

## The *Albizia* Species of South Africa.

By

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Most of the South African *Albizia* species were dealt with by Burtt Davy in his Flowering Plants and Ferns of Transvaal and Swaziland, Vol. 2, 1932, but several name changes have rendered it desirable to review them again. The opportunity is also taken to include those species not listed by Burtt Davy. The territory covered by the present review is made up of the Union of South Africa, South West Africa, Swaziland and Basutoland, but excludes Bechuanaland, and is therefore the area to be dealt with by the proposed Flora of Southern Africa. Eleven species are recorded as being indigenous in this area, while two exotic species are considered to be sufficiently naturalised to be included in this treatment. One species found in South African gardens, *A. julibrissin* Durazz., is not included because it shows no signs of becoming naturalised. This is not due to lack of opportunity because Sim, in manuscript notes, relates that 100 lbs. of seed of this species were sent to Pondoland and were sown in error for wattle seed, but there is no evidence that any plants have become established.

In addition to the material in the National Herbarium, Pretoria, specimens have been seen from the following Herbaria, whose co-operation is gratefully acknowledged: Bolus, Kirstenbosch, South African Museum, Albany Museum, Natal (Durban), Natal University (Pietermaritzburg) and the Forestry Department, Pretoria. When citing specimens, the abbreviation indicating the Herbarium is given only in cases where the gathering is not represented in the National Herbarium.

Useful assistance and advice concerning certain species with a largely tropical distribution have been freely given by Mr. J. P. M. Brenan of Kew Herbarium, while Mr. D. J. B. Killick, our liaison officer at Kew, has helped by consulting botanical material and literature not available in South Africa. I am also grateful to the Directors of the Zurich University Herbarium and of the East African Herbarium, Nairobi, for the loan of type material.

Durazzini based the genus *Albizia* on *A. julibrissin* Durazz., naming it in honour of "Il sig. Cavalier Filippo degl' Albizzi" since, he claimed, a member of this illustrious family first introduced the species into Tuscany from Constantinople in 1749. Apparently Durazzini considered that two "z's" in the middle of a latinised generic name would not be appropriate because he deliberately spelt the genus with one "z". The name was amended to "Albizzia" when it was taken up by Boivin (1834) and Bentham (1844), and this spelling has been in general use, though Mueller (1872) referred to the original spelling. Since Little (1949) drew attention to his examination of the rare publication containing Durazzini's description, several authors have reverted to the original spelling, so it is unlikely that favourable consideration would now be given to a proposal to conserve the philologically preferable spelling "Albizzia".

In *Albizia* species the stipules are herbaceous and are shed very early, unlike the African species of the closely related genus *Acacia*, where the stipules usually become hard and thorny. The main diagnostic character between the two genera, however, is to be found in the stamens which, in *Albizia*, are usually longer and are united at the base into a tube. In *Acacia*, the stamens are free or very shortly connate at the base into a shallow cup or irregular perigynous disc.

Useful timber is derived from certain species of *Albizia*, for example, *A. adianthifolia*, *A. versicolor* and *A. suluensis*, though pieces of timber size are rare in South Africa. *A. suluensis* and *A. tanganyicensis* contain a substance which causes irritation to the nose and throat when the wood is worked. The bark of some species is known to have anthelmintic properties and to contain saponins, and such species are used medicinally by various native races. According to Watt and Brandwijk, the anthelmintic action is not due to the saponins, but to other unidentified substances.

### ALBIZIA

*Durazz.* in *Magazz. Toscan.* 3, 4: 11 (1772); Little, *Amer. Midland Nat.* 30: 510 (1945); Lawrence, *Gentes Herb.* 8: 44 (1949); Brenan, *Kew Bull.* 189 (1955); as *Albizzia*, Benth. in *Hook. Lond. Journ. Bot.* 3: 84 (1844); Harv. in *Fl. Cap.* 2: 284 (1861-62); Oliv. in *Fl. Trop. Afr.* 2: 355 (1871); Bak. f., *Leg. Trop. Afr.* 855 (1930); Burtt Davy, *Fl. Tvl.* 2: 347 (1932).

*Zygia* P. Br. sensu E. Mey. *Comm. Pl. Afr. Austr.* 165 (1836); Benth. in *Hook. Lond. Journ. Bot.* 3: 92 (1844); Harv. in *Fl. Cap.* 2: 284 (1861-62).

Trees or shrubs, unarmed. *Leaves* bipinnate usually with a gland on the petiole and often elsewhere on the pinnae; stipules herbaceous, usually early deciduous. *Inflorescence* globose or spicate, pedunculate, arranged in terminal panicles or racemes, or 1-several axillary. *Flowers* usually 5-merous, hermaphrodite or, rarely, some flowers in the inflorescence unisexual. *Calyx* campanulate to tubular, 5-toothed; teeth shorter than the tube. *Corolla* funnel shaped, deeply 5-lobed; lobes shorter than the tube. *Stamens* numerous, much exerted, connate in a tube at the base; tube included or exerted; anthers peltate on the filaments. *Ovary* oblong to lanceolate, subsessile or shortly stipitate; style filiform, usually longer than the stamens; stigma scarcely differentiated. *Pod* oblong to linear, flat, few to several seeded, papyraceous to subcoriaceous, sometimes dehiscent by the separation of the valves. *Seed* flat, ovate to orbicular, compressed; funicle filiform.

#### KEY TO SPECIES.

Staminal tube included within the corolla, or scarcely exerted:

Leaflets not exceeding 4 mm in width:

Inflorescence spicate..... 13. *A. lophantha*.  
 Inflorescence globose:

Mature leaves and twigs glabrous; calyx and corolla with a few whitish hairs..... 1. *A. brevifolia*.

Mature leaves and twigs pubescent; calyx and corolla fulvo-tomentose:

Pinnae 15-35 pairs; leaflets 25-42 pairs..... 2. *A. amara* spp. *sericocephala*.

Pinnae 8-15 pairs; leaflets 16-24 pairs..... 3. *A. harveyi*.

Pinnae 2-7 pairs; leaflets 6-14 pairs..... 4. *A. forbesii*.

Leaflets exceeding 4 mm in width:

Mature leaflets persistently tomentose..... 5. *A. versicolor*.

Mature leaflets glabrous or with scattered hairs:

Leaflets 7-18 pairs or, if less, exceeding 2.4 cm in length; branchlets not spine-tipped:

Leaflet margin not crisped; stamens usually exceeding 2 cm in length:

Corolla lobes fulvo-tomentose; pedicels less than 2 mm in length:

Leaflets markedly discolorous; bark grey, not peeling in papery flakes

6. *A. antunesiana*.

Leaflets not markedly discolorous;  
bark pale brown  
to whitish, peeling  
in papery flakes

7. *A. tanganyicensis*.

Corolla lobes glabrous or with a fringe of  
whitish hairs; pedicels  
usually longer than 2  
mm..... 12. *A. lebbeck*.

Leaflet margin crisped; stamens less than 2 cm in  
length..... 8. *A. suluensis*.

Leaflets 2-6 pairs less than 2.5 cm in length; branchlets often  
spine-tipped..... 9. *A. anthelmintica*.

Staminal tube well exerted beyond the corolla:

Leaflets 3-5 pairs..... 10. *A. evansii*.

Leaflets 6-12 pairs..... 11. *A. adianthifolia*.

### INDIGENOUS SPECIES.

1. *A. brevifolia* Schinz in Bull. Herb. Boiss. ser. 2, 2: 945 (1902); Bak. f., Leg. Trop. Afr. 864 (1930).

Type: Mocambique, Zambesi area, Boruma, *Menyharth* 944 (Z, holo.!).

*A. rogersii* Burt Davy, Flora Tvl. 2: xviii and 348 (1932); Codd, Trees and Shrubs, K.N.P. 56 (1951).

Type: Transvaal, Soutpansberg District, Messina, *Moss and Rogers* 66 (PRE, iso.).

*A. parvifolia* Burt Davy, l.c. xvii and 348 (1932).

