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A REVISION OF THE GENUS ARCHIDENDRON F. MUELL. (MIMOSACEAE)

H. C. D. DE WIT*

SUMMARY

1. The present paper is the author's second revision of the genus *Archidendron*. The validity of the genus is briefly discussed.

2. The genus has its centre of speciation in New Guinea. The number of species treated is 31, not counting a few insufficiently known species. A key is given to the species and varieties, which are described.

3. The following are new species or varieties: *Archidendron affine* De Wit, *A. calliandrum* De Wit, *A. dies-Christi* De Wit, *A.nervosum* De Wit, *A. parviflorum* . var. *lovgipes* De Wit, and *A. trifoliolatwm* De Wit.

4. New combinations are; *Archidendron gogolense* (K. Schum. & Laut.) De Wit (basonym: *Hansemannia gogolense* K, Schum, & Laut.) and *A.Incyi* var. *scklechteni* (Harms) De Wit (basonym: *Archidendron scklecklerii* Harms).

INTRODUCTORY REMARKS.—The striking character in the Mimosaceous genus *Archidendron* lies in its having more than one ovary. It is, however, undesirable from a phylogenetic point of view to attach much value to the plurality of carpels and many authors have preferred to consider the groups of polycarpellate species in Mimosaceae as subgenera.

Many years ago, F. von Mueller, the publishing author of *Archidendron*, pointed out (Fragm, Phytogr. Austr. 5: 10-11. 1865) that a plurality of carpels is occasionally found in Leguminosae *(Wistaria, Gleditschia, Swartzia, Affonsea, Caesalpinia digyna* Rottl, *Dialium divaricatum* Vahl). I myself collected at Bogor (Buitenzorg) a specimen of *Cassia mimosoides* L. which had two carpels in each flower.

On the other hand, the presence of more than one carpel in Leguminosae is, generally speaking, a rarity and so unambiguous a character, that for practical reasons polycarpelly seems in this case acceptable for generic distinction. A further argument for recognizing *Archidendron* as a genus is, in my opinion, the unisexual flowers occurring in many (if not all) species which points to considerable antiquity and stresses the isolated position of *Archidendron* in Leguminosae. Other differences between *Archidendron* and *Pithecellobium* Mart., its closest ally, I have outlined before (De Wit *in* Bull. bot. Gdns Buitenz. Ill 17: 257. 1942). F. von

*Botanist, Flora Malesiana Foundation.

Mueller, however, wished to include *Pithecellobium* in *Albizzia,* and to maintain *Archidendron* as a section of *Albizzia,,* named *Pleiophaca (cf.* Baillon, Hist. PI. 2: 50. 1870, note 1).

O. Kuntze preferred to unite *Archidendron* and *Affonsea* A. de St. Hil., the latter genus representing South American polycarpellate Mimosaceae, but I consider the general appearance and further morphology of *Affonsea* sufficiently different from *Archidendron* to maintain both as separate genera. The geographic distribution of *Archidendron* and *Affonsea* suggests that the (generic) character of polycarpelly originated independently (bitopical), a view which agrees very well with a slight phylogenetic importance and the occurrence of polycarpelly in various places in the Leguminosae.

The natural affinity among species of *Archidendron* seems to be close. I was unable to subdivide the genus into supraspecific taxa.

The presence of extra-floral nectaries ("glands"), sometimes on the twigs at the insertion of the leaves, generally near the top and often near the base of the petiole, and always on the rachis between the rachillae and on the rachillae between the petiolules, the bracts often changing into similar large glands, linked as it is with myrmecophily and hollow branches, is biologically interesting. The characters of the nectaries are also valuable in distinguishing species, if used with caution.

I found that distinctly raised petiolar and rachillar glands in young leaves may change into indistinct, practically flat, glands in old leaves. On the other hand very marked glands were observed which remained intact in old leaves, the general shape of the glands appearing stable and not changing much with age. The somewhat fleshy-thickened tips of the corolla in many species suggest in their appearance that there, too, nectaries are present.

Archidendron, as revised here, is by no means exhaustively studied, not even from a morphological point of view. The specimens in the herbaria are often poor. Collectors often failed to recognize the importance of having complete leaves and were too often satisfied when a fragment had been secured. In the majority of species either the fruits or the flowers are unknown; the distribution and proportion of the sexes is practically unknown, and I may have failed sometimes to unite conspeeific maic and female specimens as there may exist a pronounced sexual dimorphy that I was unable to evaluate in the absence of adequate specimens and collector's data.

I have applied the following terminology for the foliar characters. *Petiole:* the stalk from the insertion of the leaf to the first pair of pinnae

or jugum; *rachis:* the petiole prolonged beyond the insertion of the first jugum; *rachilla,:* one of the paired stalks bearing the leaflets. A grooved petiole or rachilla indicates that the stalks are actually furrowed or bear parallel rims suggesting a furrow.

I began this revision expecting that many binomials would appear to be synonyms. Aided this time by many types, I came to the conclusion that only few species had been described as new without reason, though there exists a close relationship among several of them, A comparatively large number of new species of *Archidendron* remain to be discovered.

It is a pleasure to acknowledge my indebtedness to the Directors of the herbaria of the Arnold Arboretum, Bogor, the British Museum, Brussels, Florence, Kew, Leyden, Melbourne, Paris, Utrecht, and Wroclaw who kindly supplied me with the material required.

ARCHIDENDRON F. Muell.

Archidendron F. von Mueller, Fragm. Phytogr. Austr. 5: 59. 1865; *in* J. of Bot. 10: 10. 1872; Bentham *in* Benth. & Hook., Gen. PI. 1: 1004. 1867; *in* Trans. Linn. Soc, Bot. 30: 349. 1875; O. Kuntze, Rev. Gen. PI. 1: 158. 1891; Taubert *in* Engl. & Pr., Nat. PflFam., 3: 3. Abt.: 102. 1891; Bailey, Queensland Fl. 522. 1900; Pulle *in* Nova Guinea 8: 371. 1910; Harms *in* Bot. Jb. 55: 39. 1917; De Wit *in* Bull, bot. Gdns Buitenz. Ill 17: 256. 1942.

Hansemannia K. Schumann *in* Bot. Jb. 9: 201. 1887; Taubert *in* Engl. & Pr., Nat. PflFam. 3: 3. Abt.: 102. 1891; *"Hausemannia"* F. Muell. *in* Proe. Linn. Soc. M.S. Wales Ik 5: 20. 1890 (misspelt).

Trees or shrubs, rarely large, usually cauliflorous, often with hollow branches. Leaves compound, bipinnate, bearing glands (extra-floral nectaries) on the petiole, rachis, and rachilla, sometimes the nectaries are little developed, never quite absent. Petiole (or rachis) and rachillae usually produced into a caducous or persistent mucro. Leaflets opposite, as a rule markedly unequal-sided. Flowers on simple or branched racemes, monoecious or dioecious. Calyx variable in shape, margin nearly entire to lobed or deeply split. Corolla tubular in the lower part, lobed. Stamens numerous, monadelphous. Anthers small; thecae containing 4 massulae of 16 pollen grains each. Ovaries more than one; style often longer than the filaments; stigma either inconspicuous or small, knob-shaped. Pods more or less fleshy, valves thick-walled, contorted, dehiscent, often constricted between seeds, as a rule brightly coloured. Seeds usually numerous, ovoid or ellipsoid, not or little compressed, black and as a rule with a whitish bloom, up to the size of a walnut. Aril absent.

TYPE SPECIES.—*Archidendron vaillantii* (F. Muell.) F. Muell.

LOCAL NAMES.—SE Central New Guinea: bawbata (Manki tribe), wishiga (Nauti tribe).

DISTRIBUTION.—New Guinea (centre of speciation), Moluccas, North Queensland, Solomon Islands, Bismarck Islands, Louisiade Archipelago.

ECONOMIC USE.—The bark is burnt to make a substitute for lime, chewed with areca nut *(fide* Blackwood *in* Proc. sixth Pacific Sci. Congr. 4: 120. 1940).

KEY TO THE TAXA IN ARCHIDENDBON

1. Corolla wholly or partly tomentose or puberulous.
2. Corolla puberulous.
3- Raceme simple.
4. Raceme 3—6 cm long. Lower surface of leaflets sparsely rusty pubescent. 20. *A. megapkyllum*
4. Raceme about 35 cm long, filiform. Lower surface of leaflets (except the midrib) entirely glabrous . . . . . 15, *A. glabrum*
3. Raceme compound, thick. Leaflets subcoriaceous, glossy, reticulate. . 4. *A.bellum*
2. Corolla wholly or partly tomentose.
5. Corolla glabrescent on the tube and on the lobes densely velvety tomentose. Raceme branching . . . . . 8.-4. *calliandrum*
5. Corolla wholly tomentose. Raceme simple or branching.
6. Ovaries tomentose or pubescent. Raceme stout. Corolla 1—3 cm long.
7. Calyx appressed puberulous to tomentose.
8. Leaflets narrowly oblong. Stamens about 1.5 cm long. Axis of the raceme glandular-puberulous. Flowers yellow or orange . . . . 24. *A. oblongum*
8. Leaflets broadly ovate, very unequal-sided. Stamens about 6 cm long. Axis of the raceme puberulous . . . . . 31. *A.vaillantii*
7. Calyx glabrous . . . . . 14. *A. forbesii*
6. Ovaries glabrous. Raceme slender, pendent, about 25 cm long. Corolla 6—7 mm long . . . . . 11. A. *dies-Ckristi*
1. Corolla glabrous or nearly so (with a few solitary hairs).
,9. Raceme simple.
10. Leaflets softly and sparsely pubescent on both surfaces. Petiolules golden hirsute. Corolla about 11mm long . . . . . 21. *A. molly*
10. Leaflets glabrous or on the lower surface sparsely softly puberulous. Petiolules glabrous or appressed puberulous.
11. Raceme glabrous, not over 5 cm long. Corolla more than 2 cm long.
12. Leaves 1-jugate. Corolla papery, 2.5 cm long[1] . . . . . 9. *A.calycinum*
12. Leaves 1-jugate. Corolla fleshy, 1.8 cm long . . . . . 25. *A. pachycarpum*
12. Leaves 3—4-jugate. Corolla fleshy, at least 4 cm long. . . . 3. *A.beguinii*
11. Raceme puberulous to glabrescent, up to more than 15 cm long. Corolla less than 2 cm long.
13. Leaves 2-jugate; leaflets in 2—5 pairs. Stamens not more than 2.5 cm long.
14. Pedicels very short, 1—2 mm long. Foliar glands depressed, very small. Calyx broadly cupular, 3.5—4.5 mm long. Ovaries about 4. . . 17. *A.incurvaiwm*
14. Pedicels slender, 4—5 mm long. Foliar glands well developed, raised. Calyx truncate at base, 7—8 mm long. Ovaries 11—8. . . . 12. *A. effeminatum*
13. Leaves 1-jugate; leaflets in 3—6 pairs. Stamens up to 4(—5) cm long.
15. Calyx minutely puberulous to glabrous. Pedicels not over 2 mm long. Raceme up to 15 cm long . . . . . 2. *A. (intense*
15. Calyx glabrous or with few solitary hairs. Pedicels 2—8 mm long. Raceme up to 7 cm long.

