

REVISION OF

ALBIZIA Sect. PACHYSPERMA (Leguminosae-Mimosoideae)

by

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In the course of revising the genus *Serianthes* Benth. (Reinwardtia 5: 293—317. 1960) it was necessary to account for several names which had been proposed in *Serianthes* but which applied to species belonging to a group that seems better placed in the genus *Albizia*. **) After some further study, the present treatment of this group, here regarded as constituting *Albizia* section *Pachysperma*, was brought together. Owing to the scarcity of material of most of the species concerned, as well as to the difficulty in understanding inflorescence morphology in some of the species from herbarium specimens alone, this paper is of necessity to be regarded as only preliminary. It may, however, serve to direct attention to the fact that the species involved do form a coherent group, with a number of common characters as well as a most peculiar inflorescence that needs much further study. Two new species and two new varieties, as well as two transfers, are proposed.

Albizia is a large and complicated pantropical genus, the taxonomy of which is not yet very firm. Like most genera of the Mimosoideae, it is ill-separated from its relatives (see Fosberg, Reinwardtia 5: 295—296. 1960). Its close relation to the much smaller and more coherent genus *Serianthes* is through a small group of Australian-Malaysian-Papuan species, the best known of which are *Albizia lophantha* (Willd.) Benth. and *Albizia falcataria* (L.) Fosb. (usually called *A. jalcata* (L.) Backer or *A. moluccana* Miq.). The group also includes *A. montana* (Jungh.) Benth. ex Miq., *A. minahassae* Koord., *A. fulva* White & Francis, and two new species described below.

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**) This name has usually been spelled *Albizzia*, but it was originally published *Albizia* Durazz. Mag. Tosc. 3, 4: 11. 1772. The wording of the current version of the Code gives such enormous latitude in correcting orthographic "errors" that, if taken at face value, a chaotic condition would result. Hence, it seems the part of wisdom to adhere to strict priority unless an apparently erroneous spelling, or a spelling that one dislikes, is clearly the result of a typographic error. In this case the spelling with one z is clearly intentional, as this spelling is consistently used, although the name of the man in whose honor it was proposed is consistently written with two z's, "n Sig. Cavalier Pilippo degl' Albizzi".

These species are characterized by leaves with many very small leaflets, and more especially by having the ultimate branchlets of the inflorescence spicate or racemose in the distal portion, rather than capitate or glomerate as is the case with the majority of species of *Albizia*. The whole inflorescence is commonly a panicle or reduced panicle, or solitary or paired racemes. At least two of the species, possibly three, have a curious tendency to produce a vegetative innovation at one or more of the principal nodes of the inflorescence. The flowers are subtended by linear-lanceolate to broadly ovate bracts, in some species resembling, somewhat, the concave bracts that subtend the ultimate glomerules in *Serianthes*.

The spicate or racemose arrangement of the flowers is not unique to this group in *Albizia*. A number of New Caledonian species have simple spikes, often lax and elongate (sect. *Spiciflora*).

There is also a tendency in this group to have large, thick pods, tardily dehiscent or even possibly indehiscent. The fruits of the group, except those of *A. falcata*, are not abundantly represented in the collections available, so the full range of fruit characters is not well enough known. However, enough is known so it can be said that if the commonly cited "key" character of an indehiscent fruit were the only thing separating *Serianthes* from *Albizia* the two genera would have to be combined. An indehiscent fruit, however, is not unique in *Albizia* to this group, as the fruit of *A. salomonensis* White is definitely indehiscent, having the margins strongly thickened as in some species of *Serianthes*, but definitely not woody. This species does not resemble the group here considered in any other important respect, nor does it resemble *Serianthes* (specimens examined Walker and White 83 (BRI) (type), Walker and White B.S.I.P. 11, (BRI), and N.G.F. 588 (LAE, BRI)). This lack of correlation of fruit characters together, with combinations of other characters, is not only found in this genus but seems all too frequent in the Mimosoideae. It makes fruit characters rather unreliable for separation of groups above the rank of species, a conclusion which was quite evidently held by Bentham and which strongly influenced his work on the leguminosae.

The seeds are generally transversally oval or oblong, and thickish, but they are not known for several of the taxa included in section *Pachysperma*.

Bentham in 1844 (Lond. J. Bot 3: 85. 1844) placed all the species of *Albizia* known to him to have inflorescences with elongate axes in the ultimate flower clusters in his section *Spiciflorae*. This included two new Caledonian species, *A. fulgens* (Labill.) Benth. and *A. granulosa* (Labill.) Benth. and an Australian species, *A. lophantha* (Willd.) Benth. Walpers,

in his Repertorium 5: 595. 1845—6, adopts this name and lists the same three species. In Walpers' Ann. Bot. Syst. 4: 633. 1857, C. Mueller first used the name *Albizia* sect. *Lophantha*, but with no diagnosis, only including in it *A. montana* Benth. and *A. benthamiana* Bl. This is, therefore, according to Art. 34 (5) of the International Code, not considered validly published. Fournier (Ann. Sci. Nat. 4, 15: 172. 1860) took up this name as *Albizia* sect. *Lophantha* Walp., supplying a diagnosis and listing seven species, including the three originally placed by Bentham in his sect. *Spiciflorae*. Inclusion of these makes *Albizia* sect. *Lophantha* a superfluous name for sect. *Spiciflorae*, thus preventing its further use.

In a much more comprehensive treatment of the Mimosae in 1875 (Trans. Linn. Soc. 30: 558. 1875), Bentham put the same three species, with a number of additional ones, in a new sect. *Lophantha* Benth., not mentioning Fournier's use of the name. As this also included the type of sect. *Spiciflorae* Benth. (as well as all of its other species), and as it is a later homonym of *Albizia* sect. *Lophantha* Walp. ex Fournier, the name is doubly illegitimate and may not be used. Included, however, were two series, ser. *Platyspermae* Benth., including *A. lophantha* and *A. montana* (Jungh.) Benth. These names were validly published and are legitimate. Taubert, in Engler & Prantl, Nat. Pfl. fam. 3(3): 106. 1894, adopts Bentham's 1875 arrangement, using the name *Albizia* sect. *Lophantha* Benth. essentially without change except to list fewer species. As Bentham's two series are not here regarded as particularly closely related to each other and not close to any other section in the genus, they are here treated as separate sections. For the New Caledonian species with spicate inflorescences it is convenient to use the name *Albizia* sect. *Spiciflora* *) Benth., which can be done by designating *A. fulgens* as the type of the section.

This section would include at least:

Albizia guillainii Guill., *A. granulosa* (Labill.) Benth., *A. lentiscifolia* Benth., *A. comptonii* E. G. Baker, *A. subfalcata* Benth., *A. fulgens* (Labill.) Benth., *A. rivularis* Fourn., *A. glandulosa* Guill., *A. streptocarpa* Fourn., *A. callistemon* Guill. & Beauv., *A. obovata* Benth., *A. paivana* Fourn.

These are the species with spicate inflorescences listed in Guillaumin's Flore de la Nouvelle Calédonie 160, 1948, and two others, also from New Caledonia, that seem to belong here. Their nomenclature and taxonomy have not been checked. The other section, with a geographic range extend-

*) It seems preferable to use the singular substantive form for sectional names, and there seems to be no prohibition in art. 21 of the Code against making the change in ending of Bentham's epithets.

ing from Sumatra to West Australia, New Guinea, and the Solomon Islands, can be typified by *Albizia lophantha* (Willd.) Benth. As the sectional name *Albizia* sect. *Lophantha* is illegitimate because superfluous when published, the epithet *Pachysperma* *) is elevated from series to sectional rank for this group.