Syntypes: Transvaal, Soutpansberg District, near Messina, *Rogers* 19247a (PRE, iso.) and 22118.

Shrub or tree 4-15 m high, usually branching near ground level, bark grey; young parts pubescent, becoming glabrous with age. *Leaves* 8-10 cm long and 4-6 cm wide, sparingly pubescent when young, soon becoming glabrous; petiole 1-2 cm long; pinnae 6-10 pairs; leaflets 10-20 pairs, linear oblong, 3-5 mm long and 1 mm broad, oblique at the base, apex obtuse to rounded, not falcate, midrib nearly central. *Inflorescence* of 8-15 flowers; buds pubescent; peduncle 1.5-3 cm long, sparingly strigose; bracts and bracteoles linear, early deciduous, 4 mm and 1 mm long respectively. *Flowers* creamy white; pedicels 1 mm long. *Calyx* 1-1.5 mm long, 5-toothed, pubescent at first, becoming glabrous or retaining a fringe of hairs. *Corolla* 4.5-5 mm long, 5-lobed; tube glabrous, 2.5-3 mm long; lobes deltoid, 1.5-2 mm long with a tuft of hairs at the apex of each lobe. *Stamens* 1.5-1.8 cm long, united at the base for 3 mm. *Ovary* glabrous, 1.5 mm long, shortly stipitate; style filiform exceeding the stamens in length. *Pod* several seeded, linear to linear-oblong, 12-23 cm long and 2.4-4 cm broad, flat, thin textured, often with transverse striations; margin slightly thickened, straight or indented between the seeds; position of seeds apparent as raised bumps on the valve.

Recorded from Mocambique, Southern Rhodesia, Bechuanaland and the Transvaal.

TRANSVAAL.—Soutpansberg: Messina, *Moss and Rogers* 66; *Pole Evans* 2527; *Gerstner* 5449; near Messina, *Rogers* 19247a; Dongola area, *Codd* 4459; Zoutpan, *Bremekamp and Schweickerdt* 310; *Verdoorn* 601; *O.S.V.* 170; Masekwapoort, *Codd* 8372; 4 miles N.W. of Wyllie's Poort, *Codd* 2999; Mpefu Location, *Smuts* 2053; Vanetzi Poort, *Gerstner* 6055; 6231; Kruger Nat. Park, near Punda Maria, *Lamont* 5; Lebombo Hills, *Lamont* 20. Pilgrims Rest: Kruger Nat. Park, The Gorge, *Codd* 6188; *van der Schijff* 2323. Waterberg: 11 miles S. of Ellisras, *Codd* 8493; 8831. Brits: Farm Welgevonden, *Mogg* 14641; 7 miles N. of Assen, *Codd* 6566. Rustenburg: Onkuil, *van Nouhuys* 61.

The holotype of *A. brevifolia* was kindly sent to us on loan by the Director of the Botanical Museum, Zurich University, and was compared with an isosytype of *A. parvifolia* present in the National Herbarium, Pretoria. Both are flowering specimens with immature leaves and are similar in all essentials. When taken into consideration with a good range of modern material, the conclusion is unavoidable that only one species is involved. The type of *A. rogersii* is a fruiting twig with mature leaves. Observations made in the type area of *A. rogersii* and *A. parvifolia*, that is, in the northern Transvaal between Messina and Dongola, combined with the examination of flowering and fruiting specimens collected from individual trees, leave no doubt that the two are conspecific. The leaves of the type material of *A. parvifolia* are so immature that the leaflets can scarcely be distinguished; thus the number of leaflets and their dimensions given by Burt Davy cannot be regarded as representative.

The type locality of *A. brevifolia* is Boruma, on the lower reaches of the Zambesi River in Mocambique, and intermediate localities in Southern Rhodesia form a link with the records from the Transvaal. In the last named region the species is almost invariably associated with hot, dry, rocky hillsides, on geological formations such as sandstone, quartzite or granite. Although often found as a small tree branching from near ground level, it is said to grow to 40 feet tall with a spreading, umbrageous crown. Information on herbarium specimens indicates that the wood is hard and durable and is used for axe and pick handles. According to Lamont (formerly a Ranger in the northern part of the Kruger National Park), the bark, being termite resistant, is stripped and used for tying poles of huts. Notes on characters distinguishing *A. brevifolia* from *A. harveyi* will be found in the discussion on the latter species.

2. *A. amara* (Roxb.) Boiv. subsp. *sericocephala* (Benth.) Brenan in Kew Bull. 1955: 190.

Syntypes: Ethiopia, Kotschy 294; Sennaar, Kotschy 244; Abyssinia, Schimper 818, 883.

*A. sericocephala* Benth. in Hook. Lond. Journ. Bot. 3: 91 (1844); Milne-Redhead in Kew Bull. 1934: 301; Brenan and Greenw., Ch. List. For. Trees and Shrubs, Tanganyika, 2: 341 (1949).

*Acacia sericocephala* Fenzl in Flora, 312 (1844), *nomen nudum*.

*Inga sericocephala* A. Rich., Fl. Abyss. 1: 236 (1847).

*Albizzia struthiophylla* Milne-Redhead in Kew Bull. 1933: 144.

Type: Northern Rhodesia, Mazabuka, Milne-Redhead 1207 (PRE, iso.).

Tree 4–12 m tall; branchlets persistently pubescent. *Leaves* 10–18 cm long and 3·5–5 cm wide, fulvo-tomentose when young, rusty to grey hispid when mature; petiole 0·8–1·5 cm long; pinnae 15–35 pairs; leaflets 25–42 pairs, linear oblong, 3–3·5 mm long and 0·5–0·75 mm broad, oblique at the base, apex obtuse to rounded, not falcate; midrib nearly central. *Inflorescence* of 12–18 flowers; bracts and bracteoles minute, linear, early deciduous; peduncle 1·5–2 cm long; peduncle and buds fulvo-tomentose. *Flowers* whitish, subsessile. *Calyx* 1·5–2 mm long, 5-toothed, golden tomentose; teeth rounded. *Corolla* 4·5–5 mm long, 5-lobed, golden tomentose, especially on the lobes; lobes ovate deltoid, 2–2·5 mm long. *Stamens* 1·2–1·4 cm long, united at the base for 2–2·5 mm. *Ovary* glabrous, 2–2·5 mm long, shortly stipitate; style filiform, slightly exceeding the stamens in length. *Pod* several seeded, linear to linear oblong, 12–28 cm long and 2·8–4 cm wide, flat, thin textured, with occasional transverse striations; margin slightly thickened, straight or occasionally indented between the seeds; position of seeds apparent as raised bumps on the valves.

Recorded from Anglo-Egyptian Sudan and Eritrea, through tropical East Africa and the Rhodesias to Bechuanaland and north-eastern Transvaal.

TRANSVAAL.—Soutpansberg: Nuanetsi Drift, *Smuts* s.n.; Sibasa area, *van Warmelo* 5115/24; 24 miles N.E. of Sibasa, *Codd* 6901; 17 miles E. of Sibasa, *Codd and Dyer* 4494; Shingwedzi River, *Forest Officer*, Pietersburg, s.n.; Minga, near Punda Maria, *Gerstner* 6219; Kruger National Park, near Punda Maria, *van der Schijff* 986; between Shangoni and Punda Maria, *van der Schijff* 2894.

Baker (1930) places *A. sericocephala* Benth. as a synonym of *A. amara* (Roxb.) Boiv. It was upheld again as a distinct species by Milne-Redhead (1934), but Brenan (1955) takes an intermediate course and gives it the status of a subspecies of *A. amara*. According to the latter author, specimens referable to the subsp. *amara* are also to be found in East Tropical Africa, though this subspecies has its main distribution in Asia. *A. struthiophylla* has been regarded for some time as being hardly separable from *A. sericocephala*, a view confirmed by Brenan, l.c.