16. Stipules persistent. Foliar glands small, not raised.
17. Styles short. Pods in upper part with 5 mm thick septs, cylindrical. Seeds glossy brown. Stipules 1 cm long. Leaflets lanceolate. . 25. *A. pachycarpum*
17. Styles long. Stipules 2.5—3.5 cm long. Leaflets oblong to lanceolate. 18. *A. ledermannii*
16. Stipules caducous. Styles exceeding or equalling the stamens. Pods not septate, lobed. Seeds black.
18. Leaflets ovate to obovate; base not acute. Foliar glands strongly raised.
19. Raceme up to 2.5 cm long:. Corolla C—8-lobed, 15—17 mm long. Calyx distinctly 6-lobed, 5 mm long . . . . . 23. *A. nervosum*
19. Raceme about 4 em long. Corolla 4—5-lobed, 17—10 mm long. Calyx 5-lobed, about 2 mm long . . . . . 26a. *A. parviflorum* var. *longipes*
IS. Leaflets lanceolate to more or less ovate, base narrow, usually acute. Foliar glands small depressed, at any rate not conspicuous. Corolla 4—5-lobed. Calyx vaguely 4—5-lobed.
20. Raceme 1.5—2.5 cm long. Pedicels 2—4 mm long. Calyx more or less cupular. Leaflets long acuminate . . . . . 7. *A. brevipes*
20. Raceme 3—6 cm long. Pedicels up to 7 mm long. Calyx very broadly cupular. Leaflets vaguely acuminate . . . . . 6. A. *brevicalyx*
9. Raceme compound.
21. Leaflets on the upper surface softly pubescent. Petiolules densely golden hirsute. 21. *A.molle*
21. Leaflets glabrous on the upper surface, possibly the midrib side-nerves partly appressed minutely puberulous.
22. Six leaflets to a leaf, rarely two additional spurious leaflets. 30. *A. trifoliolatum*
22. Twelve leaflets to a leaf, very rarely eight.
23. Leaflets sessile. Calyx papery, 14—20 mm long. Raceme up to 1 cm long. 27. *A. sessile*
23. Leaflets distinctly petioluled. Calyx if more or less papery very short, otherwise not papery. Raceme up to more than 30 em long.
24, Pedicel, calyx (and corolla) puberulous or with sparse hairs. Axis of inflorescence shortly puberulous.
25. Leaf-rachis, raehillae, petiolules, and lower surface of midrib pubescent. Raceme 2.5—8 cm long. Pod about 5 cm long. . . . 5.-4. *brackycarpum*
25. Leaves glabrous. Raceme 10—25 cm long.
26. Flowers 2—4 together in nearly sessile umbels along a slender, puberulous axis . . . . . 13. *A. fallax*
26. Flowers 2—4 together on 1—2.5 cm long peduncles. . 22. *A. mucronatum*
24. Calyx and corolla quite glabrous,
27. Calyx 1.5—2 cm long.
28. Raceme about 15 cm long. Stamens about 5 cm long. Base of leaflets narrow, surfaces reticulate, coriaceous . . . . . *A. A. bellum*
28. Raceme up to 2 cm long. Stamens 6.5—7.5 cm long. Base of leaflets broad, surfaces not markedly reticulate, chartaceous . . . . . 3. *A.beguinii*
27, Calyx up to 1 em long.
29. Leaves 1-jugate. Petiole and rachillae more or less puberulous, not quite glabrous; raehillae grooved (at least in upper part).
30. Leaflets 2—3 pairs . . . . . 1. *A.affine*

30. Leaflets 4—6 pairs.
31. Foliar glands strongly raised. Calyx about 2 mm long. Pedicels about 5 mm long. Corolla up to 9mm long; stamens 18—20mm long. Raceme glabrous or nearly so . . . . . 26. *A. parviflorum*
31. Foliar glands small, not or scarcely raised. Calyx 3—5 mm long. Pedicels 2—5 mm long. Corolla 10—13 mm long; stamens 25—35 mm long. Raceme green-yellow, pubescent . . . . . 7. *A. brevipes*
29. Leaves 2- or more-jugate.
32. Foliar glands strongly raised, saucer- or cup-shaped. Corollar tube free or adherent to the stamina! tube.
33. Calyx about 1 cm long. Inflorescence up to 30 cm long. Leaflets 6.5—9.5 cm wide, chartaceous, Pods (when dry) golden green. Seeds compressed, in orbicular lobes, or disc-shaped . . . . . 10. *A. chrysocarpum*
33. Calyx about 5 mm long.
34. Inflorescence up to 8 cm long. Leaflets 3—4 cm wide, coriaceous, on the lower surface with small solitary scales . . . . . 16. *A. gogolense*
34. Inflorescence up to over 50 cm long. Leaflets chartaceous. Pods (when dry) black . . . . . 19a. *A.lucyi* var. *schlechterii*
32. Foliar glands flat, not or scarcely raised. Staminal tube partly adherent to the corollar tube.
35. Inflorescence up to about 30 cm long with up to 2.5 cm long side-branches. Stamens 3.5—4.5 cm long. Leaflets broad, about 10 cm wide. Petiole plus rachis about 60 cm long . . . . . 19. *A. htcyi*
35. Inflorescence up to about 10 cm long, side-branches not over 4 mm long. Stamens about 3,5—6 cm long. Leaflets narrow, not over 6 cm wide. Petiole plus rachis up to 30 cm long. Calyx 7—8 mm long.
36. Leaflets 2—3 pairs; base and top acute. Corolla papery when dry. Stamens about 3.5 cm long, upper part in 5 coherent bundles. Ovaries about 5 . . . . . 28. *A.sogerense*
36. Leaflets 3—5 pairs; top more or less acuminate. Corolla not papery when dry, thickish. Stamens 5—6 cm long, monadelphous. Ovaries about 8 . . . . . 29. *A. solomonen.se*

1. Archidendron affine De Wit, *sp. nov.*

Maxime affine generi Pithecellobio. *Foliis 1-jugatis, foliolis 2—3-jugatis, anguste ovatis vel late lanceolatis, basi et apice acutis, inflorescentiis delicate ramosis, glabris, pedicellis circa 7 mm longis, corollis 3,5 mm longis, ovariis 2 {quoad flores femineos) distinctum. Foliorum glandulae inconspicuae, obsoletae.*

Leaves 1-jugate; petiole 6—8.5 cm long, terete, minutely puberulous, soon glabrous, mucro nearly absent; rachilla slender, 8—15cm long, in the upper part shallowly grooved, finely puberulous; leaflets 2—3 pairs, narrowly ovate to broadly lanceolate, unequal-sided, 8—13.5(—24) cm long and 15—4.5(—7.5) cm wide, sparsely minutely puberulous on the lower surface (slightly denser so on the nerves) or locally glabrescent, base acute, top slender, tapering, sometimes subacuminate; petiolules about 3 mm long; glands absent except for a minute glandlet between the upper-

most petiolules and, sometimes, a similar halfaborted glandlet between the lower petiolules. Stipules early caducous, not seen.

Inflorescence branched, up to 17 cm long; axis slender, glabrous; branches slender, about 1 cm long, bearing small, umbellately arranged clusters of 4—6 flowers. Bracts minute. Pedicels capillary, about 7 mm long; calyx about 2mm long, erose-truncate, glabrous, cupular; corolla 3.5mm long (lobes 1mm long), corollar tube free from the very short staminal tube. Stamens (in young flowers) shortly exserted. Ovaries 2, about 7-ovulate. Pods slender, over the seeds 15 mm wide, deeply constricted between.

TYPE.—Kostermans 601; Herb. Lugd. Bat., holotype.

DISTRIBUTION.—Moluccas: Morotai (Totodoku).

ECOLOGY.—A tree, 4 m tall.

Archidendron affine is most suggestive of *Pithecellobium* and is closely related to that genus. The presence of two ovaries, however, is to be taken as decisive. The foliar glands are here reduced to a minimum. The male flowers (Kostermans 616) have a single abortive ovary and seem for that reason to belong to *Pithecellobium*.

2. ARCHIDENDRON ARUENSE (Warb.) De Wit

Hansemannia aruensis Warburg *in* Bot. Jb. 13: 1891; *"H.arvensis* Warb." *in* Just's bot. Jber. 19 (2): 141, 500. 1891 (misspelt). — *Arckidendron aruense* (Warb.) De Wit in Bull. bot. Gdns Buitenz. Ill 17: 261. 1942.

Archidendron racemosum Pulle *in* Nova Guinea 8: 370. 1910.

Archidendron laxiflormn Kanehira & Hatusima *in* Bot. Mag., Tokyo 56: 355 *fig.l.* 1942.

Leaves 1-jugate; petiole about 15 em long, mucronate; rachillae 12—17 cm long, grooved, mucronate, minutely puberulous to glabrous; leaflets 3—5 accrescent pairs, first pair often a single leaflet, lanceolate to (ob) ovate, unequal-sided, up to 25 cm long and 4—8(—15) cm wide, glabrous, or sometimes on the lower surface on the nerves a minute, sparse puberulousness, top (long) acuminate to caudate or cuspidate; glands on top of petiole and between petiolules small, nearly level, not sharp-rimmed. Stipules 1.5—2 cm long, lanceolate-falcate, tardily caducous.

Raceme simple, up to 18 cm long, minutely puberulous, sturdy. Bracts 1 mm long, ovate; bracteoles reflexed, linear, 4 mm long, persistent, often changing into nectaries. Pedicels short, up to 2 mm long; calyx 5—6mm long, minutely puberulous to glabrous, cupular, erose or twice shallowly and twice deeply cut; corolla about 13 mm long (lobes about 7 mm), corollar tube near the base shortly adnate to the staminal tube. Stamens 4.5—5 cm long (partly connate). Ovaries 4—8; style about 4cm long; stigma small, knob-shaped. Pods about 10 cm long, 1.5 cm wide over the seeds, and

constricted between, 1—3 from a single flower; seeds black, ellipsoid, 13 mm long.

