribus ad 130 in fasciculis distantibus. *Flores* 5-meri. *Calyx* cupularis. *Legumina* (in statu submaturo) linearia, ad 9.5 cm longa, 3-5 mm lata. *Semina* (immatura) in legumine longitudinalia, obloidea.

Typus: Gascoyne River crossing, 3 km S of Landor Station homestead, Western Australia. "Tree to 8 m tall, more or less infundibular with dense, silvery grey-green, slightly rounded crowns. Bark dark grey, longitudinally fissured with fine horizontal fissures on the individual segments. New shoots at first pale citron-sericeous, then turning silvery light green. Ultimate branchlets very slender, sometimes pendulous. Phyllode apices brown and acute, not pungent. Forming dense, almost monotypic stands along the banks of the River. A little *Acacia citrinoviridis* growing here also." 7 May 1982, *B. R. Maslin* 5183 (holo: PERTH; iso: BRI, CANB, K, MEL, NSW, NY).

Trees 5-8 m tall, normally more or less obconic with dense, bushy, more or less rounded, silvery grey-green crowns, either with a single trunk or sparingly divided near ground level, trunks to c. 40 cm diam. at base. *Bark* medium or dark grey to almost black, finely longitudinally fissured on main trunks with the individual segments marked with fine horizontal fractures (Figure 4B), smooth on branches. *Branchlets* slender and sometimes pendulous, terete, very obscurely nerved, glabrous and grey to red-brown except on new shoots where they are light brown and frequently strigillose. *New shoots* at first with densely citron-sericeous phyllodes, with age the hairs turning white and the phyllodes becoming silvery light green. *Stipules* deciduous. *Phyllodes* linear or broadest near the middle, tapering to acute, brown, non-pungent points, 6-11 cm long (rarely longer), 4-10(11.5) mm wide, length to

Figure 2. ***Acacia anastema*****. Photograph of** ***B. R. Maslin*** **5004 (the type).**

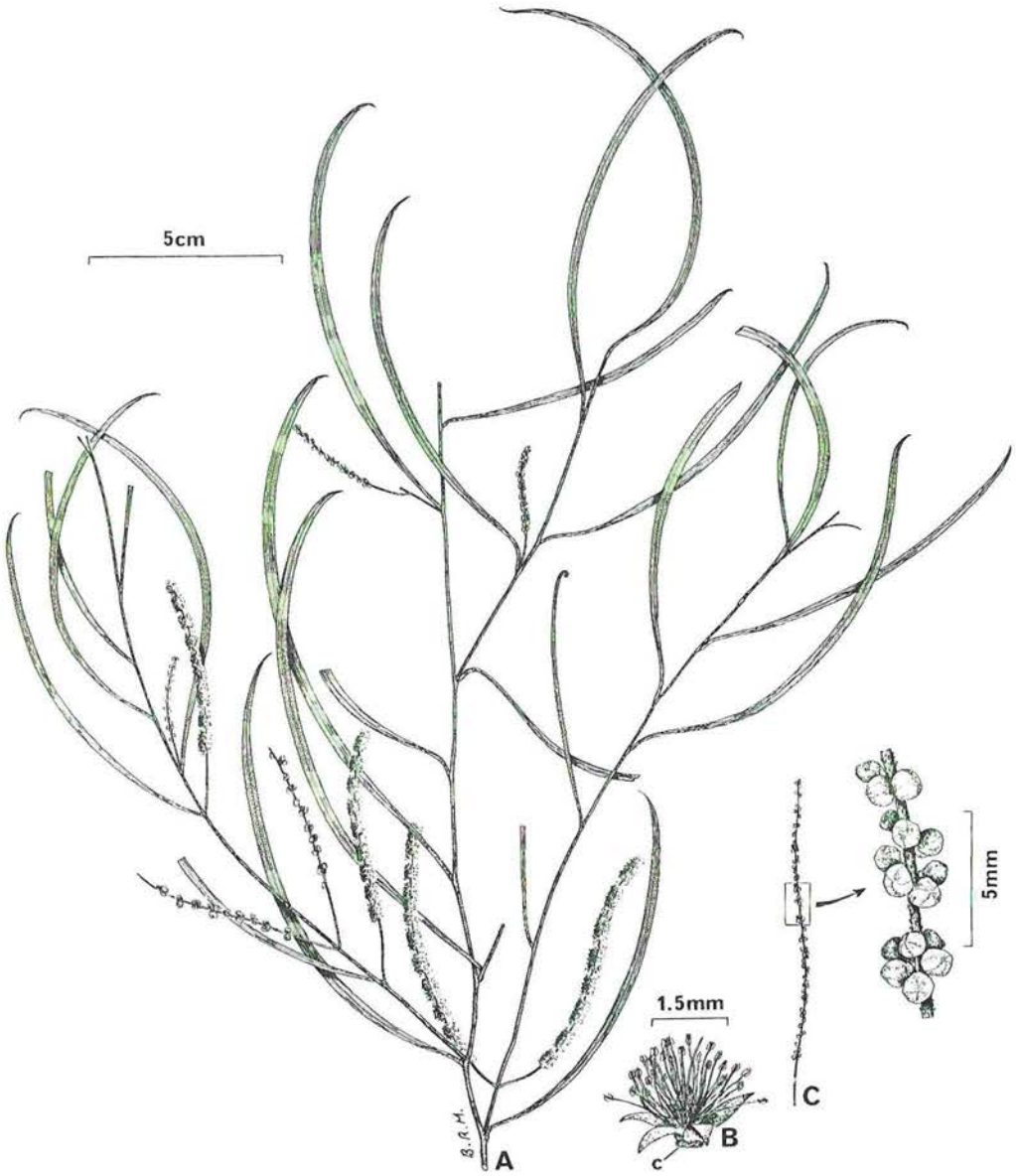

Figure 3. *Acacia distans*. A—Portion of branch. B—Flower showing small, cupular calyx (c) and widely spreading petals. C—Spike with enlargement showing flowers arranged in more or less distant clusters.

A from *B. R. Maslin* 5183 (the type); B—C from *L. Glauert* s.n.

width ratio 9-21, gently falcate, not rigid, densely hoary with appressed hairs when young, indumentum sparser with age; *nerves* fine, numerous and close together, parallel and not anastomosing, interstices 0.1-0.2 mm wide, the central nerve and sometimes one on either side of it slightly more evident than the rest, the nerves frequently obscured by the dense indumentum especially on young phyllodes; *pulvinus* orange, 2-3 mm long, finely transversely wrinkled; *gland* on the upper margin of the phyllodes 1-2 mm above the pulvinus, very obscure, less than 0.5 mm long, lamina

slightly swollen about the gland. *Inflorescence* normally an extremely reduced, 2(3)-branched raceme of pedunculate spikes, rarely seemingly simple, the raceme axes minute (0.5-1 mm long) and frequently growing out at apex into a leafy shoot. *Peduncles* 8-12 mm long, antrorsely white puberulous; *basal peduncular bracts* caducous. *Spikes* to 11 cm long, 4-5 mm wide, with up to 130 small flowers arranged in more or less distant clusters along the antrorsely puberulous receptacles (hairs sometimes sparse). *Bracteoles* subsessile, the inflexed laminae ovate, acute, c. 0.3 mm long, dark brown and densely puberulous abaxially. *Flowers* 5-merous but on some occasionally 6 petals. *Calyx* small and cupular, 1/5-1/6 the length of the corolla, membranous, puberulous, divided for about 1/2 its length into broadly triangular lobes. *Petals* 1.7 mm long, free almost to their base, spreading widely at anthesis, sparsely puberulous, very obscurely 1-nerved. *Ovary* densely white-tomentose. *Legumes* (slightly immature) linear but slightly raised over and shallowly constricted between the seeds (?moniliform at maturity), to 9.5 cm long, 3-5 mm wide, somewhat crustaceous, obscurely longitudinally nerved, reddish brown, densely hoary when young but indumentum sparser with age. *Seeds* (immature) longitudinally placed in the legume, obloid; *funicle* minute (0.3 mm long) and linear, expanded into a small, convoluted *aril*.

Other specimens examined. WESTERN AUSTRALIA: Mount Narryer Station, *G. E. Brockway* 1 (PERTH); The Dale Paddock, Towera Station, 23°22′S, 114°58′E, *R. J. Cranfield* 1749a (MEL, PERTH); Murchison River, May 1922, *L. Glauert* s.n. (PERTH); Mileura Station, *J. Kruiskamp* 4096 and 4100 (both PERTH); 16 km from Byro homestead on the road to Milly Milly Station, *B. R. Maslin* 5174 (BRI, MEL, PERTH); Beringarra, *N. H. Speck* 656 (BRI, MEL, PERTH); 12 mi (19 km) N of Mileura homestead, *N. H. Speck* 970 (K, NSW, PERTH).

Distribution. (Figure 14) Of scattered occurrence between the Murchison and Ashburton rivers from Mileura Station (26°22′S, 117°20′E) in the north-west Austin Botanical District to Towera Station (23°22′S, 114°58′E) in the extreme north-west of the Ashburton Botanical District (1:250 000 maps G50-6, 10, 11; F50-13).

Habitat. Principally confined to low-lying, loamy, alluvial plains where it often forms almost pure stands.

Flowering and fruiting period. Flowering from late March until May. Legumes with immature seeds have been collected between July and September.

On account of its spicate inflorescences and its multinerved phyllodes the species is placed in section Juliflorae (Benth.) Maiden et Betche. In its growth habit and greyish foliage *A. distans* may be mistaken in the field as a broad phyllode form of Mulga (*A. aneura* F. Muell. ex Benth.) or River Jam (*A. citrinoviridis* Tindale et Maslin), however, the new species is at once recognized by its very long spikes bearing numerous small flowers arranged in rather well-spaced clusters, and by its long, linear legumes.

The specific epithet refers to the spikes with their well-spaced flowers.

3. **Acacia drepanophylla** Maslin, sp. nov. (Figures 5 and 6)

Arbuscula 2.5-4(5) m alta. *Rami* glabri. *Phyllodia* linearia, acuminata, falcata, patentia, (9)15-20 cm longa, 3-6 mm lata, multistriata. *Pedunculi* 1-3 mm longi. *Spicae* 15 mm longae et 5 mm latae (in sicco). *Flores* 4-meri. *Sepala* libera. *Legumina* late linearia, ad 11.5 cm longa, 8-11 mm lata, supra semina umbonata. *Semina* in legumine longitudinalia ad obliqua, applanata, circularia, 5-6 mm diam.