ALBIZIA sect. *Pachysperma* (Benth.) Fosberg, *stat. nov.*

Albizia sect. *Lophantha* C. Muell. in Walp. Ann. Bot. Syst. 4: 633. 1857, nom. nud. — *Albizia*, sect. *Lophantha* Walp. ex Fourn., Ann. Sci. Nat. 4, 15: 172. 1860. — *Albizia* sect. *Lophantha* series *Pachyspermae* Benth., loc. cit. — Type species *Albizia lophantha* (Willd.) Benth.

Trees or shrubs, leaves bipinnate with small leaves; flowers in bracteate spikes or racemes, these paniculate umbellate, paired or solitary in axils, the panicles or umbels often bearing a rudimentary vegetative branch; seeds not strongly flattened.

Range: Indigenous from Sumatra to Western Australia, New Guinea, and the Solomon Islands.

The seven species making up this section may be separated by the following key:

- A. Indument very close or very sparse, the plant appearing superficially almost glabrous or very minutely and closely tomentose.
- B. Leaflets pointed, ovate-oblong- to lanceolate; inflorescence a panicle of spikes. 7. *A. falcataria*
- BB. Leaflets blunt, oblong; inflorescence of one to several pedunculate spikes or spicate racemes at a node.
- C. Pinnae usually 7—12, flowering racemes 3—6 cm long hairy
1. *A. lophantha*
- CC. Pinnae about 14, flowering racemes 9—10 cm long, almost glabrous.
4. *A. melanesica*
- AA. Indument on young parts abundant, often brownish, plant appearing definitely pubescent.
- D. Flowers in solitary or paired spicate racemes. 2. *A. montana*
- DD. Spikes paniculate or umbellate.
- E. Calyx teeth unequal, about half the length of the tube
3. *A. minahassae*
- EE. Calyx teeth equal or subequal, about one-fourth the length of the tube.
- F. Midrib of leaflet very close to distal margin, calyx 2—2.5 mm long, corolla lobes 2—2.5 mm long. 6. *A. eymae*
- FF. Midrib of leaflet about $\frac{1}{2}$ the way from distal to proximal margin, calyx 3—4 mm long, corolla lobes 3—5 mm long
5. *A. fulva*

*) Cf. note on page 73.

1. ALBIZIA LOPHANTHA (Willd.) Benth., Lond. J. Bot. 3: 86. 1844.

Mimosa distachya Vent., Descr. Pl. Nouv. Jard. J. M. Cels 5.20. 1800. (non *M. distachya* Cav. 1795). — *Albizia distachya* (Vent.) Macbr., Contr. Gray Herb. 59: 3. 1919.

Acacia lophantha Willd., Sp. Pl. 4: 1070. 1806. — *Mimosa lophantha* Pers., Syn. Pl. 2: 264. 1807.

Mimosa elegans Andrews, Bot. Repos. 9: t. 563. 1809.

Acacia insignis Hoffmannsegg, Verz. Pflanzenkultur 159. 1824.

Albizia lophanthoides DC., Prodr. 2(2) : 457. 1825.?

Shrub or small tree, young growth very minutely and closely golden sericeous tomentulose, branchlets prominently longitudinally striate, the ridges flat-topped, mostly subglabrous, but some tomentulose, the grooves mostly tomentulose, but occasionally glabrous; leaves bipinnate, pinnae (6)7—12(13) pairs, leaflets (16)20—40, narrowly oblong, base strongly oblique, apex slightly or scarcely mucronulate, with 3 strong nerves palmate from base, the strongest close to but somewhat diverging from distal margin, petiole with an elongate gland 1—2 cm from base; inflorescence a spicate raceme 3—6 cm long, paired, axillary, fairly densely flowered, bracts minute, about 1 mm or less long, ovate, caducous while buds are still very small, peduncle 10—12 mm long, pedicels very short, about 1 mm; flowers with calyx (1) 2—2.5 mm long, thinly sericeous, lobes triangular to ovate, $\frac{1}{3}$ to $\frac{1}{2}$ the total length, corolla somewhat more sericeous than calyx, (4) 6—7 mm long, lobes oblong-ovate, somewhat acute, with a tiny dense tuft of wool at apex, thinly white-tomentulose within distally, stamens to 15 mm long, yellowish or chartreuse green; mature pod oblong, usually acuminate, stipitate, thin, dehiscent, 7—10 cm long, about 1.5 cm wide, 3—8 seeds in each pod, causing swellings; seed transversely arranged in pod, oval, swollen, black, faintly margined.

Native of western Australia, and widely cultivated in greenhouses and in tropical and warm temperate areas of the world.

S. loc, s. coll., "Herb. Pers." (L), "h. Gron. v. H." (L), s. loc, *Basil* in 1865 (NY); Nova Hollandia, "Herb. Splitgerberianum" (L, 3 sheets); Western Australia: s. loc, *Kaspiciv 1* (NY); Albany, *Meebold 11703* (NY); Horton's Siding, Denmark Railway, *White 5396* (NY); Swan District, **Darling' Range**, *Pritzel 404* (L); Kelmecott, Canning River, *Morrison 104.35* (L).

In addition, Bentham, Fl. Austr. 2: 421—422. 1864, cites the following- collections which I have not seen:

W. Australia: Goose Island Bay, *R. Brown*; King George's Sound, *Baxter*; Geographic Bay, *Fraser*; Cape Naturaliste, *Oldfield*; Swan River?, *Drummond*. F. von Mueller adds "S.W. Bay" *Oldfield*.

Cultivated specimens: California: Berkeley, *Bracelin 1822* (L), 2267 (L); Ocean Beach, San Diego, *Klawe 1591* (NY); Hawaiian Is., Oahu, Makiki, *Heller 1949* (NY). Mexico: Distr. Federal: Mixcoac, *Arsene 8816* (US); City of Mexico, *Rose & Hay 5281* (US); Valley of Mexico, **Guadalupe**, *Rose & Hough*

4538 (US); Guanajuato, *Dugds* in 1891 (US). Venezuela: Colonia Tovar, 1800–2000 m, *Allart* 487 (NY, US), *Pittier* 9302 (NY, US). Colombia: Bogotá, *Dugand* 3687 (US), *Guevara Amortegui* 140 (US), *Appollinaire* s.n. (US); Antioquia, San Pedro, *Daniel* 1543 (US). Ecuador: Pichincha, Chillo Gallo, *Firmin* 449 (US). Peru: Cajamarca [probably error for Junin], Satipo, [east of] Huancayo, *Soukup* 3373 (US); Junin, Pucará, *Ferreira* 2821 (US). England: London, s. coll. "Torrey Herb." in 1821 (NY). France: Hyères, Hort. Huber, s. coll. 4692 (NY), 4691 (NY).

The two last specimens cited are given horticultural varietal names. The differences between them and other material examined are not very obvious. Two vaguely defined forms are apparent in the material examined, one with leaflets 8–15 mm long and 1.5–3.5 mm wide (e.g., the Herb. Persoon and two of the Herb. Splitgerberianum sheets at Leiden), and one with leaflets mostly 4–6, or rarely 9, mm long, and 1–2 mm wide (e.g., the *Bracelin* sheets and one of the Herb. Splitgerberianum ones at Leiden). They run together and are probably of no importance. The *Klawe* sheet at New York is peculiar. The branchlets are more closely striate than usual, leaves reach 20 cm long, the 11–12 pairs of pinnae are almost patent, to 8 cm long, the leaflets small, to 7 mm long, 1–1.5 mm wide, slightly pointed, patent; pods 8 cm long, 16–18 mm wide, with 10–11 seeds, the base shortly stipitate, apex rounded, with a slight, reflexed stylar mucro. If there were any evidence that this specimen represented a population it would be amply distinct for varietal recognition. *Arsene 8516* from Mexico is similar.

