PLANTAE PAPUANAE ARCHBOLDIANAE. I*

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THIS PAPER is the first one of a series planned to include data on the assembled Papuan material available at the Arnold Arboretum. The intention is to include, under various natural groups, descriptions of apparently hitherto undescribed species, records of those previously described from other regions but, so far as our records show, not before reported from the particular geographical area herein noted, and nomenclatural notes. Most of the data appertain to material assembled by the Richard Archbold Expeditions, through the activities of Mr. L. J. Brass who has served as botanist for the first three New Guinea expeditions. The very extensive collections assembled during the third expedition, which operated in the Netherlands New Guinea in 1938, have not yet been arranged for study. We have included data on other collections available to us, not only from New Guinea but also from the earlier L. J. Brass and S. F. Kajewski collections from the Solomon Islands. Our work has been greatly facilitated through the courteous loan of the extensive card index to New Guinea species prepared during the past six years at the New York Botanical Garden, covering the known literature appertaining to that large island. The types of the new species herein described, unless otherwise stated, are deposited in the herbarium of the Arnold Arboretum.

ULMACEAE

***Parasponia paucinervia* sp. nov.**

Arbor parva, usque ad 7–8 m. alta; ramulis novellis subsericeis vel breviter villosis, demum glabris; foliis lanceolatis, 6–8.5 cm. longis, 2–3 cm. latis, sensim acuminatis, basi obtusis vel subrotundatis et interdum leviter inaequalibus, margine basi excepta dense crenato-serratis, supra asperulis, costa media nervisque primariis impressis, $\pm$ strigillosis, subtus costa, nervis venulisque strigosis ad strigillosis, nervis basalibus 3, lateralibus supra basin utrinque 1–2 valde ascendentibus; petiolo 7–11 mm. longo, dense subadpresse pubescente; stipulis in unam intrapetiola rem bicuspidatam extus praesertim in costis adpresse pubescentiam $\pm$ 4 mm. longam connatis; cymis axillaribus; floribus ♀

*Botanical Results of the Richard Archbold Expeditions.

tantum visis; perianthii laciniis 1 mm. longis, oblongis, obtusis, ciliolatis, puberulis; ovario obovoideo, apice lato, basi attenuato; stigmatibus 2, incurvis, intus pubescentibus; toro piloso; drupis parvis (2 mm. longis), ovoideis, stigmatibus marcescentibus coronatis, basi perianthio suffultis.

SOLOMON ISLANDS: Guadalcanal Island, *Kajewski* 2590 (type), April 26, 1931, rain-forest (rough barren country), at 200 m. alt., common (small tree up to 7 or 8 m. high; fruit about $\frac{3}{4}$ grown on the specimens).

This species is very much like *Parasponia parviflora* Miq. but differs in the fewer lateral nerves; the first lateral nerve above the base arises from the midrib about half way to the apex of the leaf. In *P. parviflora* Miq. the lateral nerves are twice as many and are rather evenly distributed along the midrib of the leaf. The specimen here described has only ♀ inflorescence.

***Gironniera grandifolia* sp. nov.**

Arbor gracilis, 12–15 m. alta; ramulis glabratiss; foliis ellipticis, 30–38 cm. longis, 13–16 cm. latis, apice obtusis? (apicibus foliorum deficientibus in specimine viso), basi rotundatis, inaequalibus, margine integris vel subdenticulatis, penninerviis, supra glabris, subtus nervis exceptis glabris; nervis $\pm$ adpresso-hirsutis, lateralibus 16–18, supra vix impressis, subtus prominentibus, reticulato-venosis; petiolo $\pm$ 8 mm. longo; stipulis 2, lineari-lanceolatis, adpresso-pilosis; inflorescentiis compactis (♀ 3 cm. longis, 4 cm. latis; ♂ immaturis, vix 1 cm. diametro), axillaribus vel lateralibus; floribus ♂ (alabastris immaturis tantum) sessilibus; staminibus 5, pistilli rudimento lineari-oblongo; floribus ♀ sessilibus; perianthio persistente, laciniis inaequalibus, acutis, vix 1 mm. longis; stylo $\pm$ 2 mm. longo; stigmatibus filiformibus, intus breviter velutinis, usque ad 17 mm. longis; drupis rotundato-ovatis, lenticularibus, minute strigillosis, (immaturis) 5 mm. longis, stylo stigmatum basique coronatis; putamine subrotundo (4 mm. longo, 5 mm. lato), leviter obliquo.

SOLOMON ISLANDS: San Cristoval Island, Magoha River, *Brass* 2731 (type), 2728, August 25, 1932, rain-forests at 150 m. alt., common (slender loosely branched tree 15 m. tall; bark brittle, pale brown; leaves spreading horizontally, glossy above; flower brown).

This species is most like *Gironniera celtidifolia* Gaudich. but the leaves are larger and scarcely at all dentate near the apex, the inflorescence is somewhat less compact, the floral bracts are shorter and broader and only short-pilose as compared to the hirsute ones of the latter species; further the style and the stigmas in *G. grandifolia* are relatively longer

than those of *G. celtidifolia* Gaudich. (Gaudichaud's plate of *G. celtidifolia* shows stipules at more than one node as if persistent; the only collection of this species [?] which has definitely persistent stipules is from Ponape Island [*Kanehira* 797]; in this specimen also the leaf-bases are oblique and $\pm$ auriculate).

Gironniera subaequalis Planch. Ann. Sci. Nat. III Bot. **10**: 339. 1848,
? var. ***papuana*** J. J. Smith, Nova Guinea **8**: 892. 1912.

BRITISH NEW GUINEA: Lower Fly River, east bank opposite Sturt Island, *Brass* 8174, October, 1936, rain-forest of dry inland ridges (sub-stage tree 16–20 m. tall); Oroville Camp, Fly River, *Brass* 7433, August, 1936, common in rain-forest undergrowth (tree 6–7 m. high).

Both collections are in practically the same stage of development, yet the branchlets of *Brass* 7433 are spreading-hirsute while those of *Brass* 8174 are appressed-hirsute. In both, the leaves are predominantly ovate with a rounded and slightly oblique base; the apex of the older leaves is almost obtuse then abruptly produced into a slender acumen 4(–5) mm. broad at the base and 1.5 cm. long.

The species ranges from Ceylon to southern China, Malaysia, the Philippine Islands to Fiji. There is so much variation in the material that we have very hesitantly assigned our collections to the variety reported from New Guinea; however, a record of these two collections may be helpful to someone making a special study of the group. Without adequate material for comparison we have been unable to distinguish clearly the differences between *Gironniera subaequalis* Planch. and *G. amboinensis* Lauterb.; hence, we are somewhat hesitant in making this determination.

Gironniera celtidifolia Gaudich. var. ***Hombroniana*** Planch. in DC. Prodr. **17**: 207. 1873.

SOLOMON ISLANDS: Ysabel Island, Maringe, *Brass* 3191, November 23, 1932, limestone hills (much branched tree 6–8 m. tall; leaves stiff and slightly scabrous); Malaita Island, Asubiah, *Kajewski* 2343, December 11, 1930, rain-forest (fruit black when ripe).

These collections seem to be sufficiently different from the typical form of the species to warrant giving them some particular designation. We have placed them under the above variety which was described from the Solomon Islands.

Gironniera retinervia sp. nov.

