

MATERIALS TOWARDS THE KNOWLEDGE OF THE ICACINACEAE OF ASIA, MALESIA, AND ADJACENT AREAS

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I. INTRODUCTION

In the present work details are given in the first place for the Malesian *ICACINACEAE*, representing the basis of my forthcoming treatment of the family in 'Flora Malesiana' in which full descriptions of the Malesian genera and species will be given. Being connected closely with the *ICACINACEAE* of South and Southeast Asia on the one, and with Australia and the Pacific on the other side, and in part even with those of Africa incl. Madagascar, it has been necessary to study the respective materials too, without, however, to perform a complete revision of all *ICACINACEAE* in these parts of the world. This was the less necessary, as R. A. Howard (1940—42) already has revised part of the genera concerned. The elaboration of the family in several local treatments has much contributed to our knowledge of the family for Africa.

Of the genera formerly included in Asiatic-Malesian *ICACINACEAE* *Leucocorema* Ridl. has

been transferred to *Trichadenia* Thwait., *Matpania* Gagnep. to *Bouea* Meisn., and *Pentastira* Ridl. to *Dichapetalum* Thou.

Herbarium specimens (rather completely for Malesia only) were studied from loans from, resp. partly during visits to the following herbaria:

Berkeley (UC, Philippine specimens only), Bogor (BO), Cambridge (CGE), Cambridge, Mass. (A, in part, or cited from list), Copenhagen (C), Edinburgh (E), Florence (FI), Geneva (G), Kepong (KEP), Kew (K), Kuching (SAR), Leyden (L), London (BM), Paris (P), Sandakan (SAN), Singapore (SING), Stockholm (S), Uppsala (UPS), Utrecht (U), Wroclaw (WRS�, Herb. Lauterbach).

Generally no collector's names in serial herbarium materials are mentioned. The following abbreviations are used:

- ANU = Australian National University, Canberra.
 bb. = bosschen buitengewesten, i.e. collections outside Java of the Forest Research Institute at Bogor, Java.
 B.N.B. For. Dep. = British North Borneo Forestry Department.
 BRUN = Forestry Department Brunei.
 B.S. = Bureau of Science, Manila.
 BSIP = British Solomon Islands Protectorate.
 BW = Boswezen (in New Guinea).
 Cel = Celebes collections of the Forest Research Institute at Bogor, Java.
 CF. = Conservator of Forests, early series of the Forest Research Institute, Kepong.
 F.B. = Forestry Bureau, Manila.
 F.M.S. = Federated Malay States (Museum).
 F.R. = Forest reserve.
 FRI = Forest Research Institute, Kepong.
 F.R.I. = Forest Research Institute, at Bogor, Java.
 H.B. = Herbarium Bogoriense.
 I. = island (Is = islands).
 Ja. = Java collections of the Forest Research Institute at Bogor, Java.
 KEP = Forest Research Institute, Kepong.
 Mt = Mount.
 NGF = New Guinea Forest Department, Lae.
 n.v. = *non vidi* (specimens not seen by the author).
 P. = Pulu (island).
 P.F. = Protected forest.
 Phyt. Surv. Malaya = Phyto-Chemical Survey of the Federation of Malaya, Kuala Lumpur.
 PNH = Philippine National Herbarium, Manila.
 S = Forest Department of Sarawak, Kuching.
 SAN = Forest Department of North Borneo (Sabah), Sandakan (ditto SAN A).
 SF = Singapore Field Number.
 Sg. = Sungei (river valley).

2. KEY TO THE GENERA OF ICACINACEAE IN ASIA, MALESIA, AUSTRALIA, AND THE PACIFIC¹)

1. Trees or (not climbing) shrubs. (Leaves always spiral.)
 2. Sepals essentially free at least in their upper $\frac{2}{3}$ part, and imbricate.
 3. Flowers bisexual.
 4. Petals free, valvate or subimbricate. Tropical C. and S. America (flowers there sometimes polygamous), Malesia, Australia (New South Wales, Queensland), Solomon Is, New Caledonia, Loyalty Is, New Hebrides, Samoa, Fiji, Tonga **Citronella**
 4. Petals connate below into a tube, their upper part free and valvate in bud. New Guinea. **Pseudobotrys**

1) Only the genera printed in bold letters are treated in this paper.

3. Flowers unisexual (or functionally so, i.e. the plant dioecious). (Petals connate below.)
5. Filaments free, fixed to the very base of the petals. Leaves with a layer of rounded to star-shaped appressed scales underneath, at least in the young state. SE. Asia, Malesia incl. New Britain **Platea**
5. Filaments adnate for almost their entire length to the lower tubular part of the petals. Scales absent. SE. Asia incl. Formosa, Malesia. **Gonocaryum**
2. Sepals connate into a cup-like calyx, their upper free part (calyx lobes), if any, short and not imbricate.
6. Flowers unisexual (or functionally so, i.e. the plant dioecious).
7. Drupe ovoid-ellipsoid or oblongoid, without a fleshy lateral appendage.
8. Flowers in terminal panicles. Style short. Australia (New South Wales, Queensland), Norfolk I., New Zealand **Penmanthia**
8. Flowers in rather short axillary cymes. Style none. SE. Asia incl. Ceylon and India, Malesia incl. New Britain and New Ireland, Solomon and Santa Cruz Is, Australia (Queensland). **Gomphandra**
7. Drupe laterally compressed (almond-like).
9. Drupe without a fleshy lateral appendage. Flowers in spikes (or very rarely in panicles composed of spikes, or reduced to a few-flowered fascicle). E. Malesia incl. New Britain, New Ireland, and Admiralty Is, Solomon Is, Australia (N. Queensland). . **Rhyticaryum**
9. Drupe with a thick-fleshy laterally borne practically entirely adnate appendage. Flowers in cymes.
10. Fertile ovary (besides the appendage) with an almost free, thick-squamular unilateral disk. New Guinea **Hartleya**
10. Fertile ovary without such a free disk.
11. Filaments glabrous. Fleshy appendage of drupe covering 2 pronounced longitudinal ribs of the endocarp. Andaman & Nicobar Is, Philippines (Mindoro, Palawan). **Codiocarpus**
11. Filaments with distal, longish, club-shaped hairs at least in the fertile stamens. Endocarp with less pronounced or no such ribs under the appendage.
12. Drupe plano-convex, the fleshy appendage on the convex surface of the fruit surmounting a T-shaped keel of the endocarp, the other surface plane or but slightly concave. Australia (N. Queensland). **Irvingbaileya**
12. Drupe strongly curved, the fleshy appendage on the concave surface, the other surface convex with the endocarp strongly ridged lengthwise. Malesia incl. Bismarck Archipelago, Caroline (Palau) Is, Solomon Is, Fiji, Samoa. **Medusanthera**
6. Flowers bisexual.
13. Ovary with a lateral swelling which in the fruit develops into a thick succulent appendage.
14. Disk present, a unilateral fleshy scale free from the appendage. New Caledonia. **Gastrolepis**
14. Disk absent.
15. Petals with a prominent midrib inside. New Caledonia **Anisomallon**
15. Petals without a prominent midrib inside. Africa incl. Madagascar, Comores, Mauritius, and Réunion, S. & SE. Asia, W. Malesia, Australia (Queensland). **Apodytes**
13. Ovary and fruit without such an adnate appendage. Disk present or not.
16. Connective surpassing the anther-cell as a marked glabrous apiculus.
17. Disk cup-shaped, adnate to the ovary. Endocarp of drupe hard, rather thin. SE. Asia. **Pittosporopsis**
17. Disk absent. Endocarp of drupe thick, outer part finally spongy-corky and deeply irregularly lacunose. E. Malesia incl. Bismarck Archipelago, Solomon Is, Marianas (Rota), and Caroline Is (Kusaie) **Merrilliodendron**
16. Connective, if any, hardly or not surpassing the anther-cell.
18. Peduncle of inflorescence with numerous small knob-like bracts which form alveoles. Stigma peltate. Disk absent. W. Malesia **Cantleya**
18. Peduncle of inflorescence quite smooth. Stigma small, subcapitate or point-like. Disk \pm cup-shaped.
19. Inflorescence usually terminal. Anthers glabrous. S. & SE. Asia incl. Lan Yu I. and Ryu Kyu Is, S. & C. China, W. Malesia. **Nothapodytes**
19. Inflorescence axillary. Anthers with a distal tuft of penicillate hairs.

20. Flowers sessile. Petals up to 6 mm, free to almost the base. Stigma point-like at the top of the upper \pm attenuate (sometimes shortly style-like) part of the ovary. SE. Asia incl. Ceylon, Malesia, Micronesia (Palau), and Solomon Is **Stemonurus**
20. Flowers pedicelled for 1—2 mm. Petals (12—)13—15 mm, free in the distal part only. Stigma small, on one side of the inverted, i.e. cup-like distal part of the ovary. Solomon Is **Whitmorea**
1. Climbing shrubs, or lianas, sometimes with tendrils. Flowers unisexual or functionally so, or polygamous.
21. Leaves opposite.
22. Anthers broadly club-shaped to subglobular, many-celled, with numerous pollen-bearing alveoles. New Guinea, Solomon Is **Polyporandra**
22. Anthers, as usual, with 2 cells.
23. Filaments (very) short in relation to the petals. Stigma small, capitate, with a \pm deep depression to one side. Endocarp generally coarsely reticulate-lacunose, very rarely smooth outside. Africa incl. Madagascar, SE. Asia, Malesia. **Iodes**
23. Filaments elongate in relation to the petals. Stigma capitate, \pm distinctly 5(—6)-crenulate. Endocarp rather finely tubercled inside. SE. Asia, W. Malesia. **Mappianthus**
21. Leaves spirally arranged. Tendrils never present.
24. Flowers in elongate spikes or spike-like racemes, these solitary or sometimes collected to panicles.
25. Leaves \pm elliptic, coriaceous, glabrous, entire, much reticulate. Drupe ellipsoid. S. & SE. Asia, W. Malesia **Sarcostigma**
25. Leaves cordate, chartaceous, long-petioled, pubescent, dented or lobed. Drupe laterally compressed.
26. Flowers in loose panicles. W. & C. China, SW. Japan **Hosiea**
26. Flowers in spikes or spike-like racemes.
27. Calyx (sepals) absent. Africa incl. Madagascar, S. & SE. Asia, Malesia (Philippines).
Pyrenacantha
27. Calyx present.
28. Petals free. SE. Asia **Natsiatum**
28. Petals connate for their lower 2/3 to a tube, lobes free. SE. Asia (Burma).
Natsiatopsis
24. Flowers in peduncled heads or umbels, these solitary or collected to racemes or panicles.
29. Style absent; stigma sessile, thick-peltate. S. & SE. Asia, W. Malesia. **Miquelia**
29. Style short-columnar, with 2—4 stigmatic lobes. SE. Asia, Malesia (eastwards to New Guinea) **Phytocrene**

3. THE GENUS *APODYTES* E. MEY. EX ARN. IN ASIA AND MALESIA

A preliminary investigation of the Afro-Asiatic materials of *Apodytes* has revealed, that no single constant character can be found neither in the indumentum of various organs nor in the leaf-forms and -sizes, flowers or fruits, to discriminate more than one species. The pattern of variation shown by lowland or montane races, of such of dense forest or in more open, maybe secondary vegetation, is probably the expression of local ecotypes, and its genetical background might be polyploidy. An evaluation of these races with the infraspecific categories can only be obtained by a monographic treatment which is much beyond the scope as far as my work for 'Flora Malesiana' is concerned. For the moment it seems to be justified to accept only one species for Africa, Asia, and Malesia, the oldest name of which is *A. dimidiata* E. Mey. ex Arn. from Africa. Most of the type collections of the Asiatic species cited here in synonymy have been checked in various herbaria.

APODYTES

E. Meyer ex Arn. in Hook., J. Bot. 3 (1840) 155; Miers, Ann. Mag. Nat. Hist. II, 9 (1852) 387—389, repr. Contr. Bot. 1 (1852) 57—59, pl. 5.

1. *Apodytes dimidiata* E. Meyer [ex Drège, Cat. Pl. Exs. Afr. Austr. (1838) 19, *nom. nud.*; ex Bernhardt, Linnaea 12 (1838) 136, *nom. nud.*] ex Arn. in Hook., J. Bot. 3 (Dec. 1840) 155; Benth., Trans. Linn. Soc. 18, 4 (1841) 680, 683, t. 41, s. lat. — *Cyrilla racemiflora* (non L.) Meerb., Afbeeld. ed. 2, fasc. 5 (1789) 26, t. 53. — *A. benthamiana* Wight, Ic. 3 (1846) t. 1153; Bedd., Fl. Sylv. 3 (1871) LXII, t. 140, var. *alpha* & *beta*; Mast. in Hook. f., Fl. Br. Ind. 1 (1875) 588; Valet., Crit. Overz. Olacin. (1886) 190, pl. 6, f. 35 a–c; Brandis, Ind. Tr. (1906) 152; Gamble, Fl. Pres. Madras 1 (1915) 195; Kanjilal, Kanjilal, & Purkayastha, Fl. Assam 1, 2 (1936) 251. — *A. gardneriana* Miers, Ann. Mag. Nat. Hist. II, 9 (1852) 389, repr. Contr. Bot. 1 (1852) 58, pl. 5, p.p.; Thwait., En. Pl. Zeyl. (1858) 42. — *A. beddomei* Mast. in Hook. f., Fl. Br. Ind. 1 (1875) 588; Brandis, Ind. Tr. (1906) 152; Gamble, Fl. Pres. Madras 1 (1915) 195. — *A. cambodiana* Pierre, Fl. For. Cochinch. (1892) t. 267, f. A; Gagnep., Fl. Gén. I.–C. 1 (1911) 834; Koord., Atlas 1 (1913) t. 117; Merr., J. Arn. Arb. 6 (1925) 136; Craib, Fl. Siam. En. 1 (1926) 273; Merr., Lingn. Sc. J. 5 (1927) 117; Sleum., Notizbl. Berl.–Dahl. 15 (1940) 243; Howard, J. Arn. Arb. 23 (1942) 73; Gagnep., Fl. Gén. I.–C. Suppl. (1948) 756; Amsh. in Back., Bekn. Fl. Java (em. ed.) 6 (1948) fam. 135, p. 5; Dahl, J. Arn. Arb. 33 (1952) 263, f. 36 & 36 A (Pollen); Hundley & Chit, List Trees Burma ed. 3 (1961) 46; Back. & Bakh. v. d. Br., Fl. Java 2 (1965) 61; Chun & Chang, Fl. Hainan. 2 (1965) 446, f. 508. — *A. javanica* K. & V., Bull. Bot. Gard. Botz 2 (1899) 3; Bijdr. 5 (1900) 159; Koord., Nat. Tijd. N. I. 60 (1901) 383; Pl. Jungh. (1910) 175; Back., Schoolfl. Java (1911) 226; Koord., Exk. Fl. Java 3 (1912) 531; Koord.–Schum., Syst. Verz. 1, Fam. 162 (1912) 5. — *A. tonkinensis* Gagnep., Not. Syst. 1 (1910) 197; Fl. Gén. I.–C. 1 (1911) 835, f. 99; *ditto* Suppl. (1948) 757. — *A. giung* A. Chev., Bull. Econ. Indochine n. s. nr. 132 (1918) 817 (based on *Chevalier 37981*, lectotype, P). — *Mappia philippinensis* Merr., Philip. J. Sc. 26 (1925) 467; En. Philip. 4 (1926) 249. — *Neoleretia philippinensis* (Merr.) Baehni, Candollea 7 (1936) 180. — *Nothapodytes philippinensis* (Merr.) Sleum., Notizbl. Berl.–Dahl. 15 (1940) 247. — *A. yunnanensis* Hu, Bull. Fan Mem. Inst. Biol. Peiping, Bot. Ser. 10 (1940) 154; Dahl, J. Arn. Arb. 33 (1952) 262 (Pollen). — *A. sp.*, Endert, Meded. Proefst. Bos(ch)w. 20 (1928) 211, 216.

Distribution: Tropical and subtropical NE. to S. Africa and Angola, Ceylon, S. India, Assam, Burma, Thailand, Indochina, Yunnan, Hainan, and Malesia.

Note. For S. India, Assam, Burma, Thailand, Indochina, Yunnan, and Hainan compare the above cited literature.

BURMA. Myitkina, *McKee 6301 & 6304* (K).

THAILAND. Payap: Chiengmai, Pang Tawn, *Put 3815* (K); Chiengdao, Muang Keng, c. 700 m, *Kerr 5520, 5433, 5812, 8532*. — Pitsanulok: Thung Salaeng Luang, 500 m, *Shimizu T. 11276, 11281, 11289* (all at K).

MALAY PENINSULA. Kelantan, Mt Ayam, waterfall, 900 m, *For. Dep. F.M.S. 37743* (K, KEP). — Pahang: Cameron Highl., *For. Dep. F.M.S. 37538* (K, KEP).

SUMATRA. Eastcoast: Simelungun F. R., Marihahuta, 800 m, *bb. 2920* (BO).

JAVA. W. Java: *Blume* (L), *Junghuhn* (Pl. Jungh. 127, L). — Priangan: Tjigenteng, 1400 m, *Koorders 6066* (tree n. 2155a, BO & L, lectotype of *A. javanica*, = *A. cambodiana* in Atlas, t. 117), *9891 & 9892* (from tree n. 2155a), *33741* (from tree n. 2155a), *33747, 33766*; Tjibodas-Tjibureum, 1500 m, *den Berger 605, Koorders 41532, 41986, 42827*; *ibid.*, Pangrango-Gedeh, 1800 m, *Kostermans c.s. UNESCO 289*.

SUMBA. Eastern part, Lai Rondja, 1000 m, *bb. 8993*.

Flores. Ruteng, *Verheijen 2188, 2189*.

TIMOR. Western part, Mt Mutis, 1200 m, *de Voogd 2291*.

BORNEO. N. Borneo: Mt Kinabalu, Penibukan ridge, base of great wall, 1830 m, *Clemens 40872*; *ibid.*, Pinokok R. falls, 1525 m, *Clemens 40797*; Pinosok plateau, 1465–1615 m, *SAN 42895, Chew, Corner & Stainton 1836*; Mt Trusmadi, 1830 m, *SAN 41884*.

PHILIPPINES. Mindanao: Bukidnon, Miridana, vicinity of Tangkulan, B.S. 24941 (A, n.v.; BM, BO, K, L; PNH, type of *Mappia philippinensis*, †).

MOLUCCAS. Batjan: N. slope of Mt Sibela, 2000 m, *Alston 16979* (BM).

EXCLUDED

Apodytes andamanica Kurz, Prel. Rep. For. & Veg. Pegu (1875) 37 = *Codiocarpus andamanicus* (Kurz) Howard.

4. THE GENUS CANTLEYA RIDL.

CANTLEYA

Ridl., Fl. Mal. Pen. 1 (1922) 436; Howard, J. Arn. Arb. 21 (1940) 479; Sleum. in E. & P., Nat. Pfl. Fam. ed. 2, 20 b (1942) 365.

I. *Cantleya corniculata* (Becc.) Howard, J. Arn. Arb. 21 (1940) 479, pl. 2, f. 1—7; Masam., En. Pl. Born. (1942) 422; Dahl, J. Arn. Arb. 33 (1952) 270, f. 61, 61 A (Pollen); Browne, For. Tr. Sarawak & Brunei (1955) 199; Smythies, Common Sarawak Tr. (1965) 71. — *Platea corniculata* Becc., Malesia 1 (1877) 117; Valet., Crit. Overz. Olacin. (1886) 254. — *Urandra* sp., Foxworthy, Philip. J. Sc. 4 (1909) Bot. 492, 542, f. 47. — *Urandra corniculata* (Becc.) Foxworthy, Philip. J. Sc. 6 (1911) Bot. 179; Merr., En. Born. (1921) 356; Mead, Emp. For. J. 4 (1925) 95; den Berger, Handel. 4e N. I. Wet. Congr. Batavia 1926 (1927) 401 (Wood-Anat.); Foxworthy, J. Mal. Br. R. As. Soc. 5, 2 (1927) 339; Mal. For. Rec. 3 (1927) 173; ditto 8 (1930) 13; Burk., Dict. (1935) 2205; Masam., En. Pl. Born. (1942) 424; Heyne, Nutt. Pl. 1 (1950) 968. — *Cantleya johorica* Ridl., Fl. Mal. Pen. 1 (1922) 436. — *Stemonurus corniculatus* (Becc.) Ridl., Fl. Mal. Pen. 5 (1925) 297; Burgess, Timbers of Sabah (1966) 320.

SUMATRA. Atjeh: 'Senghel' (prob. Singkil), bb. 13662. — Eastcoast: Kamparkiri, 10 m, bb. 25558; Siak, 25 m, bb. 18559. — Tapanuli: Sibolga, 25 m, bb. 27143, 29527, de Haan 841. — Indragiri: bb. 28538; Kuala Belilas, 60 m, bb. 27633. — Palembang: Rawas, 80 m, Dumas 1530, Grashoff 1530; Palembang, 100 m, Grashoff 1002; Banjuasin, 15—25 m, Grashoff F.R.I. 36E, 663, 664, 668, 689, 690, 701, 702, 708, 717, 721, F.R.I. T. 1029, 1164. — Djambi: bb. 12792, 13652, F.R.I. T.B. 680.

RIJOUW ARCH. P. Kedondong, 100 m, bb. 24818; P. Gelang, 4 m, bb. 29151; P. Bintang, Teysmann.

LINGGA ARCH. bb. 27710/13; P. Singkep, 5 m, Amat 35, bb. 2071, 2676, 2709, 3863, 4034.

BANKA. 25 m, Berkhout 1055, Grashoff 32, bb. 29492/4; Djebus, Teysmann; Mt Maras, 100—300 m, bb. 34231, Kostermans & Anta 1360; Mt Mangkol, 50—100 m, bb. 34204, Kostermans & Anta 687; Muntok, bb. 7824.

MALAY PENINSULA. Johore: no locality given, *Cantleya* 19 (K, type of *Cantleya johorica*); Kota Tinggi, Panti F.R., KEP 62801, 93686; Pontian, Pekan Menas, KEP 69805, 70858; Sg. Sembut, For. Dep. F.M.S. 5826; Batu Pahad, For. Dep. F.M.S. 5834, 5896, 49301, 49302; Ayer Hitam F. R., For. Dep. F.M.S. 29160, KEP 81453, 95101, FRI 2145, 2146. — Singapore: Jurong, 15th mile, SF 26182.

BORNEO. Sarawak: B.S. 104 Foxworthy, Moulton 2. 1909; 1st Dist., Kuching, 3rd mile Matang road, Haviland 2086; Bukit Siol, 100 m, S 374; Ludun, S 9632; 3rd Dist., Bukit Iju, S 23638. — Brunei: B.N.B. For. Dep. 2797; Tutong, BRUN 5712; Ladan hills F. R., 60 m, S 1700. — W. Borneo: Sanggau, bb. 17137; Matan, 10 m, bb. 14430; Pamangkat, 5 m, bb. 11341; Singkawang, 2—5 m, bb. 18003, 24218; Landak, 40 m, Heyne 2853, bb. 6392; Pontianak, Dumont; Sambas, van Houten; Ketapang, 10 m, F.R.I. 7444. — N. Borneo: Labuan, Motley 97(K). — NE. Borneo: Berau, 10 m, bb. 27055; Bulungan, 150 m, bb. 11187; ibid., Sebakis R. region, Kostermans 9291, 9307; Tarakan, Meijer 2595. — E. Borneo: W. Kutei, 15—30 m, bb. 16772, 16915. — S. Borneo: Sampit, 3—5 m, Buwalda 7821, 7856, bb. 32389, 32417.

CULT. Hort. Bogor. anno 1876, Beccari Herb. n. 2460 & 2461 (Fl, type of *Platea corniculata*; K).

5. THE GENUS CITRONELLA D. DON IN MALÉSIA AND THE SOLOMON ISLANDS

CITRONELLA

D. Don, Edinb. New Phil. J. 13 (1832) 243; Howard, J. Arn. Arb. 21 (1940) 471; Contr. Gray Herb. 142 (1942) 60—89, pl. 4—6; Back. & Bakh. v. d. Br., Fl. Java 2 (1965) 59. — *Villaresia* R. & P., Fl. Per. Chil. 3 (1803) 9, t. 231, nom. illeg., non R. & P. 1793; Boerl., Handl. 1, 1 (1890) 218; Engl. in E. & P., Nat. Pfl. Fam. III, 5 (1893) 244; Sleum. in ditto,

ed. 2, 20 b (1942) 350. — *Pleuropetalon* Bl., Mus. Bot. Lugd. Bat. 1 (1850) 248, *nom. illeg., non* Hook. f. 1845. — *Chariessa* Miq., Fl. Ind. Bat. 1 (1856) 794 (based on *Pleuropetalon* Bl.); Engl. in E. & P., Nat. Pfl. Fam. III, 5 (1893) 245; Sleum. in *ditto*, ed. 2, 20 b (1942) 348; Amsh. in Back., Bekn. Fl. Java (em. ed.) 6 (1948) fam. 135, p. 2.

KEY TO THE SPECIES IN MALESIA AND ADJACENT AREAS

1. Drupe essentially ellipsoid-oblongoid, (1.6—)1.8—2.2(—2.4) by 0.9—1.2(—1.3) cm. Simalur, W. & C. Java, Borneo, Celebes, Kai Is, New Guinea 1. *C. suaveolens*
1. Drupe ovoid, or ovoid-ellipsoid, or broadly ellipsoid, 2—3 by 1.8—2 cm.
 2. Leaves broadly ovate, base \pm obtuse to rounded. Solomon Is, Samoa, Tonga, New Hebrides.
 2. *C. samoensis*
 2. Leaves oblong- to obovate-elliptic, base \pm cuneate.
 3. Leaves \pm obtuse or shortly and rather abruptly acuminate at apex, tip bluntish. Samar.
 3. *C. latifolia*
 3. Leaves rather gradually and \pm acutely acuminate at apex. Luzon 4. *C. philippinensis*

1. *Citronella suaveolens* (Bl.) Howard, J. Arn. Arb. 21 (1940) 475; Contr. Gray Herb. 142 (1942) 82; Back. & Bakh. v. d. Br., Fl. Java 2 (1965) 59. — *Pleuropetalon suaveolens* Bl., Mus. Bot. Lugd. Bat. 1 (1850) 248. — *Chariessa suaveolens* (Bl.) Miq., Fl. Ind. Bat. 1 (1856) 794; Becc., Malesia 1 (1877) 118; Koord., Exk. Fl. Java 2 (1912) 530; Sleum., Notizbl. Berl.-Dahl. 15 (1940) 229; Amsh. in Back., Bekn. Fl. Java (em. ed.) 6 (1948) fam. 135, p. 2 — *Villaresia suaveolens* (Bl.) Valet., Crit. Overz. Olacin. (1886) 199, pl. 5, f. 32 a—g; Back., Schoolfl. Java (1911) 228. — *C. brassii* Howard, Contr. Gray Herb. 142 (1942) 81.