TYPE.—Warburg 20323; Wroclaw Herb., lectotype.

DISTRIBUTION.—Moluccas: Aru Islands [Wokam, Trangan (Lutor), Giabu-lengan]. New Guinea: South-West: Poelau Faoer; South: Fak-Fak; North-West: Geelvink Bay (Nabire, Patema, Momi).

ECOLOGY.—A shrub or small tree (or "half climber," *fide* Kostermans), 3—8 m tall, from sea-level to medium altitude, in dense rainforests, also on stony hills; myrmecophilous. Flowers throughout the year from old wood, white or yellowish green. Fruit orange-red.

Warburg collected the type in 1889 on the Aru Islands. The holotype was lost at Berlin and I appointed therefore the isotype at Wroclaw, a female specimen containing four ovarial remnants in the flower, as the lectotype. I previously reduced (De Wit *in* Bull. bot. Gdns Buitenz. Ill 17: 262. 1942) *A. racemosum* to *A. aruense* without having seen the type of *A. aruense* because the data available in literature furnished no argument to maintain *A. racemosum* as a distinct species. The type material from Wroclaw confirmed my decision.

0. Beccari collected April 11, 1872, a hermaphrodite specimen in flower and in fruit (Herb. Florence) on Poelau Faoer (Rijklof van Goensbaai [Teloek Sebakor], opposite South-West New Guinea; Piante Papuane no. 38). The flowers are somewhat larger than in the type and the calyx is truncate-erose and minutely puberulous, not glabrous and lobed as in the type. The fine set of specimens gathered by Beccari (Herb. Florence) satisfied me as to the constancy of the one-jugate leaf at least in one species. It also demonstrated that within the limits of a single species the calyx may vary from deeply dentate to truncate and entire, the corollar lobes may number from five to eight, the calyx and the nerves of the leaflets may be glabrous or minutely puberulous, the axis of the inflorescence may be puberulous or glabrous, and that all these characters may occur in various combinations. Stable characters proved to be the presence and shape of an acumen to the leaflet, a grooved rachilla, the appearance of the foliar glands and the bracteoles, the arrangement of the flowers on the axis, and its being simple. I am under the impression that the characters of the fruit are also stable but much more material is needed before this can be proved.

The first specimen of *Archidendron* collected for scientific purposes was secured by A. Zipelius (Triton Exp., 1828, Herb. Lugd. Bat.) but, being a leaf only, not recognized as an, at the time, undescribed Mimosaceous genus. It belongs to *A. aruense*.

3. ARCHIDENDRON BEGUINII De Wit

Archidendron beguinii De Wit *in* Bull. bot. Gdns Buitenz. Ill 17: 262, 263. 1942.

Leaves 3—4 jugate; petiole plus rachis 80—85 cm long; rachillae in the third jugum up to 50 cm long; leaflets 3, 4—6, and 5 pairs, broadly ovate to ellipsoid, more or less unequal-sided, 12.5—17.5 cm long and 8—10.5 cm wide, glabrous, base rotundate, oblique, top bluntly and shortly acuminate; petiolules 4—6.5 mm long. Stipules early caducous.

Racemes simple or with very short branches; peduncle glabrous, stout, up to 2cm long; flowers crowded near the top. Bracts minute, caducous. Pedicels nearly absent; calyx about 2 cm long, tubular-infundibuliform, irregularly dentate, glabrous; corolla 40—45mm long (lobes recurved, more or less fleshy). Stamens 6.5—7.5 cm long. Ovaries 3; style as long as the filaments; stigma inconspicuous. Pods coiling into nearly 2 completed rings, about 24 cm long and 3 cm wide over the seeds, shallowly constricted between; seeds up to 11, dark blackish blue, with a white bloom.

TYPE.—Beguin 2263; Herb. Bogoriense, holotype.

DISTRIBUTION.—Moluccas: Halmahera (West Pitu); Ternate.

ECOLOGY.—A low, 2m tall "tree"; bark grey, not peeling. In forest at about 80 m altitude, rare; also cultivated by the local people.

LOCAL NAME.—Bere-berete (Halmahera).

The type specimen was collected by V. M. A. Beguin in Halmahera. The Ternate specimen was found by W. H. de Vriese on his trip to the Moluccas with Teysmann in 1860.

4. ARCHIDENDRON BELLUM Harms

Archidendron bellum Harms in Bot. Jb. 55: 40. 1917.

Leaves ?-jugate; petiole ? cm long; rachillae about 35cm long; leaflets 3—4 pairs, elliptic, subcoriaceous, about 25 cm long and 7—8 cm wide, glabrous, glossy, reticulate on both surfaces, base narrowed, cuneate-acute, top gradually tapering, more or less short, blunt-acuminate; petiolules about 3 mm long; glands not raised.

Raceme compound, stout, glabrous, about 15 cm long; branches simple, carrying the flowers aggregate on top. Bracts unknown. Pedicels 2—5 mm long; calyx about 1.5cm long, tubular-infundibuliform, broadly dentate; corolla 3—3.5 cm long (lobes about 1.5 cm), at first minutely puberulous, soon glabrous. Stamens about 5 cm long, more than half connate. Ovaries 2—3.

TYPE.—Schlechter 16754; Paris Herb., lectotype.

DISTRIBUTION.—North-East New Guinea: Kani Mountains.

ECOLOGY.—Forest; flowering in November, a small tree at about 700 m altitude.

The holotype was lost at Berlin-Dahlem. A good isotype is preserved at Paris and is appointed to replace the holotype.

In the Florence Herbarium is a specimen of O. Beccari's Piante Papuane, collected at Andai (Sept. 1872), which probably belongs here;

it consists of one leaf only. This leaf has two juga, of which the upper conforms to *A. helium*, and the lower has two leaflets on top of a 2.5 cm long rachilla.

5. ARCHIDENDRON BRACHYCARPUM Harms

Archhlewiron brachycarpum Harms *in* Notizbl. bot. Gart, Berlin-Dahl. 10: 273. 1928.

Leaves 1-jugate (?); petiole about 15 cm long; rachillae about 15 cm long; leaflets 3—5 pairs, more or less ovate, acuminate, 10—15 cm long and 4—8 cm wide; rachis, rachilla, petiolules, and lower surface of midrib pubescent; glands strongly raised, saucer-shaped, sharp-rimmed.

Raceme compound, 2—8 cm long, slightly hairy, rather slender. Pedicels 2 mm long; calyx 3—4 mm long, nearly glabrous; corolla about 13 mm long (lobes about 5 mm), nearly glabrous. Stamens about 3 cm long, partly connate, tube somewhat adherent to the corolla. Ovaries 3. Pod bright red, about 5 cm long, 2—4 em broad, very thick; seeds as a rule 2.

TYPE.—(Peekel 989.) Lauterbach 456; Wroclaw Herb., neotype.

DISTRIBUTION.—New Guinea: Gogol district, Bumi mouth. Bismarck Archipelago: New Ireland (Neu-Mecklenburg), at Lamekot, Lakurafanga.

ECOLOGY.—Coastal plain, sandy soil; small tree 5 m tall; flowers white; flowers and fruits May—July. Myrmecophilous.

Harms observed (original description) a pulvinate disc in the male flower and a tubular disc round the ovaries in the female flower. The species has apparently dioecious flowers.

The holotype was lost at Berlin-Dahlem. A neotype had to be selected when material came at hand; I appoint Lauterbach 456. Lauterbach noted that it was a myrmecophilous, 5 m tall tree, with white flowers.

Harms discussed both a male and a female specimen but quoted only one specimen (or collector's number). This leads to the assumption that Harms found male and female flowers on a single plant. I found in the neotype male and female flowers in one specimen, the male ones having three reduced ovarial remnants and a tubular disc around them and the male ones four swollen and three reduced ovaries; the swollen, apparently not fertile, ovaries were present as a result of some insect stimulus, it seemed.

The pedicel in the neotype is very sparsely short hairy, with short, patent, fine hairs, the calyx similarly provided but glabrescent. The corolla was glabrous.

Brass 5215 (oak forest, substage, alt. 1250 m., Mafulu, Central Div., Papua) may also belong here. The leaflets are sparsely pubescent on the lower surface and in seven pairs.

6. ARCHIDENDRON BREVICALYX Harms

Archideiulrou brevicalyx Harms *in* Bot. Jb. 55: 41. 1917; De Wit in Bull. bot. Gdns Buitenz. Ill 17: 263. 1942.

Leaves 1-jugate; petiole ? cm long; rachillae ? cm long; leaflets 5—6 pairs, lanceolate-oblong, unequal-sided, 13—20 cm long and 5—7 cm wide, glabrous, base acute or obtuse, top acuminate; petiolules rather long, 4—7 mm. Stipules unknown.

Raceme simple, about 3—6 cm long, very shortly puberulous. Bracts lanceolate, acuminate, 1—3 mm long. Pedicels 3—7 mm long, glabrous; calyx 3—4mm long, very broadly cupular, glabrous or nearly so; corolla about 1.5 cm long, glabrous. Stamens about 4 cm long, connate in lower part.

TYPE.—Schlechter 17558.

DISTRIBUTION.—South-East New Guinea: Djamu River.

ECOLOGY.—Forest near river. Flowering in April.

Although I expressed doubts (De Wit, *I.e.)* as to whether *A. brevicalyx* were to be kept separate from *A. incurvatum,* I now hold that it is a good species, distinguished not by the length of the calyx but by its shape (width) and by a number of characters in the leaves and flowers.

I have not seen any authorized specimen belonging to *A. brevicalyx*; the holotype was destroyed at Berlin,

I think Lauterbach 911 (North-East New Guinea, Gogol River, lower reaches; in forest) belongs here, though the flowers are rather small (calyx 2—2.5 mm, corolla 12—14 mm long).

7. ARCHIDENDRON BREVIPES (K. Schum.) De Wit

Hansemannia brevipes K. Schumann, Fl. Kaiser Wilhelmsland 103. 1889; K. Schum. & Laut., Fl, deut. SehGeb. Siidsee 343 *pi. 9.* 1901; "*Hausemannia brevipes* F. Muell." *in* Index kew. Suppl. 1: 16. 1906 (misspelt). — *Albizzia brevipes* (K. Schum.) F. von Mueller *in* Proc. Linn. Soc. N. S. Wales II 5: 20. 1890. — *Archidendron brevipes* (K. Schum.) De Wit *in* Bull. bot. Gdns Buitenz. Ill 17: 263. 1942.