Within our region, *A. amara* subsp. *sericocephala* has been found only in the north eastern corner of the Transvaal, on sandy flats, mainly in the area between Sibasa and Punda Maria. This area receives a slightly higher rainfall than the typical lowveld to the south, north and east, where the somewhat similar species *A. harveyi* occurs. It may be readily distinguished from *A. harveyi* by its longer leaves, more numerous pinnae and pinnules, and by the apex of the leaflet not being distinctly acute and curved. In stature it resembles *A. harveyi*, being a small tree usually with a single main trunk and a relatively narrow crown.

3. *A. harveyi* Fourn. in Bull. Soc. Bot. Fr. 12: 399 (1865); Bak. f. Leg. Trop. Afr. 865 (1930); Burt Davy, l.c. 348 (1932); Brenan and Greenw., l.c. 341 (1949); Codd, l.c. 56 (1951).

Type: Bechuanaland, banks of the Chobe, Lake Ngami and adjoining forests, *J. McCabe* (K, holo.).

*A. pallida* Harv. in Fl. Cap. 2: 284 (1861/62), non Fourn.

Type: As above.

*A. hypoleuca* Oliv. in Fl. Trop. Afr. 2: 356 (1871).

Type: As above.

*Tree* 5–10 m tall, usually with a distinct main trunk; bark grey; branchlets pubescent. *Leaves* 7–12 cm long and 4–5.5 cm wide; young parts fulvous; rachis persistently strigose pubescent; petiole 1–2 cm long; pinnae 8–18 pairs; leaflets 12–24 pairs, discolorous, pubescent when young, becoming glabrescent with age, linear oblong, 3–6 mm long and 1–1.5 mm broad, oblique at the base, apex acute, falcate; midrib distinctly nearer the upper margin. *Inflorescence* of 10–15 flowers; buds fulvo-tomentose; peduncle 1.5–3 cm long, hispid; bracts and bracteoles linear, 3 mm and 1.5 mm long respectively, hispid, persisting to the flowering stage. *Flowers* creamy white, subsessile. *Calyx* 2–2.5 mm long, 5-lobed, fulvous; lobes deltoid, 0.5 mm long. *Corolla* 5–5.5 mm long, 5-lobed, pubescent; tube 3 mm long; lobes ovate, 2–2.5 mm long. *Stamens* 1.3–1.6 cm long, united at the base for 2.5 mm. *Ovary* puberulous, 2 mm long, very shortly stipitate; style filiform, exceeding the stamens in length. *Pod* several seeded, linear to linear-oblong, 6–12 cm long and 1.8–2.8 cm wide, flat, thin textured, sometimes with transverse striations; margin slightly thickened, straight or slightly indented between the seeds; position of seeds apparent as raised bumps on the valve.

Distributed from Tanganyika through Nyasaland and the Rhodesias to the Caprivi Strip, Bechuanaland, Mocambique, Transvaal and into Swaziland.

SOUTH WEST AFRICA.—Caprivi Strip: Katima Mulilo, *West* 3249.

TRANSSVAAL.—Soutpansberg: *Smuts* s.n.; Messina, *Pole Evans* 1440; Dongola Reserve, Krematfontein, *Pole Evans* 3526; 5½ miles N. of Alldays, *Codd* 4053; 4460; near Wyllie's Poort, *Pole Evans* 2047; Kruger National Park, Punda Maria, *Lang* in TM 32251; *Codd* 4223; Mabaza, *Lang* in TM 32248. Pietersburg: Blaauwberg, on flats at base of mountain, *Leeman* 51. Waterberg: 20 miles E. of Ellisras, *Acocks* 8820. Letaba: Kruger National Park, Letaba area, *Lang* in TM 30357; 30862; *van der Schijff* 623. Nelspruit: Kruger National Park, near Skukuza Camp, *Letty* 57; 12½ miles N.E. of Malelane, *Codd* 5218; Malelane, *Thorncroft* 3111. Barberton: near Hectorspruit, *Burt Davy* 8004; Komatipoort, *Schlechter* 11875 (GRA); *Rogers* 22246.

SWAZILAND.—Near Makombo, *Miller* S/15.

Vegetative specimens of *A. harveyi* are sometimes confused in the herbarium with *A. brevifolia* but the two may be distinguished by the shape of the apex of the leaflet which, in *A. harveyi*, is acute and distinctly falcate, while in *A. brevifolia* it is obtuse or rounded and almost straight. In ecology the two are distinct as *A. harveyi* is found mainly on the flat, dry bush country of the Limpopo valley and the eastern Transvaal Lowveld, where it is a common constituent of the vegetation of the Kruger National Park.

4. *A. forbesii* *Benth.* in Hook. Lond. Journ. Bot. 3: 92 (1844); Harv. in Fl. Cap. 2: 284 (1861–62); *Benth.* in Trans. Linn. Soc. 30: 568 (1875); *Burt Davy*, l.c. 348 (1932); *Codd*, l.c. 54 (1951).

Type: Mocambique, Delagoa Bay, *Forbes* s.n. (K, holo.).

Tree 8–20 m tall, often branching from near the base with spreading, drooping branches, making an extensive crown; branchlets pubescent. *Leaves* 6–10 cm long and 5–6 cm wide, frequently folded along the midrib, hispid; pinnae 2–7 pairs; leaflets 6–14 pairs, oblong, 5–6 mm long and 2–3 mm broad, oblique at the base, apex obtuse to acute, oblique to slightly falcate, often mucronate; midrib distinctly nearer one margin; margin of leaflet inrolled. *Inflorescence* of 10–15 flowers; buds fulvo-tomentose; peduncle 2–3 cm long, hispid; bracts and bracteoles linear, 3 mm and 1.5 mm respectively, early deciduous. *Flowers* creamy white, sessile. *Calyx* 3–3.5 mm long, 5-toothed, fulvous. *Corolla* 6–7 mm long, 5-lobed, fulvous; tube 4–4.5 mm long, subcylindrical, widening towards the throat; lobes ovate, 2–2.5 mm long. *Stamens* 1.3–1.5 cm long, united at the base for 2.5–3 mm. *Ovary* glabrous, 2–3 mm long, shortly stipitate; style filiform exceeding the stamens in length. *Pod* several seeded, oblong to linear-oblong, 8–15 cm long and 3.5–5 cm broad, flat, fibrous, with marked transverse striations; margin thickened, straight; position of seeds not apparent.

Recorded from the eastern Transvaal lowveld, Mocambique and northern Zululand.

TRANSSVAAL.—Soutpansberg: Kruger National Park, near Punda Maria, *Rowland Jones* 29. Nelspruit: Kruger National Park, Lower Sabie Road, *Codd* 5497; 5704; *van der Schijff* 3265; 3412; near Malelane, *van der Schijff* 1417. Barberton: Komatipoort, *Pole Evans* H16861.

NATAL.—Zululand, without locality, *Gerstner* 4943. Ingwavuma: Mangusi Forest, *Gerstner* 4076 (NH); Maputo Forest, *Gerstner* 4115. Ubombo: Schreiber's farm, *Gerstner* 5562; Mkuzi Game Reserve, *Ward* 2641.

This is a distinctive species with a limited distribution. Although not generally common, it is sometimes gregarious, occurring in local groups, especially on or near river banks. Under favourable conditions it grows to a tall tree with a large, spreading, twiggy crown, usually with somewhat drooping branches.

5. *A. versicolor* Welw. ex Oliv. in Fl. Trop. Afr. 2: 359 (1871); Bak. f., l.c. 863 (1930); Burt Davy, l.c. 348 (1932); Brenan and Greenw., l.c. 343 (1949); Codd, l.c. 57 (1951).

Syntypes: Angola, Golungo Alto and Zenza do Golungo, *Welwitsch*, and Nyasaland, Maravi Country west of Lake Nyasa, *Kirk* (all at BM).

Var. *mossambicensis* Schinz in Bull. Herb. Boiss. ser. 2, 2: 946 (1902); Bak. f., l.c. 863 (1930).

Type: Mocambique, Zambesi area, Boruma, *Menyharth* 77b (Z, holo.).

*A. mossambicensis* Sim, For. Fl. P.E.A. 59, t. 60 (1909).

Type: Mocambique, Umbelusi, *Sim* 6392 (NU, holo.).