SIMALUR I. Tapah, fl. & fr., Achmad 131, 220, 792, 941, 1181, 1496, 1536, 1685.

JAVA. W. Java, locality not known, fl., Blume (L, type of *Pleuropetalon suaveolens*; U); fr., Korthals (L). — Bantam: Mt Karang, Koorders 40108. — Bogor: Mt Gedeh, near Tjibunas, 900—1500 m, Junghuhn 95 (L). — Banjumas: Singomerto, Pringombo, 800 m, Koorders 33768. — Kedu: foot of Mts Merbabu and Telemojo, Waitz (L).

BORNEO. Sarawak: 4th Div., Entoyut R. (affl. of the Batu Tinjar R.), Hose 383. — N. Borneo: Mt Kinabalu, Tenompok, 1525 m, Clemens 29895 (BM, BO). — E. Borneo: W. Kutei, Mt Palimasan near Tabang on Belajan R., 400 m, Kostermans 13123.

CELEBES. Menado: Lulumbulan Mts, 700 m, Koorders 19595 (BO, L). — Central part: Malili, Oesoe, 100 m, fr. ellips., Cel II/305 & 348 (BO, L); *ibid.*, Tawibaru, 1500 m, *bb.* 19578 (BO). — Southwestern part: Peak of Bonthain, Teysmann H.B. 13985, 14118 (BO, L); Gowa, Lembaja, 1600 m, *bb.* 20434; Buakang, Kampaliang, Teysmann H.B. 13779.

KAI IS. Jaheri 389 (BO, L).

NEW GUINEA. Vogelkop Peninsula: Sorong, Warsamson plain, 50 m, BW 12451; Manokwari, Masni plain, 6 m, BW 10895; *ibid.*, Warmare valley, 120 m, BW 15708. — Geelvinkbay: Nabire, 2 m, Kanehira & Hatusima 11491 (BO). — S. New Guinea: Asmat region, BW 6604 (L). — Western part: Idenburg R., Bernhard Camp, 350—850 m, Brass & Versteegh 13173 (A, type of *C. brassii*, *n.v.*; BM, BO, L), 13591. — Northern part: mouth of Tami R. near Hollandia, 15 m, BW 2670, 3411; Depapre, 5 m, *bb.* 14565. — Madang Dist.: Ramu R. valley, 5 miles SE. Fata airstrip, 200 m, Saunders 205. — Morobe Dist.: Butibum R., 60 m, Hartley 10237; Bumbu valley near Lae, NGF 17612; Bupu R., NGF 13804. Oomisis Creek, 300 m, Hartley 10562; Bulolo R. valley, 730—1160 m, NGF 7405, 9191, 17086, 17332; Amamapi Creek, 855 m, NGF 23080. — Central Dist.: Kokoda, 365 m, Carr 16370, 16440, 16511.

2. *Citronella samoensis* (A. Gray) Howard, J. Arn. Arb. 21 (1940) 475; Contr. Gray Herb. 142 (1942) 86; Dahl, J. Arn. Arb. 33 (1952) 260 (Pollen); Yuncker, B. P. Bish. Mus. Bull. 220 (1959) 172; Hürlimann, Bauhinia 3, 2 (1967) 197. — *Pleuropetalon samoense* A. Gray, U.S. Expl. Exp. Bot. Phan. 1 (1854) 200; Atlas (1857) pl. 27. — *Chariessa samoensis* (A. Gray) Engl. in E. & P., Nat. Pfl. Fam. III, 5 (1893) 245; Christophersen, B. P. Bish. Mus. Bull. 128 (1935) 128. — *Villaresia samoensis* (A. Gray) Valet., Crit. Overz. Olacin. (1886) 199.

SOLOMON IS. Bougainville: 850 m, NGF 30588. — Vella Lavella, 30 m, BSIP 11177. — Choiseul: Wagina I., BSIP 5501. — New Georgia, 25 m, BSIP 4831, 6857; Roviana Lagoon, BSIP 1983. — Guadalcanal, Tutuve Mts, 1200 m, Kajewski 2560 (BO), 2562 (L). — San Cristobal: 250—900 m, Brass 2911, BSIP 4262.

NEW HEBRIDES. Aneityum, Milne 279 (K).

Note. Furthermore known from Samoa (Savaii, Tutuila) and Tonga (Eua), cf. Howard, Contr. Gray Herb. 142 (1942) 87.

3. *Citronella latifolia* (Merr.) Howard, J. Arn. Arb. 21 (1940) 472; Contr. Gray Herb. 142 (1942) 80, pl. 6, f. 9—12. — *Villaresia latifolia* Merr., Philip. J. Sc. 14 (1919) 415; En. Philip. 2 (1923) 488. — *Chariessa latifolia* (Merr.) Sleum., Notizbl. Berl.-Dahl. 15 (1940) 229.

PHILIPPINES. Samar: Pinipisakan, Catubig R., fr., B.S. 24557 (A, n.v.; BM, BO, K, KAG; NY, n.v.; PNH, type of *Villaresia latifolia*, †; UC).

4. *Citronella philippinensis* (Merr.) Howard, J. Arn. Arb. 21 (1940) 474; Contr. Gray Herb. 142 (1942) 85, pl. 6, f. 1—8; Dahl, J. Arn. Arb. 33 (1952) 260, f. 20 & 20 A (Pollen). — *Villaresia philippinensis* Merr., Philip. J. Sc. 14 (1919) 414; En. Philip. 2 (1923) 488. — *Chariessa philippinensis* (Merr.) Sleum., Notizbl. Berl.-Dahl. 15 (1940) 229.

PHILIPPINES. LUZON: Ilocos Norte, Mt Palimlin, c. 1000 m, fl., B.S. 33267 (A, n.v.; K, P; PNH, type of *Villaresia philippinensis*, †; US, n.v.), 33308 (fr.: A, n.v.; K, P; PNH, †; US, n.v.).

Note. *Chariessa philippinensis* mentioned by Hatusima, Mem. Fac. Agr. Kagosh. Un. 5, 3 (1966) 38, from Batan I., *Hatusima 28585* = *Cordia dichotoma* Forst. f.

EXCLUDED

Villaresia macrocarpa Scheff., Ann. Jard. Bot. Btzg 1 (1876) 13 = *Gonocaryum litorale* (Bl.) Sleum. — *Villaresia scandens* Hassk., Nat. Tijds. N. I. 10 (1856) 152 = *Dichapetalum timoriense* (DC.) Boerl. — *Chariessa cauliflora* Pulle, Nova Guinea 8 (1912) 657 = *Pseudobotrys cauliflora* (Pulle) Sleum.

6. THE GENUS CODIOCARPUS HOWARD IN MALESIA

CODIOCARPUS

Howard, Brittonia 5 (1943) 53.

The genus is very close to *Medusanthera* Seem. Besides a rib of the endocarp parallel to either side of the ventral fleshy appendage (more faintly developed or absent in *Medusanthera*) there are some differences in the structure of the wood of the two genera, as far as known — the wood of *Codiocarpus andamanicus* (Kurz) Howard and that of *Medusanthera gracilis* (King) Sleum. not yet investigated — which at the moment prevent the unification of these genera without further documentation to evaluate whether these criteria are of generic or but specific value. The descriptions and figures of the pollen of both genera given by Dahl, J. Arn. Arb. 33 (1952) 267 & 269, show no essential differences.

The two species known are very close to each other in most vegetative and floral characters. The tentative key to these species given below is unsatisfactory.

1. Petiole 1—1.5 cm. Drupe 1.5—1.8 cm. Andaman & Nicobar Is. *C. andamanicus* (Kurz) Howard
1. Petiole (1.5—)2—2.5 cm. Drupe (1.8—)2—2.5 cm. Philippines (Mindoro, Palawan).

C. merrittii (Merr.) Howard

I. *Codiocarpus merrittii* (Merr.) Howard, *Brittonia* 5 (1943) 56, f. 2, f. 3, e—f (Wood-Anat.); Dahl, *J. Arn. Arb.* 33 (1952) 267, f. 47 & 47 A (Pollen). — *Stemonurus merrittii* Merr., *Philip. J. Sc.* 3 (1908) Bot. 240. — *Tylecarpus merrittii* (Merr.) Sleum., *Notizbl. Berl.-Dahl.* 15 (1940) 237. — *Medusanthera merrittii* (Merr.) Sleum., *ditto* (1941) 364.

PHILIPPINES. Mindoro: Pinamalayan, 100 m, *Merritt 9915* (K; NY, cit. Howard, *n.v.*; PNH, syntype of *Stemonurus merrittii*, †; US, cit. Howard, *n.v.*); *ibid.*, B.S. 40837 (A, *n.v.*; BO, K, P). — Palawan: locality not given, F.B. 21585 (BM, K, L, P); Aborlan, Sagpangan, 200 m, PNH 23051; Talakaigan R., PNH 13975; Iraan Mts, 50 m, PNH 12481; Brooke's Point, Addison Peak, *Elmer 12622*; Puerto Princesa, B.S. 29160 (P), F.B. 29253 (K); *ibid.*, Mt Inagawan, *Ebalo 508* (UC); Mt Pulgar, *Elmer 12842*; Bindoyan, *Ebalo 609* (UC); Quezon, Bukal, PNH 91272; Balavac I., B.S. 27981, 49838 (UC), 77797.

7. A REVISION OF THE GENUS GOMPHANDRA WALL. EX LINDL.

For the preparation of this genus for 'Flora Malesiana' it appeared necessary to revise it in a submonographic way. This revision, however, turned out to remain highly unsatisfactory mainly due to the scarcity and incompleteness of specimens collected, the latter mainly a consequence of the dioecism of the genus. Many species have been described either from ♂ or fruiting specimens only, and their pertaining ♂ and/or ♀ flowers resp. fruits are not yet known. Vegetative characters, on the other hand, the variability or constancy of which is not fully clear in many species, are mostly not sufficient to discriminate species in a key. The key given here, a mixture of vegetative and floral characters, is not more than a compromise obtained with the materials available; only complete materials of a given species can be named with it. Future collectors should care for collections as complete as possible and with ample field notes.

GOMPHANDRA

Wall. [Cat. (1831) n. 3718, (1832) n. 7204, *nom. nud.*; in Roxb., *Fl. Ind.* ed. Carey & Wall. 2 (1824) 329, *nom. event.*] *ex* Lindl., *Nat. Syst.* ed. 2 (1836) 439; Wight, *Ill.* (1840) 102; Endl., *Gen.* (1840) 1043; Ench. (1841) 546; Reichb., *Nom.* (1841) 136; Benth., *Trans. Linn. Soc.* 18, 4 (1841) 679; *Ann. Mag. Nat. Hist.* 7 (1841) 215; Endl., *Sp. Pl.* 2 (1842) 82; Meisn., *Comm.* (1843) 345; Walp., *Rep.* 2 (1843) 802; Römer, *Fam. Nat.* 1 (1846) 9, 14; Lindl., *Veg. Kingd.* (1846) 444; Benth. in Benth. & Hook. *f.*, *Gen. Pl.* 1 (1862) 350; Mast. in Hook. *f.*, *Fl. Br. Ind.* 1 (1875) 585, *p.p.*; *emend.* Becc., *Malesia* 1 (1877) 109; Valet., *Crit. Overz. Olacin.* (1886) 207; Boerl., *Handl.* 1, 1 (1890) 213; King, *J. As. Soc. Beng.* 64, ii (1895) 111; K. & V., *Bijdr.* 5 (1900) 147; Valet., *Ic. Bog.* 1 (1901) t. 88, *nota*; Hochr., *Pl. Bog. Exs.* (1904) 41, *nota*; Bull. *Inst. Bot. Btzg* 22 (1905) 42, *nota*; Gagnep., *Fl. Gén. I.-C.* 1 (1911) 825; Gamble, *Fl. Pres. Madras* 1 (1915) 194; Ridl., *Fl. Mal. Pen.* 1 (1922) 426; Merr., *En. Philip.* 2 (1923) 489; Sleum., *Notizbl. Berl.-Dahl.* 15 (1940) 238, incl. subgen. *Eugomphandra* Sleum. & *Paragomphandra* Sleum., l.c. 242; *ditto* (1941) 363 in text; Merr., *J. Arn. Arb.* 23 (1942) 176 ff.; Sleum. in E. & P., *Nat. Pfl. Fam.* ed. 2, 20 b (1942) 363; Gagnep., *Fl. Gén. I.-C. Suppl.* (1948) 746; Amsh. in Back., *Bekn. Fl. Java* (em. ed.) 6 (1948) fam. 135, p. 4; Back. & Bakh. v. d. Br., *Fl. Java* 2 (1965) 60. — *Stemonurus* Bl., *Bijdr.* (1826) 648, *p.p.*; Mus. Bot. Lugd. Bat. 1 (1850) 249, *p.p.*; Miers, *Ann. Mag. Nat. Hist. II*, 10 (1852) 30 & 34, *p.p.*, repr. *Contr. Bot.* 1 (1852) 80 & 85, *p.p.*; O. Ktze, *Rev. Gen. Pl.* 1 (1891) 112; Engl. in E. & P., *Nat. Pfl. Fam.* III, 5 (1893) 247; Schellenb., *Bot. Jahrb.* 58 (1923) 160; Howard, *J. Arn. Arb.* 21 (1940) 461; Lloydia 6 (1943) 144 ff.; Dahl, *J. Arn. Arb.* 33 (1952) 268 (Pollen). — *Platea* (*non* Bl.) Miers, *Ann. Mag. Nat. Hist. II*, 10 (1852) 108, *p.p.*, repr. *Contr. Bot.* 1 (1852) 95, *p.p.* — *Lasian-*

thera (non P.B.) Miq., Fl. Ind. Bat. I (1856) 790, p.p.; Baill., Hist. Pl. 5 (1874) 329, p.p.; Becc., Malesia I (1877) 109, p.p.

Type species: *G. tetrandra* (Wall. in Roxb.) Sleum. (= *G. axillaris* Wall. ex. Bedd., based on Wallich 3718, mentioned by Lindley).

Note. For discussion of the generic name *Gomphandra* see under *Stemonurus*.

KEY TO THE SPECIES

1. Leaves persistently velutinous or tomentose all over the undersurface, soft to the touch (cf. also 8. *G. papuana*).
2. Leaves (12—)14—28 by (5.5—)8—10(—11) cm, nerves 8—10 pairs. Petals 5—6 mm. Annam.
 1. *G. donnaiensis*
2. Leaves up to 20 by 8 cm, nerves 2—7(—8) pairs. Petals up to 4 mm.
 3. Nerves in 2(—3) pairs. Luzon 2. *G. fuliginea*
 3. Nerves in 4—7(—8) pairs.
 4. Petals outside short-tomentose in the upper third. Celebes. 3. *G. velutina*
 4. Petals outside glabrous or practically so.
 5. Leaves 12—20 by 4—7 cm, dark brown when dry. Tonkin, Yunnan. 4. *G. mollis*
 5. Leaves 9—12 by 2—4 cm, pale green when dry. Lower Burma. 5. *G. tomentella*
1. Leaves covered with scattered hairs underneath, ± glabrescent with age, or glabrous from the beginning.
6. Ovary in the ♀ flower laxly to densely hairy. (Rudiment of ovary in the ♂ flower whether or not hairy.)
 7. Inflorescence conspicuously head-like, its branches (especially in the ♂ specimens) very short.
 8. Leaves elliptic or oblong-, rarely ovate-elliptic, 12—20 by 4—8 cm, nerves 5—6(—7) pairs. Drupe (1.8—)2—2.4 by (0.6—)0.7—0.8 cm. Sumatra (incl. Simalur I.), Malay Peninsula.
 6. *G. capitulata*
 8. Leaves oblong, rarely ovate-lanceolate, 5—8(—9) by 1.5—3 cm, nerves 3—4(—5) pairs. Drupe 1—1.3 by 0.5—0.7 cm. Borneo (Mt Kinabalu) 7. *G. lysipetala*
 7. Inflorescence (especially in the ♂ specimens) generally more loose, its branches distinct and divergent.
 9. Petals hairy in their upper part, 5—7(—10) mm. Rudiment of ovary in the ♂ flower hairy on top. Drupe 3.5—4 by c. 1.5 cm. New Guinea 8. *G. papuana*
 9. Petals glabrous or practically so, rarely up to 5 mm. Drupe much smaller.
 10. Both ♂ and ♀ inflorescences many-flowered, cymes together on top of a peduncle, 1.5—2 cm. (Rudiment of ovary in the ♂ flower glabrous.) Leaves coriaceous. Simalur I.
 9. *G. simalurensis*
 10. ♂ Inflorescences rather many-, ♀ ones few-flowered, cymes together on top of a generally rather short peduncle. Leaves chartaceous to coriaceous.
 11. Leaves ± laxly covered underneath for a long time with appressed weak hairs, nerves 5—7 pairs.
 12. Rudiment of ovary in the ♂ flower with a tuft of hairs on top. Very base of drupe not swollen. Borneo, Philippines incl. Sulu Arch. 10. *G. cumingiana*
 12. Rudiment of ovary in the ♂ flower glabrous or practically so. Base of drupe swollen to almost apophysate for c. 1 mm. Simalur I.
 11. *G. pseudojavanica*
 11. Leaves practically glabrous from the beginning. (Rudiment of ovary in the ♂ flower glabrous.)
 13. Leaves with (5—)6—8 pairs of nerves. Base of drupe not swollen. Java, Bali, Lombok 12. *G. javanica*
 13. Leaves with 8—10 pairs of nerves. Base of drupe swollen. Sumatra.
 13. *G. fusiformis*
 6. Ovary (and rudiment of ovary in the ♂ flower) glabrous or practically so.
 14. Filaments glabrous or practically so.
 15. Filaments widened upwards and relatively short, i.e. c. twice as long as are the anther cells. N. Queensland, Kai Is, New Guinea 14. *G. australiana*
 15. Filaments elongate-linear, at least 3 times as long as are the anther cells.
 16. Leaves coriaceous, 5—9 by 2—3(—3.5) cm. Stamens little or hardly exerted at anthesis. India, Ceylon 32. *G. coriacea*
 16. Leaves chartaceous to subcoriaceous, 8—18 by (3.5—) 4—6(—7) cm. Stamens markedly exerted at anthesis. New Guinea 15. *G. pallida*

14. Filaments ventrally and/or dorsally hairy.
17. Filaments with short-clavate or papillose hairs which never surpass the anther cell.
18. Drupe (1.6—)1.8—2(—2.2) by 0.8—1 cm. Sumba, Flores, Wetar, Timor, Celebes, Moluccas 16. *G. mappioides*
18. Drupe, as far as known, 1.3—1.6 by 0.5—0.6 cm.
19. Leaves practically glabrous. Calyx \pm obconical, entire, glabrous. Philippines (Mindanao, Negros;? Bohol) 17. *G. apoensis*
19. Leaves \pm densely short-pubescent all over the undersurface, especially at midrib and nerves. Calyx cup-shaped, dented, hairy. Philippines (Mindanao).
18. *G. flavicarpa*
17. Filaments with elongate-clavate ('glandular') or penicillate hairs (those from the connective often surpassing the anther cell).
20. Inflorescence very lax, peduncle and branches elongate, slender and rather few-flowered both in the σ and ρ specimens. Philippines (Mindoro, Sibuyan).. . . . 19. *G. oligantha*
20. Inflorescence lax to dense, peduncle and branches relatively short at least in the σ specimens, generally many-, rarely few-flowered.
21. Petals \pm densely appressedly hairy outside. New Guinea. 20. *G. sawiensis*
21. Petals sparsely hairy on top (in bud), or glabrous.
22. Drupe (2—)2.5—3(—4) cm long.
23. Inflorescence rather compact, umbelliform. Drupe fusiform, 0.5—0.6 cm \varnothing .
24. Leaves chartaceous to subcoriaceous, nerves 10—12 pairs. Sumatra.
21. *G. dolichocarpa*
24. Leaves coriaceous, nerves 5—6(—8) pairs. Andaman Is.
22. *G. comosa*
23. Inflorescence rather lax. Drupe obovoid- or oblongoid-ellipsoid, at least 0.8 cm \varnothing .
25. Leaves narrow-lanceolate, chartaceous to subcoriaceous, nerves 3(—4) pairs. Philippines (Luzon) 23. *G. lancifolia*
25. Leaves (obovate-) elliptic to oblong or lanceolate-oblong, \pm coriaceous, nerves 4 or more pairs.
26. Leaves elliptic to obovate-elliptic. Philippines (Luzon, Mindoro, Marinduque, Panay, Palawan) 24. *G. luzoniensis*
26. Leaves elliptic to lanceolate-oblong. New Guinea, New Britain, New Ireland, Solomon and Santa Cruz Is 25. *G. montana*
22. Drupe 1—2 (rarely —2.2) cm long (if 9 mm or more \varnothing cf. 26. *G. montana*).
27. Inflorescence (at least in the σ specimens) rather compact, \pm umbelliform, on peduncle up to 5 mm. Leaves \pm chartaceous, nerves (8—)10—12(—14) pairs. Very base of drupe swollen and smooth. Sumatra.
26. *G. parviflora*
27. Inflorescence (at least in the σ specimens) with more laxly arranged and diverging branches, generally on peduncle longer than 5 mm.
28. Drupe ovoid- to oblongoid-ellipsoid, base generally swollen. Inflorescences (at least in the σ specimens) much-branched, generally many-flowered and distinctly scorpioid (i.e. flowers arranged on one side), rarely with fewer flowers and rather obscurely scorpioid.
29. Leaves dark to blackish brown in dry state, and rufous- to rusty-tomentellous on midrib and nerves beneath, as are the branchlets. Sumatra 27. *G. subrostrata*
29. Leaves green to greenish-brownish in dry state and practically glabrous beneath, as are the branchlets 28. *G. quadrifida* s. lat.
For the varieties follow the key:
30. Leaves oblong to elliptic-oblong, rarely elliptic or subovate-oblong, 10—15(—25) by 4—6(—11) cm, nerves (5—)6—8(—10, rarely more) pairs, \pm markedly looping before the edge. Burma, Thailand, Cochinchina, Malay Peninsula, Sumatra incl. Mentawai I. var. *quadrifida*
30. Leaves often smaller, nerves in (3—)4—5(—6) pairs.
31. Leaves with a pair of slightly suprabasal, high curved-ascendent 'melastomaceous' nerves, other nerves transverse to the midrib, faint or obscure. Sumatra, Malay Peninsula.
var. *triplinervis*

31. Leaves with more numerous, straight or more curved pairs of nerves subparallel to each other.
32. Leaves narrowly oblong-lanceolate, sometimes almost linear, 5—12(—18) by (0.5—)0.8—2 cm. S. Thailand, Malay Peninsula. var. *angustifolia*
32. Leaves lanceolate to oblong, rarely subovate-lanceolate, (4—)5—10(—14) by 2—4 cm.
33. Nerves ± spreading except the basal pair, generally obscurely looping before the edge. Annam, Thailand, Malay Peninsula . . . var. *ovalifolia*
33. Nerves all steeply ascending, prominent and markedly looping before the edge. Malay Peninsula (Penang) var. *maingayi*
28. Drupe, as far as known in mature state, oblongoid-ellipsoid, base broadly attenuate, not swollen. Inflorescences never scorpioid.
34. Leaves brittle and blackish in dry specimens, nerves and veins ± obscure on both faces. Inflorescence with red brown hairs. New Guinea. 29. *G. schoepfifolia*
34. Leaves hardly or not brittle and greenish-brownish, rarely blackish in dry specimens, nerves and veins generally more visible. Inflorescence with paler, mostly yellowish hairs.
35. Apex of drupe shortly and ± abruptly narrowed, often curved into a kind of beak. Mature leaves with a finely impressed reticulation above. New Guinea . . . 30. *G. pseudoprasina*
35. Apex of drupe broadly and gradually narrowed, or rounded, never beaked. Mature leaves showing no impressed reticulation above.
36. Leaves membranous to chartaceous. Ceylon, India, Indochina, Burma, Thailand, China incl. Hainan.
31. *G. tetrandra*
36. Leaves coriaceous. Ceylon, India. 32. *G. coriacea*

1. *Gomphandra donnaiensis* (Gagnep.) Sleum., comb. nov. — *Lasianthera donnaiensis* Gagnep., Fl. Gén. I.—C. Suppl. (1948) 744.

INDOCHINA. Annam: Ht. Donnai, entre Dankia et Yanglô, *Poilane 23467* (BO, P); P. sapoum, au S de la station agr. de Blao, *Poilane 22016* (K; P, type of *Lasianthera donnaiensis*); Col de Braïian, 1000—1100 m, *Poilane 24306* (P), *24515* (K, P).

Note. Close to and possibly conspecific with *G. mollis* Merr.

2. *Gomphandra fuliginea* (Elm.) Merr., En. Philip. 2 (1923) 490. — *Urandra fuliginea* Elm., Leaf. Philip. Bot. 2 (1908) 491. — *Stemonurus fuligineus* (Elm.) Howard, J. Arn. Arb. 21 (1940) 468 ('*fulgineus*').

PHILIPPINES. Luzon: Benguet, Baguio, *Elmer 8620* (A, n.v.; BO, E, FI, G, K, L; PNH, type of *Urandra fuliginea*, †; WRSL); *ibid.*, *Williams 1270* (cit. Merrill, n.v.).