Hansemannia gawadensis Baker *1. in* J. of Bot. 61 (Suppl.): IS. 1923; Harms *in* Notizbl. bot. Gart. Berlin-Dahl. 10: 275. 1928. — *Archidendron gawadense* (Baker f.) De Wit *in* Bull. bot. Gdns Buitenz. Ill 17: 266. 1942; Merr. & Perry in J. Arn, Arb. 23: 392. 1942.

Leaves 1-jugate; petiole 20—30cm long, furcate; rachillae 30—50 cm long, furcate; leaflets 5 pairs (or with one leaflet of a 6th pair), lanceolate to ovate, long acuminate, up to 20 cm long, up to 7 cm wide, unequal-sided; rachilla, petiolules, and lower surface of the nerves minutely (grey) sparsely papillose-puberulous; glands small, inconspicuous, not or scarcely raised. Stipules unknown.

Raceme compound, 1.5—2.5 cm long, green-yellow pubescent. Bracts deflexed, as a rule changing into glands. Pedicels 3—5 mm long, slender;

calyx 3—5 mm long, campanulate-cupular; corolla 10—13 mm long, glabrous. Stamens 2.5—3.5 cm long, connate in lower half. Ovaries 3—5 ; style slightly exceeding the stamens. Pods about 30 cm long, 5 cm wide, thick-valved, not septate; seeds about 10, 4—5 cm long and 2.5 cm broad, apparently not compressed, glossy black.

TYPE.—Hollrung 763; Wroclaw Herb., holotype.

DISTRIBUTION.—East New Guinea: Mountain ridges near 2nd Augusta Camp; Palmer River (3km below Black River junction).

ECOLOGY.—Myrmecophilous. A small tree, flowers white. Brass found it at Palmer River, in the undergrowth of river flood plain forest; a small tree, 5 m tall, leaves on upper 2 m of stem, scattered, flowers white.

8. Archidendron calliandrum De Wit, *sp. nov.*

Ex affinitate A. belli *tamen foliolis latioribus conspicue amoninatis, inflorescentia breviore, calyce minore, lobis velutinis corollae distincta.*

Leaves glabrous, 2-jugate; rachillae stout, terete, with or without a tiny gland between the pairs of petiolules, 25 cm long, glabrous or very nearly so, more or less produced into a mucro; leaflets 3 pairs, the lower much the smaller and very unequal, slightly unequal-sided, coriaceous, pallid-olive(-brown) when dry, elliptic or obovate, up to 26 cm long and 12.5 cm wide, reticulate, glossy, base rounded to acute, top broadly rounded with a sharp, short acumen, midrib flat-rounded, raised on both surfaces, on the lower with minute, sparse puberulous hairs like the nerves but soon glabreacent; petiolules sturdy, glabrous, 6 mm long.

Inflorescence along the stem, a sparingly branched, open, thinly rusty puberulous, 8—9 cm long panicle, somewhat glandular; flowers few, scattered, on 3—4mm long, puberulous pedicels; calyx erose-dentate, cylindrical to subcampanulate, puberulous, 9 mm long; corolla 2.5 cm long, rather fleshy, glabrous on the tube but towards the lobes and the top of the lobes gradually more densely puberulous, finally tawny velvety tomentose, tube free from the calyx, lobes 5, acute, about 6 mm long. Stamens 5—7 cm long, one third connate. Ovaries (3—)4, glabrous; styles more or less equalling the stamens. Pods 30—50 cm long, 6 cm wide, 3.5—4 cm thick, sutures strongly striate, twisted and undulate near the apex, apparently not constricted between the seeds, about 10-seeded; seeds irregularly globular, about 3 cm through.

TYPE.—Bauerlen 608; Melbourne Herb., holotype.

DISTRIBUTION.—New Guinea (Papua): Fly River.

W. Bauerlen collected the type in October 1885; the tree was about 10 m tall, the flowers were found lying on the ground. The tree is said to be of singular beauty. L. J. Brass collected a specimen in fruit (no. 6665) at Fly River (May 1936), 528 mile Camp, a single example found in ridge forest substage, altitude 80 m. A single pendent fruit (unripe) on the lower trunk of a slender, erect, sparsely foliaged tree, 12 m tall.

9. AECHIDENDRON CALYCINUM Pulle

Archkletidron calycinum **Pulle** *in* Nova Guinea 8: 370. 1910.

Leaves 1-jugate; petiole about 12cm long; rachillae about 14cm long; petiole and rachillae grooved; leaflets 2 pairs, ovate-oblong, sessile, about 15—20 cm long and 8—9 cm wide, glabrous, pallid yellow-green when dry, base broadly acute, top abruptly caudate-acuminate; glands near base and on top of petiole, and between leaflets very strongly developed. Stipules early caducous.

Raceme very short, up to 5 mm long, glabrous, simple. Bracts linear, papery, about 2 mm long. Pedicels about 3 mm long; calyx campanulate, much widening towards the mouth, 1.7—2 cm long, glabrous; corolla about 2.5 cm long, papery, glabrous. Stamens not known fully developed. Ovaries 3.

TYPE.—Versteeg 1702; Utrecht Herb., holotype.

DISTRIBUTION.—Netherlands New Guinea: Noord River, on top of Mount Resi.

ECOLOGY.—Shrub or small tree, occurring at 800 m altitude, flowering in September; the rachillae are provided with 2.5 cm long, probably early caducous, flagelliform tips. Dried leaves very pallid and by their appearance suggestive of *A. sessile.*

10. AECHIDENDKON CHRYSOCARPUM K. Schum. & Laut.

Archidendron chrysocarpum Lauterbach & K. Schumann *apud* K. Schum. & Laut. Fl. deut. SchGeb. Siidsee **344. 1901.**

Leaves 4-jugate; petiole up to 20cm long, glabrous; rachillae up to 8 cm long, glabrous; leaflets 3—5 pairs, ovate to oblong, more or less unequal-sided, 12—20 cm long and 6.5—9.5 cm wide, glabrous, base rounded to broadly acute, top vaguely and broadly acuminate; glands between leaflets strongly developed.

Raceme sturdy, sparingly branched, glabrous. Bracts usually changing into glands. Pedicels 3—4 mm long; calyx about lcm long, campanulate, glabrous, dentate; corolla 2.5—3.5 cm long, glabrous. Stamens 6 cm long. Ovaries 7. Pods up to 8 cm long, between seeds often deeply constricted, glabrous, the seeds in orbicular lobes 2 cm in diameter, golden green when dry, inside red; seeds disc-shaped, 2—3, 1.5cm through, black.

TYPE.—Lauterbach 2869; Kew Herb., lectotype.

DISTRIBUTION.—North-East New Guinea: Nuru River, Sepik region.

ECOLOGY.—At 300 m altitude in tall forest, a tree, flowers and fruits in September. The inflorescences become finally very sturdy; the bracts often change into nectaries. The flowers are fragrant.

11. Archidendron dies-Christi De Wit, *sp. nov.*

Species haec nova, A. dies-Christi, *primum collecta est die natali Christi. Ex affinitate earn iudico* A. glabri *tamen differt nereis puberulis foliolorum utraque facie, longitudine racemorum, calyce subdentato, corolla*

non zonata dense tomentosa, staminibus possibiliter semper paulo exsertis, ovariis duobus.

Leaves 2-(or more ?)jugate; petiole and about 20 cm long rachillae nearly terete (in the male plant slightly grooved), densely minutely puberulous (male plant somewhat more densely so), carrying thick-walled, nipple-shaped, raised glands which open by a narrow pore; leaflets 4 pairs, (narrowly) ovate, caudate, unequal-sided, glabrous but on either surface of the midrib and side-nerves minutely puberulous, more densely so on the upper surface, 12—18 cm long (including the 2 cm long acumen) and 5—7 cm wide; petiolules sturdy, glabrous, 4 mm long.

Raceme simple, pendent, slender, about 25 cm long, like the filiform, 2.5 cm long pedicels glandular-puberulous. Bracts early caducous, minute, acute. Calyx glandular-puberulous, 3 mm long, triangular-cupular (base narrow), very shallowly dentate; corolla rather fleshy, on the outside densely tomentose, 6—7 mm long. Stamens in the male plant possibly never exserted, ovarial remnants 2—4; stamens in the female plant similar but though containing pollen-like grains apparently sterile. Ovaries 2, 12-ovuled.

TYPE.—Carr 14014, male specimen; Herb. British Museum, holotype.

DISTRIBUTION.—New Guinea (Papua): Lala River.

ECOLOGY.—Carr noted that the female plant (Carr 15690) was a 10 m tall tree in the forest, the male plant a shrub in the forest (Carr 14014); both were secured at about 1500—1600 m altitude in the Lala River basin. The male plant flowered December 25, the female plant February 21.

Anhidendron glabrum, a close ally, occurs at low altitudes.

12. ARCHIDENDRON EFFEMINATUM De Wit

Arckideudron effeminatum De Wit in Bull. bot. Gdns Buitenz. Ill 17: 265. 1942.

Leaves 2-jugate; petiole about 10 cm long; rachis about 10cm long; rachillae about 20 cm long; leaflets 2—4 pairs, (very broadly) ovate, often unequal-sided, glabrous, 9—18 cm long and 4—9 cm wide, base broad, top blunt or acute, vaguely acuminate; glands well developed between juga and leaflets.

Raceme simple, 2—7 cm long, stout, not quite glabrous. Bracts deflexed, linear, 3—6 mm long. Pedicels 4—5 mm long, glabrous; calj'x 7—8 mm long, glabrous; corolla 15—18mm long, glabrous. Stamens about 2.2 cm long, shortly exserted. Ovaries 11 (sometimes 10, rarely 8), glabrous.

TYPE.—Rutten 2119; Herb. Bogoriense, holotype.

DISTRIBUTION.—Moluccas: Ceram, basin of western Nief River in eastern Ceram.

ECOLOGY.—A 10 m tall tree, at 1—100 m altitude; flowers white, in April.

13. ARCHIDENDRON FALLAX Harms

Archidciidron fallax Harms in Notizbl. bot. Gait. Berlin-Dahl. 10: 274. 1928.

Leaves 3-jugate; petiole (plus rachis) up to 40 cm long; rachillae 8—15cm long, glabrous; leaflets 2—4 pairs, ovate to (lanceolate-)oblong, more or less unequal-sided, 10—15 cm long and 6—7.5 cm wide, glabrous, base acute to rotundate, top slightly acuminate.