Arbor 10–15 m. alta; ramulis sparse strigosis; foliis ellipticis, acumina-
tis, basi inaequalibus obtusisque, 7–13 cm. longis, 3–5 cm. latis,

margine denticulatis vel subintegris, supra glabris, sub lente reticulatis, subtus praecipue costa media nervisque primariis sparse strigillosis, valde reticulatis; petiolo $\pm$ 7 mm. longo, strigilloso; stipulis linearibus, 1.5 cm. longis; inflorescentiis δ axillaribus, (immaturis) compactis; staminibus 5; inflorescentiis φ axillaribus, plerumque geminatis, simpliciter racemosis, (in specimine) usque ad 3.5 cm. longis; floribus sessilibus vel breviter pedicellatis; perianthio persistente, laciniis 4(?), late ovatis, vix 1 mm. longis; drupis (immaturis) scabridis, rotundato-ovatis (4 mm. longis, 5 mm. latis), lenticularibus, stylo stigmatum basique coronatis; stylo 1.5 mm. longo; stigmatibus 2, filiformibus, circiter 8 (?) mm. longis.

SOLOMON ISLANDS: Bougainville Island, Kupei Gold Field, *Kajewski* 1646 φ (type), April 8, 1930, rain-forest, at 950 m. alt., common; San Cristoval Island, Hinuahaoro, *Brass* 2873 δ , September 16, 1932, mountain-forests, at 900 m. alt., common (large shrub; the lower surface of the leaves scabrous, the upper shining).

The general habit of this species is somewhat similar to that of *Gironniera subaequalis* Planch., but the leaves are smaller, very oblique at the base and strongly reticulate on both surfaces, and the style and stigmas are shorter than in the latter species.

NYCTAGINACEAE

Ceodes umbellifera J. R. & G. Forster, Gen. Plant. 142, *t.* 71. 1776; Skottsberg, Svensk Bot. Tidskr. **30**: 723. 1936.

SOLOMON ISLANDS: Bougainville Island, Kugumaru, Buin, *Kajewski* 1990, common in rain-forest at 150 m. alt. Malay Archipelago to Polynesia including Hawaii, but not specifically reported previously from the Solomon Islands.

Ceodes corniculata (Bargagli-Petrucci) comb. nov.

Pisonia corniculata Bargagli-Petrucci, Nuov. Giorn. Bot. Ital. II. **8**: App. 615. 1901.

Calpidia corniculata Heimerl, Oesterr. Bot. Zeitschr. **63**: 283. 1913.

BRITISH NEW GUINEA: Fly River, 528 Mile Camp, *Brass* 6789, May, 1936, at 80 m. alt., characteristic forest undergrowth on muddy banks of backwater creeks cutting the river flood-banks (tree of open, rather weak, branching habit, attaining 5–7 m.; leaves glabrous, of soft texture). Described from New Guinea, and reported by Heimerl from Batjan in the Moluccas.

With only the original description of this species for comparison, we

hesitate to assign this collection (with ♂ flowers and immature fruit) elsewhere, although some leaves are much larger (up to 33 cm. long, 11 cm. broad) than in the original, and the lateral nerves are only 7–8.

Ceodes longirostris (Teysm. & Binn.) comb. nov.

Pisonia longirostris Teysm. & Binn. Nat. Tijdschr. Nederl. Ind. 25: 401. 1863; Valeton, Ic. Bogor. 1: 69, t. 21 (fig.), 22 (descr.). 1897.

Calpidia longirostris Heimerl, Oesterr. Bot. Zeitschr. 63: 287. 1913.

Pisonia triandra Bargagli-Petrucci, Nuov. Giorn. Bot. Ital. n. ser. 8: App. 610. 1901.

Pisonia Beccariana Bargagli-Petrucci, op. cit. 612.

Calpidia triandra Heimerl, op. cit. 289.

BRITISH NEW GUINEA: Fly River, 528 Mile Camp, *Brass* 6639, May, 1936, occasional in moist deeply shaded forest (sparsely branched spreading shrub $\pm$ 2 m. high; leaves clustered at intervals along the branches; masses of slender rootlets produced in leaf-axils which collect humus from falling leaves of forest trees; flowers small, brown; fruit [young] $\pm$ 40 cm. long, viscid); Palmer River, 2 miles below Black River Junction, *Brass* 7196, July, 1936, at 100 m. alt., gregarious in practically pure stands on points of low ridges abutting on river-flat (erect shrub, branched or unbranched, $\pm$ 1 m. high; flowers brown; fruit viscid); Lower Fly River, east bank opposite Sturt Island, *Brass* 8036, October, 1936, occasional in flood plain river-forest; Central Division, Dieni, Ononge Road, *Brass* 3912, April 29, 1933, at 500 m. alt., in rain-forest (slender tree 20 m. tall; leaves dull, thick, margin narrowly recurved; flowers brown). Described from Boeroe in the Moluccas, apparently common in New Guinea.

In the collection *Brass* 8036 some leaves are 80 cm. long and 19 cm. broad, the apex in the leaves of all the collections is variable, some leaves being rounded whereas others are obtuse to bluntly acuminate.

From the Solomon Islands we have two very similar collections with somewhat smaller leaves and young flowers only: Bougainville Island, Kieta, *Kajewski* 1612, March 29, 1930, rain-forest, at 100 m. alt., common (shrub up to 3 m. high); Ulawa Island, *Brass* 2966, October 5, 1932, rain-forest on slopes of central mountain, at 200–300 m. alt., common (small, crooked, branched tree; leaves fleshy; flowers brown).

On account of the similarity in flowering specimens (indicated by Valeton, Bot. Jahrb. 52: 103. 1914) of *Ceodes longirostris* (Teysm. & Binn.) and *Pisonia spathiphylla* K. Schum., and the lack of corresponding fruiting material from the Solomon Islands, we have hesitated to give these more than a provisional designation.

Ceodes urocarpa sp. nov.

Arbor parva; ramulis griseis, glabris; foliis ellipticis ad obovato-ellipticis, (in specimine) 12–31 cm. longis, 6–11 cm. latis, paullo supra dimidiam latissimis, basim versus cuneatim angustatis, apice obtusis ad acutis, chartaceis, in sicco supra nigrescentibus, subtus pallidioribus; nervis primariis utrinque 8–11, undique perspicuis, intra marginem arcuatim confluentibus; petiolo 1.2–2.5 cm. longo; inflorescentiis terminalibus axillaribusque, laxe paniculatis, divaricate ramosis, foliis brevioribus; pedunculo 1–3 cm. longo, glabrato; ramulis ultimis et pedicellis floribusque indumento pulverulento brunneis; floribus ♂ (immaturis) ad apicem ramulorum ultimorum umbellatim congestis; perianthio $\pm$ 3 mm. longo, 5-lobulato; staminibus 4, tubo perianthii aequilongis; filamentis glabris; antheris suborbicularibus; stylo filamentis fere aequilongo; stigmatibus vix fimbriato; floribus ♀ non visis; fructibus lanceolato-teretibus, basi in stipitem paullo productis, apice in rostellum longissimum filiformem in sicco vix sulcatum abientibus, summo apice perianthii limbo vix aucto coronatis; fructu cum stipite rostelloque ad 60 cm. longo, immaturo sine rostello 2 cm. tantum, supra basim 1 cm. lato; pedicello fructifero 1–1.5 cm. longo.

SOLOMON ISLANDS: Ulawa Island, *Brass* 2972 (type), October 6, 1932, common in littoral rain-forests (small trees with smooth shining somewhat fleshy leaves; the long green tail-like appendage of the fruit very viscid. Quite large birds are frequently entangled and held by the viscid fruit).

Particularly in the long rostellate fruits, but also somewhat in the outline of the leaves, the species suggests *Ceodes longirostris* (Teysm. & Binn.), but it appears to be quite distinct by the much narrower leaf-base and the much longer petiole.

LEGUMINOSAE

(E. G. BAKER)

Adenanthera novo-guineensis Bak. fil. sp. nov.