3. *Gomphandra velutina* Sleum., sp. nov.

Arbor c. 10 m alta. *Ramuli* graciles fulvo-velutini. *Folia* lanceolata usque oblonga, apice breviter acute acuminata, basi cuneata vix inaequilateralia, in sicco saturate brunnea, chartacea, supra glabra, subtus fulvo-ferrugineo-velutina, 12—17 cm longa, (3—)4—6 cm lata, nervis utroque latere 6—7(—8) leviter arcuatis, supra levissime immersis, subtus parum elevatis; petioli velutini, 8—13 mm longi, 1.5 mm crassi. *Flores* ♂ capitula e cymis valde abbreviatis composita, c. 15-flora, pedunculo c. 5 mm longo imposita petalisque exceptis ubique fulvo-tomentosula formantes, vix 1 mm longe pedicellati. Calyx cupulatus, 2.5 mm altus. Petala 5, in tubum campanulatum irregulariter fissum in superiore

tertio extus tantum tomentellum connata, 4.5—5.5 mm longa, tubo ore 4.5 mm diam. Stamina 5, vix exserta; filamenta antice infra antheras dorsoque apice tantum albobarbata. Ovarii rudimentum apice erecto-pilosum. Flores ♀ in capitulis 3—4-floris pedunculatis dispositi, calyce petalisque ut in fl. ♂. Staminodia 5, crassa, apice barbata. Ovarium breviter tomentosum. *Drupa* ignota.

CELEBES. Central eastern part: Mengkoka Mts, Porema, 1200 m, fl. 28-10-1929, *Kjellberg 2683* (BO; L, type; S).

Nota. Ut videtur *G. papuanae* proxima.

4. *Gomphandra mollis* Merr., J. Arn. Arb. 23 (1942) 175; Wu & Wang, Act. Phytotax. Sin. 6 (1957) 279. — *G. tonkinensis* Gagnep., Not. Syst. 13 (1947) 134; Fl. Gén. I.-C. Suppl. (1948) 752. — *Stemonurus mollis* (Merr.) Howard in Dahl, J. Arn. Arb. 33 (1952) 269; Dahl. l.c. 269 (Pollen).

INDOCHINA. Tonkin: Lao-kay, Pho-lu, *Poilane 25186* (K; P, lectotype of *G. tonkinensis*), 25187; Tuyen-quang, Chien-hoa, *Eberhardt 4824*; Sontay, Da-chong, *Pételot 2658, 5949* (P), 7949 (A, type of *G. mollis*, n.v., coll. nr. apparently mistaken for 5949); Phu-tho, rés. for. de Chan-mong, *Fleury* (Herb. Chevalier 32165 & 32209); Phuong lam, *Balansa 3890 p.p.*

CHINA. Yunnan: cf. materials cited by Wu & Wang.

5. *Gomphandra tomentella* (Kurz) Mast. in Hook. f., Fl. Br. Ind. 1 (1875) 587; Valet., Crit. Overz. Olacin. (1886) 225. — *Stemonurus tomentellus* Kurz, J. As. Soc. Beng. 41, ii (1872) 298; ditto 44, ii (1875) 155; Prel. Rep. For. & Veg. Pegu (1875) 37; For. Fl. Br. Burma 1 (1877) 239; Hundley & Chit, List Trees Burma ed. 3 (1961) 46, non Valet. 1886. — *Urandra tomentella* O. Ktze, Rev. Gen. Pl. 1 (1891) 113 (based on '*Lasianthera tomentella* Mast.').

BURMA. 'Tenasserim, towards S. Mines', Kurz 813 (C; K, type of *Stemonurus tomentellus*; L).

6. *Gomphandra capitulata* (Jungh. & de Vriese) Becc., Malesia 1 (1877) 111; Valet., Crit. Overz. Olacin. (1886) 228. — *Aralia capitulata* Jungh. & de Vriese, Ned. Kruidk. Arch. 1 (1846) 17. — *Lasianthera capitulata* (Jungh. & de Vriese) Miq., Fl. Ind. Bat. 1 (1856) 791; Suppl. 1 (1860) 137; Warb., Pflanzenwelt 2 (1916) 349, f. 231 B, 1—4. — *Stemonurus capitulatus* (Jungh. & de Vriese) O. Ktze, Rev. Gen. Pl. 1 (1891) 112. — *G. nyssifolia* King, J. As. Soc. Beng. 64, ii (1895) 114; Ridl., Fl. Mal. Pen. 1 (1922) 427; Bak. f., J. Bot. 62 (1924) Suppl. 21. — *Nyssa sessiliflora* (non Hook.) Koord., Pl. Jungh. ined. n. 57, cf. Hall. f., Meded. Rijks-herb. 1 (1910) 13. — *Stemonurus nyssifolius* (King) Howard, J. Arn. Arb. 21 (1940) 468.

Note. *Mastixia heterophylla* Bl. (1850) has been considered by Hallier f. (Meded. Rijks-herb. 36, 1918, 5) a synonym of *G. capitulata*. To judge from the type material of *Mastixia heterophylla*, preserved at Leyden, this 'species' seems to be a mere form of *Mastixia pentandra* Bl.

SUMATRA. Eastcoast: Simelungun F. R., 700 m, *bb. 4890*; W. of Bandarbaru, 850 m, *Loerzing 7009 p.p.*; Sibolangit, 475 m, *Loerzing 4130* (BO). — Tapanuli: Batak Lands ('Hochankola'), Tobing, 600—915 m, *Junghuhn Pl. ined. 57* (K; L, type of *Aralia capitulata*; P, U). — Westcoast: Padang, Ayer Mantjur, 360 m, *Beccari P.S. 673*; Pajakumbuh, Halaban Hutan Sinamo, 600—700 m, *Maradjo 362*. — Palembang: Tandjong Ring, Saling-Beliri R., 150 m, *Forbes 2808*. — Lampong: Giesting, *Cramer a. 1915* (L). — Simalur I. Tapah, *Achmad 122, 137, 702, 717, 754, 970, 1321, 1414*.

MALAY PENINSULA. Perak: *King's Coll. 6984* (A, n.v.; BM; CAL, syntype of *G. nyssifolia*, n.v.; CGE, E, K, UPS), *Scortechini s.n.* (BO; CAL, syntype of *G. nyssifolia*, n.v.; SING); Larut, 1065—1370 m, *King's Coll. 3822, 6406* (BM; CAL, lectotype of *G. nyssifolia*, n.v.; G, K, P); Mt Hijau, *Ridley a. 1892* (SING). — Pahang: Cameron Highl., 1400 m, *Batten-Pool a. 1939/40* (SING), *SF 23478*; Frazer Hill, 1220 m, *F. M. S. Mus. 11547* (BO). *SF 11260*.

7. Gomphandra lysipetala Stapf, Trans. Linn. Soc. II, Bot. 4 (1894) 139. — *Stemonurus lysipetalus* (Stapf) Merr., En. Born. (1921) 356; Masam., En. Pl. Born. (1942) 424.

BORNEO. N. Borneo: Mt Kinabalu, 1830 m, *Haviland 1207* (K, type; SAR); Tenompok, Lumu trail, 1675 m, *Clemens 29394*; 36.5 mile Ranau road, 1220 m, *SAN 32392*; Bembangan R., 1525 m, *Chew & Corner 4642*.

8. Gomphandra papuana (Becc.) Sleum., Notizbl. Berl.-Dahl. 15 (1940) 238. — *Lasianthera litoralis* (non Miq.) F. v. M., Descr. Not. 2 (1877) 53. — *Platea papuana* Becc., Malesia 1 (1883) 257; Valet., Crit. Overz. Olacin. (1886) 254. — *Stemonurus puberulus* K. Sch. & Laut., Fl. Schutzgeb. (1900) 414. — *Stemonurus zygomorphus* Pulle, Nova Guinea 8 (1912) 658; Schellenb., Bot. Jahrb. 58 (1923) 162. — *Stemonurus papuanus* (Becc.) Schellenb., Bot. Jahrb. 58 (1923) 161. — *G. zygomorpha* (Pulle) Sleum., Notizbl. Berl.-Dahl. 15 (1940) 239.

NEW GUINEA. Western part: Patema, 40 km inward Nabire, Geelvinkbay, *Kanehira & Hatusima 12429*. — South Western part: Noord (= Lorentz) R., Sabang I., *Versteeg 1755* (cit. '1735': BO, K, L; U, type of *Stemonurus zygomorphus*). — Western Div.: Fly R., *d'Albertis a. 1876* (FI, Herb. Beccari n. 2469 & 2469 A, type of *Platea papuana*; K; MEL, as '*Lasianthera litoralis*', n.v.); Lower Fly R., Sturt I., *Brass 8155*; *ibid.*, Daru subdist., 30 m, *NGF 35308*. — Madang Dist.: Kaulo R., affl. Minjem R., 400 m, *Schlechter 17021* (B, †; P); Astrolabe-Ebene bei Erima, 20 m, *Lauterbach 2204* (B, lectotype of *Stemonurus puberulus*, †; WRSL); Bismarck-Ebene, 100 m, *Lauterbach 2483* (B, syntype of *Stemonurus puberulus*, †); Koropa village, Ramu R. valley, 175 m, *Hoogland 5076*; Usino, 120 m, fr., *NGF 28033*. — Central Dist.: Koitaki, 450 m, *Carr 12081, 12104, 12105*. — Morobe Dist.: Busu R., 30–100 m, *NGF 12225, 12407, 22260, 37107, Hartley 11037*; Butibum R., 60 m, *Hartley 10282*; Maiama, 15 m, fr., *NGF 31689*. — Northern Dist.: Gorasata and Patikiari villages, 25 m, *Hoogland 3624*.

9. Gomphandra simalurensis Sleum., *sp. nov.*

Arbor 13—25 m alta, Ramuli validi, apicibus tantum laxe appresse pilosi. Folia elliptica, rarius subobovato-elliptica, apice breviter obtuse acuminata, basi in petiolum attenuata paulloque decurrentia, coriacea, in sicco saturate brunnea, supra laevia, subtus opaca, novella subtus ad costam laxissime brevissime pubescentia, matura glabra, 10—17(—21) cm longa, (4—)4.5—9(—11) cm lata, costa supra leviter impressa, subtus bene prominente, nervis lateralibus 5—6(—7)-paribus, inferioribus sat stricte, superioribus curvatim ascendentibus, supra fere planis, subtus elevatis, venis transversis laxis subtus prominulis vel subobscuris; petiolus 1—1.8(—2.3) cm longus, c. 2.5 mm crassus, in sicco corrugatus. *Inflorescentiae* ♂ et ♀ e cymis 3—5 multifloris pedunculo communi sat gracili 1.5—2 cm longo impositis formatae, petalis exceptis pallide ferrugineo-tomentellae, singulae vel binae, haud raro etiam ex axillis defoliatis ortae, totae 2.5—3.5 cm longae. *Flores* ♂: Calyx cupularis, ciliatus, 4(—5)-denticulatus, sparse pubescens, 1 mm altus. Petala 4 vel 5, sub anthesi in tubum orem versus dilatatum breviter 4- vel 5-lobatum connata, albovirentia, 4.5 mm longa. Stamina 4 vel 5, valde exserta; filamenta antice infra antheras laxe pilis elongato-clavatis adspersa, dorso ad connectivum penicillata. Ovarii rudimentum basi gibbosum, glabrum. *Flores* ♀: Calyx et petala ut in fl. ♂. Staminodia 4 vel 5. Ovarium cylindricum, ipsa basi glabrum, ceterum dense pilis prorsus versis hirsutulum. *Drupa* oblongoidea, parum obliqua paulloque rostrata, pallide lutea, 1.6—1.8(—2) cm longa, 0.7—0.8 cm diam., endocarpio longitudinaliter 10—12-costulato.

SUMATRA. Simalur I.: Tapah (Dëfajàn), *Achmad 290* (fr.), 389 (fr.), 536 (fr.), 733 (fl. ♂), 774 (fr. immat.), 1534 (fl. ♂ immat.), 1570 (fl. ♀; BO; L, type), 1767 (♂, defl.).

10. Gomphandra cumingiana (Miers) F.-Vill., Novis. App. (1880) 46; Vidal, Phan. Cuming. Philip. (1885) 102; Rev. Pl. Vasc. Filip. (1886) 86; Valet., Crit. Overz. Olacin.

(1886) 229; Merr., En. Philip. 2 (1923) 490. — *Stemonurus cumingianus* Miers, Ann. Mag. Nat. Hist. II, 10 (1852) 42, repr. Contr. Bot. 1 (1852) 92; O. Ktze, Rev. Gen. Pl. 1 (1891) 112; Dahl, J. Arn. Arb. 33 (1952) 268, f. 50 & 50 A (Pollen). — *Stemonurus agusanensis* Elm., Leaf. Philip. Bot. 7 (1915) 2689. — *G. agusanensis* (Elm.) Merr., En. Philip. 2 (1923) 489.

BORNEO. Western part: Mueller Mts, Liang-gagang, Hallier 2814. — Sarawak: 4th Div., Kakus, Ulu Mayeng, 200 m, S 21789; Bukit Mersing, Anap, S 21967; Niah R., Miri Dist., S 29104; Baram, Haviland & Hose 3239 (K, SAR), 3287 (K). — Central part: Upper Mahakam R., Jaheri (Exp. Nieuwenhuis) 1712. — Eastern part: Berau, Kelai R. near Long Lanuk, Kostermans 21164 A; Mt Medadam, N. of Sangkulirang, 100 m, Kostermans 13423 A; C. Kutei, Belajang R. area, 30—100 m, Kostermans 10289, 10423, 10567, Forman 525. — Southeastern part: Balikpapan, Sembodja, 80 m, Sauveur K 11, 12a, 139. — Northeastern part: Upper Sembakung R., G. Labang, Amdjah 360, 372; Upper Sebuku R., Bukit Sungei Tulit, Amdjah 622. — Northern part (Sabah): Mt Kinabalu area, 600—1525 m, Clemens 26943, 30322, SAN 23778, 29013, 33150, 42750; Tawau, mile 12.5 Apas road, 30 m, SAN 48470; Kinabatangan, Lamag, 20 m, SAN 32882; Lahad Datu, 100—120 m, SAN 25063, 31619; Bettotan near Sandakan, SF 19013 (SING).

PHILIPPINES. Palawan: Brooke's Point, Mt Mantalingahan, PNH 43, 49, 160; Mt Balagbag, B.S. 77825; Panalingajan R., B.S. 77436; Puerto Princesa, Mt Pulgar, Elmer 12893. — Luzon: Tayabas, Cuming 796 (fl. ♂: BM, C, CGE, FI, G, K, type of *Stemonurus cumingianus*; L, P, SING, UPS); Camarines, B.S. 1582; Camarines Sur, Buhi, Vidal 1036 (K); Mt Isarog, B.S. 22068; Sorsogon, Irosin, Mt Bulusan, Elmer 15215, 15449, 15476 & 15624 (as '*Urandra similis*'), 16429 (sub *Urandra sorsogonensis*, not type), PNH 2721. — Samar: Calbiga, Mt Balud, PNH 15771. — Leyte: Wenzel 350 (as '*Urandra similis*'), 696, 1580; Dagami, B.S. 15186; Mt Abucayan, B.S. 41710. — Biliran: B.S. 18782. — Basilan: F.B. 20073. — Sulu Arch.: Jolo, Mt Daho, 900 m, B.S. 43929. — Mindanao: Ahern 5849; Surigao, Wenzel 2632, 2840, 2873, 2936, 3008, F.B. 27004; Lanao, Lake Lanao, Clemens a. 1907; Agusan, Cabadbaran, Mt Urdaneta, Elmer 14018 (A, n.v.; BO, C, FI, G, K, L, P; PNH, type of *Stemonurus agusanensis*, †; U).

II. *Gomphandra pseudojavanica* Sleum., sp. nov.

Arbor 4—15 m alta. *Ramuli* graciles, apicibus tantum puberuli. *Folia* oblongo-elliptica, apice ± abrupte per 1—2 cm acuminata, apice ipso obtusa, basi late attenuata, subcoriacea, in sicco supra olivaceo-brunnea, subtus pallidiora, supra glabra, subtus initio passim per totam faciem, maturitate in facie laxius vel certe ad costae inferioriorem partem brevipilosa, subtus minutissime tuberculata, (8—)10—16 cm longa, (4—)4.5—8(—10) cm lata, costa supra anguste impressa, subtus prominente, nervis lateralibus 5—6(—7)-paribus arcuato-ascendentibus ante marginem ± distincte curvato-anastomosantibus supra minute vel haud immersis, subtus parum elevatis; petioli initio puberuli, 1—1.5 (—2) cm longi, 1.5—2 mm crassi. *Inflorescentiae* ♂ e cymis 3—4-chotomis pedunculo gracili 0.5—1.3 cm longo impositis formatae, ad pedunculos ramulosque subdense brevipilosae, subdensiflorae. *Calyx* cupulatus, minute 5-dentatus, tubo glaber, ciliatus, vix 1 mm altus. *Petala* in tubum superne dilatatum et per 1/4 superiorem partem 5-lobatum connata, albivirentia, glabra, c. 3.5 mm longa. *Stamina* 5, c. 1 mm exserta; filamenta crasse linearia, ventraliter infra thecas, dorsaliter ad connectivum pilis subglandulosis elongato-clavatis laxe penicillata. *Ovarii rudimentum* conicum, glabrum, vel raro apice pilo uno alterove instructum. *Inflorescentiae* ♀ ignotae. *Infructescentiae* juveniles e floribus (1—)2 vel 3 pedunculo communi c. 5 mm longo impositis et 3—5 mm longe pedicellatis compositae. *Ovarium* evolutum cylindricum dense appresse pilosum. *Drupa* matura ellipsoideo-oblongoidea paulloque curvata, apice breviter et angustius, basi latius attenuata, ipsa basi per circa 1 mm incrassato-subapophysata, 1.7—1.9 cm longa, 6—7 mm diam., exocarpio tenui albedo, endocarpio costis paucis parum elevatis longitudinalibus ornatum.

SUMATRA. Simalur I: Tapah (Défajàn), Achmad 64 (fr. immat.), 191 (♀ defl., fr. mat.: BO; L, type), 257 (fr. immat.), 748 (fr. immat.), 963 (fr. mat.), 1132 (fl. ♂: BO, G, K, L, P, SING, U; W, n.v.), 1594 (fr. mat.), 1797 (fl. ♂: BO, K, L, SING; W, n.v.).

12. *Gomphandra javanica* (Bl.) Valet., Crit. Overz. Olacin. (1886) 217, pl. 4, f. 1—9 c, pl. 5, f. 23 a, pl. 6, f. 46; K. & V., Bijdr. 5 (1900) 150; Hochr., Bull. Inst. Bot. Btzg 22 (1905) 42; Moll & Janss., Mikr. 2 (1908) 238, f. 106 (Wood-Anat.); Back., Schooffl. Java (1911) 225; Koord., Exk. Fl. Java 2 (1912) 531; Koord.-Schum., Syst. Verz. 1, Fam. 162 (1912) 3; Koord., Atlas 1 (1913) t. 116; Doct. v. Leeuwen, Zoococcidia (1926) 332, f. 597 (Galls); Amsh. in Back., Bekn. Fl. Java (em. ed.) 6 (1948) fam. 135, p. 4; Back. & Bakh. v. d. Br., Fl. Java 2 (1965) 60. — *Stemonurus javanicus* Bl., Bijdr. (1826) 649, incl. var.; Walp., Rep. 1 (1842) 378; Hassk., Cat. Hort. Bog. (1844) 214; Miers, Ann. Mag. Nat. Hist. II, 10 (1852) 36, repr. Contr. Bot. 1 (1852) 86, incl. var. *beta*; Dahl, J. Arn. Arb. 33 (1952) 268 (Pollen). — *Stemonurus pauciflorus* Bl., Bijdr. (1826) 648; Walp., Rep. 1 (1842) 378; Miers, Ann. Mag. Nat. Hist. II, 10 (1852) 35, repr. Contr. Bot. 1 (1852) 86. — *Lasianthera javanica* (Bl.) Miq., Fl. Ind. Bat. 1 (1856) 790, incl. var. *pauciflora* (Bl.) Miq., l.c. 791; Suppl. 1 (1860) 137. — *G. javanica* (Bl.) Valet. var. *lanceolata* K. & W., Bijdr. 5 (1900) 151; Hochr., Pl. Bog. Exs. (1904) 41; Bull. Inst. Bot. Btzg 22 (1905) 42; Moll & Janss., Mikr. 2 (1908) 243 (Wood-Anat.); Koord.-Schum., Syst. Verz. 1, Fam. 162 (1912) 4. — *G. javanica* (Bl.) Valet. var. *dolichocarpa* K. & V., Bijdr. 5 (1900) 151; Moll & Janss., Mikr. 2 (1908) 243 (Wood-Anat.); Koord.-Schum., Syst. Verz. 1, Fam. 162 (1912) 4. — *G. comosa* (non King) Bak. f., J. Bot. 62 (1924) Suppl. 21.

JAVA. Bantam: Kosala, *Forbes 400*; Pulasari, Pandeglang, *Koorders 591* (BO); Mt Karang, 700—1000 m, *Koorders 6054, 6055, 40624*; Ujung Kulon Res., Mt Pajung, 300—400 m, *Wirawan 221*. — Bogor: in montosis, *Blume* (C, K, L, type of *Stemonurus javanicus*; P, S); Mt Salak, *Blume* (fl. ♀: C, K, L, type of *Stemonurus pauciflorus*; P, S); *ibid.*, 1000 m, *Koorders 24479, 33211*; *ibid.*, G. Tjisalak, *Bakhuizen v. d. Brink f. 2567*; Tjibodas, 1500—1600 m, *Sapiin 2293, Kakah 125, Enoh 173*; Tjidadap, Mt Beser, 1000 m, *Winckel 336*; Pasir Gagah, 100 m, *Winckel 159*; Tjampaka, 1000—1300 m, *Buwalda 3500*; *ibid.*, Mt Karang, 1000—1300 m, *Buwalda 3658*; Natuurmonum. Tjadas Malang, 1000—1100 m, *Winckel 22, 451, 654*; Djasinga, Mt Gedeh, 800 m, *Backer 10120*; Nirmala, 1100 m, *Backer 11164*; *ibid.*, Mt Kendeng, 1250 m, *Backer 10977*; G. Liliang, 600 m, *van Steenis 2420*; Mt Pantjar, 550—700 m, *Bakhuizen v. d. Brink 6068, 6119*; Mt Handjawan, 800 m, *Backer 6186*; Tjikapo, 1200 m, *Lam 3785*; Leuwiliang, Mt Tjisodong, *Backer 26352*; Palabuanratu, *Koorders 34526*; Mt Menapa, *van Steenis 17409*; Tjinegara, Mt Pangrango, 600—700 m, *de Voogd 2*. 1941. Cult. Hort. Bogor. III-G-26 & 26a, *Hochreutiner 84*; sub X-E-90, *Jacobs*. — Priangan: Lembang, *Junghuhn 237*; Takoka, 1000—1100 m, *Koorders 6049, 6052, 6053, 9880, 12091, 25726, 32783*; Tjigentang, 1400 m, *Koorders 6050, 6051, 11813*; Tjisondari, Tambakurjung, 1500 m, *Loerzing 1216*; Pengalengan, 1300—1370 m, *Forbes 784* (BM, as *G. comosa*; BO, Fl, K, L, SING), *Junghuhn 165*; Tasikmalaja, 700 m, *Koorders 44571, 47749*; Pangentjongan, 1400—1700 m, *Koorders 26325*; Tjirarak above Tjipatat, 1000 m, *de Voogd 3148*. — Cheribon: Kuningan, *Houter 35*. — Semarang: Mt Telemojo, *Koorders 27878* (BO, lectotype of *G. javanica* var. *lanceolata*; K, L, P), *39225*; Mt Ungaran, *Junghuhn* (L). — Pengalangan: Surdjo, 1400 m, *Koorders 6058*; Margasari, 100 m, *Noltée 4017*. — Banjumas: Mt Kapal, 700—900 m, *Koorders 11086*; Pringombo, 700—1000 m, *Koorders 6068, 11087, 27150*; Mt Puseran, 650 m, *Koorders 40210*; Mt Slamet, 1350 m, *Koorders 6056, 6057*; Nusa Kambangan, 50 m, *Blume XI-1824* (C; L, type of *Stemonurus javanicus* var.; P), *Koorders 6059, 6062* (BO, syntype of *G. javanica* var. *dolichocarpa*), *6063, 6064, 20138, 24650* (BO, syntype of *G. javanica* var. *dolichocarpa*; L, P), *39268*, *Kostermans & van Woerden 99, 119, 128*. — Kedu: Pagerngunung, 1300 m, *Koorders 36579*. — Djapara: Mt Muria, 700 m, *Kosterman: 6205, 6241*. — Madiun: Ngebel, 1350 m, *Koorders 6060, 6061, 29337, 34196*. — Kediri: Wlingi, base of Mt Kawi, 200 m, *Koorders 23016* (fr.: BO, lectotype of *G. javanica* var. *dolichocarpa*; K, L). — Malang: Tangkil, 200—300 m, *Koorders 23434*. — Besuki: Tjuramanis, *Koorders 28801, 39884*; Puger, *Koorders 39886*; Gunungsari, Mt Raung, 500—600 m, *Jacobs 4797*; Pantjur Idjen, *Koorders 10093, 10094, 13028, 14637, 14638* (fr.: BO, syntype of *G. javanica* var. *lanceolata*; L), *21755, 21756, 21757* (fr.: BO, syntype of *G. javanica* var. *lanceolata*; L), *28841* (fr.: BO, syntype of *G. javanica* var. *lanceolata*; K, L). Rogodjampi, 50—200 m, *Koorders 10079, 13253, 29026*. — No locality given: *Horsfield* (K), *Zollinger 3624*.

BALI. Mt Batukau, 1100—1300 m, *Kostermans c.s. 141*, *Wirawan 465, 476*; Mt Agung, 1500 m, *de Voogd 2173*.

LOMBOK. Mt Rindjani, 1180—1650 m, *Elbert 1617, 1670, 1741, 1777*.