Both Willdenow and Persoon cite the later homonym, *Mimosa distachya* Vent., in synonymy, so that both must be regarded as simply renaming that species, and the type of *M. distachyum* Vent., if it can be found, must be considered to be that of both *Acacia lophantha* Willd. and *Mimosa lophantha* Pers. Neither Willdenow nor Persoon mentioned the other's publication of the epithet, so the names must be regarded as independently coined, though if transferred to the same genus they could not be regarded as homonyms because of the curious wording of the present International Code.

The plant has been in cultivation a long time but has apparently never become very common. Edwards, Bot. Reg. 5: t. 361, 1819, says it was discovered by Robert Brown and introduced in 1803 by Peter Good. That this could not have been its first introduction into horticulture is shown by the fact that Ventenat's description of it from Cels' garden is dated 1800. Excellent plates of it have been published by Edwards, loc. cit., Loddiges, Bot. Cab. t. 716, 1823, Curtis Bot. Mag. NS 5: t. 2108, 1820, and, as *Mimosa elegans* Andrews, Bot. Rep. 9: t. 563, 1809. *Acacia insignis* Hoffmannsegg,

briefly described from Australia, seems to be the same. His specimen may have been from a cultivated plant, but this is not clear.

The brief description of *A. lophanthoides* DC, from Jamaica, fits *A. lophantha* so far as it goes, except for "foliolis 12-jugis." De Candolle places it next to *A. lophantha*. Neither Fournier nor Bentham disposes of it effectively. Perhaps it is a cultivated plant of *A. lophantha*.

2. ALBIZIA MONTANA (Jungh.) Benth. ex Miquel et al., PL Jungh. 1: 267. 1853.

Acacia montana Jungh., Tijdschr. Ned. Ind. 5: 626. 1842; 7(1): 163–164, 186. 1845; Natuur. & Geneesk. Arch. Ned. Ind. 2: 22–23, 35–36. 1845. — *Inga montana* Jungh., Topog. et Naturw. Reisen 288, 305. 1845.

Acacia vulcanica Korth., Flora 5: 705. 1847.

Albizia benthamiana Bl. in Miq., Fl. Nederl. Ind. 1(1): 30. 1855.

Small tree to 10 m, rarely 15 m, tall, to 20 cm, rarely 30 cm diameter, bark gray, young parts densely, coarsely, and somewhat flocculently rusty tomentose, pubescence tending to be lost in age, branchlets irregularly longitudinally ridged, the ridges not conspicuously flat topped; leaves up to 20 cm long, rachis rusty or grayish tomentose, pinnae 4–10 (12) pairs, 8–10 cm long, leaflets (26) 32–37 pairs, narrowly oblong, very oblique at base, apex rounded to somewhat acute, (6) 8–10 (11) mm long, 2–3 mm wide, very sparsely appressed puberulent beneath or completely glabrous, palmately 3- or 4-nerved from base, main nerve or midrib 1/3–1/4 the way from anterior margin; an elliptic raised gland near middle of petiole; stipules triangular, scalelike; inflorescence a spicate raceme, axillary, 1–2 at a node, 7–9(12) cm long, peduncle 1–2(3) cm, bracts subtending flower buds ovate to linear-lanceolate, acuminate, densely golden appressed pubescent and ciliate, very early caducous, pedicels short but evident; flowers with calyx about 2.5 mm long, sparsely appressed golden pubescent, glabrate, teeth 5, triangular, 1/3 to 1/2 the length of calyx; corolla 5–6 mm long, appressed pubescent, tube somewhat exserted, lobes oblong, obtuse to acutish, apex papillate within but without a tuft of wool; stamens about 15 mm long, bright lemon yellow, anthers minute, orbicular or even broader than long; pods stipitate, narrowly oblong, 8–11 cm long, about 2 cm wide, slightly apiculate at apex, margin somewhat thickened, constricted between seeds when poorly developed, 8–11 seeded; seeds transversely arranged, oval, black, faintly margined, somewhat compressed, 4–6 mm long.

A common component of the low forest at higher elevations, usually between 1500 and 3300 m, on mountains of Sumatra and especially Java, with a variety on Flores. Junghuhn (Reisen, 1845 p. 139, 148, etc.) uses the vernacular name „kamalandingang." *) Junghuhn cited no specimens,

*) Note of the Senior Editor: Kamalindingan is the common vernacular name for *Leucaena leucocephala*; *A. montana* has similar leaves.

but it seems practical to select his collection from Tjerimas in Leyden as lectotype, as three duplicates of it exist.

This species has been reduced by some to *A. lophantha*, which, indeed, it resembles very closely. The principal differences are in the abundant flocculent rusty tomentum on all young parts, irregular, wrinklelike ridges, rather than regular, flattish-topped ridges, on the twigs, different leaflet venation with the midrib away from the margin, much longer racemes with much larger and longer persistent bracts, corolla lobes without a tuft of wool at apex but papillose within, pods broader, with 8—11 seeds, rather than 3—8. The variety from Flores is in some respects intermediate, but unquestionably belongs with *A. montana*.

2a. ALBIZIA MONTANA (Jungh.) Benth. var. *montana*

As described above.

S u m a t r a : s. loc. *Korthals* (L, 2 sheets); Pajakumbuh, Central Sumatra, Mt. Merapi, near Bukittinggi, above "Amor Naturae," 1500—1000 m, *Meijer* 64.32 (L). West Java: Mt. Gedeh: *La Riviere* s.n.(L); *Blume* [?] (L, 4 sheets); 2135 m, *Hallier* 513 (BO, L); 2135—2600 m, *Hallier* 535 (BO, L); 2900 m, *Kuntze* 4727 (NY); top, *Harrevelde* 3443 (L, 2 sheets); *Sapiin* in 1896 (BO); 2800 m, *Van Steenis* 1999 (BO); 2390 m, *Bruggeman* (2) 3717 (BO); *Backer* 31306 (BO); 2500 m, *Kostermans* in 1964 (BISH, US, Fo); 2900 m, *Fosberg* U635 (US, Fo); 2600—2800 m, *Fosberg* U627 (BISH, L, NY, US, Fo); M629 (BISH, NY, US, Fo); M630 (Fo). Mt. Pangarango, *Koorders* 3865 (BO); Tjibodas: 1400—2900 m, *Raap* 82b (L); *Koorders* 766 (BO); *Koordes* 2215b (BO). Mt. Wajang, *Smith & Rant* 589 (BO). Mt. Kantjana, Santosa Tea Estate, s. coll. in 1953 (BO). *St. Papandajan, *Van Rijckevorsel* 8 (BO); *Koens* US (BO); 2650 m, *Van Steenis* 11670 (BO); ± 2650 m, *Scheffer* C. 29 (BO). Garut, *Koorders* 3883 (BO); near Garut, s. coll. 3MS (L). Mt. Tjikuraj, 1500 m, *Backer* 5378 (BO). Mt. Tjeremai, *Junghuhn* (L, 3 sheets lectotype); 2600—3775 m, *Backer* 5127 (BO); 3600 m, *Docters v. Leeuwen* 2532 (BO); *Houter* 87 (BO); 2600—3000 m, *Backer* 5049 (BO). Central Java: Mt. Slamet, 2800—3100 m, *Van Steenis* 11643 (BO, L); *Koorders* 3886 (BO); 2900 m, *Koorders* 3887 (BO); 2700—3100 m, *Backer* 500 (BO). Dieng Plateau: *Junghuhn* 80 (L); 2100 m, *Brinkman* 327 (BO); 2000 m, *Backer* 21677 (BO). Mt. Prahū, 1500 m, *Koorders* 13348 (BO, L). Batang Surdjo, *Koorders* 13388 (BO, L). Mt. Sumbing, 2100 m, *Lbrzing* 26 (BO). Mt. Telomojo, *Koorders* 27827 (BO). Mt. Merbabu: 1500 m, *Koorders* 3885 (BO); top, ± 3125 m, *Docters v. Leeuwen* — *Reynvaan* 1165 (BO); 2800 m, *Docters v. Leeuwen* (BO); *Docters v. Leeuwen* in 1912 (BO); 1800—2000 m, *Backer* 30258 (BO). Mt. Merapi: 1900 m, *den Berger* 97 (BO); *Hemken* 13 (BO); *Warburg* 4642 (NY). Mt. Lawu: *De Voogd* 809 (L); top, 3200 m, "Alg" 3443 (L); 2900—3200 m, *Elbert* 155 (L); *Coert* 361; 3265 m, 998 (L); 3100 m, *Iam Slooten* 2558 (BO); 1650 m, *Backer* 6821 (BO); East Java: Ponorogo, Mt. Manjutan, T. Ngebel, 1450 m, *Koorders* 3884 (BO, L); 1275 m, *Koorders* 23154 (BO); 2400 m, *Koorders* 3888 (BO). Mt. Pitjīs, *Koorders* 29280 (BO). Mt. Sewu, *Koorders* 3868 (BO). Mt. Wilis, *Backer* 11396 (BO); 1500 m, *Kuntze* 5853 (NY, 3 sheets). Mt. Andjasmoro; *Winckel* 26 (L); 1980 m, *Winkel* 49 B. (BO).