Arbor parva $\pm$ 14 m. alta ad *A. pavoninam* L. accedens, differt primo intuitu pedicellis brevioribus hirtis, seminibus fere omnino rubris $\pm$ 5 mm. longis, conspicue minoribus, leguminibus contortis nec falciformibus, petalis brevioribus. Folia bipinnata 23–27 cm. longa; pinnae 4–5-jugae, 10 cm. longae; foliolis alternis utrinque 5–7 brevissime petiolulatis, oblongis vel ovato-oblongis, apice obtusis vel emarginatis, basi rotundatis, 15–28 mm. longis, 10–15 mm. latis, subtus adpresse et sparse pubescentibus. Flores lutei, in multifloros racemos dispositi.

Pedicelli ± 1 mm. longi, hirti. Petala ± 3 mm. longa lanceolata vel oblongo-lanceolata. Stamina exserta. Ovarium hirtum. Legumen oblongo-lineare contortum, ± 10 cm. longum, 13–16 mm. latum, 10–13-spermum seminibus fere omnino rubris levissime apicem versus nigris ± 5 mm. longis.

Type, *L. J. Brass* 8367, collected Nov. 1936 at Gaima, Lower Fly River (east bank), Western Division, British New Guinea; rain-forest outskirts; tree 14 m. high, flowers yellow. Type in British Museum (Natural History). Also: Lake Daviumbu, Middle Fly River, *Brass* 7763; small canopy tree, common in light rain forest.

Differs from *A. pavonina* L. by the shorter pedicels and conspicuously smaller seeds which are nearly all red but just tipped with black; from *A. borneensis* Brace by the blunt apices of the leaves; from *A. Forbesii* Gagnep. by the much larger leaflets and from *A. atosperma* F. Muell., *A. intermedia* Merr., *A. aglaosperma* Alston and *A. microsperma* Teijs. & Binn by the seed being of different shape, only just tipped with black and 5 mm. long.

RUTACEAE

Zanthoxylum torvum F. v. Muell. Fragm. 7: 140. 1871; F. M. Bailey, Queensl. Fl. 1: 205. 1899; Merr. Enum. Philip. Fl. Pl. 2: 327. 1927.

Fagara torva Engler in Engler & Prantl, Nat. Pflanzenfam. 3(4): 119. 1895; Merr. Interpret. Herb. Amboin. 288. 1917.

BRITISH NEW GUINEA: Central Division, Ononge Road, Dieni, *Brass* 3833, April 21, 1933, at 500 m. alt., rain-forest (very slender, high climbing liane with very glossy pinnate leaves paler beneath; fruit red; seeds shining, black); Lower Fly River, east bank opposite Sturt Island, *Brass* 7983, October, 1936, rain-forest canopy (liane common on drier ridges; stem and branches thorny).

These specimens are a good match for the collections from Amboina. The lower surface of the leaves tends to be pubescent along the nerves, and the leaf-serrations are somewhat variable. The species has been found in Australia, Amboina, Java, and the Philippines.

Flindersia amboinensis Poir. in Lam. Encycl. Suppl. 4: 650. 1816; C. DC. Monog. Phan. 1: 735. 1878; Merr. Interpret. Herb. Amboin. 291. 1917.

Flindersia radulifera Spreng. Gesch. Bot. 2: 76. 1818.

BRITISH NEW GUINEA: Central Division, Kubuna, *Brass* 5565, November, 1933, at 100 m. alt., common in ridge-forests; Mafulu,

Brass 5339, oak forest, at 1250 m. alt. (heavy boled tree with pale brown, fissured bark; leaves very glossy; flowers small, red); Western Division, Upper Wassi Kussa River (left branch), *Brass* 8634, January, 1937, rain-forest canopy; Lower Fly River, east bank opposite Sturt Island, *Brass* 8032, October, 1936, rain-forest, one of the commoner large trees of dry ridges inland from the river; Lake Daviumbu, Middle Fly River, *Brass* 7517, August, 1936, rain-forest, common.

This species was based on the Rumphian description and plate of *Arbor radulifera* Rumph. Herb. Amb. 3: 201, *t.* 129. 1743, which in turn was based on Amboina specimens (not Ceram as indicated by C. de Candolle). It is cultivated in the Botanic Gardens at Buitenzorg. Hemsley reports a fruit cast up on the coast of Aru Island. It seems probable that it is rather widely distributed in the Moluccas and New Guinea.

Brass describes this as a common spur-buttressed tree of the ridge-forests, 20–30 m. tall, with bark gray-brown to brown outside, yellow within, fissured horizontally and exfoliating in small scales; leaves dark green with pale nerves; flowers red; and fruit (in *Brass* 7517 solitary on peduncles, pendent) 5-valved, valves 11.5–15 cm. long, 2 cm. broad.

Our material seems to correspond fairly well with the description of *Flindersia amboinensis* Poir. Rumphius indicated that the flowers appeared in December, and the fruit-valves were 5–6 inches long. *Brass* 8634 (with flowers) was collected in January. Briefly, the flowers are red; the calyx pubescent; the sepals 5, rounded-ovate, $\pm$ 1 mm. long; the petals obovate-oblong, glabrous, $\pm$ 3.5 mm. long; the filaments shorter than the petals, thickish; the anthers broadly ovate-cordate; the staminodia a little longer than the disc, acute; and the ovary pubescent.

Without examining the actual fruit of *Flindersia papuana* F. v. Muell. from the Fly River, we cannot say whether any of our material represents that species. Both *F. Bennettiana* and *F. Oxleyana* which von Mueller says are "not dissimilar . . . in tubercular roughness," have capsules with large and small tubercles; whereas, the protuberances or tubercles of the fruits in these collections (cited as *F. amboinensis* above) are fairly regular in size, much like those on the fruit-valves of *F. australis* R. Br. but somewhat blunter.

***Flindersia heterophylla* sp. nov.**

Arbor 20 m. alta; ramulis cinereo-fuscis; foliis suboppositis, 1–4-foliolatis, rachi 3–8 cm. longa; foliolis suboppositis, subcoriaceis, 5.5–13 cm. longis, 2–6.8 cm. latis, ellipticis, coriaceis, breviter petiolulatis (petiolulis 2–5 mm. longis), apice abrupte obtuseque breviter

acuminatis vel obtusis, basi cuneatis vel acuminatis, supra nitidis, utrinque glabris, margine integris; costa media utrinque prominula praecipue basim versus; venulis primariis ± 9 , inconspicuis; paniculis amplis; pedunculis secundariis oppositis; ramulis glabratibus; alabastris pubescentibus; floribus rubris; sepalis late ovatis, 0.7 mm. longis; petalis obovato-oblongis, 2 mm. longis, undique pubescentibus; filamentis crassis, 0.8 mm. longis, dorso pubescentibus; antheris cordatis; staminodiis inconspicuis; ovario hirsuto; capsulis ± 5.5 cm. longis; valvis dorso verrucosis, leviter tuberculatis; seminibus ± 4.3 cm. longis, ellipticis, utrinque alatis.

BRITISH NEW GUINEA: Western Division, Wassi Kussa River, Tarara, *Brass* 8495 (type, fruiting branchlet), 8542 (flowering branchlet), December, 1936 and January, 1937, common in rain-forest (canopy tree attaining 20 m., with close brown bark marked with shallow horizontal fissures; wood pale, tough; leaves 1–2–3 or 4-foliolate; flowers red).

Without actual material for comparison, we believe this species is perhaps most nearly related to *Flindersia Brayleyana* F. v. Muell. It differs, however, in its less numerous and more nearly sessile leaflets, different colored flowers, less pointed anthers (cf. Engler & Prantl, Nat. Pflanzenfam. 3[4]: 171, f. 99J–Q. 1895), and more shortly pubescent filaments, as well as in the shorter and inconspicuous staminodia. The capsule also seems to be different; in our species the boundary lines of the incipient tubercles are somewhat indefinite and the surface tends to show irregular rounded ridges or mounds rather than the definite pointed tubercles characteristic of the related species.