Raceme compound, length of the slender axis unknown, with many nearly sessile umbels of 2—4 flowers. Pedicels 4—5 mm long; calyx 4—5 mm long, cupular-tubular, shallowly lobed, very shortly puberulous; corolla 23—25 mm long, nearly glabrous. Length of stamens unknown, the tube long adherent to the corolla, basal disc shortly tubular. Ovaries 2—3.

TYPE.—Peekel 988.

DISTRIBUTION.—Bismarck Archipelago: New Ireland (Neu-Mecklenburg), Lamekot.

ECOLOGY.—A small tree, 8 m tall on the slope to Panamangaf, in primary forest, flowers white, in May.

Allied to *A. peekelii* which has larger flowers on longer peduncles. A fruiting specimen in the Melbourne Herbarium (SE New Guinea, Rev. J. Chalmers, anno 1878) agrees rather well with the above description. In this specimen the midrib is on the lower surface shortly tomentellous, the slender rachillae have strongly raised glands; the inflorescence (in fruiting stage) is about 25 cm long, the much constricted pods are twice looped, minutely tomentellous, 2 cm across the seeds, eight-seeded. See further "Species excludendae vel imperfecte notae" under *A. kubaryanum*.

14. ARCHIDENDRON FORBESII Baker f.

Archidendron forbesii Baker f. *in* J. of Bot. 61 (Suppl.) : 12. 1923.

Leaves 2-jugate; petiole ? cm long; rachillae about 20 cm long, minutely puberulous to glabrescent; leaflets 4 pairs (the first pair a single leaflet), oblong or ovate-oblong, unequal-sided, shining on either surface, reticulate, glabrous except for the sparsely minutely puberulous midrib on the lower surface, 10—15 cm long and 4—7 cm wide, base acute, top gradually tapering into a broad acumen, glands strongly raised.

Raceme with strong, 3—5 cm long branches, 8—12 cm long, minutely puberulous to glabrescent. Bracts not seen. Buds globular, 7 mm through. Pedicels about 5mm long, glabrous, stout; calyx 12—14mm long, broadly campanulate, glabrous, erose-lobed; corolla 2.2—3 cm long, densely short tomentose, rather fleshy. Stamens about 4 cm long. Ovaries about 5, pubescent.

TYPE.—Forbes 395; Kew Herb., holotype.

DISTRIBUTION.—New Guinea (Papua): Sogere.

Baker described the leaflets as alternate but the type proved them to be opposite.

15. ARCHIDENDRON GLABRUM (K. Schum.) Laut. & Schum.

Hansetnannia gluhra K. Schumann *in* Bot. Jb. 9: 201. 1888; Taubert *in* Engl. & Pr, Nat. PflFam. 3: 3. Abt.: 102 *fig. 59C.* 1891; "*Hansemmmia glabra* K. Schom." *in* Ind. kew. Suppl. 1: 16. 1906 (misspelt). — *Archidendron glabrum* (K. Schum.) Lauteibach & K. Schumann apud K. Schum. & Laut, Fl. deut. SchGeb. Siidsee 343. 1901.

Albizzia "hausemannii" F. von Mueller *in* Proc. Linn. Soc. N. S. Wales II 5: 20. 1890 (also *in* Ind. kew. Suppl. 1: 16. 1906, both misspelt for *A. hansemanni).*

Leaves 2- (or more-) jugate; petiole unknown; rachillae slender, more or less terete, about 20 cm long, minutely glandular-puberulous; leaflets 4 pairs, ovate to obovate, acuminate, more or less unequal-sided, glabrous except for the basal part of the midrib on the lower surface which may be minutely puberulous, 7—20 cm long and 4—8 cm wide; petiolules slender, 4 mm long; glands thick-walled, nipple-shaped, opening by a narrow pore.

Raceme simple, slender, about 35(—67!) cm long, like the filiform, about 2.5 cm long, pedicels minutely glandular-puberulous; calyx cup-shaped, minutely glandular-puberulous, dentate, 3 mm long; corolla deeply split, each lobe with a longitudinal, central stripe, externally minutely appressed puberulous, about 6 mm long. Stamens about 2 cm long, partly connate. Ovaries 3—6, glabrous. Pods on slender stalks, about 8 cm long, over the seeds 1.5 cm, between the seeds 3 mm wide, with a velvety sheen, dull red.

TYPE.—Hollrung 130; Kew Herb., lectotype.

DISTRIBUTION.—North-East New Guinea (Morobe District: Boana).

ECOLOGY.—Small tree in the forest at 250—1500 m altitude.

Archidendron glabrum is closely allied to *A. dies-Christi.* It differs in the minutely puberulous (not tomentose) corolla, the strongly dentate calyx, the much longer inflorescence and the striped corolla, possibly also in the pods. A male specimen (Clemens no. 10883, Morobe distr., Kajabit Mission) had four to five rudimentary ovaries and racemes of up to 67 cm long.

16. Archidendron gogplense (K. Schum. & Laut.) De Wit, *comb. nov.*

Hansemaimia gogolctisis Lauterbach & K. Schumann *apud* K. Schum. & Laut., Fl. deut. SchGeb. Siidsee 34S. 1901. — *Archidendron gogolense* De Wit *in* Bull. bot. Gdns Buitenz. Ill 17: 266. 1942, num. prov.

Leaves glabrous, 3-jugate, petiole and rachis terete, pustulate by many enlarged and raised lenticels, the petiole with a large gland near the insertion, the rachillae between the leaflets with raised, disc-shaped glands, mucronate; petiole about 50 cm long; rachillae about 40 cm; leaflets 7 pairs (on the lower juga about 4 pairs), more or leas coriaceous, glabrous, reticulate on both surfaces, 12—15 cm long and 3—4 cm wide, narrowly ovate to lanceolate, vaguely acuminate; petiolules slender glabrous, about 6 mm long. Stipules early caducous.

Inflorescences compound, slender, 3.5—4.5 cm long branches'inserted along a somewhat sturdier, 6—8 cm long, main axis, entirely glabrous. Bracts minute, ovate, acute. Calyx narrowly eampanulate, glabrous, about 5 mm long, margin more or less erose; corolla long and narrowly tubular, 16—20 mm long including the about 5 mm long lobes (tips incrassate, ?with nectaries), glabrous, tube entirely free from the stamina] tube. Stamens up to 5 cm long. Ovaries (in male specimens) 1, apparently sterile, a few mm long; style about 1 mm long; stigma absent.

TYPE.—Lauterbach 1093; Wroclaw Herb., lectotype.

DISTRIBUTION.—North-East New Guinea: Upper reaches of Gogol River.

ECOLOGY.—A 15 m tall tree, flowering in November; flowers white. Only a male specimen 13 known, found at 30 m altitude. On the lower surface of the leaflets (and also on the rachillae) minute, purple scales suggest the excretion of a resinous or waxy matter.

Owing to the unsatisfactory first publication, I reduced *A. gogolense* to *A. pachycarpum* on a previous occasion (De Wit, *I.e.).* The isotypes of both species (now appointed to lectotypes as the holotypes were destroyed at Berlin), preserved in the Wroclaw Herbarium, were sent for examination and enabled me to correct my erroneous reduction.

17. ARCHIDENDRON INCUKVATUM K. Schum. & Laut.

ArchidfRdroil iyicitrvutum Lauterbach & K. Schumann apud K. Schum. & Laut., FI. deut. SchGeb. Siitisee 344. 1901.

Leaves 2-jugate; petiole about 12cm long, angular; rachillae about 30 cm long, shallowly grooved, angular, delicately puberulous, mucronate; leaflets 3—5 pairs, ovate to obovate or more or less oblong, 15—25 cm long and 5—10 cm wide, glabrous, base acute or rounded, top acuminate; glands depressed, very small. Stipules caducous.

Raceme short, 2—4.5 cm long, simple, pubsrulous (finally glabrescent), carrying flowers along the axis but mostly near the top. Bracts deflexed, ovate-acute, persistent, 1—2 mm long. Pedicels very short, 1—2 mm long; calyx 3.5—4.5mm long, cupular (base narrow), glabrous or very nearly so, very shallowly rounded-dentate; corolla with long triangular lobes, wide, 1.2—1.4 cm long, glabrous. Stamens about 2.5 cm long; tube not adherent to the corolla. Ovaries about 4. Pods glabrous, constricted between the seeds, up to 8 cm long, red outside, yellow inside, about 1.5 cm wide accros the seeds, more than 10-seeded, 1—4 from a single flower; seeds greyish black, glossy, 1 cm long.

TYPE.—Lauterbach 2321; Kew Herb., lectotype.

DISTRIBUTION.—North-East New Guinea; Szigaun Plateau; Gogol River (Oertzen Mountains).

ECOLOGY.—At 600 m altitude; apparently common in the Sepik region.

In my previous paper on *Archidendron* (De Wit *in* Bull. bot. Gdns Buitenz. Ill 17: 267. 1942) I supposed that the axis of the inflorescence

would be slightly hairy. On examining the isotype at Kew I found the fruit-bearing axis not quite glabrous and flowering specimens (Ledermann 6816) proved my surmise to be correct, as the flower-bearing axis was densely puberulous; the latter bore male flowers containing two reduced ovaries. A specimen (leaf only) preserved in the Wroclaw Herb. (Lauterbach 1080) is from Gogol River.

18. ARCHIDENDRON LEDERMANNII Harms

Archidendron ledermannii Harms *in* Bot. Jh. 55: 42, 1917.

Leaves glabrous, 1-jugate; rachillae more than 50cm long; petiole about 20cm long, in upper part furrowed as are the rachillae; leaflets 4—5 pairs (lowest pair a single leaflet), oblong to lanceolate, acuminate, up to 30 cm long, 4—5 cm wide; petiolule 7—10mm long; glands small, not raised, inconspicuous. Stipules 2.5—3.5 cm long and 1.5 cm wide, more or less falcate, persistent.

Raceme simple, 4—6 cm long, axis very shortly puberulous. Pedicels glabrous, 2—4 mm long, equalling the glabrous calyx; corolla glabrous, about 1.5 cm long, lobes about 7 mm long. Filaments at least 3.5 cm long.

TYPE.—(Ledermann 8197.) Brass 13822; Herb. Arnold Arboretum, neotype.

DISTRIBUTION.—North-East New Guinea: Hunstein Spitze, Camp 5; Netherlands New Guinea: Idenburg River (Bernhard Camp).