13. *Gomphandra fusiformis* Sleum., *sp. nov.*

Arbuscula 3 m alta, trunco 2—4 cm diam. *Ramuli* gracillimi, apicibus brevissime

appresse fusco-pilosi. *Folia* oblonga, apice per 1—2 cm subabrupte angustequae acuminata (apice ipso saepius curvato et obtusiusculo), basi in petiolum cuneata, chartacea, in sicco plumbeo-viridia parum brunnescentia, opaca, glabra, 8—13 cm longa, 2.5—3.5 cm lata, nervis lateralibus 8—10-paribus (pare infimo suprabasali alte curvato-ascendente, cum paribus superioribus angulo latiore a costa abeuntibus strictioribus interque sese curvato-coniunctis in nervum intramarginalem confluyente), subtus vix prominulis; petioli 6—10 mm longi, c. 1 mm crassi. *Inflorescentiae* ♂ cymis 1 vel 2 paucifloris formatae, graciliter et 1 cm longe pedunculatae, brevissime pubescentes. *Calyx* cupularis, minute 4-denticulatus, ciliatus, 1 mm altus. *Petala* 4, per 3/4 long. in tubum subcampanulato-dilatatum connata, glabra, albida, 3.5 mm longa. *Stamina* 4 breviter exserta; filamenta parte ventrali superiore penicillata. *Ovarii rudimentum* glabrum. *Inflorescentiae* ♀ ad cymam paucifloram fere umbellatam breviter pedunculatam reductae. *Calyx* et *petala* ut in fl. ♂. *Staminodia* 4, parce penicillata. *Ovarium* basi glabra excepta dense breviter appresse ferrugineo-pilosum. *Drupa* fusiformis, apicem versus subabrupte rostrato-attenuata, basin versus sensim attenuata, ima basi paullo cupuliformi-inflata ibique laevis, ceterum costis longitudinalibus endocarpii obtusis percursa, (2—)2.3—2.5 cm longa, medio 6(—7) mm diam.

SUMATRA. Westcoast: Mt Sago near Pajakumbuh, 1000 m, fl. ♀, *Maradjo* c.s. 121 (L, type); *ibid.*, Bukit Tjempago, 900—1000 m, fl. ♂, *Meijer 4066* (L, SING); N. slope of Mt Sago, 900—1200 m, fr. mat., *Meijer 3706* (BM, BO, L); *ibid.*, ravine of Batang Lakin, 900 m, fr. mat., *Meijer 5630* (A, n.v.; L).

14. *Gomphandra australiana* F. v. M., *Fragm. Phyt. Austr.* 6 (1867) 3; Valet., *Crit. Overz. Olacin.* (1886) 226, pl. 4, f. 20 a—h, pl. 5, f. 23 b; F. M. Bailey, *Compr. Cat. Q. Pl.* (1913) 93; White, *Proc. R. Soc. Queensl.* 53 (1942) 212. — *G. axillaris* (non Wall.) Becc., *Malesia* 1 (1877) 110, *pr. specim. papuan.*: t. 4, f. 8—13. — *Stemonurus australianus* (F. v. M.) O. Ktze, *Rev. Gen. Pl.* 1 (1891) 112. — *G. polymorpha* (non Wight) F. M. Bailey, *Queensl. Bot. Bull.* 8 (Dep. Agric. Brisbane, 1893) 71; *Compr. Cat. Q. Pl.* (1913) 93. — *Stemonurus ramuensis* Laut. in K. Sch. & Laut., *Nachtr.* (1905) 305; Schellenb., *Bot. Jahrb.* 58 (1923) 163; Birnie, *Nova Guinea* 14, 2 (1926) 275. — ? *Stemonurus viridis* Schellenb., *Bot. Jahrb.* 58 (1923) 163. — *G. ramuensis* (Schellenb.) Sleum., *Notizbl. Berl.-Dahl.* 15 (1940) 238. — ? *G. viridis* (Schellenb.) Sleum., *l.c.* 239.

Note 1. From *Stemonurus viridis* Schellenb. only the lectotype specimens with young quite glabrous fruits are still preserved. The hairiness of branchlets and leaves remembers that of *G. papuana*, whilst the form of the leaves and the venation are more or less the same as found in *G. australiana*. A second collection (*Ledermann 10859*) with ♂ flowers is lost.

Note 2. The leaves of *G. australiana* resemble those of *G. montana*, but are generally more coriaceous. The drupe of these species can hardly be discerned, as far as can be seen from dried materials.

AUSTRALIA. North Queensland: Rockingham Bay, *Dallachy* (BM, BO, G, FI, K, L; MEL, n.v.). — In Queensland apparently limited to the North Kennedy and Cook Dist.

KAI IS. *Jaheri 363* & *375* (BO, L).

NEW GUINEA. Western part: Vogelkop Peninsula, Andai, *Beccari*, fr. (n.v.); Manokwari, Arfai, 70 m, *BW 3942*; Mt Krabo, 500 m, *BW 10787*; Japen, Serui, 50—370 m, *bb. 30435, 30461, 30582, 30592, Aet & Idjan (Exp. van Dijk) 799*; Mamberamo R., Pionierbiv., 60 m, *Lam 554*. — Eastern part: Madang, Ramu R. to the coast, *Schlechter 14139* (B, type of *Stemonurus ramuensis*, †; BM, BO, G, K, L, P, WRSL); Sepik Dist., Sepik R., Malu, *Ledermann 8013* (B, lectotype of *Stemonurus viridis*, †; E, K, SING), *10859* (B, syntype of *Stemonurus viridis*, †); April R., 200—400 m, *Ledermann 9677* (B, †; K, L); Frieda R., 300—400 m, *Ledermann 7497*, fl. (B, †; BM, K); Yellow R., *NGF 3898*.

15. *Gomphandra pallida* Sleum., *Notizbl. Berl.-Dahl.* 15 (1940) 238. — *Stemonurus gracilis* Schellenb., *Bot. Jahrb.* 58 (1923) 164, non *Gomphandra gracilis* King 1895.

NEW GUINEA. Sepik Dist.: May R., 30—50 m, *Ledermann 7229* (cit. '1229', B, lectotype of *Stemonurus gracilis*, †; K); April R., 20 m, *Ledermann 8761* (B, syntype of *Stemonurus gracilis*, †; E, K, SING).

16. *Gomphandra mappioides* Valet., Crit. Overz. Olacin. (1886) 227, f. 21 a—f. — *Stemonurus mappioides* (Valet.) O. Ktze, Rev. Gen. Pl. 1 (1891) 112. — *G. australiana* F. v. M. var. *celebica* Valet. in Koord., Minah. (1898) 392; Ic. Bog. 1 (1908) t. 89; Holth. & Lam, Blumea 5 (1942) 205. — *G. ? javanica* [non (Bl.) Valet.] Holth. & Lam, l.c. 205.

SUMBA. South coast, Loko-Wienggo (cit. 'Loko Winggor'), fr., *Teysmann H.B. 6710* (BO, FI, L, syntype of *G. mappioides*), 6711 (BO; L, lectotype of *G. mappioides*).

FLORES. Western part: Ruteng, 1685 m, *Verheijen 2022—23* (L); Manggarai, Wailako, 5 m, *bb. 14362*. — Southwestern part: Mt Ndeki, 200 m, *Kostermans & Wirawan 210*. — Central part: Ende, 500 m, fl. ♂, *bb. 9641* (BO, L).

WETAR. Ilwaki, 700 m, *bb. 27198*.

TIMOR. Kapan, 900 m, *bb. 27128* (mentioned by Meijer Drees, Comm. For. Res. Inst. 33 (1951) 61 sub *G. javanica* var. *lanceolata*).

CELEBES. Minahasa: Lolombulan near Paku-ure, 700 m, *Koorders 18350* (fl. ♀: A, n.v.; BO, lectotype of *G. australiana* var. *celebica*; K, L, P), 18356 (BO, syntype of *G. australiana* var. *celebica*; L, P); Kajuwatu 600 m, *Koorders 18349* (BO, syntype of *G. australiana* var. *celebica*; L), 18351 (BO, syntype of *G. australiana* var. *celebica*; K, L, P), 18357 (BO, syntype of *G. australiana* var. *celebica*; L), 18358 (BO, syntype of *G. australiana* var. *celebica*), 18362 (BO, syntype of *G. australiana* var. *celebica*; K, L, P); Karowa near Popo, 400 m, *Koorders 18352 & 18355* (BO, syntype of *G. australiana* var. *celebica*; L); Mt Klabat, 340—800 m, *bb. 14142, Koorders 18354* (BO, syntype of *G. australiana* var. *celebica*; L, P); Pula near Ratahan, *Koorders 17481*; Mt Lokon, 1100—1400 m, *Koorders 18353* (BO, syntype of *G. australiana* var. *celebica*; K, L); Amurang, 650 m, *bb. 18683*. — Central part: Malili, *Kjellberg 2034, 3171*; *ibid.*, Kawata, 200—250 m, *Cel IV/197, Cel IV/230*; Latimodjong Mts, Rante Lemo-Pasui, 1000 m, fr., *Kjellberg 1628*. — Central western part: Tapalang, *Nurkas (Exp. van Vuuren) 445*. — Southern part: Pangkadjene, *Teysmann H.B. 11742, 11973*; Gowa, 1600 m, *bb. 20218*; Lokka-Bonthain, *Teysmann H.B. 14033*; Pic of Maros, *Teysmann H.B. 12841*; Mt Lompobatang (Pic of Bonthain), *Teysmann H.B. 13783*. — Butung I., Barangka, 45 m, *bb. 8457* (BO).

MOLUCCAS. Halmahera: Tobelo, 2 m, *Beguin 2307* (BO, L); Djilolo, 100 m, *bb. 23722*. — Ternate: 600—900 m, *Beguin 1324, 1366, 1531*. — Tidore: Mt Mala-Mala, 800 m, *Lam 3707*. — Morotai: Mt Sabatas, 60 m, *Lam 3498* (K; L, as *G. australiana* var. *celebica*); Mt Songawo, 900 m, *Kostermans 1119*. — Talaud Is: Karakelang, Mt Duata, 100 m, *Lam 2847* (K; L, as *G. ? javanica*). — Tanimbar Is: Jamdena I., 30 m, *Buwaldia 4473, bb. 24358*.

CULT. Hort. Bogor. III-G-12 (*Alston 17133*), X-R-90, XI-B-11-135 (*Jacobs a. 1958*), XI-B-18-46.

17. *Gomphandra apoensis* (Elm.) Merr., En. Philip. 2 (1923) 490. — *Stemonurus apoensis* Elm., Leaf. Philip. Bot. 7 (1915) 2690; Howard, J. Arn. Arb. 21 (1940) 487, pl. 1, f. 11—14; Dahl, *ditto* 33 (1952) 268 (Pollen).

PHILIPPINES. Luzon: Sorsogon, Irosin, Mt Bulusan, *Elmer 15416*. — Negros: Negros Oriental, Sibulan, Lake Danao, *PNH 6627*. — Mindanao: Davao, Mt Apo, Todaya, along Sibulan R., 900 m, *Elmer 10658* (A, n.v.; BM, BO, E, FI, G, K, L, P; PNH, type of *Stemonurus apoensis*, †; WRSL); Mt Galintan, *B.S. 48884* (flowers apparently galled: UC); Cotabato, Aroman, *PNH 13584* (flowers apparently galled).

Possibly belonging to *G. apoensis*:

PHILIPPINES. Bohol: Bilar, 600 m, *B.S. 43342*; Valencia, 600 m, fl. ♀, *B.S. 43240*.

18. *Gomphandra flavicarpa* (Elm.) Merr., En. Philip. 2 (1923) 490. — *Stemonurus flavicarpus* Elm., Leaf. Philip. Bot. 7 (1915) 2691; Dahl, J. Arn. Arb. 33 (1952) 268 (Pollen).

PHILIPPINES. Mindanao: Davao, Mt Apo, Todaya, 1220 m, *Elmer 11330*, fl. ♂ (A, n.v.; BM, BO, E, FI, G, K, L, P; PNH, lectotype of *Stemonurus flavicarpus*, †; WRSL), 10527, fr. (A, n.v.; BM, BO, E, FI, G, K, L, P; PNH, syntype of *Stemonurus flavicarpus*, †; WRSL); Bukidnon, Tangkulan, fr., *B.S. 39074* (K); Mt Candoon, *B.S. 38821, 38864* (fl. ♀); Mt Katanglad, 2200 m, *PNH 10065*; Pigtaoranan, *PNH 13511*.

Note. Merrill cites the following collections, which I could not trace: *F. B. 25247, Clemens 713 & 971*.

19. *Gomphandra oligantha* Sleum., Notizbl. Berl.-Dahl. 15 (1940) 238. — *Urandra pauciflora* Merr., Philip. J. Sc. 3 (1908) Bot. 243. — *G. pauciflora* (Merr.) Merr., En. Philip. 2 (1923) 491, non Craib 1914.

PHILIPPINES. Mindoro: Pinamalyan, B.S. 41006 (A, n.v.; BO, K, L, P), 41107 (fl. ♀: K, P); Mt Halcon, F.B. 4327 (PNH, syntype of *Urandra pauciflora*, †); Lake Naujan, F.B. 6770 (PNH, syntype of *Urandra pauciflora*, †); Paluan, B.S. 39658 (A, n.v.; K), 39596 (A, n.v.; P). — Sibuyan: Capiz, Mt Giting-giting, Elmer 12202 (fl. ♀: A, n.v.; BM, BO, E, G, K, L, U, WRS), 12508 (fl. ♂: A, n.v.; BM, BO, E, FI, G, K, L, U, WRS).

20. *Gomphandra sawiensis* (Birnie) Sleum., Notizbl. Berl.-Dahl. 15 (1940) 238. — *Stemonurus sawiensis* Birnie, Nova Guinea 14, 2 (1926) 275.

NEW GUINEA. Northern part: Sawie near Hollandia, 100 m, Gjellerup 608 (BO, K; L, type of *Stemonurus sawiensis*; U).

21. *Gomphandra dolichocarpa* Merr., Pap. Mich. Ac. Sc. 23 (1938) 183. — *Stemonurus dolichocarpus* (Merr.) Howard, J. Arn. Arb. 21 (1940) 468; Dahl, ditto 33 (1952) 268 (Pollen).

SUMATRA. Eastcoast: Asahan, Huta Bagasan, Rahmat Si Boeea 6703 (fr. immat.: A, n.v.; MICH, type of *G. dolichocarpa*, n.v.; S, SING), 7039 (fl. ♂: A, n.v.; SING), 7107 (fl. ♂: A, n.v.; SING), 7140 (A, n.v.; S); Silo Maradja, Talun Djoring, 40–60 m, Rahmat Si Toroes 844 (fl. ♂: A, n.v.; S, SING).

22. *Gomphandra comosa* King, J. As. Soc. Beng. 64, ii (1895) 112; Brandis, Ind. Tr. (1906) 151; Sleum., Notizbl. Berl.-Dahl. 15 (1940) 364. — *Urandra comosa* (King) Howard, J. Arn. Arb. 21 (1940) 468.

SOUTH ANDAMANS. King's Coll. a. 1890 & 1892, fr. (CAL, lectotype of *G. comosa*, n.v.; G, K, L, P, SING), a. 1891, fl. ♂ (BO; CAL, syntype of *G. comosa*, n.v.; G, K, L, P, UPS), a. 1893, fl. ♂ (CAL, syntype of *G. comosa*, n.v.; L).

23. *Gomphandra lancifolia* Merr., Philip. J. Sc. 17 (1920) 277; En. Philip. 2 (1923) 490. — *Stemonurus lancifolius* (Merr.) Howard, J. Arn. Arb. 21 (1940) 468.

PHILIPPINES. Luzon: Tayabas, Mt Dingalan, 200 m, fr., B.S. 26544 (A, n.v.; K, P; PNH, type of *G. lancifolia*, †).

Note. Perhaps only a narrow-leaved form of *G. luzoniensis*.

24. *Gomphandra luzoniensis* (Merr.) Merr., En. Philip. 2 (1923) 490. — *Elaeocarpus ? integrifolius* Blanco, Fl. Filip. ed. 2 (1845) 306; ditto ed. 3, 2 (1878) 202, non Lamarck 1788. — *Urandra luzoniensis* Merr., Philip. J. Sc. 3 (1908) Bot. 242; Spec. Blanc. (1918) 237. — *Stemonurus luzoniensis* (Merr.) Howard, J. Arn. Arb. 21 (1940) 468; Dahl, ditto 33 (1952) 268 (Pollen).

PHILIPPINES. Luzon: loco haud ind.: Blanco (type of *Elaeocarpus ? integrifolius*, not preserved); Ilocos Norte, Burgos, Merrill, Pl. Blanc. 671; Mt Quebrada, 100 m, PNH 17823, 17851; Ilocos Sur, cit. Merrill, no material seen; Cagayan, F.B. 7077 (PNH, syntype of *Urandra luzoniensis*, †), 23694 (fr.: SING); Abra, Bugas, F.B. 29755 (UC); La Union, fr., F.B. 22616 (K); Nueva Ecija, Rosales, Vidal 308 (L); Bongabon, Vidal 1332, fl. ♀ & fr. (A, n.v.; K); Bataan, Mt Mariveles, Lamao R., F.B. 562 & 574 (PNH, syntypes of *Urandra luzoniensis*, †), 711, fl. ♂ (K, L; PNH, lectotype of *Urandra luzoniensis*, †), 1926 (fl. ♂: BO; PNH, syntype of *Urandra luzoniensis*, †), 2445 (fr.: BO, L; PNH, syntype of *Urandra luzoniensis*, †; SING), 2989 (fr.: BO, K; PNH, syntype of *Urandra luzoniensis*, †), 2949 (fr.: BO; PNH, syntype of *Urandra luzoniensis*, †; SING, UC); Rizal, F.B. 25973, fr. (A, n.v.; BO, P); Boso-boso, Vidal 3329 (A, n.v.; K), Merrill 2669 (fr.: BM, K; PNH, syntype of *Urandra luzoniensis*, †); Montalban, Loher 5754 (K), 12318 (UC), 12567,

13310 (BO, UC); Cavite, B.S. 22566 (A, n.v.; K, P); Laguna, Mt Maquiling, 100—200 m, F.B. 22960 (P), PNH 9544, 33390, 33439, 34152, 40152; Batangas, cit. Merrill, no material seen. — Mindoro: F.B. 6214 (PNH, syntype of *Urandra luzoniensis*, †); Paluan, B.S. 39502 (A, n.v.; L, SING), 39771 (A, n.v.; SING); Mt Yagaw, Mansalay, 400—850 m, PNH 17411, 19052, 37894. — Marinduque: cit. Merrill, no material seen. — Panay: Ilo-Ilo, Miagao, Vidal 3148 (A, n.v.; K). — Palawan: Puerto Princesa, Mt Pulgar, Elmer 13110.

25. *Gomphandra montana* (Schellenb.) Sleum., Notizbl. Berl.-Dahl. 15 (1940) 238. — *Stemonurus montanus* Schellenb., Bot. Jahrb. 58 (1923) 162. — *G. carrii* Sleum., Notizbl. Berl.-Dahl. 15 (1940) 239. — *G. sp.*, Walker, For. Fl. Br. Solomon Is (1948) 127.

NEW GUINEA. Sepik Dist.: Ossima village, 30 m, NGF 13299 (fr. only, possibly belonging to *G. australiana*); Upper April R., Lordberg, 1000 m, Ledermann 10089 (fl. ♂: B, syntype of *Stemonurus montanus*, †; K, L); May R., Fels Spitze, Ledermann 12478 (B, lectotype of *Stemonurus montanus*, †; K, L), 12564 (B, syntype of *Stemonurus montanus*, †), 12712 (B, syntype of *Stemonurus montanus*, †; K, L), 12891 (B, syntype of *Stemonurus montanus*, †; K, L), 13035 (B, syntype of *Stemonurus montanus*, †). — Central Dist.: Isuarava, 1065—1370 m, Carr 15518, 15692, 15884; Rouna Falls, Laloki R., 400 m, Schodde 2938; Boridi, 1280—1675 m, Carr 13173 (fl. ♂: A, n.v.; K, L, SING), 13271 (fl. ♂: A, n.v.; K, L, SING), 13301 (fl. ♂: L, SING), 14219 (fl. ♂: BM, K, L, SING), 14483 (fl. ♂: A, n.v.; K, L, SING), 14501 (fl. ♀: A, n.v.; K, L, SING), 14605 (fl. ♂: A, n.v.; B, type of *G. carrii*, †; K, L, SING), 14748 (fl. ♂: A, n.v.; K, L, SING), 14993 (defl. ♀: A, n.v.; K, L, SING). — Morobe Dist.: Bululo, 730—1125 m, NGF 7487, 9137.

NEW BRITAIN. Talasea, Mt Tangis, 900 m, NGF 26911; Gazelle Peninsula, Keravat, NGF 7029.

NEW IRELAND. Kapsu Plantation, 2° 42' S, 151° 03' E, 0—15 m, NGF 29646.

SOLOMON IS. Bougainville: Buin and vicinity, 30—150 m, Kajewski 1801, Craven (& Schodde) 366, Schodde (& Craven) 4038; Tonolei Harbour, 50 m, NGF 19699; Koniguru, 640 m, Craven (& Schodde) 233; Lake Loloru crater, 700 m, Craven (& Schodde) 270. — Shortland I.: 30 m, BSIP 5921. — Choiseul: 100 m, BSIP 5241, 5654. — Wagina I.: 10 m, BSIP 5426. — Gizo I.: BSIP 11695. — New Georgia I.: 12—150 m, BSIP 3134, 3236, 3257, 3775, 4824, 5161, 6407, 6865, 6878, 7161, Waterhouse 232. — New Georgia Group: Rendova I., 50 m, BSIP 1904; Kolombangara I., 30 m, BSIP 1389, 1482, 8492, 8660, 8928, 9562, 11378, 11569, Arifanata 2573; Baga I., 30 m, BSIP 1308, 1329, 3023, 3077; Vangunu I., BSIP 160. — Santa Isabel: 60—760 m, BSIP 2361, 2406, 2597, 5122, 6497, 7366; Tatamba, Susui 2902 (K). — Malaita: BSIP 3423, 10208, 10350, 10401, 10577. — Guadalcanal: 300—550 m, BSIP 660, 785, 1833, 2788, 3555, 5035, 5591, 9064, 9353; Tutuve Mts, 1200 m, Kajewski 2564; Mt Gallego, 850 m, Whitmore 6075. — Ulawa I.: 6 m, BSIP 6232. — San Cristobal: 150 m, BSIP 4232.

SANTA CRUZ GROUP. Vanikoro I., 50—450 m, BSIP 1568, 1633, 1693, 1740, 7022; Kajewski 514 (A, n.v.; K, fruit different, elongate and a little swollen at base).

26. *Gomphandra parviflora* (Bl.) Valet., Crit. Overz. Olacin. (1886) 218, pl. 4, f. 10 & 11. — *Stemonurus parviflorus* Bl., Mus. Bot. Lugd. Bat. 1 (1850) 250; Walp., Ann. 2 (1851) 182; Miers, Ann. Mag. Nat. Hist. II, 10 (1852) 36, repr. Contr. Bot. 1 (1852) 87; O. Ktze, Rev. Gen. Pl. 1 (1891) 112. — *Lasianthera parviflora* (Bl.) Miq., Fl. Ind. Bat. 1 (1856) 791; Suppl. (1860) 137.

SUMATRA. Westcoast: 'sylvius Singalang' fl. ♂ & fr. mat., Korthals 882b (C; L, type of *Stemonurus parviflorus*; P, U); Ayer Mantjur (near Mt Singalang), fl. ♂ & ♀, Beccari P.S. 497 (Fl, K, L).

27. *Gomphandra subrostrata* Merr., Pap. Mich. Ac. Sc. 19 (1934) 164, t. 27. — *Stemonurus subrostratus* (Merr.) Howard, J. Arn. Arb. 21 (1940) 469.

SUMATRA. Eastcoast: Sibolangit, 350—450 m, fl. ♀ & fr., Loerzing 6690, 8362; Bandarbaru, 850 m, fl. ♂, Loerzing 7009 p.p. (BO); Marbau, near Bilah Pertama (Parbarisan), fr., Rahmat Si Toroes 252 (A, n.v.; MICH, n.v., paratype of *G. subrostrata*; S, SING); Damuli, Kualu, 25—50 m, Rahmat Si Toroes 1323 (A, n.v.; MICH, type of *G. subrostrata*, n.v.).