***Flindersia brachycarpa* sp. nov.**

Arbor ± 25 m. alta; ramulis cylindricis, atro-fuscis; foliis oppositis vel suboppositis, pari-pinnatis, 8–10-foliolatis, rachi (incl. petiolo) 12–19 cm. longa; foliolis oppositis, subcoriaceis, conspicue petiolulatis (petiolulis 7–9 mm. longis), inaequilateraliter lanceolato-ellipticis, 6–11 cm. longis, 3–4 cm. latis, subacutis, basi rotundato-cuneatis, utrinque glabris, margine integris; venis primariis usque ad 20, supra inconspicuis, subtus perspicuis sed non prominulis; paniculis amplis, pedunculis secundariis oppositis, ramulis pubescentibus; alabastris pubescentibus; sepalis ovatis, ± 1 mm. longis; petalis oblongis, ± 2.5 mm. longis, intus glabris; staminibus brevibus; filamentis 0.4 mm. longis, antheris ovatis, apiculatis; staminodiis 5, 0.4 mm. longis, acutiusculis; disco undulato; capsulis 5.5–6 cm. longis; valvis dorso obtuse et breviter tuberculatis; seminibus ignotis.

BRITISH NEW GUINEA: Western Division, Wassi Kussa River, Tarara, *Brass* 8389 (type), December, 1936, rain-forest (important canopy tree 25 m. tall; stem cylindrical; bark dark, very thick, rough and fissured; wood yellow; rachis of leaves decurrent; flowers white; capsules brown, pubescent).

This species strongly suggests *Flindersia Ifflaiana* F. v. Muell. It differs in having larger leaves with the leaflets strongly oblique at the base and more acute at the apex, and a little larger fruits.

AQUIFOLIACEAE

Ilex cristata sp. nov.

Ramuli cinerei usque gilvi, novelli $\pm$ angulati, fusci, copiose puberuli; foliis coriaceis, 2–3 cm. longis, 0.9–1.3 cm. latis, ovatis, basi late obtusis usque cuneatis, apicem versus paullo angustatis, apice late acuminatis, margine fere integris, apicem versus 2–4-serrulatis, in sicco supra fuscis, subtus pallidioribus et consperse glandulosis, costa media supra canaliculata, subtus prominula; venis primariis obscuris; petiolo 3–4 mm. longo; inflorescentiis in foliorum axillis solitariis vel plerumque racemosis, rachi $\pm$ 5 mm. longa, pedicellis 2 mm. longis, basi bracteatis, bracteis late ovatis, circiter 0.5 mm. longis; sepalis 5, persistentibus; drupis depresso-ovoideis usque subglobosis, circiter 3 mm. diametro, parte inferiore farinacea, stigmate prominulo oblongo (2 mm. longo, 0.5 mm. lato) coronatis, circa 18-pyrenis; pyrenis convexo-trigonis, 1.5 mm. longis, 1 mm. latis (immaturis).

NORTHEASTERN NEW GUINEA: Torricelli-Gebirge, *Schlechter* 20180 (type), September 11, 1909, at 800 m. alt.

The label of the above cited specimen bears the determination *Bulbophyllum quinquelobum* Schlecht.; this is undoubtedly a clerical error as Schlechter's type is no. 20188 of this same series.

A comparison of *Ilex cristata* with the description of *I. pseudo-embelioides* Loes. suggests that our species is closely allied. It differs, however, in having less conspicuous leaf-venation, racemose inflorescences, and a rather distinctive stigma resembling a narrow and slightly elongated crest-like ridge at the apex of the drupe.

Ilex Archboldiana sp. nov.

Arbor usque ad 15 m. alta; ramis dense foliatis, subteretibus (fere angularibus), cineraceis, novellis fuscis et saepe puberulis; foliis valde coriaceis, nitidis, 1.5–3.5 cm. longis, 1–2 cm. latis, obovatis ad ellipticis, basi late subcordatis, apice obtusis vel retusis, interdum mucronulatis, margine integerrimis valde revolutisque, glabris, supra viridibus, subtus

pallidioribus; nervis primariis utrinque 3–4, prominulis vel indistinctis; petiolo circiter 5 mm. longo, minute puberulo, fusco; floribus ♀ solitariis vel inflorescentiis 3–5-floris (cymoso-umbellatis) in axillis foliorum superiorum, pedunculo $\pm$ 6 mm. longo, puberulo; pedicellis circiter 3 mm. longis, puberulis; sepalis 5, rotundis, puberulis; baccis subglobose, in sicco 3–4 mm. diametro, 4-pyrenis.

BRITISH NEW GUINEA: Central Division, Mount Tafa, *Brass* 4118, 4897 (type), May–September, 1933, at 2300–2400 m. alt., common in ridge-forests; Wharton Range, Murray Pass, *Brass* 4601, June–September, 1933, at 2480 m. alt.

According to Brass this is a compact densely foliated tree with very stiff, smooth, shining convex leaves; fruit 4–5 mm. diameter, subglobose, and red with red seeds.

Ilex Archboldiana closely approaches *I. revoluta* Stapf from Borneo in general habit; nevertheless, it may be distinguished by the grayish white branchlets, the fuscous puberulent branchlets (new growth), and the entire leaves not glandular-punctate beneath. The ♀ inflorescence is axillary and consists of a solitary flower (incipient umbel, the two bracts on the peduncle indicating abortive flowers), or flowers in umbels of 3, or occasionally a cymose umbel with 4–5 flowers.

***Ilex Brassii* sp. nov.**

Arbor usque ad 20 m. alta; ramis teretibus, atro-cinereis; foliis coriaceis, 5–9 cm. longis, 3–5.5 cm. latis, ellipticis, basi $\pm$ rotundatis vel obtusis, apice breviter lateque acuminatis usque obtusis, margine integris; costa media supra canaliculata, subtus prominente; venis primariis utrinque $\pm$ 6, prope margine arcuatis, supra inconspicuis, subtus vix prominulis; petiolo $\pm$ 1 cm. longo; inflorescentiis ♂ axillariibus, 2 cm. longis, paniculatis; floribus racemosis vel subumbellatis, 4-meris; calyce patelliformi, lobis rotundatis, minute ciliolatis; petalis oblongis; staminibus petalis paullo brevioribus; antheris oblongis; pistillodio conico.

BRITISH NEW GUINEA: Gaima, Lower Fly River (east bank), *Brass* 8291 (type), November, 1936, common about margins of sago-swamps in the rain-forest (tree 20 m. high; bark thick, gray, suberose, fissured, green when cut; most trees in young bud). NORTHEASTERN NEW GUINEA: Sattelberg, *Clemens* 3034.

This species somewhat resembles *Ilex Ledermannii* Loes. var. *elliptica* Loes. in habit; but the ♂ inflorescence has a much shorter peduncle than that of the ♀ inflorescences in our material of the above named variety; the latter also appears (from the calyx on the fruit) to have a 5-merous flower.

CELASTRACEAE

Gymnosporia inermis sp. nov.

Frutex magnus, 3 m. altus, glaber, scandens; ramulis fusco-cinereis, divaricatis; foliis 3.5–8 cm. longis, 2–5 cm. latis, obovatis, apice rotundatis vel retusis, basi cuneatis ad $\pm$ rotundatis, margine crenulatis; costa media venisque primariis (utrinque $\pm$ 5–6) utrinque prominulis, venulis laxe reticulatis, fere prominulis; petiolo 3–8 mm. longo; inflorescentiis in foliorum axillis solitariis vel in ramulorum abbreviatorum apice 1–5, saepe bis dichotome furcatis, pedunculatis, pedunculis $\pm$ 1 cm. longis, pedicellis ultimis $\pm$ 4 mm. longis; bracteis lanceolatis; floribus 5-meris, sepalis semi-orbicularibus; petalis oblongo-ovatis, obtusis, circiter 2.5 mm. longis; capsula trivalvi, valvis $\pm$ 7 mm. longis; loculis 2-spermis (immaturis).