Tree 6–18 m tall with a single main trunk and a large, round or spreading crown; bark grey; branchlets persistently tomentose. *Leaves* 18–30 cm long and 12–24 cm broad, rusty pubescent; petiole 3–6 cm long; pinnae 1–3 pairs; leaflets 3–5 pairs, oblong to obovate-oblong or broadly elliptical, 3–5.5 cm long and 1.5–3 cm broad, oblique at the base, apex rounded to truncate, often mucronulate. *Inflorescence* 18–25 flowered; peduncle 4–5.5 cm long, fulvo-tomentose. *Flowers* creamy white, sessile. *Calyx* 5.5–6.5 mm long, 5-toothed, fulvo-tomentose; teeth deltoid, 1.5 mm long. *Corolla* 7–8 mm long, 5-lobed, tomentose; tube 3.5–4 mm long; lobes ovate, 3.5–4 mm long. *Stamens* 2.8–3.5 cm long, united at the base for 3 mm. *Ovary* puberulous, 3 mm long, subsessile; style filiform, slightly exceeding the stamens in length. *Pod* several seeded, linear to linear-oblong, 8–22 cm long and 3–5.5 cm wide, flat, thin textured with some transverse striations; margin thickened, straight or slightly indented between seeds; position of seeds apparent as raised bumps on the valves.

Recorded from Uganda southwards to Angola, South West Africa, Bechuanaland, the Rhodesias, Mocambique, Transvaal, Swaziland and Zululand.

SOUTH WEST AFRICA.—Ovamboland: Oshikongo, *Loeb* 20; 431; *Rodin* 2609 (BOL). Okavango: Runtu, *Maguire* 1595; Popa Falls, *Maguire* 1665. Caprivi Strip: *Curson* 940.

TRANSSVAAL.—Soutpansberg: Messina, *Pole Evans* 2040; Soutpansberg Range, *Smuts* s.n.; Soutpan, *Galpin* 15128; Elim, *Obermeyer* 564; Makonde, *Westphal* in TM 29123; 4 miles S.E. of Sibasa, *Codd and Dyer* 4491; Kruger National Park, Punda Maria, *Lang* in TM 32301; *Codd and Dyer* 4615; Rowland Jones 14. Pietersburg: *Smuts* s.n.; Letaba: Thabina, *Burt Davy* 2893; *Swierstra* 2188. Lydenburg: Buffelsvlei, *Codd* 6674. Pilgrims Rest: *Oranje* 4453; Acorn Hoek, *Keet* 1488; Bushbuckridge, *Pritchard* 28; *Acocks* 12894; Lothian, *Forest Dept.* 6836. Nelspruit: *Legat* in Hb. Burt Davy 2830; Kruger National Park, near Pretorius Kop, *Codd* 5694; Rowland Jones s.n.; *van der Schijff* 151; 431; 727. Barberton: *C. A. Smith* 7072; Malelane, *Pole Evans* H 15771; Queens River Valley, *Galpin* 651; Sheba Valley, *Thorncroft* 3019.

SWAZILAND.—Ingwavuma River, *West* 2105.

NATAL.—Zululand, without locality: *Wylie* 8805; *Boocock* 4; *Gerstner* 5086. Ubombo: Otobotini, *McClellan* in NH 18473 (NH). Hlabisa: *Gerstner* 2944 (NH); Dukuduku Reserve, *Stephens* 97 (NH); Hluhluwe Game Reserve, *Ward* 1861 (NH); *van Zinderen Bakker* 111 (NH); *Bayer* in NU 17113 (NU). Lower Umfolosi: Near Ngogodo Siding, *Acocks* 12976; Umhlatuzi Valley, *Lawn* 2118a (NH); Entonjaneni: Near Melmoth Road, *Lawn* 1392 (NH). Eshowe: Between Eshowe and Nkandhla, *Pole Evans* 3622. Mtunzini: Gingindhlovu, *Wylie* in NH 9243 (NH); 4 miles N. of Gingindhlovu, *Lawn* 1864 (NH); Amatikulu, *Wood* 7589.

The type of var. *mossambicensis* Schinz has not been seen. The slight deviations in corolla length and pubescence do not appear to justify its separation even as a variety, nor does an examination of a good range of modern material indicate that this variable species should be split up into groups of minor rank. The type of *A. mossambicensis* Sim is cited as No. 6392. The holotype is in the Natal University Herbarium and was sent on loan by Professor A. W. Bayer. It is actually annotated by Sim as *A. umbelusiensis* (sic), but obviously agrees with his description and plate of *A. mossambicensis* and not with his published *A. umbalusiensis* (see notes under *A. anthelmintica* and *A. evansii*). In all respects the type of *A. mossambicensis* falls within the range of variation accepted for *A. versicolor*.

*A. versicolor* grows to an attractive large tree with a round crown of graceful foliage. A useful timber is obtained from the tree and is known commercially in South Africa as Umvangaas. This is an unfortunate choice as it is the name used in the Swazi and Shangaan languages for the Kiaat (*Pterocarpus angolensis*) which produces a very similar timber. The Swazi name for *A. versicolor* is siVangatsane, or "Little Kiaat". Sim unaccountably states that its timber is useless. Brenan and Greenway, in addition to recording that the timber is used, state that the natives make a soapy substance from the roots and that the roots are employed as an anthelmintic and also as a purgative and enema.

6. *A. antunesiana* Harms in Engl. Bot. Jahrb. 30: 75 (1901); Bak. f., l.c. 861 (1930); Brenan and Greenw., l.c. 342 (1949).

Syntypes: Angola, Huilla, *Antunes* 330, and Nyasaland, Unyika, *Goetze* 1372.

Tree 3–12 m tall; bark grey, rough; young parts pubescent, becoming glabrous with age. *Leaves* 12–25 cm long, and 10–20 cm wide, sparingly pubescent when young, soon becoming glabrous; petiole 4–6 cm long; pinnae 1–3 pairs; leaflets 5–9 pairs, ovate-oblong to trapeziform, 2.5–6 cm long and 0.8–2.8 cm broad, more or less coriaceous, discolorous, oblique at the base, apex rounded. *Inflorescence* of 15–20 flowers, the central flower usually larger than the rest; buds rusty pubescent; peduncle 4–5 cm long, rusty pubescent; bracts and bracteoles small, linear, early deciduous. *Flowers* creamy white; pedicel up to 1 mm long; central flower larger and purely male. *Calyx* 4–5.5 mm long, 5-toothed, narrowing to the base, rusty pubescent. *Corolla* 7–8 mm long, 5-lobed, rusty pubescent, paler than the calyx; tube 3.5–4 mm long; lobes 3.5–4 mm long, ovate oblong, margin inrolled. *Stamens* 2.4–2.8 cm long, united at the base for 4–5 mm. *Ovary* glabrous, 2 mm long, shortly stipitate; style filiform, shorter than the stamens. *Pod* several seeded, linear oblong, 11–16 cm long and 2.5–4 cm broad, flat, thintextured; margin slightly thickened, scarcely indented between the seeds; position of seeds apparent as bumps on the valve.

Recorded from the Belgian Congo, Tanganyika, the Rhodesias, Mocambique, Angola and northern South West Africa.

SOUTH WEST AFRICA.—Okavango: *de Winter and Wiss* 4394. Caprivi Strip: opposite Andara, *de Winter and Marais* 4816.

*A. antunesiana* is closely related to *A. coriaria* Welw. In the absence of authentic material of either species in South African herbaria, I accept the opinion of Mr. D. J. B. Killick, who considers that the two are distinct. He states that *A. antunesiana* has longer leaflets which are more oblique at the base, while the leaf rhachis is always glabrous. *A. coriaria* sometimes has completely glabrous leaflets, but the rhachis always shows some pubescence.

7. *A. tanganyicensis* Bak. f. in Journ. Bot. 67: 199 (1929); Leg. Trop. Afr. 862 (1930); Brenan and Greenw., l.c. 342 (1949).