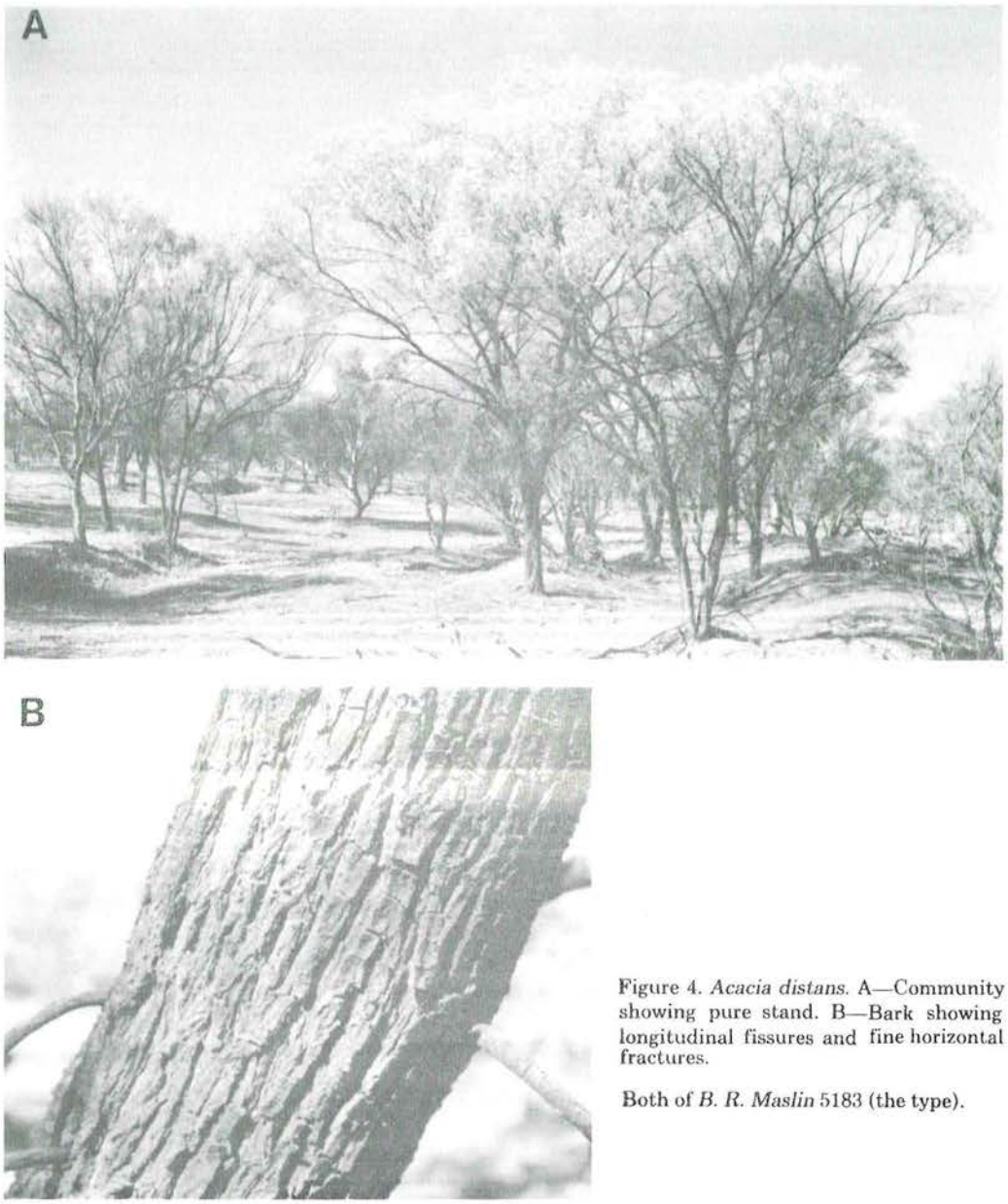

Figure 4. *Acacia distans*. A—Community showing pure stand. B—Bark showing longitudinal fissures and fine horizontal fractures.

Both of *B. R. Maslin* 5183 (the type).

Typus: 25.5 km N of Overlander Roadhouse on North West Coastal Highway, Western Australia. "Dense spreading tree c. 3 m tall; bark ±light grey, fissured at base of trunk otherwise smooth; flower-heads light yellow; phyllodes ±light green, curved. On stony plain with *A. tetragonophylla* and *A. grasbyi*." 16 June 1972, *B. R. Maslin* 2778 (holo: PERTH; iso: AD, B, BRI, MO, RSA—distributed as *Acacia oldfieldii*).

Small more or less obconic *trees* 2.5-4(5) m tall, with a single trunk or sparingly divided at ground level, crowns not particularly dense. *Bark* grey, fibrous, longitudinally fissured on main trunks but smooth on the branches which are apically reddish

brown. *Branchlets* terete, very obscurely ribbed, glabrous and with a light grey and often longitudinally fissured epidermis over a reddish brown undersurface, lenticels scattered. *New shoots* with pale citron-sericeous phyllodes on reddish brown, antrorsely puberulous axes. *Stipules* deciduous. *Phyllodes* linear although tapered towards their apices into delicate, acuminate, slightly curved, non-pungent points, (9)15-20 cm long, 3-6 mm wide, length to width ratio 30-65, characteristically spreading and gently falcate, light green, not rigid, glabrous or sparsely strigillose; *nerves* numerous and close together, parallel and not anastomosing, fine although slightly raised when dry, midrib and sometimes a nerve on either side of it slightly more evident than the rest, marginal nerves yellowish but not pronounced; *pulvinus* 1.5-2 mm long, slightly dilated at base, tranversely rugose, greenish yellow but often brownish when dry; *gland* on the upper margin of the phyllode at the distal end of the pulvinus, circular, 0.5 mm diam., lip yellowish and slightly raised and surrounding a shallow central orifice. *Inflorescence* an extremely reduced raceme of 2, shortly pedunculate spikes, the raceme axes less than 0.5 mm long, new shoots frequently developing from within the axil of the peduncles. *Peduncles* 1-3 mm long, white puberulous but hairs often sparse; *basal peduncular bracts* deciduous, ovate, about 2 mm long and 2 mm wide, concave, brown, apically cleft. *Spikes* light yellow, about 15 mm long and 5 mm wide at anthesis (when dry); *receptacles* rather sparsely pale golden puberulous to glabrescent. *Bracteoles* about 1 mm long, claws linear and glabrescent; *laminae* incurved, relatively large (0.5 mm diam.), ovate, dark brown, concave, slightly thickened and puberulous. *Flowers* 4-merous. *Sepals* 3/4-7/8 the length of the petals, free, linear-spathulate, claws glabrous or glabrescent; *laminae* concave, slightly thickened, dark brown and rather sparsely puberulous (hairs pale golden or white and often restricted to the margins). *Petals* connate for about 3/4 their length, 1.5-2 mm long, glabrous, apically dark coloured, very obscurely 1-nerved. *Legumes* broad-linear, shallowly constricted between the seeds, to 11.5 cm long, 8-11 mm wide, straight to slightly curved, firmly chartaceous to slightly coriaceous, flat but obviously raised over the seeds, light brown (greyish brown prior to maturity) but the circular umbos slightly darker than the intervening spaces between the seeds, glabrous, sparingly openly reticulate, narrowed into somewhat uncinate apices, margins slightly thickened. *Seeds* longitudinally to obliquely placed in the legumes, remaining attached to the legume following dehiscence, compressed-globose (c. 2-3 mm thick), 5-6 mm diam., greyish brown, dull; pleurogram very obscure, widely "u"-shaped and open towards the hilum; *areole* 0.5-0.7 mm long, 0.8 mm wide; *funicle* membranous, flattened and convoluted, about 4 mm long, pale cream, reflexed below a small flattened *aril*.

Other specimens examined. WESTERN AUSTRALIA: Carnarvon road, 501 mile peg, *A. M. Ashby* 3833, comm. G. Phillips, (PERTH); 501 mile peg, North West Coastal Highway, *A. M. Ashby* 4582 (PERTH); North West Coastal Highway, *A. M. Ashby* 5334 (PERTH); Coburn Station, *J. S. Beard* 7398 (PERTH); Yaringa Station, about halfway between Geraldton and Carnarvon, *W. E. Blackall* 4702 (PERTH); Near Overlander Roadhouse on North West Coastal Highway, 2 July 1982, *P. W. Hennig* s.n. (K, MEL, NSW, PERTH); 125 km N of the Murchison River on North West Costal Coastal Highway, *B. R. Maslin* 2631 (PERTH); Hamelin Pool Station, c. 26 km W of Overlander [Roadhouse], *B. R. Maslin* 3655 and 3656 (both PERTH); 10 km N of Overlander Roadhouse, North West Coastal Highway, *B. R. Maslin* 4320 and 4321 (both PERTH); 3.5 km S of Billabong Roadhouse on North West Coastal Highway, *B. R. Maslin* 4987 (PERTH); 4 km N of Overlander Roadhouse, North West Coastal Highway, *B. R. Maslin* 4992 (CANB, PERTH); Hamelin Pool Road, W of Overlander Roadhouse, *A. S. Weston* 6891 (CANB, PERTH).

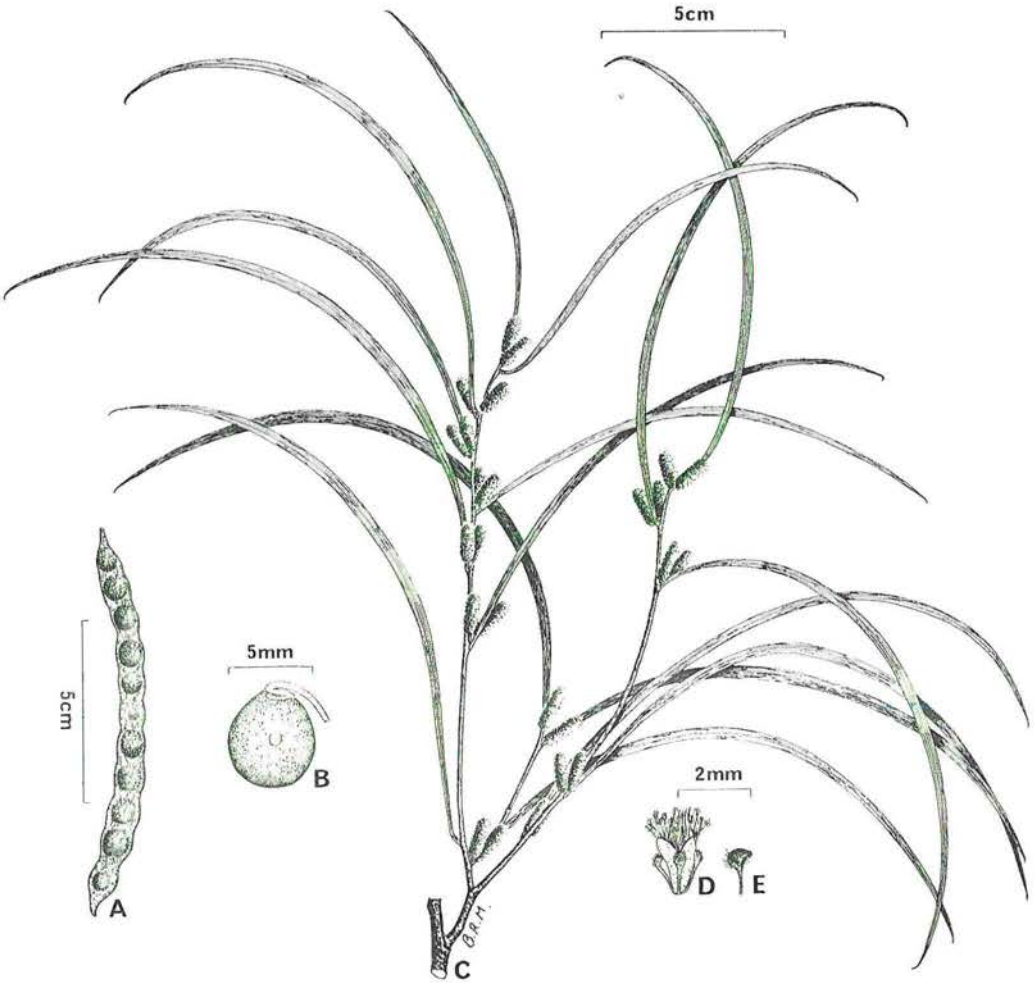

Figure 5. *Acacia drepanophylla*. A—Legume. B—Seed. C—Portion of branch. D—Flower (4-merous). E—Bracteole showing large, dark brown lamina.