Mt. Kawi, *Junghuhn* s.n. (L); 2850 m, *Van Leeuwen* 12232 (BO); Mt. Welirang, top, ± 3150 m, *Posthumus* 357 (BO). Mt. Ardjuno: top, ± 3300 m, *Posthumus* 331 (BO), 2800 m, *Arens* 28 (L); 2500 m, *Rant* in 1923 (BO); 3000 m, *Koorders* 43790 (BO). Mungal-Penandjaan (Tengger Mts.), 2000—2500 m, *Kobus* in 1899 (BO); 2500 m, *Popta* 20 (BO); Roomo, *Rant* 925 (BO). Mt. Kukusan 1500—1700 m, *Elbert* 154 (L). Mt. Semeru, 2500 m, *Backer* 3736 (BO, L). Tengger Mts., *Koorders* 13807 (BO); *Koorders* 13806 (BO, L); 2000 m, *Koorders* 37836 (BO); 2500 m, *Koorders* 37635 (BO); Tjemaralawang, 2225 m, *Koorders* 37633 (BO); Ajas Ajas, 2200 m, *Gisius* 45 (L). Mt. Batok, 2200 m, *Koorders* 37634 (BO); Widodaren, Keduwon, 2300 m, *Koorders* 37632 (BO); Ngadisari, *Koorders* 37635 (L); *Koorders* 12821 (BO, L). Jang Plateau, Mt. Argapura, 2900m, V. Steenis 10954 (BO); 3020 m, *Koorders* 43540 (BO). Pantjur Idjen, *Koorders* 28562 (BO); *Koorders* 3889, 3890 et 3891 (BO); 2160 m, *Koorders* 3892 (BO). Idjen complex, 1550 m, *Backer* 24875 [or 24175] (BO); *Teijsmann* in 1854 (BO). Idjen, Mt. Sukat, 2500—2900 m, *Van Steenis* 12177 (BO). Mt. Merapi, 2600 m, *Koorders* 43061 (BO). Kawah Idjen, *Clason-Laurman* E. 58 (BO); *Van Steenis* 12116 (BO). J a v a , location doubtful: Bangu, 2150 m, *Coert* 1020 (L); "Alp. orient." Waitz (L); Tjipannas, a warm spring on slopes of Gedeh, *Blume* (L); s. loc. *Backer* s.n. (BO). Completely without locality: s. loc. s. coll. (L); Herb. Reinwardtianum (L); "Herb. variorum Bot." (L); s. coll. *IBlumel*] (NY); *Junghuhn* s.n. (L); "R or Z" (L).

2b. ALBIZIA MONTANA var. *kostermansii* Fosberg, n. var.

Ab var. montana differt in racemis longioribus, floribus minoribus, leguminibus angustioribus.

Leaflets 4—8 mm long, 2 mm wide; racemes 8—14 cm long; flowers with calyx 2—2.5 mm long, corolla 4—5 mm long, lobes ovate; pods narrow, 15 mm wide, with thick margins.

L e s s e r S u n d a I s l a n d s : Flores, Keli Mutu, 1400 m, *O. Jaag* 1517 (L, type).

The differences shown by this specimen, together with its geographical separation from the range of var. *montana* probably justify the assumption that it represents a distinctive population.

An attempt to establish the exact place and date of publication of *Acacia montana* Jungh. led us into a seldom-equalled bibliographic rat's nest. This we were able to clear up partially largely through the efforts of my associate, Dr. M.-H. Sachet. The places of publication indicated by both Miquel and Bentham were completely erroneous. Examination of a myriad of papers published by Junghuhn on his explorations of the volcanoes of Java yielded many places where the name *Acacia montana* mihi was used, mostly with no descriptive information at all. Most of these uses were in articles dated 1845, as were two articles where the name was accompanied by ample descriptive material in both Dutch and Latin. There seems to be little chance of more precision as to the order in which

these papers appeared during that year. To complicate matters Junghuhn (or perhaps his editor, Nees), in at least four places, in one of these series of papers, called the plant *Inga montana* or *Inga (Acacia) montana*, thus effecting a transfer. However, it is not certain whether the transfer was subsequent or prior to the publication of the name with a description. A solution providing a definite date and place of publication may be reached by really straining at a technicality and regarding as validly published an earlier use of the name *Acacia montana* by Junghuhn, in 1842, accompanied by the statement „10 hoog en hadden stammen van 4—5 duimen dikte." Many botanists will refuse to regard this as a description, but perhaps if they are faced with the problem of determining in what order the various 1845 uses of the name appeared they may be more inclined to be technical and admit that for nomenclatural purposes a description does not have to be diagnostic. The name *Acacia vulcanica* presents some of the same sort of problems, but fortunately it cannot be regarded as anything but a nomen nudum before 1847. The bibliography of these names, so far as we have been able to verify it, is as follow:

Acacia montana Jungh., Tijdschr. Ned. Ind. 5(1): 199 (n. mid.), 622 (n. raid.), 626 (accompanied by the "description" quoted above). 1842. — *Acacia montana* Jungh., Topogr. naturw. Reisen durch Java, 135, 139, 206, 345, 392, 484 (all nomina nuda), Magdeburg, 1845. — *Inga montana* Jungh., Topogr. naturw. Reisen durch Java 288 (with a few words of incidental description), 289, 476, Magdeburg, 1845. — *Inga (Acacia) montana* Jungh. *ibid.*, p. 305. — *Inga montana* Jungh., Bot. Zeit. 3: 703. 1845. — *Acacia montana* Jungh., Natuur. & Geneesk. Arch. Ned. Ind. 2: 22—23 (short but adequate description in Dutch), 35—36 (ample diagnosis in Latin). 1845. Whether this or the following appeared first is not known, but the editor of this journal says the material in this article will be published in Tijdschrift van Neerlands Indie. The time elapsed between writing and printing is not known; in Tijdschr. Ned. Ind. 7(1): 163—164. 186. 1842 (treatment identical with that in Natuur. & Geneesk. Arch.). Neither of these gives any locality nor cites a specimen, but footnotes in both papers indicate that where no locality is given, the plants grow on all of the volcanoes.

Acacia vulcanica Korth. ex Zollinger & Moritzi, Natuur. & Geneesk. Arch. Ned. Ind. 3: 72. 1846 (n. nud., based on Zoll. & Mor. 1939, from Java). — *Acacia vulcanica* Korth. ex Hassk., Flora 5: 705. 1847 (no description but the following reference: „Zoll. III 72.5 Herb. 1939, Mortz. Verz. p.l. (*A. montana* Jungh. Arch. II, 22.4. Hasskl.))" The Zoll. III reference is that quoted above, but the reference to Junghuhn's species validates the publication of *A. vulcanica* and also makes it a superfluous name.)