Type: Tanganyika Territory, Kondowe District, Simbo Hills, *B. D. Burtt* 716 (K, holo., EA, iso.!).

*A. rhodesica* Burt Davy, Fl. Tvl. 2: xviii and 348 (1932); Codd, l.c. 56 (1951).

Syntypes: Southern Rhodesia, Matopos, *Galpin* 7082 (PRE, isosyn.) and Victoria Falls, *Allen* 174; *Rogers* 5319.

*A. lebbek* var. *australis* Burtt Davy in Burtt Davy and Hoyle, Ch. List Trees and Shrubs Nyasaland Prot. 53 (1936), *nomen nudum*.

Tree 3–8 m tall, sparingly branched; branches ascending; bark smooth, white to light brown, peeling in broad, papery strips; twigs sparingly pubescent, usually becoming glabrous or nearly so. *Leaves* 25–40 cm long and 20–30 cm broad, sparingly pubescent, especially when young; petiole 5–10 cm long; pinnae 2–5 pairs; leaflets 5–12 pairs, oblong, broadly elliptical to ovate oblong, 2–4 cm long and 1–2.2 cm broad, oblique at the base, apex rounded to obtuse. *Inflorescence* of 20–25 flowers; peduncle 3–4 cm long; peduncle and buds rusty hispid; bracts and bracteoles small, linear, early deciduous. *Flowers* creamy white, subsessile. *Calyx* 4.5–5.5 mm long, 5-lobed, fulvous; lobes ovate-deltoid, 1.5–2 mm long. *Corolla* 7–9 mm long, 5-lobed; tube usually pubescent, 4–5 mm long; lobes ovate to ovate-lanceolate, 3–3.5 mm long, fulvo-tomentose, especially towards the apex. *Stamens* 2.5–3 cm long, united at the base for about 4 mm. *Ovary* glabrous, 3 mm long, shortly stipitate; style filiform, exceeding the stamens in length. *Pod* several seeded, flat, semi-woody, smooth, linear to linear-oblong, 15–25 cm long and 3–5 cm broad, light brown; margin scarcely thickened; position of seeds usually not visible through valves.

Recorded from Tanganyika, Nyasaland, Rhodesia and the Transvaal.

TRANSVAAL.—Soutpansberg: *Menne* s.n.; Kruger National Park, near Punda Maria, *Lamont* s.n.; *Codd and Dyer* 4549. Waterberg: Near Nylstroom, *Pole Evans* H19679; *Codd* 5601; *Repton* 3472; *Prosser* 1722; 19 miles E. of Vaalwater, *Codd* 986; Leopards Kloof, Hartebeestelaagte, *Galpin* 13391; Rooiberg, *Pole Evans* s.n.; hills near Warmbaths, *Burtt Davy* 2183; *Bolus* 11868; *Gerstner* 5278; *Story* 1522.

The probability that *A. rhodesica* would prove to be a synonym of *A. tanganyicensis* was recognised by Mr. B. de Winter while at Kew Herbarium as our liaison officer. This view was supported after seeing an isotype of *A. tanganyicensis* kindly sent to us on loan from the East African Herbarium, Nairobi, and comparing it with material in the National Herbarium.

The name *A. lebbek* var. *australis* is listed by Burtt Davy and Hoyle without description or citation of specimens. A clue to its identity is provided by the fact that several sheets in the National Herbarium, Pretoria, are annotated by Burtt Davy with this name, including *Galpin* 7082, one of the syntypes of his *A. rhodesica*.

There has been some confusion in the past between *A. tanganyicensis* Bak. f. and *A. lebbeck* (L.) Benth., but the two are clearly distinct. Vegetative specimens of the two are very similar, though *A. tanganyicensis* has more closely placed and more numerous leaflets (5–12 pairs), as against 3–9 pairs of leaflets for *A. lebbeck*. In *A. tanganyicensis* the individual flowers are subsessile, the calyx is relatively long (4.5–5.5 mm) and is 5-lobed, with a marked golden brown tomentum, especially towards the apex, as well as on the lobes of the corolla. In *A. lebbeck* the flowers have pedicels 2–3.5 mm long, the calyx is 4–4.5 mm long, is shortly 5-toothed, with a short, pale brown tomentum, while the corolla is almost glabrous with a few whitish hairs on the lobes. There are other differences, including a marked distinction in ecology and habit. *A. tanganyicensis* is a small deciduous tree inhabiting rock formations with

an acid reaction, such as granite or quartzite. It is sometimes sparingly branched near the base, with few, ascending or crooked branches, forming a sparse canopy. The most striking feature, however, is the bark, which is thin and light brown in colour, peeling off in broad, papery flakes, leaving a white smooth surface. It has no timber value and farmers in the Transvaal have remarked that, when the wood is worked, the dust is a strong irritant to the nose and throat, so that it is locally known as "sneeze-wood".

8. *A. suluensis* Gerstner in Journ. S. Afr. Bot. 13: 62 (1947).

Lectotype: Natal, Melmoth District, 2 miles west of Dundulu Store, *Gerstner* 4337 (PRE).

Tree 5–15 m tall with a round or spreading crown; bark grey, fissured; young twigs usually pubescent, soon becoming glabrous. *Leaves* 13–20 cm long and equally broad; petiole 2–5 cm long; pinnae 2–4 pairs; leaflets 5–9 pairs, glabrous to sparingly pubescent, especially on the petiolule, dark green above, underside paler, broadly elliptical to oblong or obovate, 2–2.5 cm long and 1–1.5 cm broad, oblique at the base, apex rounded to truncate, mucronate; margin crisped. *Inflorescence* of 20–25 flowers; peduncle 3–4 cm long; peduncle and buds fulvo-tomentose. *Flowers* whitish, subsessile. *Calyx* 5-toothed, 2.5–3.5 mm long, fulvo-tomentose; teeth rounded. *Corolla* 5–6 mm long, 5-lobed, fulvo-tomentose; tube 3–3.5 mm long; lobes lanceolate, 3 mm long. *Stamens* 1.3–1.6 cm long, united at the base for 5–6 mm. *Ovary* glabrous, 2–3 mm long, shortly stipitate; style filiform, equal to the stamens in length. *Pod* several seeded, linear to linear-oblong, 8–16 cm long and 1.4–2.6 cm broad, flat, light brown, thin textured with occasional transverse striations; margin slightly thickened, straight or indented between the seeds; position of seeds apparent as raised bumps on the valves.

Distribution confined to northern Zululand.

NATAL.—Hlabisa: *Gerstner* 1714 (NBG); 1730 (NBG); 4601 (NH); 6440; 6440a (NH); 6440b (NH); Nhlwati, *F. Bayer* 64; *Gerstner* 730; Dukumbane, *Gerstner* 714; Gwegwede River, *Gerstner* 6261 (BOL); Mtadhlwana Hill, *F. Bayer* 14/46; 4 miles N. of Hlabisa, *Codd* 9611; Hluhluwe Game Reserve, *Ward* 2829 (NH). Melmoth: 2 miles W. of Dundulu Store, *Gerstner* 4337, (PRE, lecto.).

In choosing one of the National Herbarium specimens as the lectotype, I was influenced by the fact that the preliminary examination leading to the recognition of this as an undescribed species was carried out by Miss I. C. Verdoorn, who had before her a good range of material collected by the Rev. Fr. Gerstner and Mr. F. Bayer, including specimens in better condition than those cited with the published description. In the selection of a lectotype, however, one is limited to the material cited by the author. Of the syntypes listed by Gerstner, two are represented in the National Herbarium, namely, *Gerstner* 4337 (flowering) and *Bayer* 64 (fruiting). Although he cites his No. 4601 as being present in PRE, this does not appear to be the case. Because flowers and leaflets are the most diagnostic characters of the species, *Gerstner* 4337 is chosen as the lectotype. The leaf illustrated with Gerstner's type description is obviously from his No. 4601, which is an immature specimen with leaflets mainly acute. This is not representative of mature specimens, in which the leaflets are rounded to truncate at the apex, with the margins distinctly crisped. The drawing of the flower also conveys the wrong impression through showing the calyx distinctly lobed when in fact it is very shortly toothed.