BRITISH NEW GUINEA: Western Division, Wassi Kussa River, Tarara, *Brass* 8690 (type), January, 1937, common in inner mangroves (stiff scandent shrub; flowers white; fruit immature); Daru Island, *Brass* 6229, March 29, 1936, on slightly raised ridge of drift sand in outer mangrove forest (large shrub 3 m. tall, of straggling habit; flowers white; fruit red, 3-angled).

This material suggests *Gymnosporia spinosa* (Blanco) Merr. & Rolfe, but lacks the spines of the latter species.

Kurrimia Archboldiana sp. nov.

Arbor glabra; foliis coriaceis, alternis, 9–18 cm. longis, 4.5–8 cm. latis, ellipticis, apice obtusis vel rotundatis, basi $\pm$ rotundatis, margine integerrimis, leviter revolutis, supra lucidis, subtus pallidis; costa media venisque primariis utrinque 9–11, supra subtusque conspicuis; petiolo 1.5–3 cm. longo; racemis axillaribus foliis parum brevioribus; folliculis 2–2.5 cm. longis, circiter 8–9 mm. latis, oblongo-cylindraceis, apice attenuatis, basi angustatis; pedicellis $\pm$ 3 mm. longis; semine plerumque 1, interdum 2, ellipsoideo.

BRITISH NEW GUINEA: Western Division, Middle Fly River, Lake Daviumbu, *Brass* 7754 (type), 7495, September and August, 1936, common in rain-forest canopy layer (tree 25 m. tall, with hard brown fissured bark; petioles and leaf-nerves white; fruit smooth, yellow, aril orange-colored).

This species strongly suggests *Kurrimia pulcherrima* Wall. ex Lawson; however, the leaves are less tapering at the apex, the primary veins are farther apart ($\pm$ 1 cm.) and the follicles are shorter and much more abruptly attenuate at the apex. The genus is apparently new to the Papuan flora.

Elaeodendron mindanaense Merr. Philip. Jour. Sci. Bot. **12**: 277. 1917, Enum. Philip. Fl. Pl. **2**: 484. 1923.

BRITISH NEW GUINEA: Western Division, Wassi Kussa River, Tarara, *Brass* 8685, common in underbrush of light rain-forests (tree 6–7 m. high; flowers green); Daru Island, *Brass* 6257, in light rain-forest fringing a mangrove creek (tree 15 m. high; bark pale brown, corky, with a red blaze; flowers small, green; fruit soft, white, compressed, $\pm$ 5–6 mm. long, 4–5 mm. in diameter).

These two collections appear to be a very good match for the type-collection of *Elaeodendron mindanaense* Merr., a species previously considered endemic to the Philippines, except that some of the leaves of *Brass* 8685 are a little larger. On the other hand, they scarcely seem to differ from our meager material of *E. microcarpum* White & Francis, collected in southeastern Queensland; at present, the latter seems very doubtfully distinct from the former.

Perrottetia grandifolia Ridley, Trans. Linn. Soc. Bot. ser. 2, **9**: 30. 1916.

Perrottetia Schlechteri Loesener, Notizbl. Bot. Gard. Berl. **12**: 37. 1934.
Perrottetia Lauterbachiana Loesener, op. cit. 36 (incl. forma β . *macrophylla* Loes.).

NORTHEASTERN NEW GUINEA: Yunzaing, *Clemens* 2968, 3637; Ogeramnang, *Clemens* 6906; Kulunghifu, *Clemens* 6552. Described from the Netherlands New Guinea.

In the process of identifying the unnamed Celastraceae from New Guinea, we find ourselves unable to differentiate between Loesener's two species cited in synonymy and Ridley's *Perrottetia grandifolia*. Loesener points out that his *P. Schlechteri* agrees with Ridley's species except for the length of the petiole and the size of the inflorescence. The length of the petiole (1 mm.) as given in Ridley's original description is quite likely a typographical error and the inflorescence (from the description) seems to be very young. The collections from New Guinea differ from our meagre material of *P. moluccana* (Bl.) Loesener in that the leaves of the latter are remotely and minutely crenate-denticulate. The peduncle of the inflorescence is 3.4 cm. long; this is not longer than the maximum length given for *P. Schlechteri* Loes., but it is about twice as long as that in *Schlechter* 16808, 17325, or in any of the specimens we have cited.

HIPPOCRATEACEAE

Salacia subalternifolia sp. nov.

Scandens, glaber; ramulis subteretibus vel compressis, lenticellatis;

foliis alternis vel suboppositis, $\pm$ 1 cm. longe petiolatis, coriaceis, ellipticis, apice obtusis vel $\pm$ rotundatis, basi rotundatis usque cuneatis, margine subintegris, 9–15 cm. longis, 4.5–8 cm. latis; costa media venisque primariis utrinque 5–6, utrinque prominulis; venis tenuissimis laxe reticulatisque, praecipue subtus prominulis; inflorescentiis axillari-bus, cymoso-paniculatis, $\pm$ 2 cm. longis; bracteis deltoideis, fimbriatis; pedicellis ultimis 7–10 mm. longis; alabastris ovoideo-globosis, circiter 2 mm. diametro; floribus expansis circiter 7 mm. diametro; sepalis 5, semi-rotundatis, saepe erosis vel ciliolatis; petalis rotundato-ellipticis, 2 mm. longis; staminibus 3 vel 4, supra et intra discum crassum (2 mm. latum) insertis, filamentis vix 0.5 mm. longis latisque, complanatis, apicem versus angustatis; antheris erectis vel recurvis, filamentis paullo angustioribus, apice transverse dehiscentibus; ovario infra discum 3-angulato, stylo brevissimo vel nullo, stigmate parvo; loculis 3 vel interdum 4, 2-ovulatis; fructibus subglobosis, duris, usque 5 cm. diametro (fide Brass); pericarpio subligneo, $\pm$ 5 mm. crasso; seminibus 3 ($2 \times 2.5 \times 1.5$ cm.), dorso convexis, intra faciebus (2–)3; testa fusca; cotyledonibus molem firmam formantibus.

BRITISH NEW GUINEA: Lower Fly River, east bank opposite Sturt Island, *Brass 8066* (type), October, 1936 (large liane climbing to the top of rain-forest trees; flowers green; fruit orange-brown, spherical, up to 5 cm. in diameter).

This species is perhaps an affinity of *Salacia viminea* Lawson, differing in its larger and coriaceous leaves and in its axillary compound cymes; and from most other species in its alternate to subopposite leaves.

RHAMNACEAE

Zizyphus inermis Merr. Govt. Lab. Publ. (Philip.) **35**: 37. 1906, Enum. Philip. Fl. Pl. **2**: 522. 1923.

BRITISH NEW GUINEA: Palmer River, 2 miles below Black River Junction, *Brass 7180*, July, 1936, at 100 m. alt., in forests of higher ridges (slender spur-buttressed canopy tree 30 m. high; bark thin, brown; fruit red, fleshy, 1–1.2 cm. in diameter). SOLOMON ISLANDS: Kugumaru, Buin, *Kajewski 1826*, June 7, 1930, rain-forest (large tree up to 25 m. high; fruit brownish green when ripe, almost globular, 1.3 cm. long, 1.3 cm. in diameter); Marmaromino, *Kajewski 2197*, September 29, 1930, rain-forest, common (small tree up to 10 m. high; fruit narrowed at base, widening at centre and coming to a blunt point, orange-colored when ripe, 1.5 cm. long, 1.2 cm. in diameter at widest base). Previously reported from the Philippines and the Celebes.