Inga tenerensis Zoll. (*Albizia tenerensis* (Zoll.) Miq.) has been included by some in the synonymy of *A. montana*, but its original description (Natuur. & Geneesk. Arch. Ned. Ind. 4: 13, 81. 1845) indicates that it has umbellate flowers on filiform pedicels. If the description is accurate the

plant must belong elsewhere *). *Acacia saltuum* Junghuhn (Bot. Zeit. 3: 703. 1845) has also generally been placed in *A. montana*. This plant was only vaguely and incidentally described in a translation of one of Junghuhn's accounts of his explorations. In the statement cited there seems to be insufficient basis for identifying *A. saltuum* with *Albizia montana*, though I can suggest no other disposition of it. Until a specimen can be found labelled thus by Junghuhn, *Acacia saltuum* may best be regarded as a nomen dubium.

3. ALBIZIA MINAHASSAE Koord. Flora N. O. Celebes, in Med. s'Lands Pl.tuin 19: 417—419. 1893; Suppl. Flora N.O. Celebes 1: 13—15, pi. 4a, 4b. 1918. — *Serianthes minahassae* (Koord.) Merrill and Perry, J. Arn. Arb. 23: 393. 1942.

Serianthes ledermannii Harms, Bot. Jahrb. 55: 43. 1917.

Koorders in the two references cited above gives a very full description of this species and an excellent illustration, drawn from the original material. What little can be added to this, or is especially pertinent to the present study, is given in the descriptions of the varieties below. Koorders had available material only from Celebes. Subsequent collecting has shown that the species is widely distributed in New Guinea. As might be expected in such a widely distributed forest species there is considerable local variation. It has been possible to characterize the known local populations as varieties, though the paucity of material, the fact that parts of it were examined before the whole series of varieties has become apparent, and the lack of opportunity for direct comparison of some specimens with the others, make the status of these varieties somewhat doubtful. Further collecting will probably turn up many more such varieties, or it could show that some or all of them could not be maintained. In any event, the proposed arrangement will provide a frame of reference in which to study future collections and will emphasize the characters and trends that seem significant. The main trend seems to be toward reduction of the complex inflorescence and suppression of the curious vegetative branchlets in the inflorescence as one goes eastward in the range of the species. This reduction culminates in the umbellate to solitary spikes of the related *A. melanesica* of the Solomon Islands, which seems distinct enough to be considered a separate species. It is realized that these varieties are very

*) Note by the Senior Editor. This species has been included in *Abarema sapinoides* (A. Cunn.) Kosterm.; the type specimen is Zollinger 2521 (P) (cf. Kostermans, Bull. 20, Organ. Sci. Res. Indon. 39. 1954).

closely related and that some students may prefer to ignore them and merely use the binomial *Albizia minahassae* for the entire assemblage.

The species as a whole may be briefly characterized as follows:

Trees, said to reach 60 m tall, young growth brownish pubescent, leaves bipinnate 12—16 jugate, pinnules multijugate, leaflets small, more or less oblique at base, petioles and rachises with disklike glands; inflorescence an umbel, or a proliferating panicle, of pedunculate spikes, with a tendency to produce a rudimentary vegetative branchlet at one or more ramifications; flowers sessile or subsessile, subtended by caducous bracts; calyx campanulate, corolla with petals united into a tube below, up to 8 mm long, stamens many, conspicuous, up to 25 mm long; pod very large, up to 25 cm long, 4 cm wide, subligneous, splitting along margins when mature but valves not separating.

Koorders, in both of his descriptions, emphasizes the relationship of *A. minahassae* to *A. moluccana* (*A. falcataria*) as does Harms in his discussion of *Serianthes ledermannii*. As noted above, they are similar in the general type of inflorescence, not duplicated in other parts of the genus. However, *A. minahassae* differs greatly from *A. moluccana* in the pubescence, the umbelloid branching of the inflorescence, the vegetative branchlet in the inflorescence, the more deeply and irregularly lobed calyces, the thicker, more densely sericeous corollas, and in the larger, thicker, incompletely dehiscent pods which lack a dorsal keel. It is the character of these pods, which approach the completely indehiscent woody ones of *Serianthes*, as well as a similarity in habit, that has led some workers to place this species in *Serianthes*.

The following artificial key may aid in separating the varieties of *Albizia minahassae* as they are at present understood:

- A. Inflorescence a proliferating panicle
 - B. Leaflets with midrib equidistant or nearly so from both margins, about 9 mm long and 4 mm wide 3a. var. *minahassae*
 - BB. Leaflets with midrib about twice as far from lower margin as from upper, 5—7 mm long, 1.5—2 mm wide 3b. var. *proliferata*
- AA. Inflorescence not conspicuously proliferating, spikes usually umbelloid
 - C. Inflorescence with a rudimentary vegetative branch at the point of origin of the rays of the umbel; midrib of leaflet close to upper margin 3c. var. *umbellata*
 - CC. Inflorescence umbelloid but lacking vegetative branchlet; midrib of leaflet subcentral or slightly nearer upper margin 3d. var. *ledermannii*

3a. ALBIZIA MINAHASSAE Koord. var. *minahassae*

Leaf up to 16—18 cm long, one or two disklike glands near base of petiole, also on rachis, one at base of each pair of pinnae, pinnae 13 pairs,

each with up to 20 pairs of leaflets, these about 9 mm long, 4 mm wide sericeous beneath, tending to be glabrate in age, very slightly hirtellous above, somewhat oblique, slightly pointed, midrib subcentral or slightly nearer the upper margin. Inflorescence a proliferating panicle of pedunculate spikes, varying in degree of development but usually 2—3 times branched, rarely reduced to a single umbel of spikes, normally 2—5 spikes at each ramification along with a vegetative branch, this usually rudimentary occasionally with a fully developed leaf; flowers sessile or subsessile disposed along the ultimate 15 mm of the spikes; calyx, 4—5 mm long, 5—6 mm wide, broadly campanulate, 2—3 (rarely 4—5) dentate, appearing rather bilabiate, teeth strongly unequal; corolla white, 7—8 mm long, tube not exerted, lobes ovate-triangular, 3—4 mm long; stamens 20—23 mm long; fruit straight, 11—25 cm long, 23—40 mm wide, subligneous, with somewhat thickened margins, subindehiscent, splitting along margins when very mature, but valves not separating, endocarp parchmentlike, tending to separate from mesocarp when pod is opened, cross veining on sides of pod visible, veins 3—8 mm apart, tending to anastomose in central region of pod.

Endemic to Celebes, apparently known only from Menado, in the Minahassa region on the northeast peninsula, and from Malili, on the southeast peninsula, ranging from 5 to 500 m elevation. Vernacular names recorded: „paka," „teduhu moputé," „teduhu pute," and „teduhu puti." Koorders cites two specimens, his nos. 17650 and 17654 with his original description. Of these the first has been indicated as lectotype.

C e l e b e s : Minahassa: Menado, Koorders 17542, 17552, 22617, 294X2, (all L); 50 m, 17541 (L), 200 m, 17654 (L), 317 m, 22620 (L), 500 m, 17548 (L), 17650 (L, isolectotype); Malili, 450 m, *Cel.V-225* (BO, 9 sheets, L, 4 sheets); 5 m, 6.6. 32805 (BO, L); Malili, Kampong Angkona, 10—50 m, 6.6. 23972 (L); 32808 (L); 32809 (L); 32810 (L, SING); 32811 (L); 32814 (L); 20806 (BO, L, SING); 30 m, 32807 (L, 2 sheets); Malili, Kawata, 400 m, *Cel.V-S70* (L); *Cel.V-371* (BRI, SING).
J a v a : Cultivated in Hortus Bogoriensis: s. coll. I.K. 24 (SING); I.B. 50a (SING); Koorders 42809 (L, SING, 2 sheets); Koorders in 1915 (L); de Wit in 1941 (L); s. coll., s.n. (L, 2 sheets).