*A. suluensis* is a graceful tree with a round crown, bearing some resemblance to *A. lebbeck* but can readily be distinguished from that species by the crisped margin of the leaflet, by the golden tomentum of the calyx and corolla and by several other features. It appears to be endemic in northern Zululand, having been collected only from the Hlabisa and Melmoth Districts.

Gerstner records that the natives pound the bark with water, producing a foaming mixture which is used as a powerful enema. The timber is said to be hard and durable with an attractive grain, suitable for furniture. It is also stated that the sawdust produced while working the timber is somewhat irritant and causes sneezing.

9. *A. anthelmintica* (*A. Rich.*) *A. Brongn.* in Bull. Soc. Bot. Fr. 7: 902 (1860); Oliv. in Fl. Trop. Afr. 2: 357 (1871); Benth. in Trans. Linn. Soc. 30: 564 (1875); Marloth, Fl. S. Afr. II, 1: t. 29 (1925); Bak. f., l.c. 859 (1930); Brenan and Greenw., l.c. 341 (1949); Codd, l.c. 53 (1951).

Type: Abyssinia, near Add'erbati, *Quartin Dillon*.

Var. *australis* Bak. f., l.c. 859 (1930).

Type: South West Africa, Okahandja, *Dinter* 269 (K, holo., PRE, iso.).

Var. *pubescens* Burt Davy, l.c. xvii (1932).

Syntypes: Transvaal, Soutpansberg District, Waterpoort, *Rogers* 19347 (PRE, isosyn.) and *Rogers* 21504 (PRE, isosyn.).

*Besenna anthelmintica* *A. Rich.*, Fl. Abyss. 1: 253 (1847).

*Acacia marlothii* *Engl.* in Engl. Bot. Jahrb. 10: 19 (1889).

Type: South West Africa, near Otjimbingwe, *Marloth* 1317 (B, holo., destroyed; PRE, iso.).

*Albizzia umbalusiana* *Sim*, For. Fl. P.E.A. 59, t. 55A (1909).

Type: Mocambique, Umbeluzi, *Sim* 6200 (apparently no material extant).

Shrub or small tree 2–10 m tall; branchlets twiggy, usually with lenticular bark, often forming abbreviated, spine-tipped shoots; young twigs usually sparingly pubescent, soon becoming glabrous. Leaves 6–8 cm long and 5–6 cm broad; rhachis glabrous to sparingly hispidulous; petiole 0.5–2 cm long; pinnae 2–4 pairs; leaflets 2–5 pairs, the uppermost usually the largest, glabrous above, glabrous or sparingly pubescent on the nerves below, obovate, broadly elliptical to subrotundate or ovate, 0.8–2.5 cm long and 0.5–1.8 cm broad, oblique at the base, apex obtuse, mucronulate. Inflorescence of 15–25 flowers; peduncle 1.4–2 cm long, often sparingly pubescent; bracts and bracteoles small, early deciduous. Flowers white to cream; pedicels 1–2.5 mm long. Calyx 3–4.5 mm long, 5-toothed, deeply cleft on one side, usually glabrous except for occasionally a tuft of white hairs at the apex of each tooth. Corolla 6–9 mm long, 5-lobed, glabrous except for a tuft of white hairs at the apex of each lobe; tube 3–5 mm long; lobes ovate-lanceolate, 3–4 mm long. Stamens 2.3–2.8 cm long, united at the base for 3–4 mm. Ovary glabrous, about 3 mm long, shortly stipitate; style filiform, exceeding the stamens in length. Pod several seeded, linear to linear-oblong, 8–12 cm long and 2–2.5 cm broad, flat, membranous, straw coloured to light brown with occasional transverse striations; margin slightly thickened, straight or indented between the seeds; position of seeds apparent as raised bumps on the valves.

Recorded from Abyssinia, through tropical East Africa and the Rhodesias to Angola, South West Africa, Bechuanaland, Mocambique, Transvaal and Natal.

SOUTH WEST AFRICA.—Ovamboland: near Oshikanga, *Rodin* 2673. Okavango: Runtu, *Maguire* 1615 (NBG). Grootfontein: *Watt and Brandwijk* 1443; Tsumeb, *Basson* 15; Schaap River Hills, *Keet* 1504; 20 miles S. of Osiri, *Liebenberg* 4682. Otjiwarongo: Waterberg, *Liebenberg* 4774. Okahandja: *Dinter* 269 (PRE, SAM, GRA); *Bradfield* 452. Gobabis: *Liebenberg* 4628. Windhoek: *Dinter* s.n.; *Keet* 1674; *Codd* 5793; Otjisewa, *Wiss and Kinges* 739. Rehoboth: Buellspoor, *Strey* 2187. Maltahoehe: Kleinfontein, *Marloth* 5052. Keetmanshoop: *Rogers* s.n. (GRA); Gellap Ost, *Acocks* 15608.

TRANSVAAL.—Soutpansberg: Dongola area, *Pole Evans* 3534; *Codd* 4331; near Messina, *Rogers* 19347; *Pole Evans* H18897; *Gerstner* 5453; Waterpoort, *Rogers* 21504; *Gerstner* 5718; Masekwapoort, *Gerstner* 5953; Sibasa area, *Gerstner* 6213; Kruger National Park, Makuleka, *Lang* in TM 32263; Pafuri, *van der Schijff* 642. Pietersburg: *Smuts* s.n.; Leipzig Mission, Blaauwberg, *Leipolt* 3; near Malipsdrift, *Erens* s.n.; *Repton* 699. Waterberg: 30 miles N.W. of Vaalwater, *Smuts* 361. Rustenburg: near Matlabas, *Acocks* 8802. Lydenburg: *Barnard* 49a; 49b; 4 miles N. of Buffelsvlei, *Codd* 6675. Pilgrims Rest: Kruger National Park: Sand River, *van der Schijff* 775. Nelspruit: Kruger National Park, near Skukuza, *Lang* in TM 30866; *Letty* 67; *Codd* 5701; *van der Schijff* 747; 783. Barberton: near Louws Creek, *Acocks* 12879; *Codd* 1040.

NATAL.—Zululand, without locality, *Gerstner* 4944; 5088. Ingwavuma: *Gerstner* 3767 (NH); near Pongola, *West* 2093 (NH); Otobotini, *Gerstner* 3431 (NH). Ubombo: Mkuzi, *Galpin* 13691. Hlabisa: Hluhluwe Game Reserve, *Ward* 1440 (NU). Lower Umfolosi: near Umhlatuzi River, *Gerstner* 6441 (NH).

In South Africa and in drier parts of the tropics, *A. anthelmintica* is a small tree or shrub up to about 15 feet tall. According to the Flora of Tropical Africa, it may reach the stature of a large tree from the trunks of which native canoes are made, but this statement requires confirmation. The southern form has been separated varietally by both Baker fil. and Burt Davy. There seems little justification for this course, a view also expressed by Mr. Brenan and Mr. Killick after the examination of a wide range of specimens, including type material. Specimens matching the southern form can be found from north tropical Africa, while pubescence is not restricted to the South African specimens. Dr. P. J. Greenway of Nairobi informs me that he knows the species in the field almost throughout its whole range from the Kruger National Park to the Kenya—Ethiopian boundary and can see no evidence to support the separation of a variety.

The holotype of *Acacia marlothii* Engl., *Marloth* 1317, presumed to have been in Berlin-Dahlem Herbarium, appears to have been destroyed, but a specimen of this number is in the National Herbarium, Pretoria. It is a sterile twig but is unmistakably conspecific with *Albizia anthelmintica*.