A—B from *A. M. Ashby* 3833 (comm. G. Phillips); C—E from *B. R. Maslin* 2778 (the type).

Distribution. (Figure 14) Western Australia in the southern part of the Carnarvon Botanical District (1:250 000 maps G50-5, 9). Restricted to the vicinity of Shark Bay from Wannoo (26°49′S, 114°37′E) to Yaringa Station (25°56′S, 114°19′E). Very common throughout its range.

Habitat. Shallow red clay or loam over limestone in flat to low-undulating country in dense *Acacia* scrub with *A. grasbyi* Maiden, *A. ramulosa* W. V. Fitzg., *A. sclerosperma* F. Muell., *A. victoriae* Benth. and *A. xiphophylla* E. Pritzel. In places, for example around the Overlander Roadhouse (26°25′S, 114°28′E), *A. drepanophylla* is the dominant element within the vegetation. Its limits of distribution appear to be determined, at least in part, by soil depth. For example, near Woodleigh Station (26°11′S, 114°33′E) where soils are deep, *A. drepanophylla* does not grow, however, west of this locality in what seems to be the same vegetation, the species is common on shallow soil over limestone.

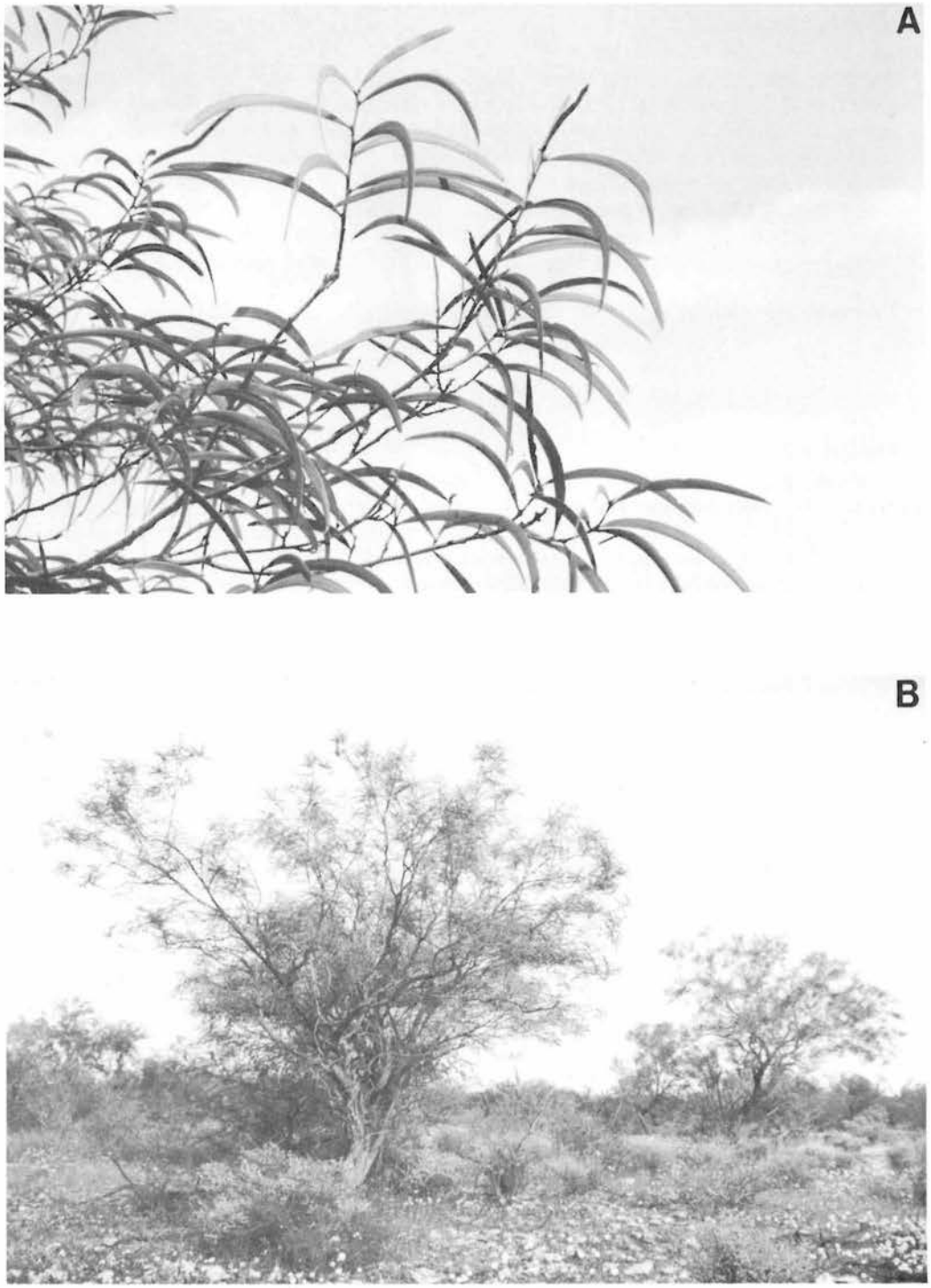

Figure 6. *Acacia drepanophylla*. A—Upper portion of branch showing characteristically falcate, spreading phyllodes. B—Growth habit.
Both of *B. R. Maslin* 4992.

Flowering and fruiting period. Flowering from May to July. Mature legumes have been collected in November.

On account of its multinerved phyllodes and its spicate inflorescences *A. drepanophylla* is placed in section Juliflorae (Benth.) Maiden et Betche where, because of its acuminate phyllodes, short peduncles and 4-merous flowers, it seems most closely allied to *A. oldfieldii* F. Muell. *Acacia drepanophylla* is, however, readily distinguished by its longer, falcate phyllodes, paler yellow spikes, free sepals and broader legumes. In its growth habit and its spreading, falcate phyllodes the new species resembles *A. subtessarogona* Tindale et Maslin (1976) but is distinguished by its longer spikes, non-quadrangular legumes and green, glabrous phyllodes.

The specific epithet refers to the characteristically falcate phyllodes (see Figure 6A).

4. **Acacia galeata** Maslin, sp. nov. (Figures 7 and 8)

Frutex vel *arbuscula* plerumque ad 6 m alta. *Phyllodia* anguste elliptica ad lanceolata, 6-11 cm longa, 6-15 mm lata, ±glabra, 2-3(4) nervata, acuminata; *pulvinus* 3-6 mm longus. *Racemi* 3-5-ramosi. *Pedunculi* 4-7 mm longi. *Capitula* globosa, 35-45-flora. *Flores* 4-meri. *Legumina* submoniliformia, ad 18 cm longa, 7-8 mm lata. *Semina* in legumine longitudinalia, obloideo-ovoidea, ad 7.5 mm longa et 5 mm lata; *arillus* magnus, cucullatus, aurantiacus.

Typus: 12 km N of the Woodleigh turn-off on North West Coastal Highway, Western Australia. "Bushy young shrubs. Older trees were sterile." 2 July 1982, *P. W. Hennig* s.n. (holo: PERTH; iso: CANB, K, MEL, NY).

Bushy, rounded shrubs growing to small *trees* 5-6 m tall with rather dense crowns and 1-2 main trunks, wind-pruned to c. 1-1.5 m tall in some coastal situations. *Bark* grey, fibrous and longitudinally fissured on main trunks, smooth on branches. *New shoots* at first densely citron-sericeous but indumentum soon turning white and phyllodes light green. *Branchlets* terete, very obscurely nerved, glabrous except when young, apically yellow or pale orange. *Stipules* deciduous. *Phyllodes* narrowly elliptic to lanceolate, the adaxial margin often slightly more convex than the abaxial margin, 6-11 cm long, 6-15 mm wide, length to width ratio 4.5-13, straight or slightly falcate, not rigid, rather widely spreading, glabrous to glabrescent, rather glaucous; *apices* acuminate, not pungent, straight or gently curved; *pulvinus* distinct, 3-6 mm long, pale orange, finely wrinkled; *longitudinal nerves* 2-3(4), well-spaced, not basally confluent with the margins, obscure and impressed when fresh but slightly raised and frequently yellowish when dry, intervening venules submerged, very obscure (obscure at x10 mag. when dry) and forming a close longitudinal reticulum; *gland* on adaxial margin of the phyllode at, or just above, the distal end of the pulvinus, often not prominent, 0.2-0.6 mm diam., generally comprising yellowish or brown nectiferous tissue without a central orifice, margin normally slightly swollen about the gland. *Inflorescence* an extremely reduced raceme of 3-5 pedunculate flower-heads appearing as axillary fascicles, raceme axes 1-1.5 mm long and often growing out as a leafy shoot. *Peduncles* 4-7 mm long, sparsely to densely strigillose; *basal peduncular bract* semi-deciduous, elliptic, concave, c. 1.5 mm long, dark brown, slightly auriculate, densely fimbriate especially near the base. *Flower-heads* bright golden, fragrant, globular, 4-5 mm diam. when dry, with c. 35-45 rather densely arranged flowers. *Bracteoles* c. 1 mm long, linear-spathulate; *laminae* slightly keeled, dark brown and densely puberulous abaxially (hairs white or pale golden). *Flowers* 4-