With only the brief original description of *Zizyphus Forbesii* Bak. f. (*Forbes*, New Guinea), for comparison, we have been unable to separate the species from the Philippine *Z. inermis* Merr.; hence, for the present we have placed our Papuasian material with the latter species.

***Zizyphus oligantha* sp. nov.**

Frutex scandens; ramulis aculeatis, pubescentibus; foliis inaequaliter ovatis, 5–8 cm. longis, 2.5–3.5 cm. latis, acutis vel obtuse acuminatis, basi oblique subrotundatis, supra venis exceptis glabris, subtus fusco-pilosis, chartaceis, crenulato-serrulatis, 3(–5)-nerviis, nervis lateralibus marginem versus ramosis, venulis et nervis subtus prominulis; petiolo 7–8 mm. longo, piloso; stipulis spinescentibus, altera uncinata, altera recta deciduaque; cymis axillaribus, paucifloris, sub maturitate petiolum subaequantibus; floribus pedicellatis, pedicellis 3–4 mm. longis; calycis lobis deltoideis, subacutis, 1.4 mm. longis, extus pilosis, intus carinatis, glabris; petalis cucullatis, glabris, stamina includentibus, calyci subaequilongis; disco $\pm$ 5-angulato; ovario glabro; fructibus glabris, obovatis usque subglobosis, $\pm$ 7 mm. longis, bilocularibus.

BRITISH NEW GUINEA: Western Division, Mabaduan, *Brass* 6488 (type), April, 1936, common in rain-forest undergrowth (large scrambling shrub; flowers small, green; fruit subglobose, black, fleshy, 7–8 mm. in diameter).

The leaves of this species suggest *Zizyphus djamuensis* Lauterb., but the former may be readily distinguished by the much shorter (at anthesis about half as long as the petiole) and fewer-flowered cymes, the sparser pubescence and the glabrous ovary.

***Alphitonia ferruginea* sp. nov.**

Arbor; ramulis tomentosis; foliis alternis, lanceolato-ellipticis, apice acutis, basi rotundatis, vix cordatis, 10–15 cm. longis, 4–6.5 cm. latis, supra glabris, subtus ferrugineo-tomentosis; costa media supra impressa, subtus conspicua; venis primariis utrinque circiter 14–16, conspicuis; petiolo 1–1.5 cm. longo, tomentoso; inflorescentiis cymosis, in ramulis lateralibus foliatis terminalibus axillaribusque; rachis, ramulis, floribus ferrugineo-tomentosis; sepalis 5, triangularibus; petalis 5, cucullatis; disco 5-angulato; ovario tomentuloso; stylo trifido; fructibus glabrescentibus, vix 1 cm. altis; coccis 3.

BRITISH NEW GUINEA: Central Division, Mount Tafa, *Brass* 4935 (type), 4082a, April–September, 1933, at 2400 m. alt., common tree of second growth in the forest.

Alphitonia ferruginea differs from *A. moluccana* Teijs. & Binn. ex Braid in that the ferrugineous tomentum of the leaves and the inflorescence persists; the inflorescence has larger buds (3 mm. in diameter) and flowers (sepals 2 mm. long, open flowers 7 mm. in diameter) than *A. moluccana* (buds about 2 mm. in diameter, open flowers 3–5 mm. broad), and the pubescence of the flower-buds is so thick that the buds appear globular rather than obtusely angled as in the related species.

TILIACEAE

Berrya papuana sp. nov.

Arbor 20 m. alta; ramulis minute stellato-pubescentibus vel sublepidotis; foliis late ellipticis vel subrotundatis, 6–11.5 cm. longis, 4.5–9 cm. latis, apice late obtusis vel subrotundis, basi subcordatis, subintegris, membranaceis vel subcoriaceis, glabris vel subtus in axillis nervorum venarumque barbulatis; nervis basalibus 3, lateralibus reliquis circiter 5–8, subtus venulis sub lente perspicuis; petiolo 2–3 cm. longo, glabro vel sparse sublepidoto; inflorescentiis terminalibus, in fructu usque ad 12 cm. longis, ramosis, stellato-pubescentibus; alabastris oblongo-obovatis; floribus $\pm$ 7 mm. longis, roseis; calyce fere ad basim irregulariter fisso ($\pm$ 3-lobato), dense stellato-puberulo; petalis oblongis, versus basim angustatis; staminibus $\pm$ 60, ima basi connatis; filamentis filiformibus, petalis brevioribus; antheris peltatis oblongis, rima longitudinali apicali dehiscentibus; ovario 5-loculari (loculis 3–5-ovulatis), dense stellato-pubescente; stylo glabro; stigmatibus punctiformi; capsula 1.5 cm. alta, 3 cm. diametro, 5-loculari, scabra; alis 10 fere horizontaliter patentibus, 1.5–1.7 cm. longis, nervosis; carpellis ventre totis connatis; semine uno in quoque loculo, pendulo.

BRITISH NEW GUINEA: Central Division, Nakeo District, Baroka, *Brass 3740* (type), April, 1933, at 30 m. alt. in the rain-forest (pyramidal tree, 20 m. tall; trunk corrugated; bark flaky; wood hard, brown; flowers pink; fruit pale green).

This species is manifestly very closely allied to *Berrya javanica* (Turcz.) Burret, but differs in the smaller leaves, the somewhat smaller flowers and the obtuse flower-buds. The seed cavities in the fruit are about half as high as those in the fruit of *B. javanica* (Turcz.) Burret and united to the apex; in the latter species the union of the carpels is very little more than half as high as the seed-cavities.

We have spelled the name of this genus (*Berrya*) according to that found in the list of Nomina Conservanda, rather than the original spelling (*Berria*).

Trichospermum Peekelii Burret, Notizbl. Bot. Gart. Mus. Berl. **9**: 853. 1926.

SOLOMON ISLANDS: Bougainville Island, Kugumaru, Buin, *Kajewski* 1855, June 11, 1930, rain-forest, at 150 m. alt., common (large tree up to 20 m. high; fruit 2 cm. long, 2.2 cm. broad, 1 cm. thick. The inner fibre is used for making a strong kind of string and very durable cordages of varying sizes). Type from the Bismarck Archipelago.

By comparison with the original description and a fragment of material determined by Burret, there can be little doubt that this collection represents *Trichospermum Peekelii* Burret; however, it is to be noted that the lower surface of the leaves is densely pubescent in both the flowering and the fruiting material; further, in both the flower-buds and the fruits only two placenta appear. The leaves are approximately 30 cm. long (the apex is broken and ragged in all) and 13 cm. wide. The capsule is bivalvate with a narrow-winged margin and a single locule; the valves are somewhat reniform-retuse, 1.5–2 cm. high, $\pm$ 2.2 cm. broad; the seeds are scarcely 1 mm. in diameter, and the surrounding hairs are whitish.

Trichospermum incanum sp. nov.

Arbor usque ad 20 m. alta; ramulis glabris; foliis ellipticis, usque 20 cm. longis, 11.5 cm. latis, basi late rotundatis, apice acutis, margine minute denticulatis, supra in sicco brunneis, subtus canescentibus (dense minuteque stellato-pubescentibus), undique praecipue in costa nervisque sparse hirsutis; nervis basalibus 3, lateralibus supra basin circiter 8; petiolo 1.5 cm. longo, hirsuto; inflorescentiis (in fructu tantum) usque ad 13–15 cm. longis; pedunculo glabrato; ramulis pedicellis (vix 1.5 cm. longis) stellato-pubescentibus etiam sparse hirsutis; capsulis margine alatis, unilocularibus; valvis 2–2.5 cm. altis, 3.5 cm. latis, atro-brunneis, dense stellato-pubescentibus, pilis minutis et paullo longioribus; seminibus circiter 2 mm. diametro.