3b. ALBIZIA MINAHASSAE var. *proliferata* Fosberg, n. var.

Ramuli, foliorum rhachides paniculaeque ferrugineo-pubescentes, foliorum laminae subtus ferrugineo-pubescentes, costae propius marginibus anterioribus; svicae paniculatae umbellatae cum ramulis sterilibus dispositae.

Tree 20—30 m tall; branches eventually horizontally spreading from a short gray trunk; young parts and leaf rachises densely rusty-brown pubescent; leaf rachises 17—18 cm long, pinnae 12—15 or more pairs, 6.5—9 cm long, with disklike glands on rachis between most pairs of pinnae, leaflets 24—28 pairs, oblong, slightly curved upward, 5—7 mm long, 1.5—2

mm wide, apex rounded, upper surface glabrous, lower densely brown sericeous-tomentose, midrib 1/3 the distance from distal margin; inflorescence a pedunculate umbellate panicle, peduncle about 35 mm long, several pedunculate spicate branches arising at summit along with a sterile vegetative branch which originates at the same point, and develops, usually giving rise to a further umbel of pedunculate spikes, often with a vegetative branch; fertile part of spikes about 20 mm long; flowers with calyx campanulate, densely sericeous, 4 mm long, lobes 3—4, ovate, about 2 mm long but unequal, corolla white, densely sericeous without, glabrous within, about 8 mm long; lobes oblong, 5 mm long; fruit (almost mature) 15—18 cm long, 3.5—4 cm wide, apparently indehiscent, not woolly, margin somewhat thickened.

New Guinea: Papua: Lower Fly River, east bank, opp. Sturt Island, in rain forest, Brass 8076 (A, BM, BO, type, L, LAE, US); Ihu-Vaitata River, Brass 1107 (A, BRI); Palmer River, 2 m. below junction of Black River, 100 m, Brass 7349 (A, L).

3c. *ALBIZIA MINAHASSAE* var. *umbellata* Fosberg, *n. var.*

Ramuli, rhachides, paniculaeque ferrugineo-tomentosi, foliola 4—6 mm long 1—2 mm lataeque vel parviora, subtus sericea leviter obliqua, costa propius margini anteriori, inflorescentia umbellata vix proliferata ramulis sterilibus ferme rudimentaribus; calycis lobi rotundi.

Tree 16—32 m tall, flat-topped; young parts, leaf rachises and panicles closely brown pubescent or tomentulose, rachises up to 21.5 cm long, with few disklike glands, only 1-2 near apex and a large one near middle of petiole, pinnae 12—16 pairs, 5—6 cm long; leaflets about 22 pairs, stiff, glabrous above, densely sericeous beneath, 4—6 mm long, 1—2 mm wide, oblong, straight, but the blunt apex toward distal side, midrib close to distal margin; inflorescence usually umbelloid, a peduncle 6 cm high bearing 3—6 branches up to 7 cm long, the ultimate 1—2 cm spicately floriferous, a small more or less abortive vegetative branchlet originating at the same point as fertile rays of umbel (this not evident on nearly mature fruiting inflorescence; on others it is well developed and leafy, making the pods appear to be on simple axillary spikes; on Brass & Versteegh 13182 and Koster BW 1449 the inflorescences are well developed and show 2 clusters of 3—4 spikes arising one just above the other, the vegetative branchlet arising between them but from the adaxial side of the upper cluster); flower with calyx about 4 mm long, divided more than halfway into 3—4 rounded unequal thinly sericeous lobes; corolla 6—8 mm long, lobes oblong-ovate, densely sericeous without, glabrous within; fruit straight, thinly tomentose, 9—17 cm long, 2.7—3.5 cm wide, rather more closely cross-veined than in var. *minahassae*, with deep transverse grooves between seed cavities; seeds oblong, 12—13 mm long, 6—7 mm wide, faintly marginated, rarely 2 in a cavity, cavities otherwise definitely separated.

Found in West Irian in primary rain forest on flood plains and lower mountain slopes from sea level to 750 m.

West Irian: Idenburg R., Bernhard Camp, 100 m, Brass & Versteegh 1351,6 (BO, type, L, LAE); 50 m, Brass 13970 (BO, L, LAE); 50 m, 6.6. 25681 (BO, L, SING), 2 km s.w. of Bernhard Camp, 750 m, Brass & Versteegh 13182 (BO, L, LAE). Mimika, Siere (Uta), 5 m, 6.6. 32841 (L). Manokwari, Oransbari, 50 m, Mangold BW 2086 (L, LAE); Momi, 25 m, Kostermans 322 (L, 2 sheets, SING). Salawati Island: 6 m, Koster BW 1U9 (BO, L, LAE); Saloal, 0 m, Versteegh BW 4670 (L, LAE).

3d. *ALBIZIA MINAHASSAE* var. *ledermannii* (Harms) Fosberg, *n. comb.*

Serianthes ledermannii Harms in Bot. Jahrb. 55: 43. 1917,

Tree 20—25 m tall; leaves with glands on rachis between upper pinnae and at middle or above base of petiole; leaflets oblong to oblong-ovate or oblong-lanceolate, 5—7 mm long, 1.5—2.5 mm wide, glabrous or almost so above, puberulent and pale beneath, midrib subcentral or a little nearer the anterior margin; inflorescence ferruginous villous, umbelloid(?), branches 2—5, 6—7 cm long; flowers white, subtended by small broadly ovate acute early caducous bracts. (Description extracted from that of Harms, no specimens available).

"Nordöstl. Neu-Guinea: Pionierlager am Sepik, Sumpfwald (*Ledermann 7311*)" type, not seen.

This description agrees in every important respect with that of *Albizia minahassae*, and I have no hesitation in including *Serianthes ledermannii* in that species, even though I have not seen specimens of it. In the absence of fruit, Harms expressed some doubt whether this plant should be in *Albizia* or *Serianthes* and remarked on its resemblance to *Albizia moluccana* Miq. (*A. falcataria* (L.) Fosb.)

4. *Albizia melanesica* Fosberg, *n. sp.*

Foliorum rhachides spicaeque subglabrae, rhachides 15—21 cm longae, foliola maxime 8 mm long a 2.5 mm lataeque infra minute sericea; spicae solitariae vel umbellatae; calyx 3—5 mm longus, lobi rotundi; corolla 8 mm longa; fructus maxime 21 cm longus 7 cm latusque.

Giant tree 35 m tall, with straight trunk; leaf rachis 15—21 cm long, almost glabrous, with circular glands at base of distal pinnae, pinnae about 14 pairs, leaflets about 20 pairs on a pinna, oblong, up to 8—10 mm long, 2.5—3 mm wide, minutely sericeous beneath and on midrib above, midrib 1/3 distance from anterior margin; spikes solitary to umbellate, up to 5

originally at a node, to 9—10 cm long, almost glabrous; flowers with calyx 3.5 mm long, deeply divided into 2—3 (?) rounded lobes, thinly sericeous, corolla up to 8 mm long, sericeous lobes linear-oblong (?), fruit about 21 cm long, 7 cm wide, distinctly veined, margins thickened, probably indehiscent.

The material on which this species is based is inadequate for full characterization, but its subglabrous rachises and spikes and the reduced inflorescence suggest that it should be distinguished. Unfortunately when the specimens were examined, the arrangement of the inflorescence of *Albizia minahassae* was not understood, and the notes recorded were not as full as they should have been.

Solomon Islands: Bougainville: Koniguru, Buin, 900 m in rain forest, *Kajewski 2143* (BISH, type, BRI, L, SING). New Georgia Group, Vanganu I., Keli River, in riverine rain, forest, *Walker & White 147* (BRI, K). San Christoval I., *Logie 355* (LAE), *351* (LAE). Malaita I. near Buma Mission, *Walker & White BSIP 72* (BRI).