Figure 7. *Acacia galeata*. A—Portion of branch. B—Node showing 5-branched condensed raceme and base of phyllode with long pulvinus (p) and 3 principal longitudinal nerves (intervening venules submerged). C—Legume (dehisced). D—Seed showing obscure peripheral ridge and prominent, hood-shaped aril. A from *P. W. Hennig* s.n. (the type); B from *J. S. Beard* 7400; C—D from *A. L. Payne* 41.

merous. *Calyx* c. 1/2 the length of the corolla, dissected for about 1/2 its length but readily splitting to the base into oblong-spathulate sepals, frequently dark brown when dry, apically pale golden puberulous with the hairs frequently restricted to the apical margins. *Petals* c. 2 mm long, connate for c. 1/2 their length, glabrous but margins (free portion) minutely granulate, nerveless. *Ovary* densely white villous. *Legumes* submoniliform (prominently raised over seeds but often only slightly constricted between them), to 18 cm long, 7-8 mm wide, coriaceous to sub-woody, dark

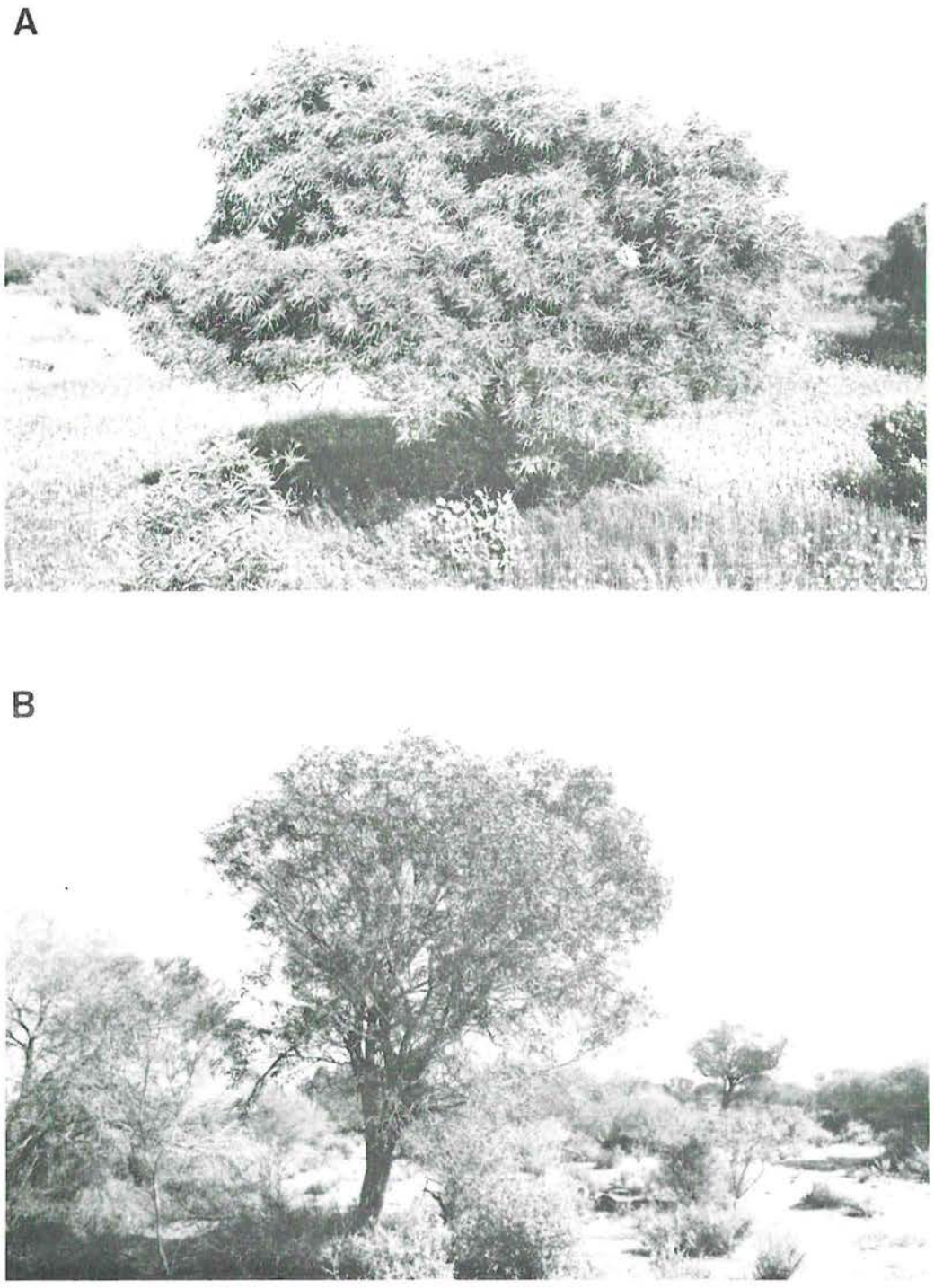

Figure 8. *Acacia galeata*. A—Young shrub (of *B. R. Maslin* 3657); B—Mature tree (of *B. R. Maslin* 4989).

brownish over seeds, yellow between seeds, glabrous, not reticulate, apex acute, margins not thickened. *Seeds* longitudinally placed in the legume, obloid-ovoid, turgid, to 7.5 mm long and 5 mm wide, with an obscure peripheral ridge, dark greyish brown, sub-shiny; *pleurogram* obscure, elongated "u"-shaped, open towards the hilum; *areole* c. 2.5 mm long and 1 mm wide, areolar area slightly paler colour than rest of seed; *funicle* very short; *aril* orange, fleshy, very large and hood-shaped, extending almost wholly down one side of the seed and sheathing about 1/2 its surface area.

Other specimens examined. WESTERN AUSTRALIA: About 9.5 mi (15 km) S of Billabong Service Station on North West Coastal Highway, *A. M. Ashby* 4739 (AD, PERTH); Nerren Nerren [Station], near the homestead, *J. S. Beard* 7400 (PERTH); Dirk Hartog Island, April 1974, *Trevor Evans* s.n. (PERTH); About 5.5 km N of Herald Bay outcamp, Dirk Hartog Island, 25°48′S, 113°05′E, *A. S. George* 11510 (PERTH); Monkey Mia, Peron Peninsula, *K. F. Kenneally* 1335 (PERTH); North of Quoin Bluff, Dorre Island, 25°00′S, 113°07′E, *K. F. Kenneally* 4652 (PERTH); 125 km S of Carnarvon towards Geraldton, North West Coastal Highway, *B. R. Maslin* 2772 (BRI, CBG, MEL, NSW, NY, PERTH); 39.5 km S of Overlander Roadhouse on North West Coastal Highway, *B. R. Maslin* 2781 (CANB, K, PERTH); Hamelin Pool Station, c. 26 km W of Overlander [Roadhouse], *B. R. Maslin* 3657 (PERTH); 9 km N of Billabong Roadhouse on North West Coastal Highway, *B. R. Maslin* 4989 and 5161 (both PERTH); Shark Bay, Voyage on H.M.S. Herald, *Milne* s.n. (K); Wooramel Station, *A. L. Payne* 41 (PERTH); Dorre Island, Shark Bay, *R. D. Royce* 5952 (PERTH); Hamelin Station, on Denham road about 8 km E of homestead, 23 Nov. 1981, *J. Stretch* s.n. (PERTH); Denham, Shark Bay, June 1957, *J. Wareham* s.n. (PERTH); Quoin Bluff, Dorre Island, *A. S. Weston* 10604 (PERTH, TLF).

Distribution. (Figure 14) Western Australia in the southern part of the Carnarvon Botanical District (1:250,000 maps G49-8; G50-5, 9, 13). Restricted to the Shark Bay area where, on the mainland, it occurs from Nerren Nerren Station (27°08′S, 114°38′E) north to Wooramel Station (25°44′S, 114°17′E) and north-east to the Peron Peninsula around Denham (25°56′S, 113°32′E). The species has also been recorded from two nearby off-shore islands, viz. Dirk Hartog Island (c. 26°S, 113°E) and Dorre Island (c. 25°S, 113°E).

Habitat. Sand or loam over limestone. In near-coastal areas, *A. galeata* has been recorded from tall open-heath (Burbidge and George 1978:79—the species there referred to as *Acacia* sp.). Further inland it occurs in York Gum woodland or tall shrubland in association with *A. drepanophylla* Maslin, *A. sclerosperma* F. Muell. and *A. wiseana* C. A. Gardner.

Flowering and fruiting period. Flowers from April to June. Legumes with mature seeds have been collected in both April and November at which times very young inflorescence buds were also present on the plants. The indications are that it takes about 9-10 months for seed to mature following anthesis.

On account of its plurinerved phyllodes and globular flower-heads, *A. galeata* is placed in section Plurinerves (Benth.) Maiden et Betche but does not appear closely related to the other members of this group. The species is very distinctive in its 2-3(4)-nerved phyllodes (interstices closely reticulate), reduced axillary racemes, 4-merous flowers, submoniliform legumes and large, orange, hood-shaped arils. In its growth habit and phyllode shape and colour it superficially resembles *A. microbotrya*

Benth. (section Phyllodineae DC.), however, the two species are not closely related. *Acacia microbotrya* has 1-nerved phyllodes, elongated racemes, 5-merous flowers and filiform, cream funicles which encircle the seeds in a double fold before expanding into a short, clavate aril.

The specific epithet refers to the prominent, hood-shaped aril.

5. **Acacia intorta** Maslin, sp. nov. (Figures 9 and 10)

Frutex vel *arbor* 2-3 m altus, habitu *A. xiphophyllae* ('Snakewood'). *Phyllodia* plerumque acicularia, (4)5-10(12.5) cm longa, 1.5-2(4) mm lata, rigida, stricta, multistriata. *Pedunculi* (3)5-15(20) cm longi. *Spicae* 1-3.5(5) cm longae, floribus laxe dispositis. *Flores* 5-meri. *Calyx* gamosepalus. *Legumina* (in statu submaturo) anguste oblonga, 4-9 cm longa, 5-8 mm lata, glabra. *Semina* in legumine longitudinalia, obloidea, ad 7 mm longa et 5 mm lata; *funiculus-arillus* clavatus.

Typus: 30 km N of Tangadee homestead, Western Australia. "Tall shrub (3m tall) growing on shaley rise. Sharp terete phyllodes. Plant has similar habit to *Acacia xiphophylla*. Common on Mt. Vernon and Tangadee stations." 16 Oct. 1976, *A.A. Mitchell* 283 (holo: PERTH; iso: CANB, K, MEL, PERTH).