ECOLOGY.—The type was collected on a rocky riverside in primary forest. The species was also noted to be frequent in rain forest on low-lying, alluvial soils; a 2—3 m tall tree, bearing inflorescences on the lower part of the stem (Brass 13882).

Ledermann stated that the flowers were white, pink-tipped, and the fruit coralline; the seeds were black.

Archidendron ledermannii is closely allied to *A. pachycarpum;* it is possible that after discovery of the fruits of either or both the two may prove to be conspecific.

19. AKCHIDENDRON LUCYI F. Muell.

Archidendron lucyi F, von Mueller, Fragm. Phytogr. Austr. 6: 201. 1868; Bailey, Queensland Fl. 522, 1900; Taubert *in* Engl. & Pr., N'at. PflzFam. 3: 3. Abt.: 103 *fig. S8E,* 1891; De Wit *in* Bull. bot. Gdns Buitenz. HI 17: 26S. 1942; Merr. A-Perry *in* J. Am. Arb. 23: 392. 1942. — *Albizzia lucyi* (F. Muell.) F. von Mueller, Ic. Austr. Sp. Acacia, Dee. 13: *[pi.* 6]. 1888. — *Affmisea lucyi* (F. Muell.) O. Kuntze Rev. Gen. PI. 1: 158. 1891.

A. peekelii Lauterbach in Bot. Jb. 45: 360. 1911; De Wit *in* Bull. bot. Gdns Buitenz. HI 17: 270. 1942.

Leaves 2-jugate, glabrous; petiole plus rachis about 60cm long, like the rachillae more or less terete; leaflets 2—3(—4) pairs, unequal-sided, broadly ovate, 12—20(—27) cm long, base variable, top more or less

acuminate; petiolules about 5mm long and 9—12(—17) cm wide; glands ovoid, flat, scarcely raised.

Inflorescence lateral from the branches, compound racemes up to 30 cm or even longer, glabrous. Bracts deflexed, glabrous, 4 mm long, fleshy. Pedicels 4—5 mm long; calyx infundibular to campanulate, shallowly dentate, glabrous, Up to 4 mm long; corolla long exserted, 2—2.5 cm long, finally revolute. Stamens 3.5—1.5 cm long; tube partly adherent to the corolla. Ovaries 3—5(—6) ; style about 5 cm long. Pods deeply lobed, in pairs, rufous to dull red, up to 12 cm long; seeds black, ovoid, up to 1.8 cm long.

TYPE.—Dallachy *s.n.;* Melbourne Herb., holotype.

DISTRIBUTION.—Moluccas: Kai Islands (Groot Kai); North-West Ceram (near Hatu Saweli). Queensland: Roekingham Bay. Bismarck Archipelago: New Ireland (Namatanai).

LOCAL NAME.—A hulale (New Ireland).

ECOLOGY.—A 6—10 m tall tree occurring near streams from sea-level to nearly 500 m altitude. Dallachy reported the flowers to be fragrant. Flowers greenish or whitish. Kajewski (1420; Daintree River, North Queensland) found it as a 30 m tall tree, flowering and fruiting in November; the stamens were white and showy.

Var. schlechterii (Harms) De Wit, *va,r. nov., st.at. nov.*

Archidendron schlechterii Harms *in* Bot. Jb. 55: 40. 1917.

Pedicels, calyx, and corolla generally somewhat narrower and longer, the inflorescence may be over 50 cm long. Foliar glands, on the axis and bracts in the inflorescence much larger and strongly developed, in the inflorescence also more numerous.

TYPE.—Schlechter 18370; Kew Herb., holotype.

DISTRIBUTION.—New Guinea: Malia River; Veyia; Koitaki; lower Fly River; Idenburg River.

The variety *schlechterii* is connected by many transitions to the remainder of the species, though occasionally specimens are distinctly different in appearance.

20. ARCHIDENDRON MEGAPHYLLUM Merr. & Perry

Archidendron megaphyUum Merrill & Perry *in* J. Arn. Arb. 23: 343. 1042.

Leaves 1-jugate; rachis about 20 cm long; rachillae about 70 cm long, minutely pubescent; leaflets 5 pairs, broadly elliptic, 25cm long and 15 cm wide, rather bluntly apieulate, both surfaces sparsely rusty pubescent, densely so on the nerves; petiolules 1 cm long.

Raceme simple, sturdy, 3—4(—6) cm long. Bracts tardily caducous. Calyx 2—4 mm long, pubescent to glabrescent; corolla delicately puberulous. Pod 7 cm long, 2 cm wide, inconspicuously short tomentose, with 7—8 oblong seeds, 1.5 cm long, hardly 1 cm wide.

TYPE.—Brass 7227; Herb. Arnold Arboretum, holotype.

DISTRIBUTION.—North-East New Guinea: Palmer River, 2 miles below Black River junction.

The type specimen was collected at 100 m altitude, in a substage of rain-forest; it is described as a rare, unbranched tree, 14 m tall, with few, large, about 1 m long, leaves, forming a scanty crown and bearing several thick, twisted pods in fascicles on the stem.

In the appearance of the leaves *A. megaphyllum* is somewhat similar to *A. molle.*

21. ARCHIDENDKON MOLLE (K. Schum.) De Wit

Hansem ami ia mollis K. Schumann *in* Bot. Jb. 9: 202. 1888; *"Hamemannia mollis* F. Muell." in Index kew, Suppl. 1 : 16. 1906 (misspelt). — *Albizzia, mollis* (K. Schum.) F. von Mueller *in* Proe. Linn. Soc. N. S, Wales II 5: 20. 1890. — *Archidendron molle* (K. Schum.) De Wit *in* Bull. bot. Gdns Buitenz. Ill 17: 269. 1942; *Archidendron mollis* (K. Sehum.) Kan. & Hat. *in* Bot. Mag., Tokyo 56: 357. 1942.

Leaves 1-jugate; petiole about 20cm long, pubescent; rachillae 30(—40) cm long, woolly pubescent; leaflets 5—6 pairs (the first pair represented by a single one), more or less elliptic, (shortly) acuminate, 12—18 cm long and 7.5—10 cm wide, side-nerves numerous, softly and sparsely pubescent on both surfaces, more densely so on the nerves; tretiolules 3—5 mm long, densely golden hirsute; glands occurring on the base and top of the petiole and between the petiolules, large, strongly raised, cup-shaped, sharp-rimmed.

Inflorescence compound, 1—2.5 cm long, axis slender, like the branches fulvous pubescent. Pedicels slender, 2 mm long, at first with a few fugacious hairs; calyx (?not always) glabrous, cupular, dentate; corolla 11 mm long, at first with a few fugacious hairlets but soon entirely glabrous. Stamens about 3 cm long. The male plant has 5 reduced carpels surrounded by a striate disc. Pods 6.5—8 cm long, septate, about 1.5 cm wide: seeds 1.5cm Ions' and 1 cm wide, flattened laterally.

TYPE.—Hollrung 249; Kew, lectotype.

DISTRIBUTION.—North-East New Guinea: Upper Augusta River.

ECOLOGY.—White flowers in June—September; the seeds are black. the pods fiery red. A small tree in (marshy) forest at low to medium altitude.

Warburg reported to have found this species (sterile) near Finschhafen *(in* Bot. Jb. 13: 333. 1891). The holotype was lost at Berlin; at Kew is preserved an isotype consisting of a few leaflets and two flowers. This is to be the lectotype as the isotype at Wroclaw consists of leaves only. At first I took Carr 12659 and 12766 (male) to be *A. brevipes.* I am now of opinion that these specimens are referable to *A. molle.* The pubescence (on both surfaces of the leaflets) is thinner than in the type of *A. molle* but otherwise entirely of the same appearance though more

fuscous, not 'golden.' The puberulous pedicel and calyx, and the puberulous corolla lobes and, especially, the raised foliar glands (which are smaller than in the type of *A. molle* but of similar structure) have made me decide that the Carr specimens (Papua, Koitaki; forest, at about 500 m alt.) belong to *A. molle*. This implies that the inflorescence of *A. molle* is of similar size and shape as that of *A. brevipes* but fulvous, not green-yellow, pubescent.

Carr's specimens have elliptic-oblong, slenderly acuminate leaflets.

22. ARCHIDENDRON MUCRONATUM Harms

Arckidendron mucronatum Harms *in* Notizbl. hot. Gart. Berlin-Dahl. 10: 274. 1928.

Leaves 2—3 jugate, glabrous; petiole and rachis 25 cm long or longer; leaflets 2—4 pairs, ovate to oblong, more or less oblique, 15—20 cm long, 9—13 cm wide, base broad, top acuminulate.

Inflorescence paniculate, many-flowered, 10—25 cm long, 2—4 flowered umbellulae on puberulous, about 1—2.5 cm long peduncles along a puberulous axis more or less closely arranged. Pedicels 4—6 mm long, puberulous; calyx nearly glabrous, 6—8 mm long; corolla about 3 cm long, two thirds connate. Disc short, tubular; ovaries 4 (or 3?), stipitate, very narrow, glabrous, style very long and slender.

TYPE.—Peekel 1022.

DISTRIBUTION.—Bismarck Archipelago: New Ireland (Neu-Mecklenburg), Lamekot, Parabina.

ECOLOGY.—A small tree, 6 m tall, in primary forest.

The holotype was lost at Berlin; I have seen no specimens referable to .4. *mucronatum.*

23. Archidendron nervosum De Wit, *sp. nov.*

Ex affinitate A. aruensis *differt tamen petiolo et rachilla sparse patente pubescentibus, glandibus foliorum alte elevatis, racemis usque ad 2 cm longis, pedicellis i—8 mm longis.*

Leaves 1-jugate; petiole about 11cm long, like the 20—30 cm long rachillae thinly pubescent with spreading hairs, rachillae shallowly grooved; leaflets 4—5 pairs, the lowest pair usually a single leaf, ovate to obovate, unequal-sided, up to 20 cm long and 6—10 cm wide, glabrous except on part of the nerves on the lower surface which are thinly puberulous, base rounded to subacute or retuse, top acuminate, nerves numerous and strongly developed; glands, saucer-shaped, strongly raised, on top of petiole, base of rachilla, and between petiolules. Stipules not seen.

Raceme simple, 1.5—2.5 cm long, puberulous. Bracts deflexed, linear, 2 mm long, bracteoles 5 mm long, linear-acute, puberulous. Pedicels slender, glabrous, 4—8 mm long; calyx cupular, lobed, 5 mm long, f ugaciously sparsely puberulous; corolla broadly cylindrical, 6—8-lobed, glabrous,

15—17 mm long. Stamens 3.5 cm long, half connate, the tube adherent to the corolla. Disc slightly raised. Ovarial remnants uncertain.