SOLOMON ISLANDS: Bougainville Island, Kugumaru, Buin, *Kajewski* 1829 (type), June 7, 1930, rain-forest, at 150 m. alt., common.

At the junction of the leaf-blade and the petiole are two obvious glands ($\pm$ 2 mm. in diameter). The species has leaves about the same size as those of *Trichospermum calyculatum* (Seem.) Burret, but the stipules are deciduous, the sparse hirsuteness of the leaves is persistent and the fruits are much larger.

Trichospermum Kajewskii sp. nov.

Arbor usque ad 20 m. alta; ramulis minute stellato-pubescentibus; foliis ellipticis, 11–15 cm. longis, 6–7 cm. latis, utrinque fere aequaliter

angustatis, margine denticulatis, undique consperse minutissimeque stellato-pubescentibus, concoloribus; nervis basalibus 3, lateralibus supra basim utrinque circiter 6; petiolo 1.5–2 cm. longo, dense stellato-pubescente; inflorescentiis axillaribus, usque ad 8 cm. longis; pedunculis sparse, ramulis pedicellisque dense stellato-pubescentibus; floribus ♀ : sepalis 10–11 mm. longis, petalis 9 mm. longis, oblongis, apice retusis, intus basi excepta pilis hirsutis aream glanduligeram cingentibus, ceterum glabris; gynaeceo 5 mm. alto, biloculo, dense stellato-hirsuto; stylo brevi; stigmate bilobo, lobis $\pm$ flabellatis, margine irregulariter lobulatis.

SOLOMON ISLANDS: Guadalcanal Island, Oulolo, Tutuve Mountain, *Kajewski* 2555 (type), April 22, 1931, rain-forest, at about 1200 m. alt., common (tree small in diameter but with trunk up to 17 m. tall; petals green).

In the size of the leaves and the general habit of the collection this species suggests *Trichospermum Richii* (A. Gray) Seem. but the leaves of the latter are broader at the base and the two glands at the junction of the blade and the petiole are lacking or inconspicuous; in *T. Kajewskii* these glands are conspicuous.

***Trichospermum psilocladum* sp. nov.**

Arbor 10–20 m. alta; ramulis glabris, levibus; foliis ellipticis, 11–20 cm. longis, 5–9.5 cm. latis, apice breviter acuminatis, basi late rotundatis vel leviter cuneatis, margine crenulato-denticulatis, in costa nervisque primariis minutissime stellato-pubescentibus vel sub lepidotis, ceterum glabris; nervis basalibus 3, lateralibus supra basim utrinque circiter 7; petiolo $\pm$ 2 cm. longo, fere glabro; inflorescentiis axillaribus, usque ad 10 cm. longis, pedunculis ramulisque glabris, pedicellis 5–7 mm. longis, glabratis vel minutissime stellato-pubescentibus; alabastris stellato-pubescentibus; floribus ♂ : sepalis lanceolatis, 1 cm. longis, intus pubescentibus; petalis oblongis, apice $\pm$ rotundatis vel retusis, basim versus paullo angustatis, intus basi corona pilorum aream glanduligeram 0.5 mm. altam cingente; androgynophoro 1–1.5 mm. alto, margine hirsutulo; staminibus 5 mm. longis, antheris circiter 1 mm. longis; gynaeceo 2 mm. alto, glabro, basi tantum stellato-pubescente; stylo nullo; stigmate crenate lobato; floribus ♀ : sepalis circiter 9 mm. longis; petalis oblongis, apice obtusis, intus basi pilis hirsutis aream glanduligeram cingentibus exceptis glabris; staminibus vix 1 mm. altis, antheris abortivis; gynaeceo vix 4 mm. alto, ovario stellato-pubescente, stylo brevissimo, stigmate bilobo, flabellato; capsulis unilocularibus, bialatis, minutissime stellato-pubescentibus, valvis reniformibus, 1.3 cm. altis, 2 cm. latis; placentis 2 tantum, oppositis.

SOLOMON ISLANDS: Guadalcanal Island, Berande River, *Kajewski* 2402 (type, ♀), January 1, 1931, common in rain-forest; Malaita Island, Quoimonapu, *Kajewski* 2342 (♂), December 11, 1930, common in rain-forest; San Cristoval Island, Waimamura, *Kajewski* 2859, September 12, 1932, in old garden clearing.

In all these specimens the leaves have two little pouch-like glands at the base of the lamina. The natives use the fibrous inner bark for making string bags, plaiting couches, etc. (fide *Kajewski*).

Superficially the species closely resembles *Trichospermum Inmac* (Guill.) Burret. Technically it differs in being dioecious, both sterile and fertile flowers having respectively a rudimentary pistil and rudimentary stamens. The style in both *T. Inmac* (Guill.) Burret and *T. psilocladum* is very short, but in the former the stigma is more elongate and incised, whereas, in the latter the two-lobed stigma is almost sessile, each lobe being flattened and crenately orbicular.

***Microcos tetrasperma* sp. nov.**

Arbor 20 m. alta; ramulis teretibus, atrofusis, glabratis vel sparse minuteque lepidotis; foliis coriaceis, late oblongis ad ellipticis, 15–19 cm. longis, 5.5–7 cm. latis, basi rotundatis, paululo obliquis, apice acutis, margine integris, undique in sicco olivaceo-brunneis, nitidulis, costa media nervisque minute lepidotis, ceterum glabris, nervis basalibus 3 quorum lateralibus paullo supra basim laminae orientibus, alte ascendentibus et $\frac{2}{3}$ – $\frac{3}{4}$ laminae aequantibus; nervis lateralibus reliquis 3–4 in quoque latere, quorum infimo fere in media lamina oriente; venulis utrinque valde reticulatis; petiolo 2 cm. longo, a medio superne paullo incrassato, glabro ad minute lepidoto; stipulis linearibus, caducis; inflorescentiis terminalibus axillaribusque, paniculatis (?), in fructu $\pm$ 7 cm. longis; fructibus obovoideis, 2.5 cm. longis, 2.2 cm. diametro, 4-locularibus, epicarpio membranaceo, glabro, levi, mesocarpio fibris tenuibus densis percurso, endocarpio osseo, circiter 1 mm. crasso; semine uno in quoque loculo.

BRITISH NEW GUINEA: Palmer River, 2 miles below Black River Junction, *Brass* 7047 (type), June, 1936, at 100 m. alt., common in ridge-forests (tree 20 m. tall; trunk flanged at the base; bark gray, lenticellate; wood yellow, coarse-grained; leaves stiff, nerves prominent especially on the lower surface; fruit obovoid, orange-yellow, $\pm$ 3 cm. long, 2.5 cm. in diameter).

The descriptions of *Microcos Schlechteri* Burret and *M. Ledermannii* Burret indicate that this is a very closely related species; it differs in having coriaceous leaves with a definitely rounded base; both the upper

and the lower surfaces dry the same color, brownish with the main nerves appearing dark reddish brown; the stipules are linear and have not yet fallen from the upper part of the vegetative shoot.

Microcos grandiflora Burret, Notizbl. Bot. Gart. Mus. Berl. 9: 784. 1926.

BRITISH NEW GUINEA: Fly River, 528 Mile Camp, *Brass* 6658, May, 1936, at 80 m. alt., common in the forest canopy (large tree with spur-buttressed stem and close brown bark; fruit ovate, pubescent, orange-colored, $\pm$ 5.5 cm. long, 4.5 cm. in diameter). Known only from New Guinea.