Rather gnarled *shrubs* 2-3 m tall and to 6 m diam., normally 2-4-branched near ground level, branches rather contorted and normally spreading horizontally (occasionally along the ground—Figure 10B). *Bark* grey, fibrous and longitudinally fissured on trunks and main branches but smooth towards the ends of the branches. *Branchlets* terete, very obscurely ribbed, grey and glabrous except at extreme apices where they are brown and sometimes sparsely strigillose. *Stipules* deciduous. *Phyllodes* acicular, very rarely broad-linear, (4)5-10(12.5) cm long, 1.5-2(4) mm wide, terete or sometimes subterete, very rarely flat, ascending, rigid, straight, glabrous or sometimes glabrescent near the base, subglaucous or sometimes pale green, very glaucous on juvenile phyllodes of young plants, finely multistriate with submerged obscure *nerves*; *apices* sharply pungent, brown; *pulvinus* 2 mm long, slightly dilated at the base, obscurely wrinkled, yellowish or orange; *glands* obscure, up to 4 on adaxial surface of the phyllode, the basal gland 0.5-3 mm above the pulvinus, orifice slit-like, lip yellowish and barely raised above the surface of lamina. *Inflorescence* an extremely reduced raceme of 1(2) pedunculate spikes, raceme axes c. 0.2 mm long and often growing out into a leafy shoot. *Peduncles* (3)5-15(20) mm long, glabrous or sparsely puberulous, subtended by a deciduous, broadly ovate, brown, clasping basal bract c. 2 mm long. *Spikes* 1-3.5(5) cm long, flowers not very densely arranged; *receptacles* sparsely white-puberulous but glabrous with age. *Bracteoles* spathulate, c. 1 mm long, light brown, claws 0.5 mm long and expanded into elliptic, concave laminae which are puberulous abaxially (hairs both white and golden). *Flowers* 5-merous. *Calyx* 1/3-1/2 the length of the corolla, gamosepalous, more or less truncate or divided for c. 1/4 its length into triangular lobes, tube puberulous or glabrescent (hairs as on bracteoles). *Petals* c. 2 mm long, glabrous or glabrescent, very obscurely 1-nerved. *Legumes* (slightly immature) narrowly oblong, of variable size (see discussion below), 4-9 cm long and 5-8 mm wide, straight or slightly curved, firmly chartaceous, raised over seeds but not or only slightly constricted between them, brown, glabrous, sparsely and openly longitudinally reticulate, apex acute, basal stipe 3-5 mm long; margins narrow, slightly thickened, yellowish. *Seeds* (slightly immature) longitudinally placed in the legume, obloid, of variable size (see discussion below), 4-

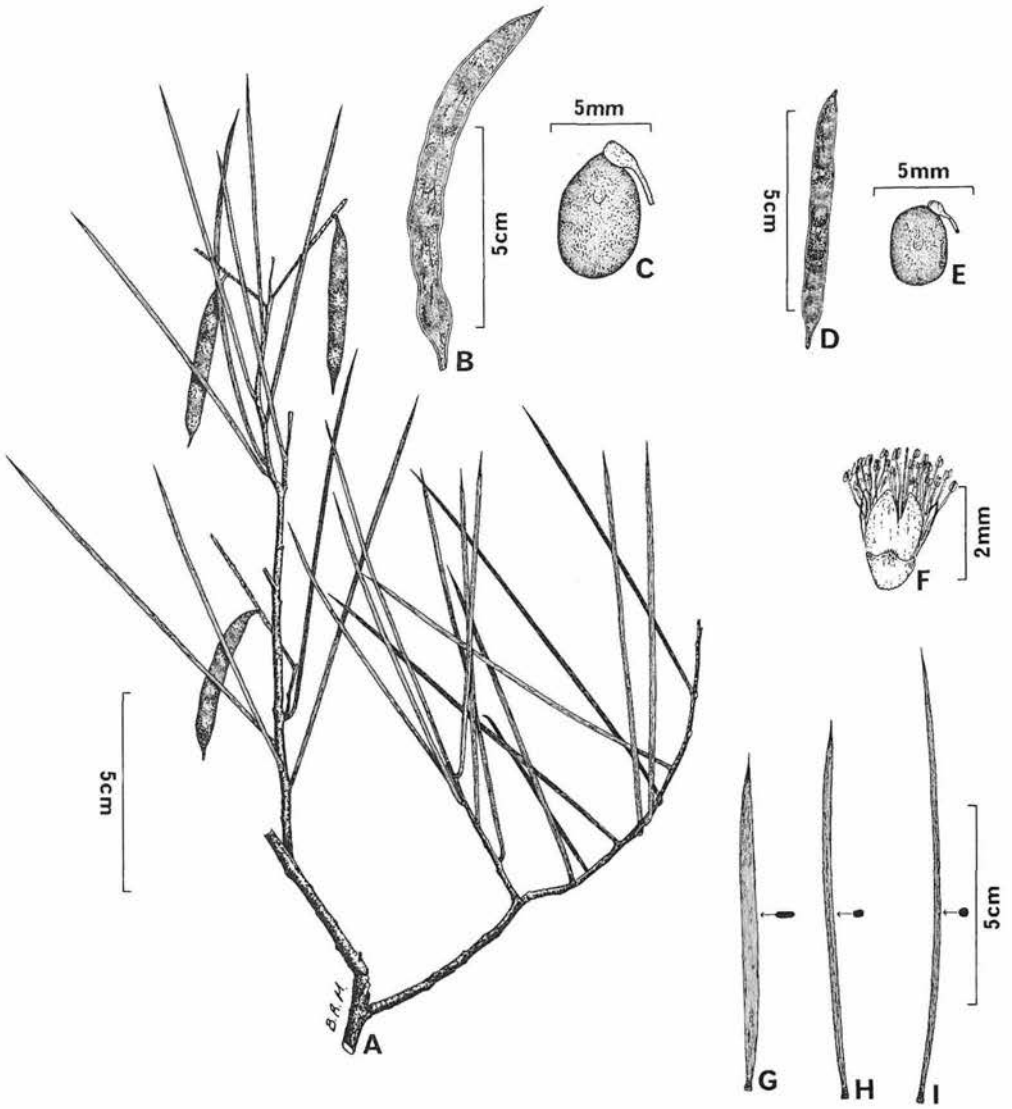

Figure 9. *Acacia intorta*. A—Portion of branch showing fruiting spikes. B—Legume. C—Seed. D—Legume. E—Seed. F—Flower. G—I—Phyllodes showing width variation, tranverse section (slightly enlarged) given in silhouette (G—flat phyllode, very rare; H—subterete phyllode, not very common; I—terete phyllode, normal).

A, D—E, I from *A. A. Mitchell* 283 (the type); B—C from *J. S. Beard* 6113; F, H from *B. R. Maslin* 5282; G from *B. R. Maslin* 5286.

7 mm long and 3-5 mm wide, somewhat compressed, to 2.5 mm thick, to 9 seeds per legume, dark brown; *pleurogram* obscure, "u"-shaped and open towards the hilum; *areole* 0.6 mm long and 0.5 mm wide; *funicle-aril* small, clavate and unfolded, extending down c. 1/3 the length of the seed.

Other specimens examined. WESTERN AUSTRALIA: Mt Vernon, 17 mi (27 km) NW of homestead, *J. S. Beard* 6113 (PERTH); Bulloo Downs Station, near Ilgarari Outcamp at E end of Lofty Range, *B. R. Maslin* 5282 (BRI, PERTH); Tangadee

Station, about 10 km NE of homestead on the track to Ilgarari Outcamp (Bulloo Downs Station), *B. R. Maslin* 5286 (CANB, PERTH); Mount Vernon Station, *A. A. Mitchell* 235 (PERTH); 20 km N of Bulloo Downs homestead, *A. A. Mitchell* 300 (CANB, MEL, PERTH); 20 km E of Bulloo Downs homestead, *A. A. Mitchell* 300A (PERTH); Meekatharra to Bulloo Downs road, Bulloo Downs, 15 June 1976, no collector given (PERTH).

Distribution. (Figure 14) Western Australia in the Ashburton Botanical District (1:250 000 maps F50-16; G50-3, 4). Confined to the drainage system in the upper reaches of the Ashburton River between Bulloo Downs Station (24°00'S, 119°34'E) and Mount Vernon Station (24°14'S, 118°14'E). The species is not uncommon throughout its range.

Habitat. Occurs in the Egerton and Ford land systems (Payne et al., in press) where it grows in alkaline clays on calcrete slopes, shale slopes and saline drainage floors. It apparently does not extend to the higher plains of the Nooingin land system where the soils are acidic (A. A. Mitchell, pers. comm.).

Flowering and fruiting period. Flowering commences in April and is completed by mid-June. Legumes with near-mature seeds have been collected in August. As with many other arid zone species, especially those of sections Juliflorae and Plurinerves, flowering and fruiting phenology is dependent upon the incidence of rainfall.

On account of its cylindrical flower-heads and plurinerved phyllodes *A. intorta* is placed in section Juliflorae (Benth.) Maiden et Betche where it is most closely allied to *A. xiphophylla* E. Pritzel, 'Snakewood'. In addition to having similar growth habits, these two species are related by their finely multistriate phyllodes, cylindrical flower-heads with the flowers not particularly densely arranged, gamosepalous calyces, flat, narrowly oblong, firmly chartaceous legumes and their longitudinal seeds with small arils. *Acacia intorta* can be distinguished from the more widespread *A. xiphophylla* (see Maslin and Pedley 1982) by its sharply pungent, normally terete phyllodes (coarsely pungent, flat and 6-15 mm wide in *A. xiphophylla*) and its small flowers with calyces 1/4-1/2 the length of the petals (less than 1/4 in *A. xiphophylla*). Very occasionally flat phyllodes occur in *A. intorta* (see Figure 9G) but these are only 2-4 mm wide. *Acacia sibina* Maslin also has spicate inflorescences and finely multistriate, somewhat pungent, terete phyllodes but this species can be distinguished from *A. intorta* by its generally longer, more slender phyllodes, its shorter peduncles, its more numerous spikes which are normally paired within the axils of the phyllodes, its much narrower legumes (to 4 mm wide) and its smaller seeds (4 x 2.5 mm). *Acacia sibina* is a more or less rounded shrub and does not have a 'Snakewood' growth habit. A description and illustration of *A. sibina* is given in Maslin (1977). The new species has a more restricted distribution than *A. sibina;* the two taxa are not known to grow sympatrically.

The carpological material examined to date has all been slightly immature and has shown a considerable range of variation in size as indicated in the description above. On three specimens, including the type, the legumes reach 4-5 cm long and 5-6 mm wide, with seeds 4 mm long and 3 mm wide (see Figures 9D and E). However, on J. S. Beard 6113, the legumes are much larger, reaching 9 cm long and 8 mm wide with seeds 7 mm long and 5 mm wide (see Figures 9B and C). A range of mature fruiting material is required to determine whether the observed variation is continuous or not.