28. *Gomphandra quadrifida* (Bl.) Sleum., Notizbl. Berl.-Dahl. 15 (1940) 238. — *Stemonurus quadrifidus* Bl., Mus. Bot. Lugd. Bat. 1 (1850) 249; Walp., Ann. 2 (1851) 182; Miers, Ann. Mag. Nat. Hist. II, 10 (1852) 36, repr. Contr. Bot. 1 (1852) 86. — *Stemonurus*

prasinus Bl., Mus. Bot. Lugd. Bat. 1 (1850) 249; Walp., Ann. 2 (1851) 182; Miers, Ann. Mag. Nat. Hist. II, 10 (1852) 36, repr. Contr. Bot. 1 (1852) 86; O. Ktze, Rev. Gen. Pl. 1 (1891) 112. — *Stemonurus penangianus* Miers, Ann. Mag. Nat. Hist. II, 10 (1852) 39, repr. Contr. Bot. 1 (1852) 90; Kurz, J. As. Soc. Beng. 44, ii (1875) 155; For. Fl. Br. Burma 1 (1877) 239; O. Ktze, Rev. Gen. Pl. 1 (1891) 112. — *Lasianthera javanica* (Bl.) Miq. var. *quadrifida* (Bl.) Miq., Fl. Ind. Bat. 1 (1856) 790. — *Lasianthera prasina* (Bl.) Miq., Fl. Ind. Bat. 1 (1856) 791; Suppl. 1 (1860) 137. — *Lasianthera ? ovalifolia* Miq., Fl. Ind. Bat. Suppl. 1 (1860) 137, 342 (descr.); Becc., Malesia 1 (1877) 111. — *G. penangiana* Wall. [Cat. (1832) n. 7204, *nom. nud.*] ex Mast. in Hook. f., Fl. Br. Ind. 1 (1875) 587; Valet., Crit. Overz. Olacin. (1886) 223; King, J. As. Soc. Beng. 64, ii (1895) 113; Brandis, Ind. Tr. (1906) 151; Ridl., Fl. Mal. Pen. 1 (1922) 427; Burk., Dict. (1935) 1086; Hundley & Chit, List Trees Burma ed. 3 (1961) 46. — *G. prasina* (Bl.) Becc., Malesia 1 (1877) 110; Valet., Crit. Overz. Olacin. (1886) 228. — *G. penangiana* Wall. var. *ovalifolia* (Miq.) Valet., Crit. Overz. Olacin. (1886) 225, pl. 4, f. 17 a—b. — *G. oppositifolia* Pierre ex Gagnep., Not. Syst. 1 (1910) 198; Fl. Gén. I.—C. 1 (1911) 825. — *G. puberula* Ridl., J. Fed. Mal. St. Mus. 6 (1915) 142. — *G. affinis* [non (Miers) Mast., based on *Stemonurus affinis* Miers] *sensu* Ridl., Fl. Mal. Pen. 1 (1922) 427, incl. var. *floribunda* Ridl., l.c.; Burk., Dict. (1935) 1096; Dahl, J. Arn. Arb. 33 (1952) 268 (Pollen). — *G. maingayi* King var. *pubescens* Ridl., Fl. Mal. Pen. 1 (1922) 429. — *G. lanceolata* (Mast.) King var. *tenuifolia* Craib, Fl. Siam. En. 1 (1926) 273. — *Stemonurus oppositifolius* (Pierre ex Gagnep.) Howard, J. Arn. Arb. 21 (1940) 469. — *G. scorpioidea* Gagnep., Not. Syst. 13 (1947) 133; Fl. Gén. I.—C. Suppl. (1948) 749, f. 89,7.

Note. *Gomphandra quadrifida* and *G. prasina* are treated in this paper for the first time as belonging to the same species. I have preferred to use the epithet *quadrifida* and not *prasina* (a name transferred to *Gomphandra* before) because the type specimen of *Stemonurus quadrifidus* has flowers and young fruits, whilst that of *S. prasinus* is sterile. The type specimen of *S. prasinus* was collected by Korthals in the Padang Highlands, and it is reasonable to accept that his materials, which form the basis of *S. quadrifida*, also came from this area.

Valeton, Crit. Overz. Olacin. (1886) on p. 277 in the text to pl. 4, f. 19 a—d mentions 'G.' *quadrifida*, but this cannot be regarded as a combination of *Stemonurus quadrifidus* to *Gomphandra*, the more as *Stemonurus quadrifidus* on p. 223 is cited as a synonym of *Gomphandra penangiana*.

var. *quadrifida*.

BURMA. Lower Burma: Moulmain, Lobb (K, P); Three Pagodas, c. 40 km N. of Wangka, 280 m, *Kostermans* 429. — Mergui, *Parker* 2631, *Sukoe* 7740; E. Tenasserim, 50 m, *Kerr* 21646 (K).

THAILAND. Chantaburi: Kao Sabab, 1—300 m, *Lakshnakara* 543, *Sørensen, Larsen & Hansen* 478. — Rachaburi: Kwae Noi R. basin, S. of Ka Tha Loi, Panung R. valley, 400—800 m, *Kostermans* 827; Klang Dong, *Larsen* 9421; Kao Luang, Prachuap, 600 m, *Kerr* 10807. — Surat: Kao Wong, 100 m, *Kerr* 18280, 18281; Tasan, Chumpawn, 75 m, *Kerr* 12899; Klawn Nam Wing, 1200 m, *Kerr* 12227. — Puket: Krabi, Lanta, *Kerr* 18993; Panom Bencha, 600 m, *Kerr* 18672; Kao Katakawm, Pang-nga, 900 m, *Kerr* 18440, 18475; Kao Pawta, Luang Kêo (Ranawng), 900 m, *Kerr* 16920. — Nakawn Sritamarat: Kao Luang, 400—600 m, *Kerr* 15430, *Pternchit* 318 (K). — Pattani: Kao Bangto, Pang-nga, 900 m, *Kerr* 17203; Bachaw, 50 m, *Kerr* 7150 (BM, type of *G. lanceolata* var. *tenuifolia*; K, SING); Kao Kalakiri, 800—900 m, *Kerr* 7786, 14951; Kao Soi Dao, Trang, 400 m, *Kerr* 19169.

INDOCHINA. Cochinchina: Bien-hoa, Mts Chiao-xhan, *Pierre* 6250 (P, type of *G. oppositifolia*). — Annam: Thua-thien, Hoi-mit, *Eberhardt* 1552 (P, type of *G. scorpioidea* = a form of *G. quadrifida* with narrower leaves).

SUMATRA. Atjeh: Gaju & Alas Lands, Mt Goh Lembuh, 700 m, *van Steenis* 8881. — Eastcoast: Asahan, Huta Bagasan, *Rahmat Si Boeea* 6636, 6733, 7137; Lumban Ria, *Rahmat Si Boeea* 7764, 8028; Huta Padang, *Krukoff* 4288; Bandar Buluh, *Yates* 1915; Masili F. R., *Krukoff* 4046; Pargambiran, *Rahmat Si Boeea* 5870, 6278; Aek Muntek, 500 m, *Rahmat Si Boeea* 9382; Talun na Uli, Tapanuli border, *Rahmat Si Boeea* 9739. —

Tapanuli: Padang Sidempuan, 150 m, *Kostermans 22016*. — Westcoast: *sine loco* (prob. from Padang Highlands), *Korthals s.n.* (fl. ♀ & fr. immat.: C; L, type of *Stemonurus quadrifidus*; P; U ex L); Padang bessie in the Padang Highlands, sterile, *Korthals 1315* (L, type of *Stemonurus prasinus*); Tanang Talu, 1100 m, *Bünnemeijer 1142* (fl. ♀ & fr.: BO, L); Mt Talamau, 900 m, *Bünnemeijer 594*. — Indragiri: Indragiri Highlands, Berapit, *Buwalda 6511*; Klessa, *Buwalda 6586*; Kuantan Dist., Pangian, *Buwalda 6272*. — Palembang: *de Voogd 219* (BO, L, differing by slightly reticulate leaves); Muara Enim, *Teysmann H.B. 3992* (BO, L; U, type of *Lasianthera ? ovalifolia*). — Mentawai I.: Sipora I., Sioban, *Iboet 561* (BO, L).

MALAY PENINSULA. Perlis: Kaki Bukit, *SF 35256* (on limestone, a form with leaves puberulous beneath). — Kedah: Langkawi, Mt Raya, 600 m, *Kerr 21714*; Jerai F. R., *KEP 80931*; 5th mile Kroh road, *SF 21241*. — Wellesley: Permatang Bertam, *Ridley 6971*. — Penang: *Wallich 7204* (BM, type of *Stemonurus penangianus*; C, CGE, K, L, P), *Cantley 3109*; Penang Hill, *Ridley 1893*; Tulloh Bahang, *Curtis 1225* (a form with narrower leaves); Waterfall, 100 m, *Wray 2667* (partly a form with narrower leaves → var. *ovalifolia*), *SF 39340*. — Perak: Kal, 200—250 m, *King's Coll. 10338*; Kampar, Mt Tempurong, *KEP 110182*; Kledang Saiong F.R., *For. Dep. F.M.S. 25754, 25850, 33660, 33698, 33720*; Upper Perak, 100 m, *Wray 3499*; Dindings, Mt Tungal, *Ridley a. 1896*; Waterloo, *Curtis 2721*; Hermitage Hill, *Ridley 3016*; Taiping, *Ridley 14680*; Ulu Temango, *Ridley 14653*; Larut, Chanderiang, *King's Coll. 2449* (P), 5749; Goping, 100—150 m, *King's Coll. 1072, 4363, 8223*; Telok Amon, *SF 14192*; Ipoh, *Ridley a. 1904*; Piah F. R., *For. Dep. F.M.S. 39281*. — Kelantan: Mt Batu papan, *SF 12082, 29565*; Kota Bharu, *Ridley a. 1917*; Gua Panjang, *SF 19514*; Sg. Ketah, Gua Nenak, *SF 12127*. — Trengganu: Sg. Paka, *For. Dep. F.M.S. 26792*; Ulu Brang, 100 m, *SF 33804, 33842*; Kemaman, Kajang, *SF 30287, 30288 & 30366* (leaves with more numerous nerves). — Pahang: Ulu Telom, *For. Dep. F.M.S. 27569*; Mt Tahan, *Ridley 15950* (differing by more coriaceous leaves: BM, K; SING, type of *G. maingayi* var. *pubescens* and *G. puberula*); Jerantut, *SF 16093*; Bukit Cheras, 200 m, *SF 25068*; Gali near Raub, *SF 16239*; Kuala Tembeling, *Ridley 5838*; Temerloh, *F.M.S. Mus. 10684, 10700, 10718 Henderson*; Kadondong, P. Tawar, *Ridley a. 1891*. — Pahang/Selangor border: Ginting Sempan, *Ridley, Robinson & Kloss a. 1917* (K). — Selangor: Semenyih, *F.M.S. Mus. 7767a, 7858, 7899, 8287 Hume*; Dusun Tua, *Ridley 7367, 7427*; Sg. Buloh, *Goodenough a. 1899*; Ulu Gombak, *Ridley a. 1915 & 1920* (K), *SF 9968*; Klang Gates, *F.M.S. Mus. 7250 Hume*, *Ridley a. 1921* (K); Batu Tiga, *Ridley a. 1904*; Tua Batu, *Ridley a. 1896*; Ulu Langat, *Phyt. Surv. Malaya 1053, 1249, 1537, 2188, 2205, 2206*; Kwang, *Ridley 13346*; Batu Caves, *Ridley 8268*; Rawang, *Ridley 7365* (SING, syntype of *G. affinis* var. *floribunda*), *Boden Kloss a. 1914*; Kuala Lumpur, *Ridley 7369*; Kepong, *KEP 98775, Phyt. Surv. Malaya 441*; Weld Hills F. R., *Ridley a. 1915* (BM, lectotype of *G. affinis* var. *floribunda*), *C.F. 2905, KEP 45815*; Bukit Lagong F. R., 240 m, *KEP 79038*; Kajang, Sg. Lalang F. R., *For. Dep. F.M.S. 22716*. — Johore: Kluang, Mt Blumut, *KEP 98045*. Mawai-Temulong road, Sg. Kaju, *SF 29386*; Mawai-Jemaluang road, 14th mile, *Corner a. 1935*; Mt Pulai, *Ridley 12184*; Simpai to Batu Pahat, *Lake & Kelsall (Ridley 4051)*; Mt Pantii, *Ridley a. 1892*; Castlewood, Sg. Tehan, *Ridley a. 1893*; — Negri Sembilan: Tebong F. R., *SF 9643*; Perhentian Tingit, *Ridley a. 1898*. — Malacca: *Griffith 807* (→ var. *ovalifolia*), *Maingay 1546 = K.D. 374* (K); 'Gunong Merong' = Mt Ophir, *Griffith K.D. 809* (K), *Ridley a. 1892*; Tebong Forest, *Ridley a. 1917* (K); Mt Mering, *Ridley 3309*; Selandar forest, *SF 1362*. — Singapore: Chan Chukang, *Ridley 3949*; Angkeo Kia, *Ridley 6328*; North Sehtar Res., *Ridley 5000, 5090*; Bukit Mand(aji), *Langlассé 135*; Changi, *Ridley a. 1891*; Tanjong Katong, *Hullett a. 1893*; Bot. Garden jungle, *Ridley a. 1893*; Bukit Timah, *Ridley 3467, 4647, 9154*.

var. **triplinervis** (King) Sleum., *stat. nov.* — *G. lanceolata* (Mast.) King var. *triplinervis* King, J. As. Soc. Beng. 64, ii (1895) 112; Ridl., Fl. Mal. Pen. I (1922) 428.

SUMATRA. W. Indragiri: Taluk region, *Meijer 4126, 4239*, in lowland Dipterocarp forest (L).

MALAY PENINSULA. Kedah: Yen, *Ridley 5352* (BM, SING); Langkawi, *Ridley 8340* (SING). — Penang: Balik Pulau, *Ridley a. 1898* (SING); Pulu Betong, *Curtis 1755*. — Perak: *Scortechini 375* (BM; CAL, type of *G. lanceolata* var. *triplinervis*, n.v.; K, L, SING); Kledang Saiong F.R., *For. Dep. F.M.S. 33680*. — Trengganu: Kemaman, Bukit Kajang, 150 m, *SF 30313*.

var. **angustifolia** (King) Sleum., *stat. nov.* — *G. lanceolata* (Mast.) King var. *angustifolia* King, J. As. Soc. Beng. 64, ii (1895) 113; Ridl., Fl. Mal. Pen. I (1922) 428, p.p. — *G. salicifolia* Ridl., Fl. Mal. Pen. I (1922) 429; Burk., Dict. (1935) 1097. — *Stemonurus salicifolius* (Ridl.) Howard, J. Arn. Arb. 21 (1940) 469.

THAILAND. Puket: Kao Sung, Trang, 1000 m, *Kerr 15259* (K). — Pattani: Betong, Mt Ina, 1100 m, *Kerr 7912* (K).

MALAY PENINSULA. Kedah: Mt Jerai, *Ridley a. 1893*. — Penang: West(ern) Hill, 760 m, 3-1886, *Curtis 737* (CAL, syntype of *G. lanceolata* var. *angustifolia*, n.v.; K, syntype of *G. salicifolia*; SING); *ibid.*, 760 m,

10-1886, *Curtis 1265* (CAL, lectotype of *G. lanceolata* var. *angustifolia*, n.v.; K & SING, lectotype of *G. salicifolia*); *ibid.*, *Ridley a. 1915* (K). — Perak: *Scortechini s.n.* (BM; CAL, syntype of *G. lanceolata* var. *angustifolia*, n.v.; G, K, L); *Larut, 150—300 m, King's Coll. 4211* (CAL, syntype of *G. lanceolata* var. *angustifolia*, n.v.; SING); *Kuala Kangsar, Lubok Merbok, SF 15973*. — Pahang: *P. Tioman, 855 m, SF 18609*; *ibid.*, *Mt Kajang, 760—1065 m, Kadim & Noor 597*; *Taman Negara, Sg. Tembeling, FRI 8592*. — Kelantan: *Kuala Rek, SF 10174*; *Sg. Lebir, SF 29609*. — 'Singapore', *Wallich 7570* (CAL, syntype of *G. lanceolata* var. *angustifolia*, n.v.; K).

var. *ovalifolia* (Ridl.) Sleum., *comb. nov.* — *G. lanceolata* (Mast.) King var. *ovalifolia* Ridl., *Fl. Mal. Pen. I* (1922) 428. — *Stemonurus affinis* Miers, *Ann. Mag. Nat. Hist. II, 10* (1852) 44, repr. *Contr. Bot. I* (1852) 94, pl. 15. — *G. affinis* (Miers) Mast. in *Hook. f., Fl. Br. Ind. I* (1875) 586. — *Lasianthera lanceolata* Mast., l.c. 585. — *Stemonurus ? tomentellus* Valet., *Crit. Overz. Olacin.* (1886) 237 (*nom. nov. pro Lasianthera lanceolata* Mast., non *Stemonurus lanceolatus* Becc. 1877). — *G. lanceolata* (Mast.) King, *J. As. Soc. Beng. 64, ii* (1895) 112; *Ridl., Fl. Mal. Pen. I* (1922) 428; *Burk., Dict.* (1935) 1096. — *G. pubescens* Ridl., *Fl. Mal. Pen. I* (1922) 429. — *G. ophirensis* Ridl., l.c. 427 (*nom. ill.*, based on *Lasianthera lanceolata* Mast.).

THAILAND. Nakawn Sritamarat: *Kao Luang, 900 m, Kerr 15472* (K). — Puket: *Panom Bencha, Krabi, 1000 m, Kerr 18686* (K); *Kao Keo Range, Satul, 700 m, Kerr 14531* (BM, K). — Pattani: *Betong, Mt Ina, 1100 m, Kerr 7601* (K).

MALAY PENINSULA. Kedah: *Mt Baling, Corner a. 1941*. — Kedah/Perak border, *Mt Bintang, SF 21100*. — Kelantan: *Channing woods, Ridley a. 1914* (K); *Tamangan, 100 m, Shah & Kadim 555 p.p.*; *Mt Sagi 1370 m, For. Dep. F.M.S. 37796*; *Sg. Lebir, FRI 7315*. — Trengganu: *Bukit Kajang, Ulu Bendong, 150 m, SF 30010, 30157, 30472*; *Mt Padang, 1220 m, SF 31873* (differing by more coriaceous, subovate-oblong leaves). — Perak: *Scortechini 336, 595b*; *Maxwell's Hill, 760—1200 m, Scortechini 357, Wray 2829, Ridley a. 1893, For. Dep. F.M.S. 1392, 1398*; *Box Hill, 1280 m, Fox 161*; *Tea Gardens, Ridley 1891*; *Taiping Hill, 520 m, SF 12801*; *Mt Kerbau, 1220 m, Robinson a. 1913*; *Ulu Bubong, 150—200 m, King's Coll. 10207, 10469*; *Larut, 200—1065 m, King's Coll. 2430, 2525, 4240*; *Goping, 150—300 m, King's Coll. 4732*; *Mt Inas, 1525 m, Wray 4118, 4152*; *Mt Hijau, 1430 m, Ridley 3015, SF 12656, 12877, For. Dep. F.M.S. 14528, F.M.S. Mus. 11156, 11830 Henderson*; *Tapah Hills, 1065 m, FRI 1357*; *Mt Babu F. R., 670 m, FRI 682*; *Trolak F. R., KEP 104608*. — Pahang: *Mt Tahan, Seimund 328*; *Wray's Camp, Ridley 1625*; *Tahan R., Ridley a. 1891*; *Kuantan, Mt Tapis, 1400 m, SF 28841* (with subovate leaves); *Telom Hill, Ridley 13536, 13537*; *Mt Benom, 1525—1675 m, For. Dep. F.M.S. 22350, F.M.S. Mus. Coll. a. 1925* (K, with more coriaceous leaves), *Phyt. Surv. Malaya 2707*; *Bentong, Sabai Estate, 100—120 m, M. Shah 158*; *Cameron Highl., 1400—1525 m, Burkill 816, SF 23470, 31203, For. Dep. F.M.S. 36051, 36253 F.M.S. Mus. 11664 Henderson*; *Tanah Rata, Mt Jasar, 1670 m, FRI 5956*; *Mt Beremban, 1525 m, Ridley a. 1908, FRI 5923*; *P. Tioman, Bukit Surin, 300 m, SF 21712*. — Pahang/Selangor border: *Frazer Hill & Pine Tree Hill, 1120—1340 m, SF 11278, Purseglove 4210, 4211* (→ var. *quadrifida*), *KEP 98160*. — Selangor: *Bunga Buah, 1065 m, Stone 553A*; *Gap to Bukit Telaga, For. Dep. F.M.S. 22218*; *Petaling, Ridley 8603*; *Sempang, Ridley a. 1911*; *Kajang, Bukit Enggang, For. Dep. F.M.S. 24117*; *Sg. Lalang, For. Dep. F.M.S. 22872*; *Bukit Lagong F.R., KEP 99453, 115691*; *Bukit Kutu, 1000 m, Ridley 7360, 7368, For. Dep. F.M.S. 23834*; *Ulu Gombak, F.M.S. Mus. 9279, 9585 Hume*; *Mt Mengkuang Lebang, 1525 m, Robinson a. 1913* (BM; K, partly with more lanceolate leaves; SING, type of *G. lanceolata* var. *ovalifolia*); *Mt Bunga Bua, 900 m, FRI 1147*; *Ulu Selangor, Mt Moyang, 1525 m, KEP 56699*; *Kepong, KEP 80910, 94275*; *Kuala Lumpur, Court's Hill, For. Dep. F.M.S. 15211*; *Weld Hills, Ridley 3-1915* (BM; K, type of *G. pubescens*), *For. Dep. F.M.S. 2897*; *Pahang Track, Ridley 8605*. — Johore: *Kluang, near Batu Pahat, SF 9480*; *Sg. Kaju Ara, Mawai-Jemulang road, SF 29322*. — Malacca: *Mt Ledang, 600—900 m, Ridley a. 1892* (SING, differing by more coriaceous subovate-oblong leaves); *Mt Ophir, Griffith 805* (A, n.v.; K, lecto?-type of *Stemonurus affinis*, fl. & fr.; P), *806* (K, possibly syntype of *Stemonurus affinis*), *808* (K, apparently syntype of *Stemonurus affinis*), *810* (K, type of *Lasianthera lanceolata* and of *G. ophirensis*; P); *Tebong, Ridley a. 1917*; *Bukit Sedanan F. R., SF 9706*; *Bukit Besar, Mt Ophir, Ridley 10063*; *Chin Chin, SF 4456* (different by slightly wider leaves). — Negri Sembilan: *Mt Angsi, 790 m, Ridley 10065, SF 11697*; *Tampin, Ridley a. 1914* (K).

var. *maingayi* (Mast.) Sleum., *stat. nov.* — *Lasianthera maingayi* Mast. in *Hook. f., Fl. Br. Ind. I* (1875) 585. — *Stemonurus ? maingayi* (Mast.) Valet., *Crit. Overz. Olacin.* (1886) 236. — *Urandra maingayi* (Mast.) O. Ktze, *Rev. Gen. Pl. I* (1891) 113. — *Gomphandra maingayi* (Mast.) King, *J. As. Soc. Beng. 64, ii* (1895) 114; *Ridl., Fl. Mal. Pen. I* (1922) 429.

MALAY PENINSULA. Penang: top of Government Hill, 900—1500 m, *Maingay K.D. 374/2* (A, n.v.; BM, CGE; K, type of *Lasianthera maingayi*; L, P); Penang Hill, *Ridley 10237*; Moniot's road, *Curtis a. 1890* (SING).

29. *Gomphandra schoepfiifolia* Sleum., Notizbl. Berl.-Dahl. 15 (1940) 241.

NEW GUINEA. Morobe Dist.: Mt Saruwaged-Sattelberg area, Yunzaing, 1500 m, fr., *Clemens 3266A* (B, †); Ogeramang, 1850—1950 m, fl. ♂, *Clemens 4766* (A, n.v.; B, †), *5160* (B, type of *G. schoepfiifolia*, †). — Central Dist.: Lala R. valley, 1525—1830 m, *Carr 15850* (fl. ♀: BM, K, L, SING), *16001* (fl. ♂: BM, K, L, SING); Alola, 1830 m, *Carr 13617* (fl. ♀: A, n.v.; B, paratype of *G. schoepfiifolia*, †; K; L, neotype of *G. schoepfiifolia*; SING).

30. *Gomphandra pseudoprasina* Sleum., Notizbl. Berl.-Dahl. 15 (1940) 240. — *G. prasina* [non (Bl.) Becc.] Warb., Bot. Jahrb. 13 (1891) 299. — *Stemonurus prasinus* (non Bl.) K. Sch. & Laut., Fl. Schutzgeb. (1900) 414; Schellenb., Bot. Jahrb. 58 (1923) 163.

NEW GUINEA. Morobe Dist.: Mt Saruwaged-Sattelberg area, Sattelberg, 600—1100 m, *Hellwig 528* (B, †), *Warburg 20208* (fr. immat.: B, as *G. prasina*, †; BM), *Bamler 7* (B, †), *Nyman 687* (UPS), *Clemens 185* (fr. immat., L), *291* (fr. submat., L), *2012* (fl. ♀: B, type of *G. pseudoprasina*, †; G); *ibid.*, Wareo, 670 m, ♀ defl., *Clemens 1647* (L); *ibid.*, Yunzaing, 1500 m, *Clemens 2969* (B, †). — Madang Dist.: Kani Mts, 1000 m, *Schlechter 16706* (fl. ♀: B, †; P, sub *16906*), *17072* (fl. ♂: B, †).