Lacking material for comparison, we have accepted *Brass* 6658 (a collection in fruit only) as a reasonably good match for *Microcos grandiflora* Burret, at least as to the description of the leaves. In our specimen the largest leaves are up to 12 cm. broad, 28 cm. long, and the acumen 4 cm. long (5 mm. broad at the base and 0.5 mm. at the apex), in the type the acumen is only 2.5 cm. long. The ellipsoid or slightly obovoid fruit consists of a thin pubescent epicarp (most of the pubescence has been rubbed off), a mesocarp (1.5 cm. thick at the middle of the fruit) of very tough slender fibres, and a bony endocarp covering two locules.

Colona scabra (Sm.) Burret, Notizbl. Bot. Gart. Mus. Berl. 9: 800. 1926.

Microcos scabra Sm. in Rees Cycl. 23: n. 3. 1812–1813.

Columbia integrifolia Warb. Bot. Jahrb. 13: 372. 1891.

Columbia subobovata Hochr. Pl. Bogor. Exsicc. 25, n. 46. 1904; Merr. Interpret. Rumph. Herb. Amboin. 354. 1917.

SOLOMON ISLANDS: Guadalcanal Island, Berande, *Kajewski* 2437, January 10, 1931, rain-forest, common (medium tree, up to 20 m. high; buds covered with short silky hair, sepals greenish yellow, petals yellow spotted with maroon); Ysabel Island, Garona, *Brass* 3356, lowland rain-forests (tree with pale, fissured bark; corolla very dark mottled brown).

The species is definitely reported from Celebes, Amboina, Aru, and Palau. For a full discussion of the synonymy cf. Burret, l. c.

Colona discolor sp. nov.

Arbor $\pm$ 10 m. alta; ramulis atrofusis, stellato-pubescentibus ad glabratis; foliis coriaceis, oblongis, 15–19 cm. longis, 3.5–6.5 cm. latis, apice acutis ad acuminatis, basi rotundatis vel subcordatis, leviter obliquis, margine minute serratis, supra brunnescentibus, consperse minuteque stellato-pubescentibus; subtus fusco-velutinis; nervis basalibus

3, quorum 2 lateralibus dimidiam laminam aequantibus; lateralibus supra basim 6–7, ascendentibus; petiolo 7–10 mm. longo, dense pubescente; inflorescentiis terminalibus, paniculatis, in fructu 22 cm. longis, 15 cm. latis, flavido-tomentosis; capsulis indehiscentibus (?), 1.5 cm. longis latisque, 3-alatis vel 4-alatis, apice retusis ad emarginatis, corpore modice tumido.

BRITISH NEW GUINEA: Western Division, Mabaduan, *Brass* 6532 (type), April, 1936, abundant in riverine rain-forest and on grass areas deforested for gardening.

The species is somewhat similar to ***Colona aequilateralis*** (White & Francis) comb. nov. (*Columbia aequilateralis* White & Francis, Proc. Roy. Soc. Queensl. **38**: 240, f. 7. 1927) and *C. Archboldiana*. From both *C. discolor* differs in the retuse to emarginate apex of the fruits. These are smaller than those of the first mentioned species and the wings also are much narrower.

Colona velutina sp. nov.

Arbor ad 18 m. alta; ramulis ut inflorescentiis pallide flavido-hirsutis; foliis oblongis, $\pm$ 23 cm. longis, 8 cm. latis, apice obtusiuscule acuminatis, basi valde obliquis, subauriculatis, margine integris, supra brunneis (in sicco), costa media nervisque primariis hirsutulis, ceterum demum glabris; subtus flavo-viridibus vel brunnescentibus, velutinis; nervis basalibus 5–7, quorum 2 lateralibus dimidiam laminam aequantibus; lateralibus reliquis in quoque latere 6–7, curvatim ascendentibus; petiolo 1.5 cm. longo, dense hirsuto; inflorescentiis terminalibus, ramosis; alabastris globosis, $\pm$ 4 mm. diametro; sepalis oblongis, 7 mm. longis, obtusis, extus tomentosis, intus pubescentibus; petalis $\pm$ 5 mm. longis, oblanceolatis, apice rotundatis, extus sparse pilosulis, intus ad basim aream glanduligeram 0.5 mm. longam, lateraliter ut superne, ubi area glabra $\pm$ 0.5 mm. alta, corona pilorum circumcinctam gerentibus; androgynophoro longitudine aream glanduligeram aequante; staminibus $\pm$ 3.5 mm. longis; gynaeceo tomentoso, 3–5-loculari, stylo glabro; fructibus $\pm$ 2.2 cm. longis atque diametientibus, alatis (alis $\pm$ 5 mm. latis), omnino tomentosis.

SOLOMON ISLANDS: Guadalcanal Island, Konga, Ma-massa, *Kajewski* 2465 (type), February 8, 1931, rain-forest, at 500 m. alt., common (medium tree with straight trunk up to 18 m. high; all small stems, the lower surface of the leaves and the buds covered with fine hair; fruit leathery, quadrangular. The bast is used in making small baskets for carrying tobacco, betel nut, etc.).

As far as we can judge from the specimen, the fruit is indehiscent;

hence, the species belongs to the section HOLOCARPUS. It strongly suggests *Colona megacarpa* (Merr.) Burret in leaf-size and the pubescence of the fruit, but the hairs are more evenly distributed in *C. velutina*, the fruit is 3-4-winged, the leaves are gradually but not long acuminate, and the leaf-margin is entire.

Colona Archboldiana sp. nov.

Arbor 7-8 m. alta; ramulis fuscis, stellato-pubescentibus ad glabratiss; foliis chartaceis, oblongis, 18-27 cm. longis, 7-9 cm. latis, apice breviter acuminatis vel longe acutis, basi subaequaliter rotundatis, margine minute serrulatis vel nervis minute projectis, supra brunnescentibus, dense in nervis sparse in facie pilis stellatis minutis praeditis, subtus velutino-canescens; nervis basalibus 3, quorum 2 lateralibus dimidiam laminam altitudine fere aequantibus, lateralibus ceteris supra basim utrinque 6-8 arcte ascendentibus; petiolo 1.3 cm. longo, a medio superne manifeste incrassato, dense stellato-pubescente; inflorescentiis terminalibus, paniculatis, (in specimine) circiter 20 cm. longis; floribus pedicellatis; sepalis circiter 7 mm. longis, $\pm$ 2.5 mm. latis, oblongis, acutis, extus stellato-tomentosis, intus breviter pilosis; petalis 5 mm. longis, oblanceolatis, dorso sparse pilosis, area glandulifera 0.5 mm. alta corona pilorum circumcincta; androgynophoro longitudine aream glanduliferam aequante; staminibus $\pm$ 3 mm. altis; gynaecio albido-tomentoso, 3-angulari, 3-loculari, stylo basi pubescente, superne glabro; fructibus pubescentibus interdum pilis longis interspersis, fere isodiametricis, 1-1.5 cm. longis latisque, apice obtusis vel rotundatis, alis angustatis, corpore tumido.

BRITISH NEW GUINEA: Western Division, Upper Wassi Kussa River (left branch), *Brass* 8631 (type), January, 1937, common about grassy margins of rain-forest (thinly foliated tree of weak branching habit, 7-8 m. high; leaves gray beneath).

The fruit is very tardily, if at all, dehiscent, hence, the species seems to belong to the section HOLOCARPUS. Its most obvious characters are the rounded scarcely oblique base of the leaves, the gray indumentum of the lower surface, and the minutely serrate margin (apparently formed by the very slight projection of the lateral veins); the fruit is obtusish at the apex and the wings are much narrower than in other species which we have examined.

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