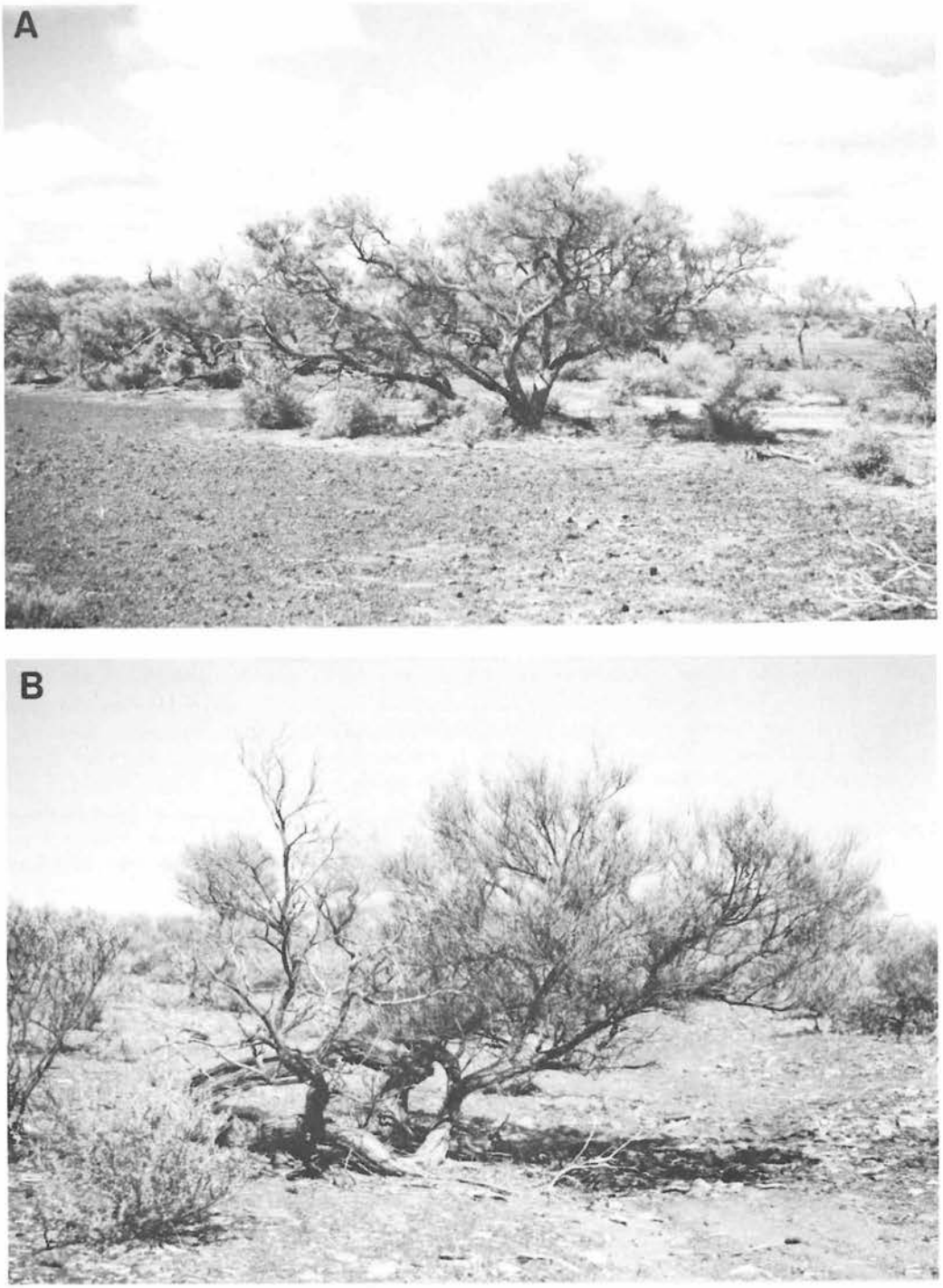

Figure 10. *Acacia intorta*. 'Snakewood' growth habit (note contorted main trunk in B spreading more or less horizontally along ground).

A—Photograph of *B. R. Maslin* 5282; B—Photographed on Tangadee Station, about 15 km NE of homestead.

The specific epithet refers to twisted, bent branches which give this species a characteristic 'Snakewood' habit.

6. **Acacia sibilans** Maslin, sp. nov. (Figures 11 and 12)

Arbor 3-5(12) m alta. *Ramuli* ad apicem incani. *Phyllodia* filiformia, c. 10-17 cm longa et 1 mm diam., laxa, incana, multistriata, ad apicem uncinata haud pungentia. *Racemi* 2-3-ramosi. *Pedunculi* 5-12 mm longi. *Capitula* globosa, 26-28-flora. *Flores* 5-meri. *Sepala* libera. *Petala* puberula. *Legumina* moniliformia ad 20 cm longa, 7-9 mm lata. *Semina* in legumine longitudinalia, ellipsoidea, 12 mm longa, 6 mm lata; *arillus* parvus.

Typus: 29 mi [46.5 km] N of The Overlander (Denham turn-off), North West Coastal Highway, Western Australia. "Tree 5 m; bark fissured, grey (habit like Myall). On loam flat." 9 September 1970, *A. S. George* 10360 (holo: PERTH; iso: CANB, K, MEL, PERTH).

Trees commonly 3-5 m tall but sometimes reaching 12 m, bushy and rounded when young but becoming more open and spreading with age, the main trunks frequently slightly twisted and ending in more or less horizontal branches, crowns dense and silvery grey-green. *Bark* grey, fibrous, longitudinally fissured except towards the ends of the branches where it is smooth. *Branchlets* terete, finely ribbed, hoary especially towards their apices (hairs minute, dense, appressed, antrorse) but becoming glabrous with age, light brown or yellow. *New shoots* densely pale citron-sericeous, the hairs soon turning white. *Stipules* deciduous. *Phyllodes* filiform, c. 10-17 cm long and 1 mm thick, terete, ascending, not rigid, straight to gently curved or very shallowly sinuous, hoary (hairs covering entire surface on young phyllodes but confined to between the nerves with age), finely longitudinally multistriate; apices uncinate, innocuous, brown; *pulvinus* 0.5-2 mm long, transversely wrinkled, orange or brown when dry; *gland* situated at distal end of the pulvinus or up to 1.5 mm above it. *Inflorescence* an extremely reduced axillary raceme of 2-3 pedunculate flower-heads, the raceme axes to 1.5 mm long and hoary. *Peduncles* 5-12 mm long, hoary, *basal peduncular bract* deciduous. *Flower-heads* globular, with 26-28 densely arranged flowers. *Bracteoles* narrowly spathulate, c. 1 mm long, claws narrowly oblong and expanded into concave, inflexed laminae which are densely pale golden puberulous abaxially. *Flowers* 5-merous. *Sepals* 2/3 the length of the petals, free, narrowly obovate; *claws* membranous, broadly linear and expanded into narrow, concave, pale golden puberulous laminae. *Petals* 2 mm long, very obscurely 1-nerved, pale golden puberulous (hairs antrorse). *Legumes* moniliform, the articles ellipsoid, to 20 cm long, 7-9 mm wide, pendulous, crustaceous to slightly coriaceous, brown, glabrescent over the seeds but hoary between them (uniformly densely hoary when very young), openly longitudinally reticulate; margins yellow, not thickened. *Seeds* longitudinally positioned within the legume, ellipsoid, 12 mm long, 6 mm wide, somewhat compressed, 3 mm thick, dark brown, not shiny; *pleurogram* obscure, elongated "u"-shaped, open towards the hilum; *areole* 6 mm long and c. 2 mm wide; *funicle* flat and linear, 5-8 mm long, reflexed below and expanded into a small pale yellow *aril.*

Other specimens examined. WESTERN AUSTRALIA: 26° parallel [North West Coastal Highway], *T. E. H. Aplin* 5213 (PERTH); 529 mi peg, North West Coastal Highway, *A. M. Ashby* 4827, per G. Phillips (BRI, MEL, PERTH); 26° parallel, North West Coastal Highway, 15 Apr. 1972, *A. M. Ashby* s.n. (PERTH); 30 mi (48 km) from turn-off along Ellavalla road, *J. S. Beard 3459 (KP, PERTH);* Beringarra Station, *J. S. Beard* 6623 (PERTH); 26th parallel, North West Coastal

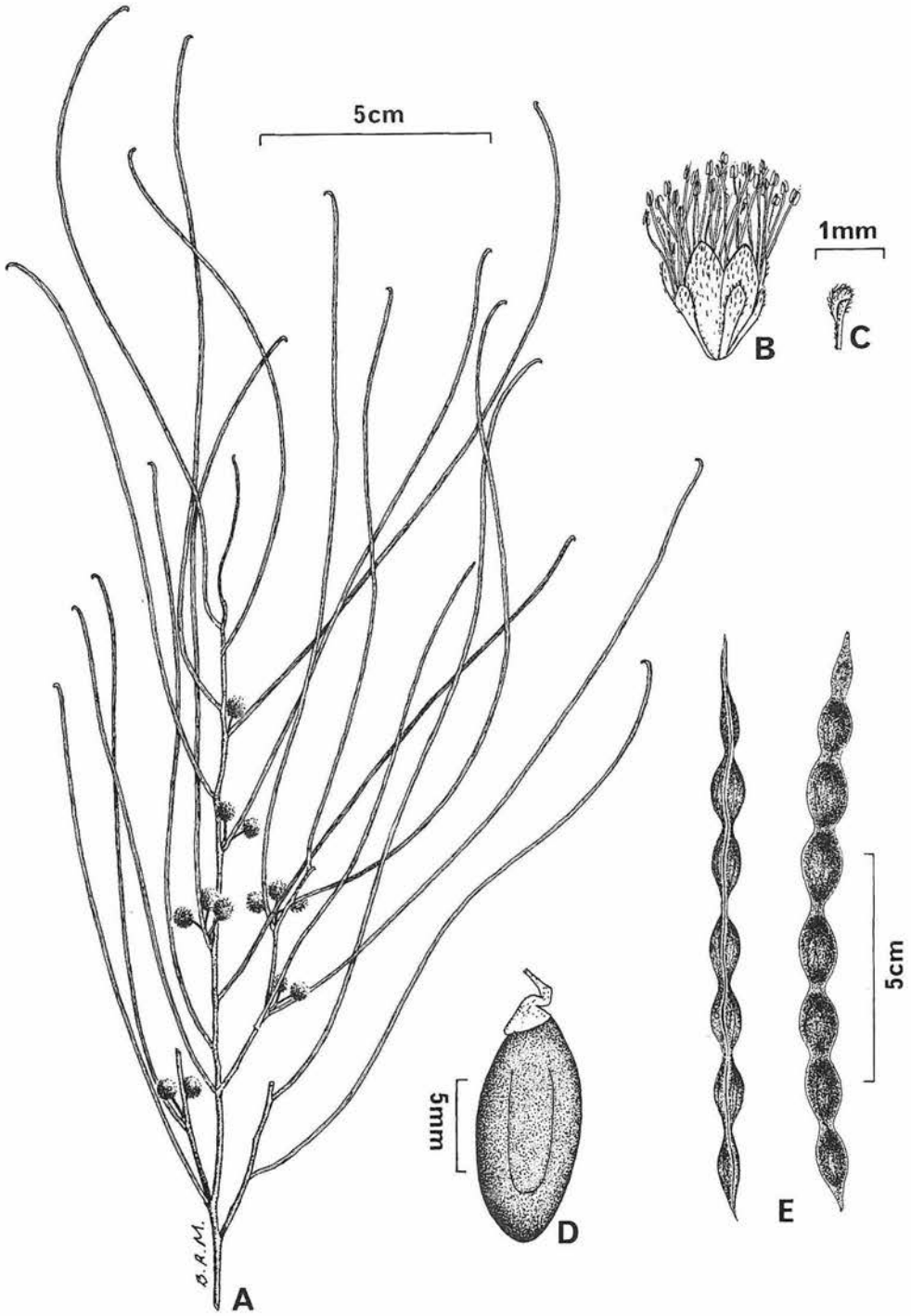

Figure 11. *Acacia sibilans*. A—Portion of branch showing filiform, uncinate phyllodes and extremely reduced axillary racemes. B—Flower showing free, antrorsely puberulous, narrowly obovate sepals and antrorsely puberulous petals. C—Bracteole. D—Seed. E—Legumes (side and plane views).
A from *G. Phillips* for *A. M. Ashby* 4827; B—C from *R. O'Farrell* 1869/17; D—E from *A. S. George* 10360 (the type).