31. *Gomphandra tetrandra* (Wall. in Roxb.) Sleum., Notizbl. Berl.-Dahl. 15 (1940) 238. — *Lasianthera ? tetrandra* Wall. in Roxb., Fl. Ind. ed. Carey & Wall. 2 (1824) 328. — *G. axillaris* Wall. [Cat. (1831) n. 3718, *nom. nud.*] *ex* Voigt, Hort. Suburb. Calc. (1845) 31, *nom. illeg.* (based on *Lasianthera tetrandra* Wall.); *Bedd.*, Fl. Sylv. 3 (1871) LXI, *descr.*; *Mast. in Hook. f.*, Fl. Br. Ind. 1 (1875) 586; *Becc.*, Malesia 1 (1877) 110, *excl. syn. & specim. novoguin.*; *Valet.*, Crit. Overz. Olacin. (1886) 219; *Trimen*, Hand. Fl. Ceylon 1 (1893) 261; *Brandis*, Ind. Tr. (1906) 151, *nota*; *Kanjilal c.s.*, Fl. Assam 1, 2 (1936) 252. — *Olox heyneana* Wall., Cat. (1832) n. 6780, *nom. nud.* — *Olox longifolia* Wall., Cat. (1832) n. 6782, *p.p.*, *nom. nud.* — *G. polymorpha* Wight, Ill. 1 (1840) 103 *p.p. lectotyp.*, *incl. var. acuminata, oblongifolia, angustifolia, longifolia, & ovalifolia* Wight, l.c.; *Walp.*, Rep. 1 (1842) 378; *Valet.*, Crit. Overz. Olacin. (1886) 221; *Brandis*, Ind. Tr. (1906) 151; *Gamble*, Fl. Pres. Madras 1 (1915) 195. — *Stemonurus heyneanus* Miers, Ann. Mag. Nat. Hist. II, 10 (1852) 40, *repr. Contr. Bot. 1* (1852) 91 (based on *Wallich 6780 & Gardner 102*). — *Stemonurus longifolius* Miers, Ann. Mag. Nat. Hist. II, 10 (1852) 40, *repr. Contr. Bot. 1* (1852) 90 (based on *Wallich 6782 B*, from Sylhet). — *Stemonurus axillaris* Miers, Ann. Mag. Nat. Hist. II, 10 (1852) 41, *repr. Contr. Bot. 1* (1852) 91, pl. 13/1, *nom. illeg.* (based on *Lasianthera tetrandra* Wall.); '(Wall.) Miers' *ap.* O. Ktze, Rev. Gen. Pl. 1 (1891) 112; '(Wall. *ex* Lindl.) Miers' *ap.* Howard, J. Arn. Arb. 21 (1940) 486, pl. 1, f. 7—10, 15. — *Stemonurus polymorphus* (Wight) Miers, Ann. Mag. Nat. Hist. II, 10 (1852) 37, *repr. Contr. Bot. 1* (1852) 87, *incl. var. acuminatus, oblongifolius, angustifolius, longifolius, & ovalifolius* (Wight) Miers, l.c.; *Trans. Linn. Soc. 22* (1856) t. 19, f. 1—15 (Seed); O. Ktze, Rev. Gen. Pl. 1 (1891) 112; *Engl. in E. & P.*, Nat. Pfl. Fam. III, 5 (1893) 246 (Fl.); *Dahl*, J. Arn. Arb. 33 (1952) 268 (Pollen). — *Platea wightiana* Miers, Ann. Mag. Nat. Hist. II, 10 (1852) 111, *repr. Contr. Bot. 1* (1852) 98, 305 (Errata). — *Stemonurus ceylanicus* Miers, Ann. Mag. Nat. Hist. II, 10 (1852) 42, *repr. Contr. Bot. 1* (1852) 93, pl. 14/1 (based on *Macrae 428*). — *Platea axillaris* Wall. *ex* Thwait., En. Pl. Zeyl. (1858) 44; *Dalz. & Gibson*, Bombay Fl. (1861) 28. — *G. cambodiana* Pierre *ex* Gagnep., Not. Syst. 1 (1910) 199; *Fl. Gén. I.-C. 1* (1911) 825, f. 97, 1—4. — *G. pauciflora* Craib, Kew Bull. (1914) 123; *Fl. Siam. En 1* (1926) 273; *Gagnep.*, Fl. Gén. I.-C. Suppl. (1948) 747. — *G. hainanensis* Merr., Philip. J. Sc. 21 (1922) 348; *Lingn. Sc. J. 5* (1927) 116; *Gagnep.*, Fl. Gén. I.-C. Suppl. (1948) 749, *incl. var. latifolia* Gagnep.; *Wu & Wang*, Act. Phytotax.

Sin. 6 (1957) 278; Chun & How, Act. Phytotax. Sin. 7 (1958) 587; Chun & Chang, Fl. Hainan. 2 (1965) 448, f. 511. — *Stemonurus hainanensis* (Merr.) Hu, J. Arn. Arb. 5 (1924) 229; Chun, Sunyatsenia 4 (1940) 229; Dahl, J. Arn. Arb. 33 (1952) 268 (Pollen). — *Stemonurus tetrandrus* (Wall.) Alston in Trimen, Handb. Fl. Ceylon 6 (1931) 48. — *Stemonurus chingianus* Hand.-Mazz., Sinensia 2 (1931) 3; Hu & Chun, Ic. Pl. Sin. (1933) t. 144; Dahl, J. Arn. Arb. 33 (1952) 268 (Pollen). — *G. obscurinervis* Merr., J. Arn. Arb. 19 (1938) 44; Gagnep., Fl. Gén. I.-C. Suppl. (1948) 746 ('*obscurinervia*'). — *G. chingiana* (Hand.-Mazz.) Sleum., Notizbl. Berl.-Dahl. 15 (1940) 238; Merr., J. Arn. Arb. 23 (1942) 175; Gagnep., Fl. Gén. I.-C. Suppl. (1948) 753. — *Stemonurus cambodianus* (Pierre ex Gagnep.) Howard, J. Arn. Arb. 21 (1940) 468. — *G. petelotii* Merr., J. Arn. Arb. 23 (1942) 176; Gagnep., Fl. Gén. I.-C. Suppl. (1948) 753. — *G. annamensis* Gagnep., Not. Syst. 13 (1947) 132; Fl. Gén. I.-C. Suppl. (1948) 750, f. 88, 8—12. — *G. camchayensis* Gagnep., Not. Syst. 13 (1947) 133; Fl. Gén. I.-C. Suppl. (1948) 750, f. 89, 1—6. — *G. kerrii* Gagnep., Fl. Gén. I.-C. Suppl. (1948) 747. — *Stemonurus obscurinervis* (Merr.) Howard in Dahl, J. Arn. Arb. 33 (1952) 269; Dahl, l.c. 269 (Pollen). — *Stemonurus petelotii* (Merr.) Howard in Dahl, J. Arn. Arb. 33 (1952) 269; Dahl, l.c. 269 (Pollen). — *Stemonurus oppositifolius* [non (Pierre ex Gagnep.) Howard] Dahl, J. Arn. Arb. 33 (1952) 268 (Pollen).

A widespread species, variable as to form and size of the leaves and to the degree of hairiness of the filaments, though fairly constant in other flower and fruit characters. Drupe oblongoid-ellipsoid, 1.2—1.5(—2) by 0.5—0.8 cm, not or slightly swollen at base. Whether specimens with smaller fruits, as found in Hainan, represent a proper species, is doubtful.

CEYLON. From the sea level to 1200 m, *Macrae* 10 (K), *Walker* 144 (K), *Thwaites* C.P. 251, etc.

INDIA. Western Peninsula from the Concan southwards, *Wight* K.D. 428 (C; K, lectotype of *G. polymorpha* and type of *G. polymorpha* var. *angustifolia*; L), 429 (A, n.v.; K, type of *G. polymorpha* var. *acuminata*; L), 430 (C; K, type of *G. polymorpha* var. *oblongifolia*; L, P), *Wight s.n.* (K, type of *G. polymorpha* var. *longifolia*), *Wight s.n.* (K, type of *G. polymorpha* var. *ovalifolia*); Nilgcherries, *Wight* t. 953 (cit. '53'), type of *Platea wightiana*; Madras Presidency, etc. — Assam: Sylhet border, *M.R. Smith* (type of *Lasianthera tetrandra*, probably preserved in CAL, n.v.); Sylhet, *Wallich* 3718 (CGE; K, type of *G. axillaris*), 6780, 6782 B (CGE; K, type of *Stemonurus longifolius*). — Khasia: *Hooker f. & Thomson*, *Griffith*, etc.

BURMA. Lower Burma: Amherst, slopes of Mulayit, 1430 m, *Parkinson* 5124 (K).

INDOCHINA. Tonkin: Lao-kay, Cha pa, 1600 m, *Chevalier* 29396, *Pételot* 4463, 5450 (A, n.v.; P, syntype of *G. hainanensis* var. *latifolia*), 6360 (A, n.v.; P, lectotype of *G. hainanensis* var. *latifolia*); Taai Wong Mo Shan, *W. T. Tsang* 29355, 29579, 30111; Sontay, Mt Bavi, *Balansa* 3134, 3192, *Pételot* 2647 (A, type of *G. petelotii*, n.v.; P); Phuong-lam, *Balansa* 3890 p.p. (P, syntype of *G. hainanensis* var. *latifolia*); Vinh-yen, Tam Dao, 1100 m, *Eberhardt* 4963, 4972, 5035, *Pételot* 4359 (A, type of *G. obscurinervis*, n.v.; P); massif de Nui bien, près Chobo, *Poilane* 13116. — Tonkin/Kwangtung border: *W. T. Tsang* 26934, 26943, 27254. — Laos: prov. Tran-ninh, *Poilane* 20122; Chienkwang, Pu Mutin, 1700 m, *Kerr* 21138 (K, P); *ibid.*, 1500 m, *Kerr* 21154 (K, L; P, type of *G. kerrii*). — Annam: Quang-tri, Massif de Dong-co-pat, *Poilane* 11156; Dent du tigre, *Poilane* 10283; Thua-thien, Nui Bach-ma près Hué, *Poilane* 27600, 27628, 27655, 29232, 29645, 31151, 31197; Quang-nam, S.O. de Tramy, *Poilane* 31377 (P, syntype of *G. annamensis*); village de Go-oi, *Poilane* 31500 (A, n.v.; K; P, syntype of *G. annamensis*), 31709; Manglum, *Poilane* 31969; poste 6, *Poilane* 29590 (P, syntype of *G. annamensis*); Tourane, Mt Bana & Col de Nuages, *Clemens* 3861 (fl. ♂: A, n.v.; BM, K, L; P, lectotype of *G. annamensis*; U), 3867 (fl. ♀: K; P, syntype of *G. annamensis*), 4224 (K), *Poilane* 7117, 7174, 7362, 7746, 7997, 8124, 29004, 29136, 29232; Nhattrang, Phu ha, *Poilane* 5293 (P, syntype of *G. annamensis*). — Cambodge: Montagne de l'Eléphant, *Poilane* 229 (A, n.v.; P, syntype of *G. camchayensis*), 337 (P, lectotype of *G. camchayensis*); Kampot, Mt Kamchay, *Pierre* 5202 (P, type of *G. cambodiana*).

CHINA. Kweichow: Gam-go, c. 2100 m, *Esquirol* 6399 (P). — Kwangsi: R.C. *Ching* 5226 (A, n.v.; WU, type of *Stemonurus chingianus*, n.v.). For further localities see: Chun, l.c. 229; Wu & Wang, l.c. 278. — Yunnan: *Henry* 10492, 10738, 11273, 13007 (all at K). For further localities see: Wu & Wang, l.c. 278. — Hainan: 700 m, *McClure* 8546 (A, n.v.; BM, C, E, G, K, P; PNH, type of *G. hainanensis*, †), 9464, 9570, *Henry* 10492, *Chun & Tso* 43878, *F.C. How* 70388, 72089, *S.K. Lau* 127, 377, 450, 3560, 3713, *H.Y. Liang* 61734, 63148, 63587, 64409, 64500, 64705, 64743, 64793, 65188, *W.T. Tsang* 22204, 22686, C. *Wang* 33311, 34309, 35030, 36552. — For further localities see Chun & How, l.c. 58; Wu & Wang, l.c. 278.

THAILAND. Payap: Chiengsên, Mê Chan, 400 m, Kerr 5141. — Maharat: Doi Wao near Nan, 690—750 m, Kerr 2430 (K, syntype of *G. pauciflora*), 2433, 2435 (E; K, lectotype of *G. pauciflora*). — Rachaburi: Kao Ri Yai, 1400 m, fr., Kerr 10410 (K).

32. *Gomphandra coriacea* Wight, Ill. 1 (1840) 103; Walp., Rep. 1 (1842) 378; Bedd., Fl. Sylv. 3 (1871) LXI, Anal. Gen. t. IX, f. 4; Becc., Malesia 1 (1877) 109, t. 4, f. 1—7; Valet., Crit. Overz. Olacin. (1886) 222; Trimen, Handb. Fl. Ceylon 1 (1893) 261; Gamble, Fl. Pres. Madras 1 (1915) 195. — *G. polymorpha* Wight, Ill. 1 (1840) 103 *p.p. et auct. div.* — *Stemonurus coriaceus* (Wight) Miers, Ann. Mag. Nat. Hist. II, 10 (1852) 37, repr. Contr. Bot. 1 (1852) 87; O. Ktze, Rev. Gen. Pl. 1 (1891) 112. — *Stemonurus gardneri* Miers, Ann. Mag. Nat. Hist. II, 10 (1852) 38, repr. Contr. Bot. 1 (1852) 89, pl. 13/2. — *Stemonurus walkeri* Miers, l.c. 43, resp. 93, pl. 14/2. — *Platea coriacea* (Wight) Thwait., En. Pl. Zeyl. (1858) 44.

CEYLON. *Walker s.n.* (fl. ♂: BM; K, syntype of *Stemonurus walkeri*), *Gardner 101 & 101 bis* (fl. ♀: K, lectotype of *Stemonurus walkeri*), *Thwaites C.P.* 375, etc.

INDIA. Western Peninsula, Pulneys, *Wight K.D.* 427 (A, n.v.; C, Fl; K, type (or lectotype?) of *G. coriacea*; GH, n.v., pollen investigated by Dahl, J. Arn. Arb. 33, 1952, 268; L, P, S), 433 (A, n.v.; C, K, L, P); Nilgherries, *Gardner s.n.* (BM; K, lectotype of *Stemonurus gardneri*), etc. — Madras Presidency?

Note. Possibly only a montane variety or form of *G. tetrandra* with more coriaceous leaves and not rarely glabrous filaments.

Imperfectley known

33. *Gomphandra oblongifolia* Merr., Philip. J. Sc. 17 (1920) 276; En. Philip. 2 (1923) 491. — *G. sorsogonensis* Elm., Leaf. Philip. Bot. 10 (1939) 3748. — *Stemonurus oblongifolius* (Merr.) Howard, J. Arn. Arb. 21 (1940) 469.

PHILIPPINES. Luzon: Camarines, fr., *F.B.* 27423 (SING, UC); Camarines Norte, Paracale, fr. juv., B.S. 33727 (A, n.v.; K; PNH, type of *G. oblongifolia*, †), *F.B.* 27406 (A, n.v.; K); Camarines Sur, Lagonoy, *F.B.* 21103 (cit. Merrill, PNH, †); Sorsogon, Irosin, Mt Bulusan, *Elmer 15295* (A, n.v.; BM, BO, C, Fl, K, L, P; PNH, type of *G. sorsogonensis*, †; S, U), 15650 (distr. as *Urandra leytenis*), *PNH 2722* (fr.), 38543 (fr.). — Catanduanes: B.S. 30258 & 30355 (PNH, †), B.S. 75422 (SING, U, UC). — Mindanao: Davao, Mati, B.S. 49621 (distr. as *G. flavicarpa*: P, SING, UC).

INCOMPLETE MATERIALS STUDIED BUT LEFT WITHOUT SPECIFIC DETERMINATION

Gomphandra sp.

SUMATRA. Enggano I: *Lütjeharms 4108, 4931, 4933*, sterile & fr. submat. (BO, L, P).

Gomphandra sp.

LINGGA ARCH. Lingga I: Bukit Sipientjan, *Teysmann H.B. 6709* (BO, L); Bukit Uwan Pelo, *Teysmann H.B. 6707, 6708* (BO, L), cf. Valet., Crit. Overz. Olacin. (1886) pl. 4, f. 18 a & b; P. Singkep, 60 m, *Bunnemeijer 7181* (BO). — All these possibly aff. *G. quadrifida* (Bl.) Sleum. var. *ovalifolia* (Ridl.) Sleum.

Gomphandra sp. nov. ?

SUMBAWA. Western part: Mt Batulanteh, in moist Dipterocarp forest, 500—900 m, fl. ♂ juven., fl. ♀ & fr. submat., *Kostermans 18321, 18328, 18479, 18738, 19173*. — Possibly close to *G. javanica* (Bl.) Valet.

Gomphandra sp.

FLORES. Ruteng Mts, 1200 m, frequent tree with markedly erect branches and leaves, sterile, *de Voogd 1793* (BO, L).

Gomphandra sp.

BORNEO. Western part: Kapuas R., Biang Mts, sterile, *Teysmann H.B. 8455* (L). — Cited erroneously by Valetton, Crit. Overz. Olacin. (1886) 218, and Merrill, En. Born. (1921) 356, sub *G. parviflora* (Bl.) Valet., a species not yet known from Borneo.

Gomphandra sp.

BORNEO. Central part: W. Kutei, near Long Petah, 550 m, fl. ♂ or galled, *Enderit 3125* (BO, K, L).

Gomphandra sp.

BORNEO. Sarawak: 4th Div., Baram, Entoyut R., *Hose 375* (BM, K), *455* (BM, K, L), *700* (BM, L); Baram R., *Hose 154* (BM, K, L). — These specimens are cited by Ridley, Kew Bull. (1931) 35, erroneously sub *G. javanica* (Bl.) Valet.

Gomphandra sp.

BORNEO. Sarawak: 4th Div., Ulu Melinau, Baram, *Ashton BRUN 3232* (BO, K, L).

Gomphandra sp. nov. — *G. aff. comosa* Anderson, Gard. Bull. Sing. 20 (1963) 166.

BORNEO. Sarawak: 2nd Div., Betung, Saribas F. R., in peat swamp forest, fr. mat., *Anderson S 8517* (BO, K, L, SAR); Triso P. F., sterile, *Anderson S 3166, 14502, 14539* (SAR); 3rd Div., Pulau Bruit, in centre of island, peat swamp forest, *Anderson S 7914* (BO, K, L, SAR, SING); 4th Div., Sg. Dua, Baram, sterile, *Anderson S 4189*.

Gomphandra sp.

BORNEO. Sarawak: 5th Div., Limbang, *Haviland 777* (K, SAR, SING). — Reminds of both *G. parviflora* (Bl.) Valet. and *G. quadrifida* (Bl.) Sleum. in leaf-characters.

Gomphandra sp.

BORNEO. Sarawak: 5th Div., Lawas, *Brooke 9963* (BM, L).

Gomphandra sp.

BORNEO. Brunei: Seria Dist., fl. ♂ juven., *Hotta 12640* (L).

Gomphandra sp.

BORNEO. Brunei: Temburong, N. slopes Bukit Patoi, 50 m, fr., *SAN 17150 Smythies, Wood & Ashton* (BO, L, SING).

Gomphandra sp.

BORNEO. N. Borneo: Mt Kinabalu, Kadamaian R., 1370 m, fr., *Haviland 1243* (K). — Published as *G. ? prasina* Becc. by Stapf, Trans. Linn. Soc. II, Bot. 4 (1894) 139, but certainly not that species.

Gomphandra sp.

BORNEO. N. Borneo: Mt Kinabalu, 1370—1525 m, *Clemens 32260* (fr.: BM, L), *32597* (BM, BO, G, L), *50307* (fl. ♂: BM, G, K, L).

Gomphandra sp.

BORNEO. N. Borneo: Mt Kinabalu, 1525 m, *Clemens 32590* (BM, BO, L). — In this specimen the petals are free to the base as in *G. lysipetala* Stapf.

Gomphandra sp.

BORNEO. N. Borneo: Mt Kinabalu, 2135—3000 m, *Clemens 31997* (fr. mat.: BM, BO, G, K, L), *35029* (BM).

Gomphandra sp.

BORNEO. N. Borneo: Mt Kinabalu, *Clemens 35028* (BM, L); Lobang, fr., *Clemens 10321* (L); Penibukan, 1000—1980 m, *Clemens 30487* (BM, L), *35031* (fr.: BM, L), *40477* (BM, G, L), *40937* (BM, K), *50013* (fl. ♀: BM, G, K); Tenompok, 1525 m, *Clemens 28114* (fr.: BM, BO, G, L), *28226* (fl. ♀: BM, BO, L), *28365* & *28365 A* (BM, BO, G, K, L); Dallas, 900—1200 m, *Clemens 26148* (BM, BO, G), *26254* (BM, K, L), *27548* (BM, G, K). — Related apparently to *G. cumingiana* (Miers) F.-Vill.

Gomphandra sp.

BORNEO. N. Borneo: Mt Kinabalu, 1525 m, *Clemens 32341* (BM, L), *32462* (fr. mat.: BM, BO, G, K, L), *34030* (BM, L). — These specimens have practically glabrous filaments.

Gomphandra sp.

BORNEO. N. Borneo: Mt Kinabalu-Sosopodon, Ranau road, 1400 m, fl. ♀, *SAN 33713* (K, SAN).

Gomphandra sp.

BORNEO. N. Borneo: Mt Kinabalu, Ulu Kagitang, 1220 m, fr., *SF 26788 Carr* (SING).

Gomphandra sp.

BORNEO. N. Borneo: Sosopodon near Kundasang, 1220 m, fr., *SAN 47950* (K, L).

Gomphandra sp.

BORNEO. N. Borneo: Tambunan, Trusmadi F. R. above Koingaran R., 1675—1830 m, *SAN 41751* (K, L, SAR), *44333* (K, L, SAN).

Gomphandra sp.

BORNEO. N. Borneo: Bukit Malawali, Labuk road, 240 m, fr. submat., *SAN 46666* (K).

Gomphandra sp.

BORNEO. N. Borneo: Sandakan, Sepilok F. R., Dj. Kabili, Cpt. 13, fl. ♂, *SAN 34312* (K). — In Dipterocarp forest.

Gomphandra sp.

BORNEO. N. Borneo: Sandakan, Kinabatangan, Bukit Tingka, 670 m, on ultrabasic soil, fr., *SAN 23286* (K).

Gomphandra sp.

PHILIPPINES. Dinagat I.: fr., *B.S. 35264 Ramos & Pascasio* (BM, K, L, P).

Gomphandra sp.

PHILIPPINES. Alabat I.: fl. ♀, *B.S. 10495 Merrill* (L).

Gomphandra sp.

PHILIPPINES. Samar: Mt Cansayo, fl. ♀ & fr., *PNH 14345* (K, L), *14592* (L).

Gomphandra sp.

PHILIPPINES. Biliran I.: Mt Suiro, 530 m, *PNH 21575* (L).

Gomphandra sp.

PHILIPPINES. Leyte: Palo, fr., *Elmer 7192* (BO, L). — According to Elmer, *Leaf. Philip. Bot.* 7 (1915) 2693, matching *G. cumingiana* (Miers) F.-Vill., which I doubt. Distributed as *Urandra leytenis* Elmer *ms.*

Gomphandra sp.

PHILIPPINES. Luzon: Mountain Prov., Ifugao, Banaue, 1220 m, fr., *PNH 79571* (K, L).

Gomphandra sp.

PHILIPPINES. Luzon: Nueva Vizcaya Prov., Caraballo Mts, *Loher 13660* (UC).

Gomphandra sp.

PHILIPPINES. Luzon: Bataan Prov., Lamao R., Mt Mariveles, *F.B. 1199 Borden* (BM).

Gomphandra sp.

PHILIPPINES. Luzon: Batanes Prov., Batan I., *B.S. 79973 & 80643 Ramos* (K). — Maybe related to *G. luzoniensis* (Merr.) Merr.

Gomphandra sp.

PHILIPPINES. Luzon: Tayabas, Mt Pular, *B.S. 19415* (K, P).

Gomphandra sp.

PHILIPPINES. Luzon: Laguna, *F.B. 24672 Amarillas* (L).

Gomphandra sp.

PHILIPPINES. Mindanao: Mt Apo, Todaya, fr., *Williams 2582* (K). — Cited by Merrill as *G. flavicarpa* (Elm.) Merr.

Gomphandra sp.

NEW GUINEA. Northern part: Hollandia, 100 m, fr. submat., *BW 5541 v. d. Sijde* (K, L). — Leaves finely reticulate on both faces.

Gomphandra sp. (aff. *G. australis* F. v. M. ?)

NEW GUINEA. Mussau I.: *Køie & Sandermann Olsen 1569* (C). — Western part: Bernhard Camp, Idenburg R., 750 m, sterile, *Brass & Versteegh 13199* (L). — Eastern part: Eastern Highlands, near Sassaura, 1675 m, *Hartley 12004* (L); Madang Dist., Ramu R. valley near Fata airstrip, 180 m, *Saunders 309*; Normanby I., 15 m, fr. immat., *NGF 8610* (K, L); Misima I., 300 m, fr. immat., *Brass 27504* (K, L); Woodlark I., 100 m, fr. immat., *Brass 28741* (K, L).

Gomphandra sp.

NEW GUINEA. Eastern Highlands: Kassam Gap, 1460 m, *Brass 32295* (K, L).

Gomphandra sp.

NEW GUINEA. Northern Dist.: Dobodura, fr. immat., *NGF 2047* (L).

Gomphandra sp. nov.

NEW GUINEA. Morobe Dist.: Gully due North of Wagau airstrip, 1220 m, fr. mat., *NGF 17882* (K, L); Wau-Salamaua road, near Skindeway, 1665 m, fr. mat., *NGF 8465* (K, L).

Gomphandra sp.

NEW GUINEA. Morobe Dist.: Bulolo, Upper Rifle Ra., 1220 m, fr., *NGF 27923*.

Gomphandra sp.

NEW BRITAIN. Talasea, NE. ridge of Mt Penck, 150 m, *NGF 26730* (L). — The petals are free from each other in this specimen.

EXCLUDED

Gomphandra ? *crassipes* (Kurz) Mast. in Hook. f., Fl. Br. Ind. 1 (1875) 587; Valet., Crit. Overz. Olacin. (1886) 229. — *Stemonurus* ? *crassipes* Kurz, J. As. Soc. Beng. 41, ii (1872) 298; O. Ktze, Rev. Gen. Pl. 1 (1891) 112. — *Platea crassipes* (Kurz) Kurz, Prel. Rep. For. & Veg. Pegu, App. A, p. XXXIV (1875) = *Anacolosia crassipes* (Kurz) Kurz, J. As. Soc. Beng. 44, ii (1875) 153.

Gomphandra impressa Ridl., Trans. Linn. Soc. II, Bot. 9 (1916) 29. — *Stemonurus impressus* (Ridl.) Schellenb., Bot. Jahrb. 58 (1923) 163 = *Pittosporum ramiflorum* (Z. & M.) Zoll. ex Miq.

Gomphandra serrata King & Prain, J. As. Soc. Beng. 69, ii (1900) 169 = *Prunus zippeliana* Miq. — Det. C. Kalkman.

Gomphandra gamblei (C. B. Clarke) van Royen ex Ind. Kew. Suppl. 13 (1966) 61, *sphalm. pro* 'Gomphocarpa' *gamblei* (C. B. Clarke) van Royen, Blumea 8 (1957) 425, based on *Sideroxylon gamblei* C. B. Clarke in Hook. f., Fl. Br. Ind. 3 (1882) 538. — *Planchonella gamblei* (Clarke) H. J. Lam, Bull. Jard. Bot. Btzg III, 7 (1925) 199 = *Platea latifolia* Bl.

Gomphandra yatesii Merr., Pap. Mich. Ac. Sc. 19 (1934) 165, t. 28 = *Medusanthera gracilis* (King) Sleum.

Gomphandra vitiensis (Seem.) Valet., Crit. Overz. Olacin. (1886) 230 = *Medusanthera vitiensis* Seem.