TYPE.—Eeccari, Piante delle Isola Aru, s.n.; Kew Herb., holotype.
DISTRIBUTION.—Moluccas: Aru Archipelago (Wokam).

Only the type (a male plant) is known, collected by O. Beccari in March 1873, on Vokan (or Wokam), the northermost island of the Aru group.

The hollow twigs and the strongly developed glands suggest that the species is myrmecophilous; glands are also found on the branches at the insertion of the leaves.

Archidendron nervosum is a close ally of *A. aruense* but differs by its hairier leaf-axes and strongly raised, more numerous foliar glands. The inflorescence is much shorter and the flowers much less numerous; the calyx is much larger, the corolla wider and more fleshy, the stamens are decidedly shorter and more numerous, and the pedicels much longer.

The bracteoles and bracts often bear nectaries, and these occur also on the branches near the insertion of the leaves. In one flower, apparently attacked by some insect, I found five ovaries, apparently half-developed, possibly caused by some stimulus induced by the insect. I observed the same phenomenon in male specimens of *A. aruense*.

A specimen collected by Buwalda (no. 5294, "pansul," on Pulau Kobroor, Djierlaaj near Selibatabata, in old secondary forest) probably belongs here.

24. ARCHIDENDRON OBLONGUM (Hemsl.) De Wit

Hansemannia oblonga Hemsley *in* Kew Bull. 1892: 125. — *Archidendron oblongum.* (Hemsl.) De Wit *in* Bull. bot. Gdns Buitenz. Ill 17: 269. 1942.

Leaves 1—2-jugate; young parts glandular-rusty-puberulous; petiole 3—4 cm long, glabreseent; rachillae 15—20 cm long, puberulous, glabrescent; leaflets 4—5 pairs, strongly accrescent, very thin, early glabrous but midrib at first on lower rusty-glandular-puberulous, narrowly oblong, up to 20 cm long and less than 7 cm wide, more or less unequal-sided, top acute to subacuminate. base more or less rounded; petiolules about 2 mm long, glandular-puberulous but soon glabrescent; glands large but flat and only in young leaves partly raised. Stipules early caducous, not seen.

Inflorescence about 20 cm long, densely flowered, a simple raceme; axis stout, glandular-puberulous. Pedicels 8—15 mm long, rusty tomentose; calyx cupular, deeply 3-lobed, rusty tomentose; corolla 4-lobed, about 1 cm long, thickish, densely tomentose outside. Stamens about 1.5 cm long. Ovaries 3—5, nearly sessile, densely villose; styles about 0.5 cm longer than the stamens.

TYPE.—Comins 102; Kew Herb., holotype.

DISTRIBUTION.—Solomon Islands: Malaita, San Christoval, Guadalcanal.

LOCAL NAME.—Lame-lame (Malaita, Guadalcanal).

ECOLOGY.—Comins described this species on Malaita as a handsome tree, overhanging water up a creek; the flowers were a rich orange. The same collector noted of his San Christoval specimen (no. 304) that the flowers were yellow. It flowered in March. F. S. Walker and C. T. White collected it near the Hebo River on Malaita, in secondary rain-forest. It was a 23 m tall tree, with small buttresses, brown bark roughened by numerous lenticels; a "leguminous" odour was noticed when cut. On Guadalcanal (Beaufort Bay, Kombau River), in riverine rain-forest, Walker found it as a nearly 40 m tall tree, with plank-like buttresses up to 2.5 m high. The bark was yellow brown with prominent, corky lenticels tending to form raised, longitudinal lines. A detailed description of bark and wood accompanies Walker's specimen (B.S.I.P. no. 248).

25. ARCHIDENDRON PACHYCARPUM (Warb.) De Wit

Hansemannki pachyarpa Warburg *in* Bot. Jb. 13: 333. 1891. — *Archklendron jmchyearpum* (Warb.) De Wit *in* Bull. bot. Gdns Buitenz. Ill 17: 269. 1942.

Leaves glabrous, probably 1-jugate, petiole about 25 cm long, with small, not raised glands; rachillae 30 em long, only locally with some minute puberulous hairs, mucronate; leaflets 4(—5?) pairs, lanceolate, 13—16cm long, 5—6 cm broad, glabrous, top shortly acuminate; petiolules 6—8 mm. Stipules persistent, more or less falcate, about 1 cm long.

Inflorescence a (simple) 2 cm long raceme. Pedicels 2 mm long; calyx 5—7 mm long, shallowly dentate, cup-shaped, glabrous; corolla glabrous, about 18 mm long (lobes about 9 mm, tips thickened, more or less fleshy), not narrowly tubular but widely campanulate. Filaments 4—5 cm long. Reduced ovaries 3—6; style 1—2 mm long; stigma small, knob-shaped. Pods 7—9 cm long, basal part rugose, stalk-shaped, 2.5 cm long, upper part cylindrical, apparently not dehiscent, containing 5 oblong, glossy brown seeds, separated by up to 5 mm thick septs.

TYPE.—Warburg 20324; Wroclaw Herb., lectotype.

DISTRIBUTION.—North-East New Guinea: Constantinhafen.

ECOLOGY.—In coastal forest.

Apparently Warburg collected flowers and leaves of a male plant, at least the only remaining isotype (lectotype) preserved at Wroclaw is male. As he described also the pods (now lost) it would be interesting to know whether Warburg obtained a pod from the same plant or found it on a neighbouring individual. See also notes sub *A. gogolense* and sub *A. ledermannii*.

26. ARCHIDENDRON PARVIFLORUM Pulle

Archidendron parviflorum Pulle *hi* Nova Guinea 8: 370. 1910; De Wit *hi* Bull, bot. Gdns Buitenz. Ill 17: 264. 1942, in nota sub A. brevipes.

Archidendnm graciliflоruvi Harms *in* Bot. Jb. 55: 42. 1917.

Archidendron warenense De Wit *in* Bull. bot. Gdns Buitenz. III 17: 264. April 1942, noraen prov. in nota sub A. bievipes; Kanehira & Hatusima *in* Bot. Mag., Tokyo 56: 359 *fig. 3.* Aug. 1942.

Leaves 1-jugate, petiole 20—25 cm long, puberuloua, mucronate, in the upper part grooved; rachillae 25—40 cm long, puberulous, mucronate, grooved to angular; leaflets 4—6 pairs, first pair often a single leaflet, elliptic to elliptic-oblong, unequal-sided, up to 20 cm long and 4—7 cm wide, glabrous but the nerves on both surfaces minutely puberulous, top (long) acuminate; petiolules puberulous, short; glands raised, large to medium-sized, on base and top of petiole and between petiolules. Stipules more or less subulate, falcate, 5—8 mm long, caducous.

Raceme branched, 1.5 cm long, sparsely minutely puberulous, slender. Bracts and bracteoles minute, caducous, reflexed. Pedicels slender, about 5 mm long, glabrous or with a sparse minute puberulousness; calyx about 2 mm long, glabrous, widely cupular, entire to aubdentate; corolla 7—9 mm long (lobes about 3 mm), thin, corollar tube adnate to the staminal tube. Stamens 18—20 mm long. Ovaries slightly longer than the stamens, 2—5; stigma inconspicuous. Pods about 10 cm long, over the seeds 12 mm wide, between the seeds constricted; seeds ellipsoid, 1cm long.

TYPE.—Versteeg 1781; Herb. Bogoriense, holotype.

DISTRIBUTION.—Netherlands New Guinea: Lorentz River (Noord River) near Bivouaq Island; Andai; Waren (south of Manokwari).

ECOLOGY.—In marshy forest; flowers and fruits in October; pods fiery red.

I have suggested previously (De Wit, *I.e.)* that *A. parviflorum* might be reduced to the synonymy of A. *brevipes.* At present it seems better to me to keep *A. parvifloruni* as a related species distinguished from *A. brevipes* by its stronger foliar glands, different stipules, slender, more glabrous inflorescence, decidedly shorter and wider calyx, shorter corolla and stamens, and much smaller pods and seeds. The type specimen has both bisexual and male flowers on a single tree.

O. Beccari collected a fine specimen (Piante Papuane 756) in flower September 10, 1872 (Andai); he noted that the pods were red inside.

Var. longipes De Wit, *var. nov.*

Ab *A. parvifloro* typico differt foliolis maioribus, ad 12 cm latis, pedicelis circa 10 mm longis, gracilibus, racemis simplicibus (an semper?)

TYPE.—Clemens 141; Herb. Lugd. Bat., holotype.

DISTRIBUTION.—North-East New Guinea: Morobe district, Sattelberg.

The variety shows affinity to *A. brevicalyx.* The type has large, raised, foliar glands at the base and top of the petiole and between the petiolules.

27. ARCHIDENDRON SESSILE (Scheffer) De Wit

Pithccolobium {Clypeavia) sessile Scheffer *in* Ann. Jard. bot. Buitenz. 1: 22. 1876. — *Albizzia sessilis* (Schett.) F. von Mueller, Deser. Not. Pap. PI. 1: 24. 1876. — *Ai-chidendron sessile* (Scheff.) De Wit *in* Bull. bot. Gdns Buitenz. Ill 17: 270. 1942.

Leaves glabrous, 3-jugate (on the female plant); rachis about 60 cm long, terete, and slightly grooved, with large, suborbicular, raised glands; leaflets 3—4 pairs, sessile, unequal-sided, ovate to ovate-oblong, 15—20 cm long and 8—9 cm wide, glabrous, pallid yellow-green when dry, base (broadly) acute, top acuminate to caudate. Stipules early caducous.

Inflorescence a short, sturdy, glabrous panicle, less than 1 cm long; flowers in small clusters, nearly sessile. Bracts linear, about 2 mm long. Calyx cylindrical, loose-papery, glabrous, in the female greatly widening towards the mouth, 14—20 mm long; corolla much exserted, about 2.5 mm long, papery, with long, narrow, revolute lobes, tube entirely free from the staminal tube, glabrous. Stamens represented in female flowers by 4—5, about 1 mm long, rounded, flat bodies round the ovaries. Ovaries 2 (in female plants), glabrous. Pods apparently not deeply constricted, glabrous, about 10 cm long.

TYPE.—Teysmann 7834; Melbourne Herb., lectotype.

DISTRIBUTION.—North-West New Guinea: Andai.