Highway, 2 July 1982, *P. W. Hennig* s.n. (AD, CANB, MEL, NSW, PERTH); 14.5 km from Cue towards Mileura, *B. R. Maslin* 3596 (PERTH); 45 km N of Overlander [Roadhouse] towards Carnarvon, North West Coastal Highway, *B. R. Maslin* 3717 (NSW, PERTH); Carbla Station, *B. R. Maslin* 4328 (PERTH); 48.5 km N of Overlander Roadhouse, North West Coastal Highway, *B. R. Maslin* 4993 (PERTH); Moorarie Station, between Gascoyne Junction and Meekatharra, *B. R. Maslin* 5025 (PERTH); About 15 km S of Roy Hill Station on Great Northern Highway, *B. R. Maslin* 5271 (BRI, CANB, K, PERTH); Austin Downs Station near Cue, *A. A. Mitchell* 902 (BRI, MEL, NY, PERTH); Wooramel Station, *R. O'Farrell* 1869/17 (CANB, K, PERTH); 3 mi (4.8 km) N of Beringarra Station, *N. H. Speck* 992 (PERTH-dup. ex CANB).

Distribution. (Figure 14) North-west Western Australia in the Austin, Carnarvon and Fortescue Botanical Districts (1:250 000 maps F50-12; G50-5, 6, 7, 9, 10, 15). Extending from Shark Bay to near Mileura station with a single record from Roy Hill station some 500 km to the north-northeast of Mileura.

Habitat. Plains and alluvial flats in shallow light brown loam over limestone. In the region adjacent to Shark Bay on the North West Coastal Highway (from the 26° parallel north to the Wooramel River) the species is scattered but not infrequent. Here it occurs in low chenopodiaceous shrubland. Between Cue and Mileura it has been found with *A. ligulata* A. Cunn. ex Benth., *A. sclerosperma* F. Muell. and *A. victoriae* Benth. growing near 'samphire' flats.

Flowering and fruiting period. No clear pattern of flowering and fruiting phenology is detectable from the available information. Flowering specimens have been collected in both April and October. Specimens with young legumes have been collected between July and October while mature seed has been collected in April and September. Sterile specimens have been gathered in April, July, August and September.

On account of its globular flower-heads and its multistriate phyllodes the species is placed in section Plurinerves (Benth.) Maiden et Betche. *Acacia sibilans* is an attractive species with a 'Myall'-type growth habit (see Figure 12) and in this respect resembles *A. calcicola* Forde et Ising ('Northern myall'), *A. loderi* Maiden ('Nealie'), *A. papyrocarpa* Benth. ('Western myall') and some forms of *A. coriacea* DC. ('Desert oak'). These taxa show further resemblance in their common possession of globular flower-heads arranged in short axillary racemes and their finely multistriate phyllodes. Additionally, most of these species seem to be restricted to calcareous soils (see Forde and Ising 1958 and Whibley 1980). *Acacia sibilans* is distinguished by a combination of its filiform, terete phyllodes, its large, moniliform, crustaceous to slightly coriaceous legumes and its large seeds with small, pale yellow arils. With the exception of the widespread arid zone species *A. coriacea, A. sibilans* occurs further west than the other species listed above (Maslin and Pedley 1982). Aspects of speciation in arid zone Acacias, including *A. sibilans,* are discussed in Maslin and Hopper (1982)—the new species being there referred to as *Acacia* sp. no. 3 in Figure 6c.

The specific epithet refers to the characteristic hissing noise made by wind blowing through the canopy. This noise is frequently heard on species with delicate foliage; it is especially characteristic of She-oaks (*Allocasuarina* species).

Figure 12. *Acacia sibilans*. Photograph of *B. R. Maslin* 4993.

7. **Acacia ancistrocarpa** x **A. trachycarpa** (Figure 13)

More or less obconic *shrubs* to 3 m tall with a rather spreading and untidy aspect, single-stemmed or sparingly branched at ground level. *Bark* grey, exfoliating in a 'Minni Ritchi' fashion (i.e. shedding in narrow strips which curl retrorsely from each end) at extreme base of main trunk revealing a reddish brown underlayer, soon becoming smooth. *Branchlets* terete, finely ribbed, glabrous, greenish or yellow-brown to red-brown. *Stipules* triangular to deltate, 0.5-1 mm long, scarious but thickened at the base, dark brown. *Phyllodes* broad-linear to very narrow elliptic, 9-12 cm long, 4-7 mm wide, length to width ratio 13-26, normally slightly curved, ascending to somewhat spreading, not rigid, upper margin slightly thickened, somewhat shiny (at least when young), glabrous, medium pure green, narrowed at the *apex* into acute, coarsely pungent, callose points which are 1-2 mm long and straight or slightly recurved; *pulvinus* c. 2 mm long, orange; *nerves* numerous and parallel, sometimes sparingly anastomosing, interstices distinct (0.2-0.3 mm wide), the central nerve as well as one on either side of it more evident than the rest, slightly raised when dry; *gland* situated on the upper margin of the phyllode 1-3 mm above the pulvinus, elliptic, c. 0.5 mm long, lip only slightly raised and surrounding a slit-like orifice. *Inflorescence* (1)2(3) per node, arising within axils of phyllodes, or alternatively, near the base of axillary new shoots in which cases they are not subtended by phyllodes. *Peduncles* 6-12 mm long, glabrous; *basal peduncular bracts* absent at anthesis. *Receptacles* glabrous. *Spikes* 20-25 mm long and 3-4 mm wide (when dry), flowers densely arranged. *Bracteoles* spathulate, c. 0.7 mm long, sparsely puberulous, claws linear and expanded into narrowly ovate, inflexed, shallowly concave, non-thickened, acute laminae. *Flowers* 5-merous. *Calyx* about 1/2 the length of the corolla, shortly white-villous, divided for about 1/2-3/4 its length into broadly linear lobes. *Corolla* 1-1.5 mm long, glabrous, 1-nerved. *Legumes* and *seeds* not seen.

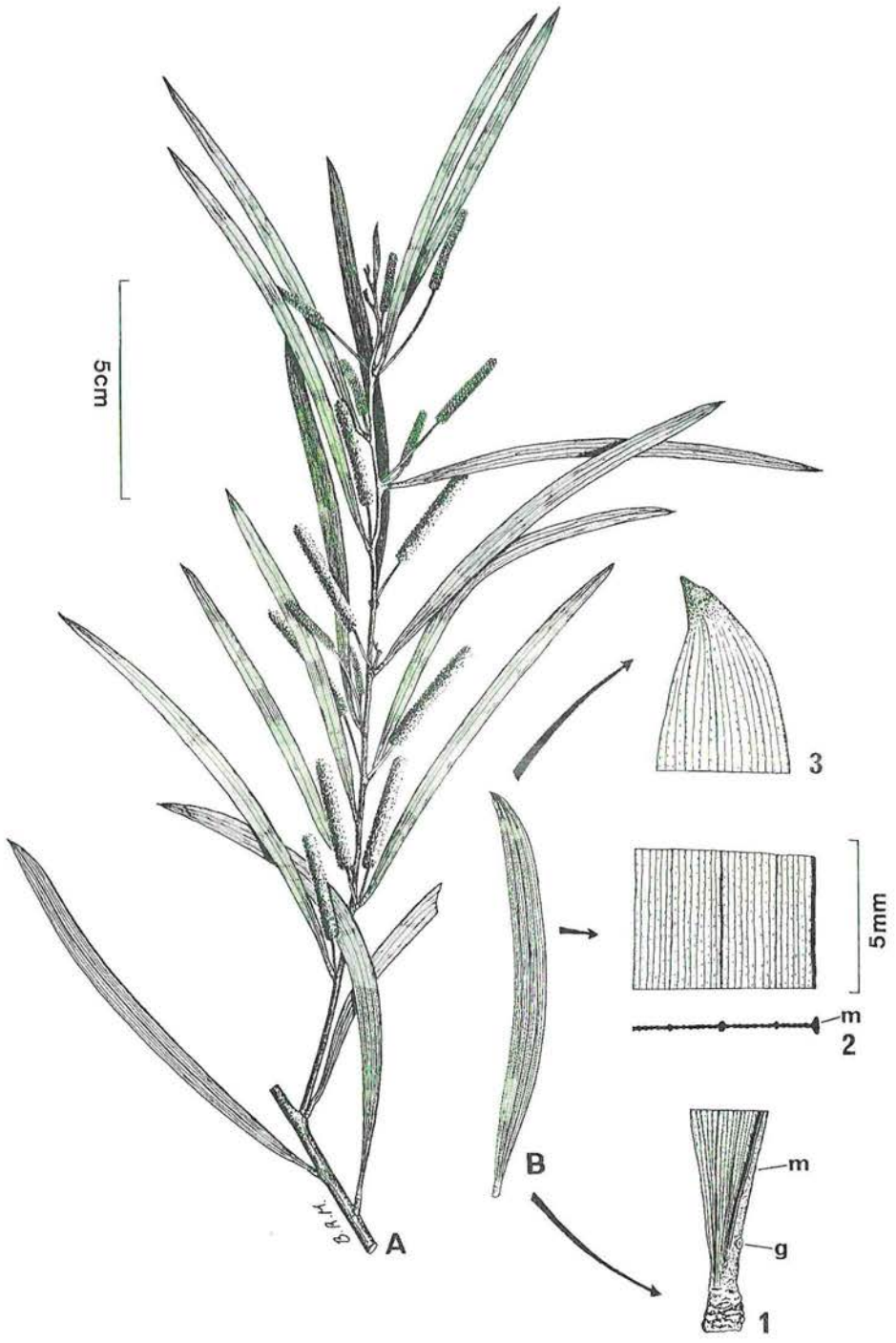

Figure 13. *Acacia ancistrocarpa* x *A. trachycarpa*. A—Portion of branch showing spicate inflorescences. B—Phyllode with enlargements showing (1) base of phyllode with gland (g) situated on surface of thickened upper margin (m), (2) middle of phyllode with silhouette showing nerves (note thickened upper margin—m), and (3) apex of phyllode with a coarsely pungent mucro.