F.S. Walker, in "Forests of the British Solomon Islands Protectorate," p. 136, 1948, has given a description of this plant under the name *Serianthes minahassae* (Koord.) Merr. & Perry, and Merrill and Perry have referred it to *Albizia minahassae* Koord. which they transferred to *Serianthes*, incorrectly in my opinion.

Two sterile (one with detached pod) specimens from New Britain possibly belong here, though their leaves are larger, reaching 30 cm long, up to 20-jugate. *) A detached pod on the sheet with *White 10964* in Leiden is somewhat smaller, 15 x 5.5 cm. The specimens cannot be assigned definitely until re-collected with flowers and fruit.

New Britain: near Urin, 50 ft. *White 10016* (LAE); ridge top east of Old Mahararu Village, 3 mi. s. of Mt. Otto, Talasea Subdistr. 1000 ft., *White 10964* (L, LAE).

5. *ALBIZIA FULVA* White and Francis, Proc. Roy. Soc. Queensl. 38: 250. 1927.

Large tree, to 43 m tall; branchlets conspicuously zig-zag, angled, leaf scars prominent, lenticels noticeable, young parts strongly brown-tomentose; leaves up to 25 cm long, rather stiff, pinnae 10 to 13-jugate, densely fulvous-tomentose, except on upper surface of leaflets, these up to 22-jugate, oblong or oblong-ovate, straight or rarely slightly falcate, slightly or not at all,

*) Note of Senior Editor: Leaves of pole stage of *A. minahassae* have leaves of 60 cm long, and are up to 24-jugate.

cuspidate up to about 12 mm wide 3/4 mm wide, midrib very near distal margin, blade sparsely appressed hirtellous above, densely pubescent beneath; panicle axillary, heavy, up to 16 cm long, irregularly or racemosely twice-branched, no trace of vegetative branch (except in *Hoogland & Schodde 6771*), ultimate ramifications shortly spicate, pedunculate, spicate portion elongating to at least 2.5 cm in fruit, whole panicle pedunculate or sessile (in type one panicle has a spike at base, other has not), densely fulvous tomentose, bracteoles ovate, slightly acuminate, 3—4 mm long, very early caducous; flowers with calyx 3—4 mm long, sparsely to densely sericeous, subequally toothed to 1/4 total length; corolla about 7—8 mm long, lobes oblong-lanceolate to ovate, 3—5 mm long, brownish green outside, pale green within; stamens about 15 mm long, white, style about 20 mm long; fruit straight, linear-oblong, 12—13 cm long, 21—27 mm wide (no fruit on type, but a note says pods 1/2 inch by 5 inches), sides very thinly brown tomentose, margins somewhat thickened, surrounded by a wing less than 1 mm wide on one side, 2—3 mm on other; seeds elliptic, 6 by 3 mm, up to 14 in pod.

New Guinea: 3000—5000 ft. in Owen Stanley Range, Trail from Kokoda to the Gap, *Lane-Poole 263* (BRI, type); Papua: Boridi, 5000 ft., *Carr 14580* (CANB, NY, SING); Lala River, 5500 ft., *Carr 15838* (SING); Territory of New Guinea: Morobe Distr., Bulolo Valley, 3000 ft., *McVeigh & Ridgwell 7343* (CANB, EAE); Western Highlands Distr., Upper Wahgi Valley, Komum Valley, Kulikenda Village, *Hoogland & Pullen 6271* (CANB, LAE).

A specimen from Western Highlands Distr., Wahbag Subdistr., Upper Tar Valley, near Wahpanamanda, 6800 ft., *Hoogland & Schodde 6771* (CANB) differs in having the panicle only once ramified and in having a small, scarcely developed vegetative branch in the panicle, the spicate portions of the ultimate ramifications up to 3.5 cm long. It probably should be included in *A. fulva*, at least until enough material is collected to show that it is consistently different. The original drawing of *A. fulva* appears to show a vegetative branchlet in the inflorescence, but examination of the type, from which the drawing was obviously made, shows that this is simply due to the rachis of the panicle being pressed against an ordinary vegetative branchlet. Dr. A. Kostermans has suggested in conversation and on several herbarium sheets that this species be reduced to *Albizia falcata* (= *A. falcataria*). This is certainly the correct disposition of the specimens which he has so annotated, but they are not identical with the material cited above as *A. fulva*.

6. *Albizia eymae* Fosberg, n. sp.

Ramuli, rhachides vaniculaeque, dense ferrugineo-tomentoso-pilosi, folia bipinnata 13—14-juga, foliola 22—24-juga maxime 8—9 mm longa

3 mm lataque sericea; yanicula 13—20 cm longa biramificata cum ramulo sterile valde reducto: calyx 2—2.5 mm, longus 5-dentatus dentes minuti subaequales, corolla extus valde sericea 5—7 mm longa, lobi 2—2.5 mm longi ovato-lanceolati acuti.

Young parts, leaf rachises, secondary rachises and inflorescence densely brown tomentose-pilose; leaves bipinnate, rachises 21—23 cm long, pinnae 13—14 pairs, 8—9 cm long, widely separated, with disklike glands on rachis at bases of most pairs of pinnae, leaflets up to 22—24 pairs, to 8—9 mm long, 3 mm wide, sparsely sericeous above, more densely so beneath, midrib Vs the distance from the anterior to posterior margins, tomentose-pilose beneath; inflorescence definitely paniculate, twice ramified, thyrsoïd in appearance but ultimate ramifications umbelloïd, each umbel bearing a very much reduced vegetative branch; flowers with calyx 2—2.5 mm long, thinly tomentose, divided about 1/2 to base into 5 subequal teeth; corolla 5—7 mm long, densely sericeous without, glabrous within, lobes 2—5 mm long, ovate-lanceolate, acute; stamens about 1 cm long.

This species seems about intermediate between *A. falcataria* and *A. minahassae*. It differs from *A. falcataria* in the umbelloïd ramifications and vegetative branchlets in the inflorescence and from *A. minahassae* in the greater ramification and thyrsoïd appearance of the panicle, the more remote pinnae and the form of the corolla, and from both of them in the almost regular dentation of the calyx. It is closer to *A. minahassae* but seems sufficiently distinct. Unfortunately the fruit is unavailable. Named for the collector, the late Pierre Joseph Eyma, who died in a prisoner-of-war camp in Singapore during World War II.

W. I r i a n : Wissel Lake region, environs of Enarotalf, 23-11-1939, Eyma 54.38 (BO, type, duplicates said to be in K. and L.).

7. *Albizia falcataria* (L.) Fosberg, *comb. nov.*

Adenanthera falcataria L., Sp. PL, ed. 2: 550. 1762 (based on *Clypearia alba* Rumph. Herb. Amb. 3: 176, t. 111. 1743.)

Albizia? rnuocana Miq., Fl. Nederl. Ind. 1: 26—27. 1855.

Albizia falcata (L.) Backer, Voorl. Schoolfl. Java 109. 1908; Schoolfl. Java 437. 1911; Merr., Int. Rumph. Herb. Amb. 249. 1917. — *Adenanthera falcata* L. in Stickm., Herb. Amb. 14. 1754; Amoen. Acad. 4: 124. 1759 (ed. 2, 1788); Syst. Nat., ed. 10: 1020. 1759. (based on *Clypearia rubra* Rumph. Herb. 3: 176, t. 112. 1743.)