There is some evidence that Sim based his *A. umbalusiana* on a mixture. The flowering twig with spine-tipped branchlets illustrated on Plate 55A of his Forest Flora of Portuguese East Africa would pass as *A. anthelmintica*, though the leaf and pod show a closer resemblance to *A. evansii*. No material of the type, Sim 6200, has been traced. The greater part of Sim's phanerogamic collection is in the Natal University Herbarium, but No. 6200 is not represented. Two specimens have been annotated by him with the name *A. umbelusiana* (sic). One of these is No. 6392, the type of *A. mossambicensis* Sim (see note under *A. versicolor*); the other, No. 23118, a fruiting specimen, is identifiable as *A. evansii* Burt Davy, a species with very different flowers from those described and illustrated as *A. umbalusiana*. It seems probable that the leaf and pod of Plate 55A were drawn from this specimen, in which case the flowering twig with spine-tipped branchlets (excluding the leaf) no doubt corresponds to the missing type, No. 6200. It may be noted that Sim also lists *A. anthelmintica*, but gives the description in inverted commas after Dr. Meller, indicating that he was not familiar with the species.

The anthelmintic properties of the roots of this species are recognised by a number of native tribes. Watt and Brandwijk report the presence of sapogenins in the roots but state that these substances are not responsible for the anthelmintic action. Tests with pollen carried out by the Division of Veterinary Services, Onderstepoort, showed that it acts as an irritant to the eyes.

10. *A. evansii* Burtt Davy, Fl. Tvl. 2: xvii and 349 (1932). Codd, l.c. 54 (1951).

Type: Transvaal, Nelspruit District, Sabie Game Reserve, *Pole Evans* H16921 (K, holo.).

*Shrub* or small tree 4–8 m tall, usually branching freely from the base with many ascending branches; branchlets pubescent, not forming abbreviated spine-tipped shoots. *Leaves* 5–8 cm long and 4–6 cm broad; petiole 0.8–2 cm long; rachis hispidulous; pinnae 2–4 pairs; leaflets 2–5 pairs, obovate to trapeziform-elliptical, 1–2 cm long and 0.5–1 cm broad, upper surface dark green with a few scattered hairs, lower surface paler, hispidulous; base cuneate, usually oblique, apex obtuse, often mucronulate. *Inflorescence* 6–15 flowered; peduncle 0.8–1.5 cm long, hispidulous; bracts and bracteoles minute, early deciduous. *Flowers* whitish, tinged with red; pedicels 1.5 mm long. *Calyx* 1–1.5 mm long, cup-shaped, obscurely 5-toothed, puberulous. *Corolla* 6–7 mm long, 5-lobed, glabrous or sparsely pubescent on the lobes; tube subcylindrical, widening slightly towards the throat, 3.5–4 mm long; lobes 2.5–3 mm long, ovate-lanceolate, cucullate. *Stamens* 1.6–1.8 cm long, united in a narrow tube for 1.2–1.3 cm. *Ovary* glabrous, 2.5 mm long, shortly stipitate; style filiform, exceeding the anthers by 3–5 mm. *Pod* several seeded, linear-oblong, 6–13 cm long and 1.4–2 cm broad, flat, semi-woody, smooth, yellow brown; margin very slightly thickened, usually straight; position of seeds not apparent through the valves.

Recorded from the north-eastern and eastern Transvaal, southern Mocambique and northern Zululand.

TRANSVAAL.—Soutpansberg: Kruger National Park, 2 miles S. of Punda Maria, *Codd* 5990. Pilgrims Rest: 15 miles S. of Satara, *Codd* 4296; 20 miles N.E. of Skukuza, *Codd* 5592. Nelspruit: Kruger National Park, 16½ miles E. of Skukuza, *Codd* 5706; 5½ miles S.W. of Lower Sabie Camp, *Codd* 5708.

NATAL.—Ingwavuma: *Gerstner* 3734; Ndumu Game Reserve, *Gerstner* 3440; 3993; *Ward* 2037.

Attention has been drawn (page 78) to the possibility that the description and illustration of *A. umbalusiana* Sim are drawn from the two species *A. anthelmintica* and *A. evansii* and that possibly *Sim* 23118 is the basis of the leaf and pod of his Plate 55A. *Sim* also records the native name Nala for his species and this is the Shangaan name for *A. evansii* encountered in the Kruger National Park. However, the description of the flowers of *A. umbalusiana* could not apply to *A. evansii*.

There is a superficial resemblance between the leaves of *A. anthelmintica* and of *A. evansii*, but the leaflets of the latter are hispidulous, especially on the under surface, while those of *A. anthelmintica* are glabrous or with a few scattered hairs on the nerves, and only very rarely hispidulous in some South West African specimens. *A. evansii* is closely related to *A. petersiana* Bolle but the leaflets of the latter species are more numerous and glabrous, while the corolla and stamens are longer. The habit of *A. petersiana* is not known, but *A. evansii* has a very characteristic appearance, unlike any other South African species. It branches freely from near ground level, forming numerous ascending branches 12–25 feet tall (see *Trees and Shrubs of the Kruger National Park*, Fig. 47). Although never very common, it is sometimes locally gregarious on brakish, sandy flats as, for example, near the Lion Pan in the Kruger National Park.

11. *A. adianthifolia* (Schumach.) W. F. Wight in U.S. Dept. Agr. Bull. 137: 12 (1909); Brenan in Kew Bull. 1952: 520.

Type: Gold Coast, Bliguisso, *Thonning* s.n. (Hb. Haun., Univ. Bot. Mus., Copenhagen, holo.).

*Mimosa adianthifolia* Schumach. in Schumach. et Thonn., Beskrif. Guin. Pl. 322 (1827).

*Zygia fastigiata* E. Mey. Comm. Pl. Afr. Austr. 165 (1836); Benth. in Hook. Lond. Journ. Bot. 3: 93 (1844); Harv. in Fl. Cap. 2: 285 (1861-62).

Syntypes: Natal, between Umzimkulu and Umkomaas, Drege, and Port Natal, Drege.

*A. fastigiata* (E. Mey.) Oliv. in Fl. Trop. Afr. 2: 361 (1871); Benth. in Trans. Linn. Soc. 30: 570 (1875), *pro parte*; Wood and Evans, Natal Pl. 1: 24, t. 27 (1898); Sim, For. Fl. Cape Col. 213, t. 62 (1907); Sim, For. Fl. P.E.A. 59, t. 58 (1909); Marloth, Fl. S. Afr. II, 1: t. 30 (1925).

*A. gummifera* non (Gmel.) C.A.Sm., C.A.Sm. in Kew Bull. 218 (1930), *pro parte*; Burtt Davy, l.c. 2: 349 (1932); Henkel, Woody Pl. Natal and Zul. 236 (1934); Codd, l.c. 55 (1951).

Tree 7-15 m tall with a flat, spreading crown; bark grey; young twigs rusty pubescent. Leaves 12-22 cm and 8-12 cm broad; petiole 3-4 cm long; petiole and rachis rusty pubescent; pinnae 4-7 pairs; leaflets 6-12 pairs, trapeziform, 1-1.6 cm long and 5-8 mm broad, sparingly hispidulous and dark green above, hispidulous and paler below; midrib diagonal. Inflorescence 15-25 flowered; peduncles 2.5-6 cm long, fulvous; bracts and bracteoles minute, early deciduous. Flowers whitish, shortly pedicellate, of two kinds; outer flowers hermaphrodite, with a few larger male flowers at the centre. Calyx 4.5-5.5 mm long, 5-toothed, fulvo-tomentose. Corolla 8-10 mm long, 5-lobed, grey pubescent; tube subcylindrical, widening towards the mouth, 6-7 mm long; lobes lanceolate-oblong, 2-3 mm long, apex cucullate. Stamens 2.5-3.2 cm long, united into a narrow tube for 1.8-2.6 cm. Ovary glabrous, 2.5 mm long, subsessile; style filiform, exceeding the stamens. Pod several seeded, linear to linear oblong, 11-16 cm long and 2.3-2.6 cm broad, flat, thin textured, pubescent, rugose, pale brown; margin thickened, straight or wavy; position of seeds apparent as bumps on the valves.

Distributed from Senegal to Abyssinia and, southwards, through east Tropical Africa to Rhodesia, Mocambique, Transvaal, Natal and to Port St. Johns in the Cape Province.