Gomphandra andamanica (Kurz) King, J. As. Soc. Beng. 64, ii (1895) 115 = *Codiocarpus andamanicus* (Kurz) Howard, Brittonia 5 (1943) 57.

8. A REVISION OF THE GENUS GONOCARYUM MIQ.

GONOCARYUM

Miq., Fl. Ind. Bat. Suppl. 1 (1861) 343; Kurz, J. As. Soc. Beng. 39, ii (1870) 72, *nota*; Baill., Hist. Pl. 5 (1874) 333; Scheff., Ann. Jard. Bot. Btzg 1 (1876) 96; Becc., Malesia 1 (1877) 122; *ditto* (1878) 256; Valet., Crit. Overz. Olacin. (1886) 243; Boerl., Handl. 1, 1 (1890) 216; Engl. in E. & P., Nat. Pfl. Fam. III, 5 (1893) 250; King, J. As. Soc. Beng. 64, ii (1895) 118; Gagnep., Fl. Gén. I.-C. 1 (1911) 827; Ridl., Fl. Mal. Pen. 1 (1922) 431; Merr., En. Philip. 2 (1923) 491; Schellenb., Bot. Jahrb. 58 (1923) 166; Howard, J. Arn. Arb. 21 (1940) 464, *in clavi*, 488, pl. 2, f. 16—20; Sleum. in E. & P., Nat. Pfl. Fam. ed. 2, 20 b

(1942) 355; Back. & Bakh. v. d. Br., Fl. Java 2 (1965) 59. — *Phlebocalymna* Griff. ex Miers, Ann. Nat. Hist. II, 10 (1852) 109, *nom. inval.* (incidental mention, Code § 34, note 2) and *pr. syn. gen. Platea*; repr. Contr. Bot. I (1852) 96; Benth. in Benth. & Hook. f., Gen. Pl. I (1862) 353, descr.; Mast. in Hook. f., Fl. Br. Ind. I (1875) 589.

Type species: *G. gracile* Miq.

KEY TO THE SPECIES

1. Petals of the ♂ flowers almost free or united below up to the middle, cup-like expanded. Anthers as long as or longer than filaments. Drupe as far as known without a distinct abortive loculus ¹⁾, reddish to orange at maturity; exocarp thick, almost exclusively spongyous.
 2. Petals of the ♂ flowers almost free, smooth inside, c. 2 mm. Malay Peninsula (Selangor).
 1. *G. crassifolium*
 2. Petals of the ♂ flowers united below to $\frac{1}{3}$ — $\frac{1}{4}$ their length, with papillose emergences all over the inside, (4—)5—6 mm. Timor, Tanimbar Is, Celebes, Moluccas, Aru & Kai Is, New Guinea, New Britain. 2. *G. litorale*
1. Petals of the ♂ flowers united below to about $\frac{3}{4}$, forming a tube, not papillose inside. Filaments distinctly longer than the anther cells. Drupe with a distinct abortive loculus (round in cross-section), dark green to olivaceous or turning blackish at maturity; exocarp rather thin, spongyous or predominantly fibrous.
 3. Leaves suddenly narrowed at apex for c. 2 cm by 3—4 mm (at base), tip subacute, nerves, and generally also veins, much impressed above, sharply raised beneath. Mature drupe acuminate, tip acute, longitudinal ribs numerous and \pm sharply outstanding. Borneo 3. *G. impressinervium*
 3. Leaves less distinctly or shortly acuminate-attenuate at apex, tip \pm bluntish, nerves whether or not impressed above, veins but slightly or not so. Mature drupe short-apiculate or obtuse at apex, longitudinal ribs few to rather numerous and \pm obtuse, prominent or not.
 4. ♂ Spikes solitary in general. Mature drupe obtusely trigonous in cross-section.
 5. Spikes (both ♂ and ♀) generally elongate, up to 30 cm. Leaves (6—)8—18(—20) by 3.5—6.5 (—9.5) cm, greyish green in dry specimens. Petals 5—6 mm. Sumatra, Malay Peninsula.
 4. *G. gracile*
 5. Spikes (both ♂ and ♀) relatively short, up to 6 cm. Leaves 6—12 by 3—4(—5) cm, usually yellowish green especially beneath in dry specimens. Petals c. 4 mm. Borneo (Sarawak, Brunei, W. part of N. Borneo) 5. *G. minus*
 4. ♂ Spikes in general several in a fascicle, or flowers glomerately arranged. Mature drupe \pm round in cross-section.
 6. Drupe ovoid or rarely ellipsoid-subovoid, green at maturity, with several obtuse, prominent, longitudinal ribs. N. & E. Borneo, Philippines, Sulu Arch. 6. *G. cognatum*
 6. Drupe oblongoid to ellipsoid or rarely subovoid-ellipsoid or -oblongoid, dark olivaceous to \pm blackish at maturity, longitudinal ribs few to numerous, little or hardly prominent.
 7. Ovary in the ♀, resp. rudiment of ovary in the ♂ flower glabrous. Leaves 15—20(—25) by (5—) 6—10(—14) cm, lateral nerves generally slightly impressed above, reticulation rather weakly or not prominent above. Drupe (1.5—)2—2.5 (rarely —3) by 1—1.5 cm; exocarp 1—2 mm; endocarp thin. Sumatra, Borneo. 7. *G. macrophyllum*
 7. Ovary in the ♀, resp. rudiment of ovary in the ♂ flower densely to more sparsely hairy. Lateral nerves of leaves not impressed above. Drupe larger in general.
 8. Leaves markedly finely and densely prominent-reticulate on both faces, or at least above. Exocarp plus endocarp of well developed drupes 1—2 mm. S. Taiwan, Philippines, Celebes (Gorontalo), S. Borneo, Moluccas 8. *G. calleryanum*
 8. Leaves rather obscurely or not prominent-reticulate above, never so beneath. Exocarp plus endocarp (2—)3—4 mm in well developed drupes. Burma, Thailand, Indochina, Hainan, Malay Peninsula (Perlis), S. & SE. Borneo. 9. *G. lobbianum*

I. *Gonocaryum crassifolium* Ridl., J. Str. Br. R. As. Soc. 75 (1917) 18; Fl. Mal. Pen. I (1922) 432.

MALAY PENINSULA. Selangor: Sempang Mines, *Ridley 15695* (BM; K, type; L, phot.).

¹⁾ Cf. also *G. melanocarpum*, at the end.

2. *Gonocaryum litorale* (Bl.) Sleum., Notizbl. Berl.-Dahl. 15 (1940) 233. — *Stemonurus ? litoralis* Bl., Mus. Bot. Lugd. Bat. 1 (1850) 250; Walp., Ann. 2 (1851) 182; Miers, Ann. Mag. Nat. Hist. II, 10 (1852) 36, repr. Contr. Bot. 1 (1852) 87. — *Lasianthera ? litoralis* (Bl.) Miq., Fl. Ind. Bat. 1 (1856) 792; Scheff., Ann. Jard. Bot. Btzg 1 (1876) 14; Becc., Malesia 1 (1877) 111. — *Villaresia macrocarpa* Scheff., Ann. Jard. Bot. Btzg 1 (1876) 13; l.c. 102, obs. — *G. pyriforme* Scheff., Ann. Jard. Bot. Btzg 1 (1876) 100; Becc., Malesia 1 (1877) 123; Valet., Crit. Overz. Olacin. (1886) 246; Hochr., Pl. Bog. Exs. (1904) 43, incl. var. *corrugatum* Hochr., l.c. & var. *planifolium* Hochr., l.c. 44; Bull. Inst. Bot. Btzg 22 (1905) 39, incl. var. *corrugatum* Hochr. & var. *planifolium* Hochr., l.c. 51; Ann. Jard. Bot. Btzg Suppl. III, 2 (1910) 857, incl. var. *genuinum* f. *planifolium* (Hochr.) Hochr., l.c., f. *corrugatum* (Hochr.) Hochr., l.c., var. *obovatum* (Hochr.) Hochr., l.c., var. *fuscum* (Hochr.) Hochr., l.c. var. *fusiforme* (Hochr.) Hochr., l. c. 858; Back., Schoolfl. Java (1911) 227; Koord., Exk. Fl. Java 2 (1912) 532 ('*piriforme*'); Pulle, Nova Guinea 8 (1912) 659; Warb., Pflanzenwelt 2 (1916) 349, f. 231 D, 1—6; Schellenb., Bot. Jahrb. 58 (1923) 166; Wettstein, Handb. Syst. Bot. ed. 4 (1935) 842, fig. (fr.; '*pyrospermum*'); Amsh. in Back., Bekn. Fl. Java (em. ed.) 6 (1948) fam. 135, p. 2; Back. & Bakh. v. d. Br., Fl. Java 2 (1965) 59. — *G. selebicum* Becc., Malesia 1 (1877) 124; Valet., Crit. Overz. Olacin. (1886) 247; Koord., Minah. (1898) 394. — *G. affine* Becc., Malesia 1 (1878) 256; Valet., Crit. Overz. Olacin. (1886) 247; Pulle, Nova Guinea 8 (1912) 659; Schellenb., Bot. Jahrb. 58 (1923) 166. — *G. macrocarpum* (Scheff.) Scheff. ex Warb., Bot. Jahrb. 13 (1891) 299; K. Sch. & Laut., Fl. Schutzgeb. (1900) 415. — *G. fuscum* Hochr., Pl. Bog. Exs. (1904) 42; Bull. Inst. Bot. Btzg 22 (1905) 5, 49; Back., Schoolfl. Java (1911) 227; Dahl, J. Arn. Arb. 33 (1952) 265 (Pollen). — *G. fusiforme* Hochr., Pl. Bog. Exs. (1904) 42; Bull. Inst. Bot. Btzg 22 (1905) 50. — *G. obovatum* Hochr., Pl. Bog. Exs. (1904) 43; Bull. Inst. Bot. Btzg 22 (1905) 4, 51; Valet., Bull. Dep. Agric. Ind. Néerl. 10 (1907) 30. — *G. sp.*, Pulle, Nova Guinea 8 (1912) 659.

LESSER SUNDA IS. Timor: *Teysmann H.B. 10655*. — Tanimbar Is: Jamdena I., 100 m, *bb. 24316, 24370, 24415, Pleyte 172, Buwalda 4345, 4562, van Borssum Waalkes 3359, 4011*.

CELEBES. Central eastern Celebes: Malili, 30 m, *Cel II/96 & 489, Cel IV/184*. — Southeastern Celebes: Kolaka, Anawoi, 80 m, *bb. 32324*; Kandari Peninsula, Toli-toli, near the mouth of the Sampara R., *Beccari, 5-1874 (Herb. Beccari 2475/76, Fl. type of G. celebicum, fr. only)*. — Buton I.: 3 m, *bb. 6649*.

MOLUCCAS. Ambon: cult. in Hort. Bogor., *Binnendijk H.B. 17513 (BO, type of G. pyriforme)*. — Halmahera: Mt Sembilan, 600 m, *Pleyte 380*. — Ceram: *Paulus H.B. 5600*. — Morotai: Mt Tutuhu, 75 m, *bb. 24594*.

KAI IS. *Jaheri 377, 378, 379*.

ARU IS. Aru I.: *Moseley Exp. a. 1874 (K)*; Sg. Workai, between Kbroör and Maikoo, *Jensen 251 (C)*. — Trangan: Lutor, *Beccari a. 1873*; Wokam: 20 m, *bb. 25372*.

SALAWATI. *Teysmann a. 1871 (BO)*; Kaloal, *BW 4665*.

MISOOL. Waigama, *Teysmann H.B. 16738*.

NEW GUINEA. Vogelkop Peninsula: Manokwari, Pravi, 100 m, *BW 328*; Oransbari, 5 m, *BW 2282, 2556*; Momi, 10 m, *Kostermans 208*; Sidei, *BW 5547*; Ransiki, 10 m, *Kostermans 2883, bb. 33321*; Andai, *Beccari P.P. 623, Teysmann H.B. 6809 (BO, type of Villaresia macrocarpa)*; Kebar valley, 620 m, *BW 2324*; Tohkiri Mts, 950 m, *van Royen & Sleumer 6893*; Tamrau R., S. slope of Mt Kusemun, 800 m, *van Royen, Sleumer & Schram 7687*; Beriat, 12 km S. of Teminabuan, *BW 4935*; Seta, NE. of Lake Ajamaru, 240 m, *BW 15336*; Sausapor, 15 m, *van Royen 4638*; Sorong, Rufeï R., 50 m, *van Royen 3143*; Steenkool to Tambuni, 45 m, *van Royen 3451*; Mioswaar I., *BW 3877*. — Southern part: Southcoast between Triton Bay and Frederik Hendrik I., *Zippelius a. 1828 (C; L, type of Stemonurus litoralis; P)*; Etnabay, *Koch 596 (BO, L)*; Oeta, 5 m, *Aet (Exp. Lundquist) 367, 588*; Utakwa to Mt Carstenz, *Boden Kloss, 11-1912 (BM)*; Lorentz R., *von Römer 94*; Kampong Kabatiel NW. of Merauke (= Kahtel on Biau R. ?), *Branderhorst 272*. — Northern part: Japen I., 250—700 m, *bb. 30279, 30543, 30659*; Woda, 60 m, *BW 11191*; Serui, 270 m, *bb. 30401, Aet & Idjan (Exp. van Dijk) 414*; Mamberamo R., 30—60 m, *Docters van Leeuwen 9409, 11228, 11332, bb. 31346, BW 3334*; Idenburg R., 50 m, *bb. 25657*; Hollandia, 40—200 m, *Brass 8863, Gjellerup 299, BW 1988*; Demta, *BW 3656*; Cycloop Mts, Polymac road near Hollandia, 200 m, *BW 3498* (leaves with veinlets depressed above); hills E. of Jabau R., 460 m, *van Royen & Sleumer 5833*; Tanahmerah

Bay, Tablasufu, 70 m, *van Royen & Sleumer 6463*. — Western Dist.: Fly R., *d'Alberty a. 1877* (*Herb. Beccari 2467 & 2467 A*, Fl, type of *G. affine*); *ibid.*, *d'Alberty* (*Herb. Beccari*, Fl, sterile); Oriomo Creek, mouth of Yakup Creek, 40 miles from sea, 8° 50' S, 143° E, *NGF 17755*. — Gulf Dist.: Seribi R. near Middletown, *NGF 8064*. — Sepik Dist.: Yellow R., *NGF 3868, 3902*; Wewak-Angoram area, 30 m, *Pullen 1730*; Torricelli Mts, 700 m, *Schlechter 20146* (B, †, cit. Schellenberg sub *G. affine*); Sosi village, Vanimo subdist., 270 m, *NGF 25243*. — Madang Dist.: Hatzfeldhafen, *Warburg 20213* (B, †, cit. Schellenberg); Puria R., foot of Mt Hellwig, 350 m, *Hoogland 5195*; Ramu R. valley, near Fata airstrip, 200 m, *Saunders 330, 357, 366*. — Central Dist.: Trans Vanapa, *NGF 8187*; Port Moresby, 30 m, *Pullen 3395*; Boridi, 1280 m, *Carr 14806*; Kanosia plantation, 6 m, *Carr 11799, Darbyshire 724*; Brown R. area, 15—60 m, *Schodde 2548, NGF 8225, 8272, 13139, 17374*. — Morobe Dist.: Lae, Oomsis Creek, *NGF 3235, 10680*; Yalu, 30 m, *Hartley 11879*; Bulolo, 1220 m, *NGF 10136*. — Milne Bay Dist.: Modewa, W. of Samarai, 100 m, *Brass 2886*; Sudest I., 30 m, *Brass 28114*.

NEW BRITAIN. Eliak Creek, 5° 45' S, 149° 05' E, *NGF 10063*; Gasmata, Awul, sea level, *NGF 24154*.

BISMARCK ARCH. Mussau I., *Køje & Sanderman Olsen 1112, 1502* (C).

CULT. Hort. Singapore: *Ridley a. 1892* (K), *SF 34841*. Hort. Bogor.: *Beccari a. 1876, Alston 15564—65, 15570—72, 17102—03, Sutriano 16, Woerjantoro 19*; sub *II-F-22, Hochreutiner, Pl. Bog. Exs. 85* (BO, lectotype of *G. fuscum*; K, L, P, WRS�), *Forman 64, Alston 17104*; sub *II-E-28, Hochreutiner, Pl. Bog. Exs. 88* (BO, type of *G. obovatum*; K, L, P, WRS�), *Forman 618, Alston 13026; Hochreutiner, Pl. Bog. Exs. 89* (BO, type of *G. pyriforme* var. *corrugatum*; K, L, P, WRS�); *Hochreutiner, Pl. Bog. Exs. 90* (BO, type of *G. pyriforme* var. *planifolium*; K, L, P, WRS�); sub *III-G-106, Hochreutiner, Pl. Bog. Exs. 86* (BO, type of *G. fusiforme*; K, L, P, WRS�).

3. *Gonocaryum impressinervium* Sleum., *sp. nov.*

Frutex vel arbuscula (2—)3—8 m alta, cortice laevi, trunco c. 5 cm diam. *Ramuli* obtusanguli, graciles, sub lente puberuli. *Folia* oblongo-elliptica, apice abrupte acuminata (acumine c. 2 cm longo, basi 3—4 mm lato), basi late attenuata, subinaequilaterialia, tenuiter coriacea, ad petiolum, costam nervosque initio puberula denique glabrescentia, ceterum glabra, in sicco pallide viridi-olivacea, margine paullo recurva, (12—)15—23 cm longa, 5—10 cm lata, costa nervis lateralibus et venis supra in sicco distincte impressis, subtus arcte elevatis, nervis lateralibus 6—8-paribus curvato-ascendentibus ante marginem bene anastomosantibus, venulis dense reticulatis utrinque prominulis vel subobscuris; petioli longitudinaliter rimosi transverseque rugosi, in sicco saepius nigrescentes, 8—10 mm longi, c. 2 mm crassi. *Spicae* axillares solitariae rarius binae, erecto-patentes, (2—)3—8 cm longae, laxae multiflorae, floribus inferioribus usque ad 2 mm pedicellatis; rhachis gracilis, c. 1 mm diam., sicut pedicelli puberula. Calyx fere usque ad basin 5-lobus, lobis ciliatis dorso glabris c. 2 mm longis. *Flores* ♂: *Petala* per 3/4 inferiorem partem in tubum connata, superne libera, tota 5—6 mm longa, ex coll. alba, in sicco rubescentia. *Filamenta* tubo adnata, c. 3 mm longa. *Antherae* ellipticae, 5 mm longae. *Ovarii rudimentum* oblongoideum, hirsutum, disco tenui glabro insidens. *Flores* ♀ in statu deflorato tantum cogniti (*Teysmann H.B. 8300*): *Calycis lobi* ovato-acuminati, 2.5 mm longi. *Petala* desunt. *Ovarium* elongato-ovoideum, apicem versus in stylum vix 1 mm longum attenuatum, breviter pubescens, stigmatate capitato minuto subbilobo coronatum. *Drupa* matura (vel submatura ?) oblique elongato-ovoidea et subtrigona, lateraliter paullo compressa, sursum magis quam basin versus attenuata, acuta, sparse pilosa, viridis, manifeste longitudinaliter costis 12—15 subirregularibus 1—2 mm altis subacutis ornata, 5—5.5 cm longa, (2—)2.5 cm diam.; loculus abortivus c. 1 mm diam. adest; exocarpium spongiosum 1—1.5 mm crassum, fibris longitudinalibus percursum; endocarpium durum tenue, longitudinaliter costatum.

BORNEO. W. Borneo: Sungei Malawi, defl. ♀, *Teysmann H.B. 8300* (BO, FI, L). — C. Borneo: Sungei Dengay (= Dingen), fr. immat., *Jaheri (Exp. Nieuwenhuis) 1025* (BO, L); Sungei Blu-u, fl. ♂, *Jaheri (Exp. Nieuwenhuis) 501 & 502* (BO, L). — Central eastern Borneo: W. Kutei, Long Puhus, 80 m, fr. mat., *Endert 2443* (BO, K, L, SING); *ibid.*, 100 m, fl. ♂, *Endert 4797* (BO, K, L); Long Ibut, 130 m, fl. ♂, *Endert 2546* (A, n.v.; BO, K, L, SING); *ibid.*, 150 m, fr., *Endert 4745* (BO, L); Bilatalang on Pedohon R. near Tabang, 50 m, *Kostermans 12706 A* (BO, L). — E. Borneo: C. Kutei, Belajan R., Mt Kelepok near Tabang, 50 m, fl. ♂, *Kostermans 10435* (A, CANB, K, KEP; L, type; P); *ibid.*, fr., *Kostermans 10480* (BO, L).

4. **Gonocaryum gracile** Miq., [Fl. Ind. Bat. Suppl. 1 (1860) 137, *nom. nud.*] ditto (1861) 343, descr.; Becc., Malesia 1 (1877) 122; Valet., Crit. Overz. Olacin. (1886) 245, excl. syn. — *G. longeracemosum* King, J. As. Soc. Beng. 64, ii (1895) 120 ('*longe-racemosum*'); Ridl., Fl. Mal. Pen. 1 (1922) 431; Bak. f., J. Bot. 62 (1924) Suppl. 21; Burk., Dict. (1935) 1099; Dahl. J. Arn. Arb. 38 (1952) 265, f. 44, 44 A (Pollen).

SUMATRA. Eastcoast: Kampar R. area, *Yzerman 338* (Herb. Koorders 22365, BO); Aek Sordang, Lundut concession, Kualu, *Bartlett 7274*. — Westcoast: Taram, E. of Pajakumbuh, sandstone region of Tjampo R., 500—1000 m, *Meijer 6765*, *Ismael 34*. — Riouw: Indragiri, Kuantan R. dist., Kerenteng, *Anon.* (BO, L). — Palembang: *Buurman van Vreden 90* (BO); Suka-Radja, Rupit R., 200 m, *Forbes 2957*; Lebong Musi, *Teysmann H.B. 3977*, fr. immat. (BO, L, P; U, syntype of *G. gracile*), 3979, fl. ♂ (BO, L, P; U, lectotype of *G. gracile*). — No locality given: *Forbes 3136*.

BANKA. Blinju, *Teysmann a. 1872* (BO, L).

MALAY PENINSULA. Kelantan: Ulu Sg. Kelantan, Bukit Hubil, 760 m, *KEP 98809*; *ibid.*, Sg. Brok, 150 m, *FRI 5362*, 5384; Sg. Mersing, 200 m, *KEP 77742*, *FRI 5473*. — Trengganu: *Vesterdal 118* (C). — Perak: *Scortechini* (CAL, syntype of *G. longeracemosum*, n.v.; SING); Larut, Mt Bubu, 150—250 m, fl. ♂, *King's Coll. 7397* (BM; CAL, lectotype of *G. longeracemosum*, n.v.; G, K, L, SING), 7663 (BM; CAL, syntype of *G. longeracemosum*, n.v.; K, L). — Pahang: Sg. Perting-Bintong, 120 m, *SF 16567*; S. of Kuala Lompat Krau, 900 m, fr. immat., *FRI 3578*; P. Tioman, Mt Lalang, 760 m, *Kadim & Noor 577*. — Selangor: Ulu Gombak, *Ridley a. 1915* (K), *KEP 64870* (with smaller leaves); Batu Caves and Kajang, cit. *Ridley*, no specimens seen; Kanching F. R., *For. Dep. F.M.S. 5705* (SING); Bukit Lagong F. R., 300—500 m, *KEP 64891*, 65502, 65508, 95053; Lenggeh F. R., *KEP 99067*, 99069; Ulu Selangor, *KEP 64869*. — Negri Sembilan: *Franck 208* (C); Tampin Hill, *SF 825*, 1164, 1332; Mt Angsi F. R., *For. Dep. F.M.S. 23699* (SING). — Malacca: *Alvins 772 & 2144* (SING); Chuana Puteh, *Alvins 853* (SING); Brisu, cit. *Ridley*, no specimens seen; Batu Tiga, *Holmberg 733* (SING); Sg. Bharu, *SF 3216*; Batang Malacca, *Derry 2*. — Johore: Sg. Kayu, *SF 32393*; Sg. Kayu, Mawai-Jemaluang road, *Corner a. 1935*; N. of Mt Belumut, *SF 10604*; Kuala Sembrong, *Lake & Kelsall* (Herb. *Ridley 4061*, SING); Mersing, *FRI 5235*. — Singapore: *Cantley 2629*, 2634, 3022 (SING); Changi, *Hullett 851* (K, syntype of *G. longeracemosum*; SING), *Ridley 4750* (K, syntype of *G. longeracemosum*; SING); S. side of Mac Ritchie Res., *Sinclair 10661*; Reservoir jungle, *Corner a. 1940*. Botanic Garden jungle, *Ridley 1838*, *Burkill a. 1914*, *Sargent a. 1918* (A), *Nur a. 1929*, *Sinclair a. 1955* (= *SF 40665*).

5. **Gonocaryum minus** Sleum., *sp. nov.*

Arbuscula usque ad 12 m alta, trunco usque ad 12 cm diam., cortice laevi vel minute fisso, viridi-griseo usque saturate brunneo. *Ramuli* obtusanguli, sub lente puberuli, cito glabrati, gracillimi. *Folia* elliptico-oblonga, 0.5—1.5 cm longe subcaudato-acuminata, apice ipso obtusa, basi late cuneata vel obtusa, subcoriacea, glabra, in sicco subtus pallidiora saepiusque viridi-lutescentia, 6—12 cm longa, 3—4(—5) cm lata, costa supra inferne parum impressa, subtus prominente, nervis lateralibus irregulariter 4—5-paribus subrectis, utrinque prominulis, rete venarum venularumque denso supra levissime elevato, subtus generaliter minus distincto; petioli c. 10 mm longi, 1—1.5 mm crassi. *Spicae* axillares solitariae, laxiflorae; rhachis gracilis, sparse appresse pilosula, (1—)2—5(—6) cm longa. *Calycis lobi* ovati, ciliati, 1.5 mm longi. *Petala* virescentia, sub plena anthesi in tubum 4 mm longum et 1—1.5 mm diam. connata, ceterum per 1 mm libera et erecto-potentia. *Flores* ♂: *Filamenta* 3 mm longa; *antherae* 1 mm longae. *Ovarii rudimentum* cylindricum, pilosum. *Discus* crassus pilosus. *Flores* ♀: *Petala* per $\frac{3}{4}$ partem inferiorem in tubum urceolato-cylindricum connata, c. 4 mm longa. *Antherae* rudimentariae. *Ovarium* ovoideum, dense breviter pilosum, stylo crasso vix 0.5 mm longo; stigma capitatum. *Drupa* obovoideo-oblongoidea, oblique obtuseque subtrigona, apice obtusa vel subapiculata, viridis vel brunnescens vel subnigrescens, 2.5—3.5(—4) cm longa, 1.8—2.5 cm diam., loculo abortivo distincto; exocarpium spongiosum et longitudinaliter fibrosum, 2(—3) mm crassum; endocarpium 0.5 mm crassum, longitudinaliter 8—10-costulatum, costulis exocarpium generaliter parum distincte obtuseque elevantes.