Large, fast-growing tree, youngest tips appearing tomentulose, when older, puberulent, twigs irregularly angled, with conspicuous white lenticels; leaves to 40 cm long, petiole with (rarely without) an oval or elongate diskshaped gland 2—3 cm from base, pinnae (4—7) 8—10 (11—12) pairs,

rachises of both orders more or less rusty tomentulose, leaflets 15—25 pairs, or less, obliquely oblong tending to be slightly falcate, midrib near distal margin, blade slightly puberulent above, more densely so beneath, acute to slightly acuminate or subcuspidate at apex, appearing paler beneath; inflorescence a closely pubescent to glabrate panicle 10—15 cm long, 3—5 times irregularly branched, ultimate branchlets spicate, the spikes elongating, as flowers mature and drop, to 1—2 cm long, or even longer; flowers with calyx sericeous, turbinate, 1—1.5 mm long, teeth triangular, 0.5 mm long; corolla sericeous, 3—4.5 mm long, lobes oblong-ovate, acute; stamens to at least 1 cm long; flower colour variously described as white, cream, pale yellow or light green; fruits straight, to 12 cm long and 2.5 cm wide, usually smaller, with a wing 3 mm wide on ventral margin, shortly stipitate, slightly beaked, with up to 1.5 seeds.

A common, widespread tree of the Moluccas, New Guinea, New Britain, and the Solomon Islands, widely planted elsewhere as a very fast-growing tree used in reforestation.

I n d o n e s i a : Moluccas: Ternate I.: Toramadiahi 300 m, *Beguin* 1228 (L.); Molulu Utara, Dessa, Fola-Madiahe, 150 m, *Bish* 6 (L, SING). Ambon I.: s. loc. *Oldenburg* 21 (L); *de Vriese* in 1859—1860 (L). Morotai I.: Mangowo R., *Kostermans* 1372 (LAE). Ceram I.: Oost Ceram, Artafela, 60 m, 6.6. 25812 (L, SING). Banda I.: G. Api 5 m, 6.6. 13444 (L); Pohon Siekat, s. coll. (L), Buru I.: Wae Mole 4 m, 6.6. 24452 (L); Balos 50 m, 6.6. 31356 (L); Hat 5 m, 6.6. 2U56 (L). Halmaheira I.: Raruba, Djailolo, 100 m, b.b. 23729 (L). Sula I.: Sanana, Tandjung Baleha, 175 m, 6.6. 28767 (L, SING). Mangoli, n. Mangoli, 75 m, 6.6. 29793 (L, SING), 29863 (L). West Irian: Lorentz R. behind Kloof Bivouac, 30 m, *Pulle* 95 (L); Bendawaja 2, I. Japen, 10 m, *Malinka* BW 7023 (L); Jappen-Biak, Mt. Hirong near Serui, 10—150 m, *Oet & Idjan* 755 (L); Taniba b.b. 22506 (L); Pikpik 200 m, 6.6. 22225 (L); Baho, 20 m, 6.6. 21830 (L); 4 km s.w. Bernhard Camp, Idenburg R., 800 m, *Brass & Versteegh* 1314.1 (L, LAE); 6 km s.w. Bernhard Camp, Idenburg R., 1340 m, *Brass & Versteegh* 12575 (L, LAE); Balim River, 1600 m, *Brass & Versteegh* 11176 (L, LAE), 11176A (L, LAE); Manokwari, Prafi, 150 m, *Bouwer* S3 (L); *Schram* BW 468 (CANB, L.LAE). Territory of New Guinea: Near Wau, *White* 1455 (L, LAE). Sepik Distr., Mapik Subdistr.: Prince Alexander Range, s. side of Mt. Turu, *Pullen* 1585 (CANB, 2 sheets); „Sepik“, *Ledermann* 6773 (SING). Madang Distr. near Mawan Village, Gogol Valley (ca. 25 km inland), 60 m, *Hoogland* 4903 (A, CANB 2 sheets, L, LAE, US). Morobe Distr.: Umi R., Markham Valley, 480 m, *Brass* 32547 (NY); Sattelberg, 1000 m., *Clemens* 935 (L). Territory of Papua: Sogeri, *Heather* 2835 (LAE); Lower Fly R., Gaima, *Brass* 8359 (BO, L, LAE). Northern Distr., Tufi Subdistr.: along Kopwei R. bet. Aku and Kuruaku, 5—10 m, *Hoogland* 4388 (A, BRI, CANB 4 sheets, L 2 sheets, LAE, US); near Ridubidubina Camp, 400 m, *Hoogland* 4519 (A, BRI, CANB, L 2 sheets, LAE, US). Fergusson I., Angamoia, 200 m, *Brass* 27251 (A, CANB, L, LAE). Koitahi, 1500 ft., *Cwrr* 12833 (CANB 2 sheets, L, SING 3 sheets, NY). Bisiatavu, 1500 ft., *Brass* 576 (BRI). Kaiser-Wilhelmsland, s. loc. *Schlechter* 16812 (SING). New Britain: Siwai, *Waterhouse* 94 (NY). Solomon Islands: Bougainville I., Kugu-maru, Bum, 150 m,

Kajewski 1987 (BRI, L). Ysabel I, Tiratona, 600 m, *Brass 3223* (BRI, L). Malaita I., near Auki, *Walker & White 69* (BRI 2 sheets, CNB, L).

Specimens from planted trees: Malay Peninsula: Selangor: Wild Hill Reserve, *Cabin's coll., CF 857* (SING); Kepong Plantation, *Hamid 16918* (SING). Singapore: Lornie Road, *Sinclair* in 1951 (L). Philippines: Mindanao: Cinchona Plantation, Koatoam, Malaybalay, Bukidnon, *For. employee 2590* (L, SING). Luzon: Laguna, Mt. Makiling, 120 m, *Canicosa 22874* (L). Indonesia. Sumatra: Kaban Bjahe, 1420 m, *Batten Pooll* in 1940 (SING). Java: s. loc. *Koorders 15643* (L); Tandjong Priok, 1 m, *Backer 32837* (L); Tjibinong near Bogor, *Van Heeteren* in 1958 (L, SING); Mt. Gedeh, Tjibodas, *Boerlage* (L); 1800 m, *van Oostroom 13990* (L); Hort. Bogor in 1903, s. coll. *I.B. 60* (NY); *Kostermans 11152* (L); *Durtmd 2000* (L). Borneo: Sabah: Sandakan: 250 ft., *Agama 6715* (L, SING); 100 ft., *Keith 4964* (SING); near Headquarters Forest Office, 100 ft., *Hepburn* in 1960 (L). West Indies: Cuba, Cienfuegos, *Atchison 190* (US). South America: Trinidad, Port of Spain, *Broadway 7687* (NY); *Broadway 10547* (NY). Hawaiian Islands: Oahu and Hawaii, seen growing but not collected. India: The type locality of *Adenanthera falcataria* L. is given as "India."

This plant was widely known as *Albizia moluccana* Miq. until Backer in 1908 applied to it the name *Albizia falcata* (L.) Backer, based on *Adenanthera falcata* L. (1754). This was originally based on *Clypearia rubra* Rumph. but the plate of *Clypearia alba* Rumph. was also cited without mention of the latter name. Linnaeus in 1762 proposed *Adenanthera falcataria*, citing *Clypearia alba* and its plate (111) as its basis, thus leaving *Clypearia rubra* as clearly the type of *Adenanthera falcata*. So there seems no choice but to use the epithet *falcataria* rather than *falcata* for the plant typified by *Clypearia alba*, which is the common *Albizia* under discussion.

Clypearia rubra, with spiral pods and different leaflets, is clearly a *Pithecellobium* (or *Abarema*).

Kostermans, in his Monograph of the Old World *Pithecellobium* and its allies (Bull. No. 20 of the Organisation for Scientific Research in Indonesia, Dec. 1954) includes *Adenanthera circinalis* DC, which is based solely on *Clypearia rubra* Rumph., in the synonymy of *Abarema clypearia* (Jack) Kost., thereby, by inference including *Clypearia rubra* in that species. Rumphius' plate has leaflets much more like those of *A. angulata* Benth. than of *P. clypearia*. It is certainly an *Abarema* rather than an *Albizia*.