TRANSVAAL.—Soutpansberg: Tshakoma, Obermeyer 975; Shewass, Legat in TM 6259; Makonde, Westphal 5; Curson and Irvine 78; Pepeti Falls, Curson and Irvine 97; Kruger National Park, near Punda Maria, Lamont 43; Codd 6529; van der Schijff 3784.

NATAL.—Without locality, Mrs. Saunders s.n. (BOL); Gerrard and McKen 397 (NH). Zululand: Bazwana, Gerstner 3725 (NH). Ingwavuma: Mangazi Forest, Maputa, Bayer 753. Hlabisa: St. Lucia Bay, Pole Evans 3646; near Hluhluwe Game Reserve, Ward 2627. Mtunzini: Ngoye Forest, Schmidt in For. Dept. Herb. 1445. Eshowe: Forest adjoining Eshowe, Codd 1864. Mapumulo: Umhlali, Repton 1838. Inanda: near Umzinyati Falls, McClean and Ogilvie in NH 28868. Durban: Medley Wood 6135. Pinetown: Amanzimtoti, Gerstner in NH 22080 (NH). Umzinto: Dumisa, Rudatis 681; Umdoni Park, Smuts 2340. Port Shepstone: 2½ miles W. of Southbroom, Marais 1147.

CAPE PROVINCE.—Lusikisiki: 2½ miles N. of Embotyi, Codd 9740.

The difficult problem of species limits and synonymy in the *A. gummifera*—*A. adianthifolia*—*A. zygia* complex has been dealt with by Brenan in Kew Bull. 1952: 520, and his conclusions are followed here.

*A. adianthifolia* is a conspicuous tree of the coastal forests of Natal, with its spreading, flat crown of graceful foliage. Sim, in his Forest Flora of the Cape of Good Hope, states that the wood is fine grained, rather soft and susceptible to borer.

## EXOTIC SPECIES.

12. *A. lebbeck* (L.) Benth. in Journ. Bot. Lond. 3: 87 (1844) (as "A. lebbeck"); Brenan and Greenw., l.c. 342 (1949).

Type: Linnaean Herbarium, No. 1228/16.

*Mimosa lebbeck* L., Sp. Pl. ed. 1: 516 (1753).

*M. lebbeck* Forsk., Fl. Aegypt. Arab. 177 (1775).

*Acacia lebbeck* (L.) Willd., Sp. Pl. 4: 1066 (1806); DC., Prodr. 2: 466 (1825).

Tree 8–15 m tall with a large round crown; bark grey, fissured; branchlets glabrous to tomentose. Leaves 15–35 cm long and 12–30 cm broad; petiole 5–8 cm long; petiole and rachis pubescent to glabrescent; pinnae 2–4 pairs; leaflets 5–9 pairs, sparingly hispidulous to glabrous, paler below, oblong to broadly elliptical, 2.5–4.4 cm long and 1–2.4 cm broad, oblique at the base, apex rounded, often emarginate; margin not crisped. Inflorescences 1–3 in axils of terminal leaves, each of 20–25 flowers; peduncle 4–6 cm long; peduncle and buds brownish tomentose. Flowers white; pedicels 2–2.5 mm long. Calyx subcampanulate, 4–4.5 mm long, 5-toothed, grey-brown tomentose. Corolla 6–8 mm long, 5-lobed, almost completely glabrous below with patches of whitish tomentum towards the apex; tube subcylindrical, 4–5.5 mm long; lobes ovate-lanceolate 2–3.5 mm long. Stamens 2–2.5 cm long, united at the base for 5–5.5 mm. Ovary glabrous, 2 mm long; style filiform, exceeding the stamens. Pod several seeded, linear to linear-oblong, 12–20 cm long and 3.5–4.5 cm broad, flat, thin textured, light to dark brown; margin thickened, usually straight; position of seeds visible as raised bumps in the valve.

A native of tropical Asia and, probably, tropical Africa, widely cultivated in the tropics. Cultivated and semi-naturalised along the north coast of Natal. According to Forskahl, the specific name is derived from the Arabian name Labach for the tree.

TRANSVAAL.—Pretoria: Meyer s.n.

NATAL.—Mtunzini: Lawn 2118; Gingindhlovu, Lawn 1863 (NH); valley near Gingindhlovu, Lawn (NH). Inanda: 2 miles S. of Verulam, Codd 9653.

*A. lebbeck* is growing in the Botanic Gardens, Durban, and the specimens collected from the coastal areas of Natal and Zululand are from trees that are very likely cultivated or semi-naturalised. The species is included in this treatment because it is sometimes confused in the herbarium with *A. tanganyicensis* and *A. suluensis*. For the distinguishing characters, see the discussions under those species.

It is a graceful tree of easy culture in a frost-free climate, forming a fairly straight trunk and a round crown of attractive, dark green foliage. Brenan and Greenway record that it produces a useful timber and that the leaves are browsed by stock.

13. *A. lophantha* (Willd.) Benth. in Hook. Lond. Journ. Bot. 3: 86 (1844); Fl. Austral. 2: 421 (1864).

Type: It is not known if a specimen is preserved on which Ventenat, Jard. Cels. t. 20, based his description and figure; if not, the latter will suffice as the type.

*Acacia lophantha* Willd. Sp. Pl. 4: 1070 (1806); DC., Prodr. 2: 457 (1825).

*Mimosa distachya* Vent. Jard. Cels. t. 20 (1800 or 1801), non Cav. Ic. 3: 48, t. 295 (1794 or 1795).

Type: As above.

*Albizia distachya* (Vent.) MacBride in Contrib. Gray Herb. n.s. 59: 3 (1919); Salter in Adamson and Salter, Fl. Cape Penins. 452 (1950).

*Tree* 4–7 m tall; branchlets usually velvety pubescent. *Leaves* 20–25 cm long and 11–18 cm broad; petiole 3–7 cm long; petiole and rhachis pubescent; pinnae 7–12 pairs; leaflets 20–35 pairs, linear oblong, 7.5–11 mm long and 2–2.5 mm broad, sparingly pubescent to glabrous, oblique at the base, apex obtuse to rounded, mucronulate; midrib nearer to upper margin. *Inflorescence* spicate, 4–8 cm long, axillary, 1–3 per axil; peduncle 0.8–1.5 cm long, fulvo-tomentose. *Flowers* creamy to yellowish; pedicels 1–2.5 mm long. *Calyx* campanulate, 2–2.5 mm long, 5-toothed, pubescent. *Corolla* 5.5–6.5 mm long, 5-lobed, appressed pubescent; tube subcampanulate, 4–5 mm long; lobes ovate, cucullate, 1.5 mm long. *Stamens* 1.3–1.5 cm long, united at the base for 1.5–2.5 mm. *Ovary* glabrous, 2.5 mm long, very shortly stipitate; style filiform, exceeding the stamens by 6–7 mm. *Pod* several seeded, linear to linear oblong, 6–11 cm long and 1.4–1.6 cm broad, flat, semi-woody, light to dark brown; margin slightly thickened, straight or nearly so; position of seeds clearly evident as raised bumps on the valve; seeds, when mature, loose and rattling in the pod.

Native of the south-western coastal region of Western Australia and naturalised in South Africa, especially along the coast from Humansdorp to the Peninsula.

NATAL.—South Coast, *Wood* 10588 (NH).

CAPE PROVINCE.—Humansdorp: *Rogers* 3021; *Fourcade* 3934 (BOL). Knysna: *District Forest Officer* in PRE 8707. Riversdale: Corente River Farm, *Muir* in Hb. Galpin 5092. Caledon: Kogel Bay, *Parker* 4206 (BOL). Cape Peninsula: Simons-town, *Watt and Brandwijk* 1682; Rondebosch, *Gerstner* 6135; Edinburg Estate, *Salter* 7356 (BOL).

It is not known when this species was introduced into South Africa. The earliest herbarium specimen seen is from the Riversdale District, dated December, 1908, when it was already recorded as “common on river banks”. Collectors describe it as almost a ruderal weed, being common and gregarious along river banks, forest margins and in wooded ravines.

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