I appoint the specimen representing Teysmann 7834 preserved in the Melbourne Herbarium as the lectotype as it is much better than the specimen preserved in the Herbarium Bogoriense. The Melbourne specimen has a number of flowers whereas the Bogor specimen is without. Teysmann's plant is female.

28. ARCHIDENDRON SOGERENSE Baker f.

Archide-ndron sogerense Baker f. *in* J. of Bot. 61 (Suppl.) : 12. 1923.
Archidendron papuammi Merrill & Perry *in* J. Arn. Arb. 23: 392. 1942.

Leaves at least 2-jugate; petiole plus rachis 20—30 cm long, having flat glands between the rachillae; rachillae 6—11 cm long, grooved, with depressed glands between the petiolules, produced into a short mucro; leaflets 2—3 accrescent pairs, oblong or elliptic, unequal-sided, 8—12.5 cm long and 3—5 cm wide, base acute, top acute; petiolules 3 mm long. Stipules unknown.

Raceme with few, very short (2—3 mm long), lateral branches (peduncle stout), glabrous, smooth, 4—5(—7) cm long. Bracts not seen. Pedicels stout, glabrous, 3—4 mm long; calyx 7—8 mm long, glabrous, shallowly 4—5-dentate, cylindrical; corolla 1.5—2 cm long (lobes long, revolute, papery). Stamens about 3.5 cm long, in the upper part in about 5 semi-coherent bundles, tube adherent to the corolla. Ovaries 5.

TYPE.—Forbes 615; Kew Herb., holotype.

DISTRIBUTION.—New Guinea (Papua): Sogere; Vailala River, Ihu.

ECOLOGY.—A white-flowered, 8 m tall tree, leaves very dark green.

Baker stated that his *A. sogerense* was closely related to *A, helium* but different in "that the petals are higher connate and there are mostly 5 ovaries." I suggest that the calyx and corolla are considerably shorter, the leaves smaller. I reduced *A. papuanum* to the synonymy of *A. sogerense* after examinating the holotypes. *A. papuanum* was based on Brass 1110 (Herb. Arn. Arb.). Obviously, *A. sogerense* is very close to *A.hicyi.*

29. AECHIDBNDRON SOLOMONENSE Hems!.

Archidendrnn soltymonense Hemsley in Hook. Ic. PI. 28: *pi. 2735.* 1902.

Leaves 2- (or more-?) jugate, entirely glabrous; petiole plus rachis more than 15 cm long, glands not raised; rachillae up to 25 cm long, with small, inconspicuous, sunken glands; leaflets 3—5 pairs, ovate, thin, distinctly unequal-sided, 8—12 cm long and 5—6 cm wide, base often strongly oblique, top slightly acuminate; petiolules about 4 mm long.

Raceme with few, extremely short branches, glabrous, sturdy, 7.5—10 cm long, few flowered. Pedicels glabrous, sturdy, 5—6mm long; calyx broadly cylindrical (base truncate), glabrous, broadly lobed, 7—8 mm long: corolla 2.7—3 cm long (lobes long, narrow, acute), glabrous. Stamens 5—6 cm long; staminal tube adnate to the corollar tube. Ovaries about 8, glabrous, at their base surrounded by a slightly raised disc; styles somewhat longer than the filaments; stigma small, capitate. Pods 1—5 from a single flower, lively red, curved, up to 15 cm long and about 2 cm broad, irregularly lobed; seeds 2—5, black.

TYPE.—Comins 249; Kew Herb., holotype.

DISTRIBUTION.—Solomon Islands: Uluwa (Madoa), "one tree near a village"; San Christoval (Star Harbour).

LOCAL NAME.—Ai mahai (also used for *Pongamia glabra* in the Solomons) .

ECOLOGY.—A tree, up to 6 m tall. The Rev. R. B. Comins wrote: "the peduncles of the flowers rise out of the solid stem in quite an abrupt way. and there are 5—6 flowers on one head- The pods were a handsome bright red, and the seeds black or nearly S0."

30. Archidendron trifoliolatum De Wit, *nov. sp.*

Foliis 1-jugatis, foliolis 2-jugatis (jugo primo ex foliolo singulo consistente), inflorescentia laze racemosa graciliore et floribus parvis distincta. Probabiliter ex affinitate A. brachycarpi *sed foliolis 2-jugatis, minoribus, angustioribus, pedicellis longioribus et floribus lutescentibus differt.*

Branchlets light brownish-grey. Leaves glabrous, 1-jugate; petiole 2.5—4 cm long, terete, produced into a tardily caducous, about 3 mm long mucro; rachillae 4.5—6 cm long; leaflets 2 (sometimes 1) pairs, distinctly unequal-sided, ovate-oblong to almost lanceolate, pallid on the upper surface, 8—12 cm long and 3.5—4.5 cm wide, laxly reticulate on both surfaces, base obliquely acute to cuneate, top smoothly subacuminate. Petiolules short.

Inflorescences along twigs and on the ultimate branchlets (axillary), often fascicled, laxly branching, short (2—4 cm), open; flowers somewhat

closer at the top of the peduncles; axes very slender, with some sparse hairs and minute glands. Pedicels glabrous or nearly so, about 4 mm long", calyx more or less entire or indistinctly shallowly lobed, cylindrical, slightly longer than the pedicel, (nearly) glabrous; corolla 4-lobed (lobes acute, rather narrow, top distinctly thickened), glabrous, about half connate, 12—14 mm long. Stamens less than half connate; connective very minutely rough. Ovaries reduced, abortive, 2, on a small, more or less pulvinate disc.

TYPE.—Carr 13482; Herb. British Museum, holotype.G

DISTRIBUTION.—New Guinea (Papua): Boridi.

ECOLOGY.—A shrub in the forest, about 4 m tall, at about 1250 m altitude, flowering in November. In Carr 14463, collected in October near the type locality, the ovaries are entirely reduced. The collector noted that this number was from a tree, about 6.5 m tall, in the forest at about 1350 m altitude, with green flowers and white stamens. Only male plants are known so far.

As a rule, the lower pair of leaflets is represented by a single leaflet, the other not being developed or caducous, which suggested the epithet 'trifoliolatum.'

This may be allied to *A. brctchycarpum* Harms, but the latter is a species of the coastal plain in New Ireland, whereas the present species was found above 1200 m altitude in East New Guinea.

31. ARCHIDENDRON VAILLANTH (F. Muell.) F. Muell.

Pitheeolobium vaillantii F. von Mueller, Fragm. Phytogr. Austr. 5: 60. 1S65. — *Archidendron vaillantii* (F. Muell.) F. von Mueller, Fragm. Phytogr. Austr. 5: 60. 1865; Taubert in Engl. & Pr., Nat. PllFam. 3: 3. Abt.: 103 *fig. S8A-D.* 1891. — *Albizzia vaillantii* (F. Muell.) F. von Mueller, Ic. Austr. Sp. Acacia, Dec. 13: *[pi. 7*]. 1888. — *Affonsea vaillantii* (F. Muell.) O. Kuntze, Rev, Gen. PI. 1: 158. 1891.

Leaves 1-jugate; rachillae about 25 cm long, grooved, stout, mucro short; leaflets 3—4 pairs, broadly ovate, very unequal-sided, strongly nerved, subcoriaceous, glabrous except for some sparse puberulous hairs locally on either surface of the midrib, base broad, very unequal-sided, top broad-acute; petiolules stout, not quite glabrous, about 4 mm long; glands between the petiolules strongly raised.

Raceme simple; axis stout, puberulous, about 3cm long, carrying 5—7 flowers crowded at the top. Bracts thick, fleshy. Calyx broadly cylindrical, 8—12 mm long, striate, densely appressed puberulous, margin nearly entire; corolla tomentose outside, about 2.5 cm long, sparsely pubescent inside, fleshy, lobes long, acute. Stamens about 6 cm long. Ovaries S—15, appressed shortly hairy; style pubescent in lower half, exceeding the stamens. Pods thick, with raised sutures, more than 10-seeded, about 10 cm long, glabrous.

TYPE.—Dallachy *s.n.;* Kew Herb., holotype.

DISTRIBUTION.—Queensland: Rockingham Bay (Seaview Mountain Range).

ECOLOGY.—This is described as a splendid tree, about 15 m tall, bark smooth, wood hard.

Species excludendae vel imperfecte notae

Archidendron harmsii Von Malm = *Pithecellobium sp. (cf.* De Wit *in* Bull. bot. Gdns Buitenz. III 17: 266-267. 1942).

ARCHIDENDRON SP. NOV.

Specimen *Archidendron* speciei novae distinctae tamen imperfecte notae in Herbario Melbournensi servatur: antheris filamentisque hirsutis; foliolis ad 17.5 cm longis, 7.5 cm latis, subsessilibus, glabris, sed inferne consperse puberulis costa et nervis lateralibus, basi rotundatis tamen proxime petioluli conspicue inaequalibus, apice acutis; legumine toto dense et alte pustulato.

Sir W. MacGregor in 1889 collected on the Louisiades a new species of *Archidendron* of which some scraps are preserved in the Melbourne Herbarium. The material certainly belongs to an undescribed species—of which an analysis is given above—to which I wish to draw attention although I have refrained from publishing an epithet on account of the inadequate material. It is preferable to base a new binomial on a satisfactory holotype.

ARCHIDENDRON KUBARYANUM (Warb.) K. Schum. & Laut.

Archidendron kubaryanum (Warb.l Lauterbach & K. Schumann *apttd* K. Sehum. & Laut., Fl. deut. SchGeb. Siidsee 344. 1901, an isonym of *Pitheeellobium kubaryanum* Warburg *m* Bot. Jb. 13: 335. 1891 *(cf.* De Wit m Bull. bot. Gdns Buitenz. III 17: 267. 1942).

It is uncertain whether *A. kubaryanum* belongs in *Archidendron;* in literature I have never seen evidence and the holotype was destroyed at Berlin. There seem to exist no duplicates. Assuming that it really belongs in *Archidendron,* it might be the correct name for *A. fallax* Harms, but the type of *A. fallax* has also been lost and in this case, too, there are no duplicates. I expect that this question can never be solved and consider it best to reject *A. kubaryanum* and to maintain *A. fallax,* which is indubitably a species of *Archidendron* and was well described.

ARCHIDENDRON TENUIRACEMOSUM Kaneh. & Hat.

Archidendron Icmiiracemosum Kanehira & Hatusima *in* Bot. Mag., Tokyo 56: 857. 1942.

The general appearance of this species, based on Kanehira & Hatusima 1325, is suggestive of *Archidendron* but the flowers have only one ovary. It may represent a distinct species of *Pithecellobium.*