All from *N. T. Burbidge* 1134.

Other specimens examined. WESTERN AUSTRALIA: Nullagine road south of Mount Edgar Station, *N. T. Burbidge* 1134 (BRI, PERTH); 3 mi (4.5 km) S of Roebourne towards Cooya Pooya, *B. R. Maslin* 2743 and 5252 (both PERTH); 6 mi (10 km) N of Fortescue River crossing on North West Coastal Highway, *B. R. Maslin* 2758 (CANB, K, PERTH).

Distribution. (Figure 14) North-west Western Australia in the Fortescue Botanical District (1:250,000 maps F50-3,6; F51-5). Known only from three localities in the Pilbara area (see above).

Habitat. Seemingly restricted to rocky watercourses.

Flowering period. Flowering specimens have been gathered in June, however, because of the lack of collections, it is not possible to assess the range of flowering phenology.

Judging from field observations and from morphological criteria this taxon appears to be a hybrid between the Juliflorae species *Acacia ancistrocarpa* Maiden et Blakely and *A. trachycarpa* E. Pritzel. It is known only from three scattered localities in the Pilbara region and at one of these visited recently by the author the two putative parents were common together with a few plants of the possible hybrid (see Maslin 5252). No apparent back-crossing was observed at this locality. *Acacia trachycarpa* is a 'Minni Richi' species with red bark that exfoliates in narrow shavings that curl retrorsely from each end, it has persistent stipules and non-shiny, very narrow phyllodes (1-2 mm wide) which possess the unusual character for an *Acacia* of having a thickened upper margin. *Acacia ancistrocarpa* on the other hand has grey, non-'Minni Ritchi' bark, its stipules are deciduous and its phyllodes range from 2-11 mm in width and lack thickened upper margins. As can be seen from the description above this presumed hybrid has grey bark which, at the extreme base of the trunks, exfoliates in a 'Minni Ritchi' fashion, it has persistent stipules, and has phyllodes which are wide but possess a thickened upper margin. It is these morphological features, together with the fact that the taxon is of scattered occurrence and grows (at least at one locality) in association with *A. ancistrocarpa* and *A. trachycarpa* that suggest a hybrid origin. It is not known whether this presumed hybrid sets fruit; if it does, these will be useful in clarifying the status of the taxon. *Acacia trachycarpa* is mainly confined to the Pilbara region where it is common along creeks and rivers. *Acacia ancistrocarpa* is also common in the Pilbara but extends eastward through the arid zone to the Northern Territory and Queensland (Maslin and Pedley 1982). If further examples of this hybrid are to be located then they may be expected along watercourses.

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Andrew Mitchell, Alan Payne, John Stretch and Peter Hennig (W.A. Department of Agriculture) are thanked for making special field collections for some included taxa. I would also like to thank Professor K. H. Rechinger for checking the Latin descriptions and Suzanne Curry for her very competent field and technical assistance. The project was conducted at the Western Australian Herbarium (PERTH) with financial assistance provided under an Australian Biological Resources Study grant from the Bureau of Flora and Fauna.

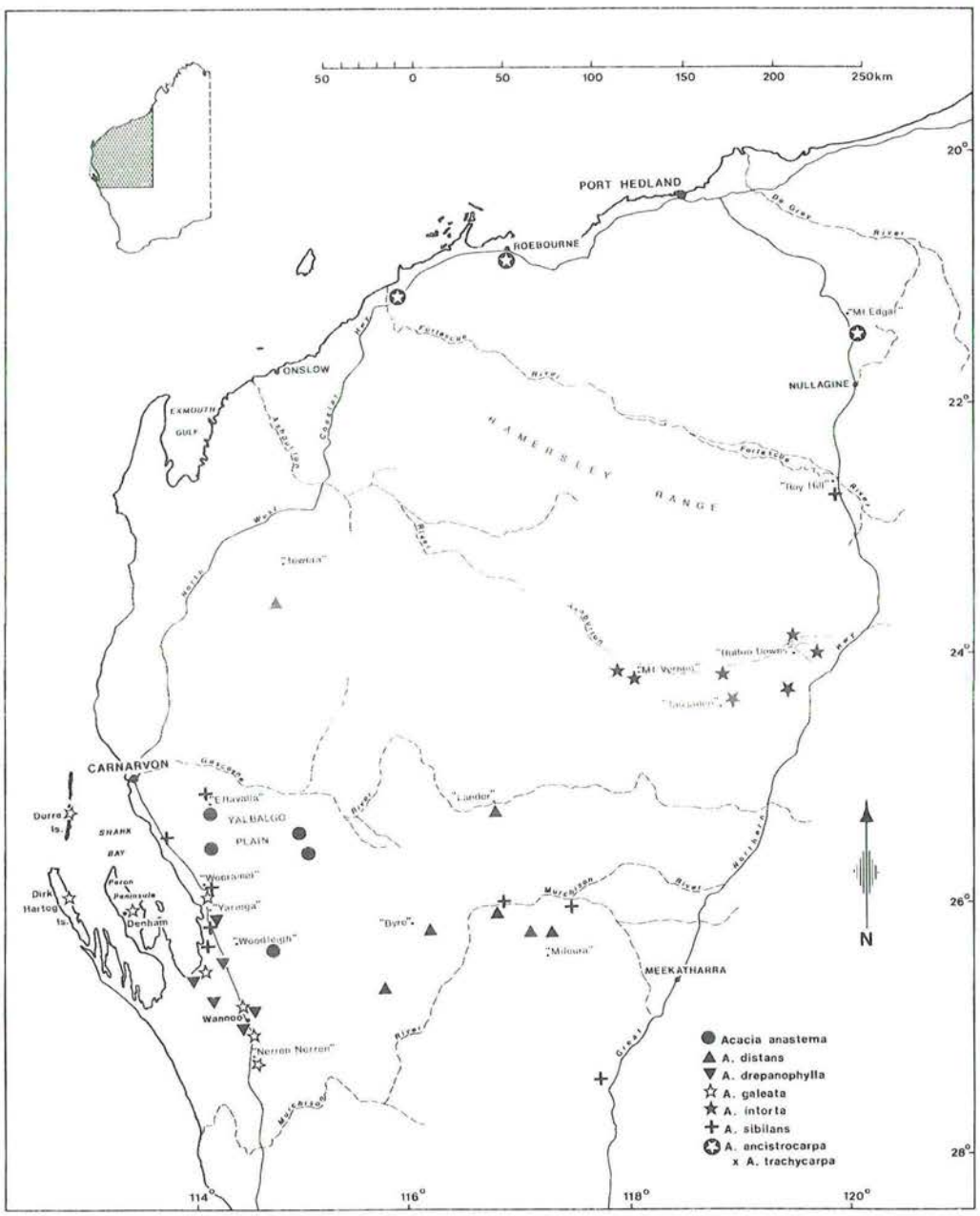

Figure 14. Map showing distribution of *Acacia anastema, A. distans, A. drepanophylla, A. galeata, A. intorta, A. sibilans* and *A. ancistrocarpa* x *A. trachycarpa*.

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. 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.

Aplin, T.E.H. 5213(6)

Ashby, A.M. 3833(3), 4582(3), 4610(1-AD, CBG, PERTH), 4739(4-AD, PERTH), 4827(6-BRI, MEL, PERTH) 5334(3), s.n. 15 April 1972 (6)

Beard, J. S. 3459(6-KP, PERTH), 6113(5), 6623(6), 7398(3), 7400(4)

Blackall, W. E. 4702(3)

Brockway, G. E. 1(2)

Burbidge, N. T. 1134(7-BRI, PERTH)

Cranfield, R. J. 1749a(2-MEL, PERTH)

Demarz, H. D. 3329(1-KP, PERTH), 5184(1-KP, PERTH)

Evans, T. s.n. April 1974 (4)

George, A. S. 10360 (6-Type: CANB, K, MEL, PERTH), 11510 (4)

Glauert, L. s.n. May 1922 (2)

Hennig, P.W. s.n. (4-Type: CANB, K, MEL, NY, PERTH), s.n. (3-K, MEL, NSW, PERTH), s.n. (6-AD, CANB, MEL, NSW, PERTH)

Holmes, A. s.n. 28 Nov. 1980 (1)

Kenneally, K. F. 1335(4), 4652(4)

Kruiskamp, J. 4096(2), 4100(2)

Maslin, B. R. 2631(3), 2743(7), 2758(7-CANB, K, PERTH), 2772(4-BRI, CBG, MEL, NSW, NY, PERTH) 2778(3-Type: AD, B, BRI, MO, PERTH, RSA; distributed as *A. oldfieldii*), 2781(4-CANB, K, PERTH) 3596(6), 3655(3), 3656(3), 3657(4), 3717(6-NSW, PERTH) 4320(3), 4321(3), 4328(6), 4987(3), 4989(4), 4992(3-CANB, PERTH), 4993(6), 5004(1-Type: BM, BRI, CANB, G, K, MEL, NSW, NY, PERTH) 5004a(1), 5025(6), 5161(4), 5163(1), 5174(2-BRI, MEL, PERTH), 5183(2-Type: BRI, CANB, K, MEL, NSW, NY, PERTH), 5252(7), 5271(6-BRI, CANB, K, PERTH), 5282(5-BRI, PERTH), 5286(5-CANB, PERTH).

Milne s.n. (4-K)

Mitchell, A. A. 235(5), 283(5-Type: CANB, K, MEL, PERTH), 300(5-CANB, MEL, PERTH), 300a(5), 902(6-BRI, MEL, NY, PERTH)

O'Farrell, R. 1869/17(6-CANB, K, PERTH)

Payne, A. L. 41(4)

Royce, R. D. 5952(4)

Speck, N. H. 656(2-BRI, MEL, PERTH), 970(2-K, NSW, PERTH), 992(6)

Stretch, J. s.n. 23 Nov. 1981 (4)

Wareham, J. s.n. June 1957 (4)

Weston, A. S. 6891(3-CANB, PERTH), 10604(4-PERTH, TLF)

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