BORNEO. Sarawak: 1st Div., Kuching, Semengoh F. R., Arboretum, *S* 9376, 15790 (tree n. 3552); 3rd Div., Kapit, Bukit Raya, 200—245 m, *S* 23942, 23982 (fr. mat.); 4th Div., Bintulu, Segan F. R., *S* 15553 (fr. mat.). — Brunei: Kuala Belait, Andulau F. R., 30—50 m, *BRUN* 55, *SAN* 17501, fl. ♀ (A, BRI, BO, K, KEP; L, type; SAR, SING); Tutong, Bukit Pasir Puteh, 25 m, fr., *BRUN* 293. — N. Borneo: Beaufort, Kawanh F. R., 30 m, *SAN* 30273; Kampong Sampanga, Papar, fl. ♂, *SAN* 30321.

Note. Certainly close to *G. gracile* Miq., and perhaps only a Bornean variety of it.

6. *Gonocaryum cognatum* Elm., *Leaf. Philip. Bot.* 1 (1908) 315; Merr., *En. Philip.* 2 (1923) 491; *Pl. Elm. Born.* (1929) 172; Elm., *Leaf. Philip. Bot.* 10 (1939) 3808; Masam., *En. Pl. Born.* (1942) 422; Dahl, *J. Arn. Arb.* 33 (1952) 265, f. 45 & 45 A (Pollen). — *G. grandifolium* Merr., *Philip. J. Sc.* 17 (1920) 278; *En. Philip.* 2 (1923) 491.

BORNEO. N. Borneo: Sandakan, Segaliud R., *Evangelista* 714 (A, n.v., SING); Lahad Datu, Kennedy Bay, 120 m, *SAN* 20058 (K); Kinabatangan, *For. Dep. Br. N. Borneo* 978 (BO); Batu Puteh, 6 m, *For. Dep. Br. N. Borneo* 1650 (K, L). — E. Borneo: Tawao, *Elmer* 20637; Nunukan I., N. of Tarakan, *Meijer* 2079.

PHILIPPINES. Luzon: Sorsogon, Irosin, Mt Bulusan, fr., *Elmer* 17061. — Samar: Bagacay, Concord, *PNH* 6252. — Leyte: Palo, *Elmer* 7352, fr. (A, n.v.; BO, E, FI, G, K, L; PNH, type of *G. cognatum*, †). — Panay: Capiz, Libacao, *B.S.* 31456 (SING). — Dinagat I.: *B.S.* 35205 (A, n.v.; K, P; PNH, type of *G. grandifolium*, †). — Mindanao: Agusan, Tungao, S. Mateo, 300 m, *PNH* 42460; Butuan, *F.B.* 20744 (K); Davao, Sta. Cruz, *Williams* 2901. — Sulu Arch.: Tawi-Tawi, *Sanderman Olsen* 649, 852 (C), *B.S.* 44073, 44170, 44317, *PNH* 38904.

7. *Gonocaryum macrophyllum* (Bl.) Sleum., *comb. nov.* — *Stemonurus macrophyllus* Bl., *Mus. Bot. Lugd. Bat.* 1 (1850) 250; Walp., *Ann.* 2 (1851) 182; Miers, *Ann. Mag. Nat. Hist.* II, 10 (1852) 36, repr. *Contr. Bot.* 1 (1852) 86. — *Lasianthera macrophylla* (Bl.) Miq., *Fl. Ind. Bat.* 1 (1856) 792; *Suppl.* 1 (1860) 137; Becc., *Malesia* 1 (1877) III. — *G. melano-carpum* (non Hochr.) Wyatt-Smith, *J. Ecol.* 41 (1953) 213, 214.

SUMATRA. 'Sumatra', Waitz (L, type of *Stemonurus macrophyllus*). — Eastcoast: Asahan, Huta Bagasan, fr., *Rahmat si Boeea* 6918 & 7026; Masihi F. R., fr., *Krukoff* 4218; Kuala Masihi, fl. ♀ & fr. immat., *Yates* 2380; Sibolangit, 350—400 m, fl. ♂, *Loerzing* 5452 & 12576. — Mentawai Is: Siberut I., fr., *Iboet* 181; *ibid.*, fr., *SF* 14598. — Malacca Strait: Berhala I., 40 m, fr., *Loerzing* 6985; *ibid.*, sterile, *van der Meer Mohr* 55; Jarak I., fr., *KEP* 71001 (KEP, SING); *ibid.*, sterile, *Seimund* 44 (SING).

BANKA. Banka: Lobok Besar, 20 m, sterile, *Kostermans & Anta* 1378; Lepar I., *Teysmann H.B.* 6740.

BORNEO. W. Borneo: Karimata I., sterile, *Teysmann* (BO, L); *ibid.*, fr., *Mondi* 145. — Sarawak: 4th Div., Niah, Mt Subis, fr., *S* 21648; Baram, ♂ defl., *Hose* 314, *Haviland & Hose* 3714; Entoyut R., ♂ defl., *Hose* 384. — Brunei: Tembrong, Mt Subok to Mt Batu Apoi, 100—300 m, fl. ♂ (galled?), *Hotta* 13478. — C. Borneo: W. Kutei, Komlong, 30 m, fr., *Endert* 5403. — Central eastern Borneo: Loa Djanan, W. of Samarinda, 30 m, fr., *Kostermans* 6547. — E. Borneo: Balikpapan, Sg. Mentawir, fl. ♀, *Kostermans* 10025; *ibid.*, Sg. Wain region, 30 m, fr., *Kostermans* 4275; Tarakan I., 100 m, fr., *Kostermans* 10786; *ibid.*, Pamusion, fr., *Meijer* 1870; Berau, near Telukbajur, 30 m, ♂ defl., *Kostermans* 21735; *ibid.*, Tanjung Redeb, 30 m, fl. ♀ juv. & fr., *Kostermans* 21071; *ibid.*, ♂ defl., *Kostermans* 21093. — S. Borneo: 'Sinterantemang', sterile, *Korthals* (L); Sampit region, Kuala Penjahuan, sterile, *Kostermans* 4702. — N. Borneo: Beaufort, Mt Bandira, defl. ♂, *SAN* 27333; Pangi, 300 m, fr. juv., *SAN* 15118; Tenom, Crocker Ra., fr. juv., *SAN* 31922, (L, SAN); mile 8 road to Pensiangan, fr., *SAN* 35055 (K); Lamag, Sapa Tali, 40 m, fr. juv., *SAN* 36427 (K).

Notes. As the leaves of *G. macrophyllum* are not rarely similar to those of *G. calleryanum* (which also occurs in Borneo) incomplete specimens such as *Haviland & Hose* 3714, *Hose* 314 & 384, etc. cited above under *G. macrophyllum* might belong to *G. calleryanum*. The rudiment of the ovary in the ♂ flowers of *G. calleryanum* is sparsely hairy, that of *G. macrophyllum* apparently always quite glabrous, as is the ovary in the ♀ flowers, whilst the ovary in the ♀ flowers of *G. calleryanum* is densely short-hairy.

Blume in the original description of *Stemonurus macrophyllus* says 'In Archipelago indico'. The type specimen in Leyden bears also the remark 'Sumatra' and 'W.', from which can be guessed that the plant belonged originally to the collection of F.A.C.

Waltz and possibly was collected in Indrapura. The 'cylindric' fruit mentioned by Blume could not be traced at Leyden. The type specimen bears leaves and badly developed apparently ♀ flowers in a raceme c. 1.5 cm long; the leaves have a rather faint reticulation on the upper surface only, the quality and size of which agree with the leaves of most of the collections cited above from Sumatra and Borneo.

8. *Gonocaryum calleryanum* (Baill.) Becc., Malesia 1 (1877) 123; Valet., Crit. Overz. Oclacin. (1886) 247; Merr., Philip. J. Sc. 3 (1908) Bot. 243, 418; Brown, Min. Prod. Philip. For. 3 (1921) 203; Merr., En. Philip. 2 (1923) 491; Brown, Useful Pl. Philip. (1950) 356; Kraemer, Tr. W. Pacif. Region (1951) 208, f. 74; Dahl, J. Arn. Arb. 33 (1952) 265, f. 46 & 46 A (Pollen); Li, Pac. Sci. 7 (1953) 184; Liu, Sasaki & Keng, Quart. J. Taiwan Mus. 8 (1955) 305; Kao, l.c. 345; Hatus., Mem. Fac. Agric. Kagosh. Un. 5, 3 (1966) 38. — *Phlebocalymna calleryana* Baill., Adansonia 9 (1869) 147. — *G. teysmannianum* Scheff., Ann. Jard. Bot. Btzg 1 (1876) 98; Becc., Malesia 1 (1877) 123; Valet., Crit. Overz. Oclacin. (1886) 245; Hochr., Pl. Bog. Exs. (1904) 44, n. 91; Bull. Inst. Bot. Btzg 22 (1905) 51. — *G. tarlacense* Vidal, Sin. Atl. (1883) 20, t. 30, f. C; Rev. Pl. Vasc. Filip. (1886) 86; Ceron, Cat. Pl. Herb. Manila (1892) 46; Merr., Philip. J. Sc. 1 (1906) Suppl. 86. — *G. diospyrosifolium* Hayata, Ic. 2 (1912) 106 ('*diospyrifolia*'); Kaneh., Formos. Tr. (1917) 119; ditto (1936) 400, f. 359; Ito, Ill. Formos. Pl. (1927) t. 12; Sasaki, Cat. Gov. Herb. Formosa (1930) 324.

FORMOSA. Kōsyun (Koshun) Peninsula, Kururu, Hayata a. 1912 (K; TI, type of *G. diospyrosifolium*, n.v.) Wilson 11024; Takao-shū, Tanaka 10444; Lan-Yu I. (Botel Tobago), Yamamoto a. 1947 (TAI, cit Yamamoto, n.v.).

BORNEO. S. Borneo: Sampit region, fr., *Kostermans 4664* (BM, BO, K, L).

CELEBES. Gorontalo, *Riedel a.* 1875 (K, L, P).

PHILIPPINES. LUZON: Babuyan Is, Camiguin I., B.S. 2987 (cit. Merrill, n.v.), 79185, 79199; Dalupiri I., Bartlett 15057 (UC); Ilocos Norte, F.B. 26811, 26699; Burgos, B.S. 27324; Cagayan, B.S. 14504, F.B. 17066, 17227, 29319; Mt Bawa, B.S. 78491; Mt Tabuan, B.S. 77148 (distributed also sub 77143); Claveria, 60 m, F.B. 30567; Isabela, San Mariano, B.S. 46938; Sierra Madre Mts, San Mariano, 110 m, PNH 77997; Nueva Vizcaya, Mt Alzapán, B.S. 45573; Pangasinan, Mt San Isidro, B.S. 29871; Zambales, Botolan, Merrill 2983; Dimalupihan, *Loher 292*; Pampanga, Arayat, Merrill 1406; Bulacan, B.S. 1997; San Miguel de Mayuno, Vidal 1321 (K); Angat, B.S. 21745, 34021; Tayabas, B.S. 26913, F.B. 7853, 25411, 25025; Lagumanoc, Merrill 3360; Altimonan, *Whitford 709*; Pagbilao, Merrill 1928 (K); Malbos, F.B. 30764; Alabat I., B.S. 47983; Bataan, B.S. 10842, F.B. 12933, 22708, 27140; Lamao R. & Mt Mariveles, Elmer 6684, 6887, F.B. 636, 831, 1366, 1803, 2106, 2199, 2643, 2744, 6355 (cit. Merr., n.v.), PNH 4160, *Whitford 475, 1212, Williams 493*; Rizal, B.S. 14432; Montalban, *Loher 5800*, B.S. 12644; Antipolo, Vidal 181 (A, n.v.; FI, K, L); Bosoboso, B.S. 4601, *Decades Philip. For. Fl. n. 38* (cit. Merrill, n.v.), F.B. 1989, Merrill 1862, 2816; Mt Tokduanbanoy, B.S. 48631 (UC); Munang, *Loher 290 & 291* (K); Manila, Calawan, *Calléry 63* (P, type of *Phlebocalymna calleryana*); San Mateo, Vidal 2384 (K); Quezon, Baler, Merrill 1036 (K); Laguna, San Antonio, B.S. 400, 16534; Los Baños & Mt Maquiling, 110 m, Elmer 8317, 17545, 18356, F.B. 11947, PNH 33463, 35391; Laguna/Batangas, Mud Spring, 300—400 m, Stern 2183 (L, UC); Batangas, F.B. 11999; Camarines, F.B. 10781, 23713, 23724, 23736, 28728. Camarines Norte, Paracale, Vidal 711 (FI; K, type of *G. tarlacense*; L); Camarines Sur, *Ahern 86* (cit. Merrill, Bull. Bur. For. Philip. 1, 1903, 34, as *G. sp.*: BO); Sorsogon, Irosin, Mt Bulusan, Elmer 15560, 16047, PNH 2636; Sine loco: *Haenke 338*, anno 1792 (UC). — Samar: Mt Cansayo, 220 m, PNH 14442.

MOLUCCAS. Batjan, *Teysmann H.B. 17512* (BO, type of *G. teysmannianum*; L ex BO), bb. 23250 (BO, L, SING); introduced from Batjan (type tree), cult. at Hort. Bogor., fl. ♂: *Beccari a.* 1876, *Hochreutiner, Pl. Bog. Exs. n. 91* (tree III-G-112), *Alston 15569* (tree III-G-112). — Halmahera: Kampong Goal, 100 m, *Pleyte 185*. — Morotai: Tobelo, 150 m, bb. 24593; Mt Permatang, 250 m, *Kostermans 924*.

9. *Gonocaryum lobbianum* (Miers) Kurz, J. As. Soc. Beng. 39, ii (1870) 72; Prel. Rep. For. & Veg. Pegu (1875) 37; Pierre, Fl. For. Cochinch. (1892), in obs. sub t. 268; Craib, Fl. Siam. En. 1 (1926) 274. — *Stemonurus macrocarpus* Bl., Mus. Bot. Lugd. Bat. 1 (1850) 250; Walp., Ann. 2 (1851) 182; Miers, Ann. Mag. Nat. Hist. II, 10 (1852) 36, repr.

Contr. Bot. I (1852) 86, non *G. macrocarpum* (Scheff.) Scheff. ex Warb. 1891. — *Platea lobbiana* Miers, Ann. Mag. Nat. Hist. II, 10 (1852) 111, repr. Contr. Bot. I (1852) 97, t. 17. — *Platea griffithiana* Miers, Ann. Mag. Nat. Hist. II, 10 (1852) 110, repr. Contr. Bot. I (1852) 97. — *Lasianthera macrocarpa* (Bl.) Miq., Fl. Ind. Bat. I (1856) 792; Masam., En. Pl. Born. (1942) 422. — *G. gracile* (non Miq.) Kurz, J. As. Soc. Beng. 39, ii (1870) 72; ditto 44, ii (1875) 155; For. Fl. Br. Burma I (1877) 240; King, J. As. Soc. Beng. 64, ii (1895) 120; Brandis, Ind. Tr. (1906) 152. — *G. griffithianum* (Miers) Kurz, J. As. Soc. Beng. 44, ii (1875) 155; For. Fl. Br. Burma I (1877) 241; Pierre, Fl. For. Cochinch. (1892) in obs. sub t. 268. — *Phlebocalymna lobbiana* (Miers) Mast. in Hook. f., Fl. Br. Ind. I (1875) 590. — *Phlebocalymna griffithiana* (Miers) Mast. in Hook. f., Fl. Br. Ind. I (1875) 590; Brandis, Ind. Tr. (1906) 152. — *G. wallichii* Mast. in Hook. f., Fl. Br. Ind. I (1875) 590; Hundley & Chit, List Trees Burma ed. 3 (1961) 46. — *G. subrostratum* Pierre, Fl. For. Cochinch. (1892) t. 268 B; Gagnep., Fl. Gén. I.-C. I (1911) 828, f. 97, 5—10; Craib, Fl. Siam. En. I (1926) 275; Gagnep., Fl. Gén. I.-C. Suppl. (1948) 755. — *G. harmandianum* Pierre, Fl. For. Cochinch. (1892) t. 268 A; Gagnep., Fl. Gén. I.-C. I (1911) 829; Suppl. (1948) 755. — *G. siamense* Warb. in Fedde, Rep. 16 (1919) 254. — *G. maclurei* Merr., Philip. J. Sc. 21 (1922) 348; Lingn. Sc. J. 5 (1927) 116; Chin & How, Act. Phytotax. Sin. 7 (1958) 59, f. 5; Chun & Chang, Fl. Hainan. 2 (1965) 448, f. 510. — *G. sp.*, Schmidt, Bot. Tidsskr. 32 (1915) 329; Craib, Fl. Siam. En. I (1926) 275. — ? *G. poilanei* Gagnep., Fl. Gén. I.-C. Suppl. (1948) 755. — ? *G. pavieanum* Gagnep., l.c. 755, f. 89, 8 & 9, ex descr.

CHINA. Hainan: 700 m, Chun & Tso 43450 (fr.), Gressitt 749 (fl. ♂), F.C. How 70432, 71388, How & Chun 70295, S.P. Ko 52216 (fl. ♂), S.K. Lau 23 (fr.), 1416 (fl. ♂), 3461, C.I. Lei 15 (fr.), H.Y. Liang 61734, 62152, 64205, 65232, McClure 820 (fr.), 8606 (fr.: A, n.v.; G; PNH, type of *G. maclurei*, †), 9252, C. Wang 34070, 36333.

BURMA. Pegu, Lace 6067 (fr.: K); Tharawaddy, fr., Lace 2792 (K); Bassein, fr., Lace 2996; Mahule, Shaik Mokim 139; Amherst, Wallich 1446 (fr.: G), 9052 p.p. (fr.: K). — Tenasserim: Falconer 205 (BO), Helfer K.D. 816, Gallatly 444 (BM); Moulmein, Lobb 385, fl. ♂ (BM, fragm.); FI; K, type of *Platea lobbiana*, Kurz (L); Tavoy, Wallich 9051 (K, type of *G. wallichii*), Wallich Cat. Burma 184 (G); Mergui, Griffith K.D. 849, fl. ♂ & fr. (BM, fragm.; K, type of *Platea griffithiana*).

INDOCHINA. Tonkin: vers van Pouten, entre le Fleuve Rouge et la Rivière Noire, Pavie (P, type of *G. pavieanum*, n.v.); Sontay, Mt Bavi, Balansa 3146 (K). — Laos: du Mékong à Hué, Harmand 1917 (P, type of *G. harmandianum*); Se-lamphau, Harmand 290 (P); Prov. Borikhane, Vidal 4348; Tatom, Chienkwang, 1200 m, Kerr 20843 (K, P); La-khon, Thorel (P); Prov. Vientiane, Vidal 964, 982, 4087. — Annam: Quang Nam, Tourane, fl. ♂, Clemens 3413; Col des Nuages, Poilane 7775; Bana, Poilane 7293 (P, type of *G. poilanei*); Nhatrang, Massif de la Mère et l'Enfant, Poilane 6616, 6704. — Cochinchine: Phuoc-than, Thorel 1220; Bienhoa, Trang Bom, fr., Poilane 40891; ad fl. Dongnai prope Ponglou & ad montem Chula Chang, fl. ♂ & fr., Pierre 2839 (K, L; P, type of *G. subrostratum*). — Cambodge: Kompong Cham, Krâlien, Vidal 4738.

THAILAND. Maharat: Lampang, Mè Saloi, 210 m, fr., Winit 1258; Muang Lawng, 240 m, Winit 1409; Nan, Doi Tiu, 900 m, Kerr 5056. — Pitsanulok: Nakawn Tai, 200 m, fl. ♀, Kerr 5832 & 5832 A. — Ubon: NE. Ubol, fl. ♂, Champion 505. — Rachasima: Korat, Katok, 500 m, Kerr 8175; Khao Yai, BKF 32049; Nakhon Ratchasima Nat. Park, Phengkhelai 448. — Chantaburi: Kao Saming, Krat, 20—50 m, fr., Kerr 9376, 17898, Put 518; Kao Sabab, fr., Lakshnakara 545, Put 894; Pong Namrawn, 350 m, fr., BKF 13177; Kao Gloea, N. of Chantaburi, fr., Sørensen, Larsen & Hansen 1888 (C); Koh Chang, Klong Son, fr., Schmidt 686 (B, type of *G. siamense*, †; C, K). — Prachinburi, Ban Kêng, Krabin, fl. ♂, Kerr 19791. — Surat: Yangao, 50 m, fr., Kerr 18169. — Puket: Kopata-Janjan, fr., SF 2059 (BO, K, SING). — Nakawn Sritamarat: Kaw Lem Soon, fl. ♂, Annandale a. 1916 (SING); Songkla, Tepa, fr., Kerr 14756; Ban Prakawp, 50 m, fl. ♂, Kerr 15826. — Pattani: Pattani, 50 m, Kerr 7820 & 7820 A; Yala, fl. ♂, Put 3664.

MALAY PENINSULA. Perlis: Chupeng, fr., Ridley 14961 (SING); Mata Ayer F. R., fl. ♂, FRI 462 (K, L). — Kedah: Bukit Tangga, For. Dep. F.M.S. 46969 (KEP). — Perak: Mt Bubu, FRI 962.

BORNEO. S. Borneo: Pulu Lampei, S. of Banjarmasin, fr., Korthals a. 1836 (C; L, type of *Stemonurus macrocarpus*; P). — SE. Borneo: Tanahbumbu, Mt Mangis, N. of Batulitjin, 130 m, van Slooten 2182 (BO, L).

Imperfectly known species

Gonocaryum melanocarpum Hochr., Pl. Bog. Exs. (Dec. 1904) 42, n. 87; Bull. Inst. Bot. Btzg 22 (1905) 49; Ann. Jard. Bot. Btzg Suppl. III, 2 (1910) 855.

CULT. Hort. Bogor. sub III-G-105, fl. ♀ & fr. mat., Hochreutiner Pl. Bog. Exs. n. 87 (BO, type of *G. melanocarpum*; G, K, L, P, WRSL).

Note. Origin unknown, not yet collected in wild state. Most related to *G. litorale* in the flower characters and the absence of an abortive loculus in the fruit, but distinct by the black colour of the latter and by the leaves which much more resemble those of *G. calleryanum*.

SPECIMENS NOT NAMED DUE TO INCOMPLETENESS

Gonocaryum sp.

BORNEO. Sarawak: 4th Div., Bintulu, c. 4 km E. of Minah Camp, along Sg. Kakus, 20—60 m, fr. mat. (endocarp and seed only), *Hotta* 14070 (KYO; L, fragm.). — Possibly a new species with large leaves 34 by 14.5 cm, nerves impressed above, rachis in fruiting stage from defoliate axil 10—12 cm long.

Gonocaryum sp.

INDOCHINA. Annam: Thanh hoa, Hoi-xuan, fr., *Poilane* 1781 (K, L, P). — Drupe 5.5 by 2 cm, distinctly trigonous in cross-section, longitudinal ribs marked. Leaves reminding of those of *G. lobbianum*. Cited by Gagnepain, Fl. Gén. I.-C. Suppl. (1948) 755 as belonging to *G. subrostratum*.

Gonocaryum sp.

INDOCHINA. Annam: Mt Bani near Tourane, fl. ♂ immat., *Clemens* 3391 (K, P); *ibid.*, fr. submat., *Clemens* 4039 (A, n.v.; K, P, U).

Leaves with fine reticulation impressed on both faces, yellowish green, shining. Infl. ♂ c. 5 cm long. Drupe hairy, yellowish green, ovoid, much flattened on two sides, ribs blunt, much prominent, c. 3 by 2.5 by 2 cm.

Gonocaryum sp. — *G. gracile* (non Miq.) Hundley & Chit, List Trees Burma ed. 3 (1961) 46.

BURMA. Tenasserim: *Helfer* K.D. 817, defl. (K, P); Tavoy, Lasa Hill, fr. mat., *Shaik Mokim* 327 (K); Mergui, Yaungwa Ra., 450 m, fl. ♂ juv. & fl. ♀, *Parker* 2737, 2743 (K).

Leaves dull greyish green, with fine depressed reticulation on both faces. Spikes slender, up to 14 cm in the ♂, c. 6 cm in the ♀ specimens. Petals connate to a tube for their lower $\frac{2}{3}$ part, 6—7 mm. Ovary tomentose; style lateral, glabrous, 1 mm; stigma thick, almost capitate, c. 1 mm \varnothing . Drupe broadly ellipsoid, unilaterally much obliquely expanded, with strongly prominent obtuse ribs, c. 3 by 2.5 cm.

Gonocaryum sp.

MALAY PENINSULA. Trengganu: Dungun, Bukit Bauk F. R., *FRI* 3959.

Drupe ovoid-oblongoid, up to 5.5 by 3.5 by 2.5 cm, many-ribbed. Possibly conspecific with the specimens from Burma mentioned above.

Gonocaryum sp.

NEW BRITAIN. SW. of Subdidi village, Gasmata, 200 m, fr. red, immat., *NGF* 26566 (BRI, L, LAE); Massawa, ♂ defl., *Schlechter* 13727 (K).

Flowers and fruits fascicled, 3 or 4 per axil; fruit-pedice thick, 5 mm. Drupe oblongoid, with narrow, longitudinal, abortive loculus and small, bilobed, sessile stigma, exocarp plus endocarp thin. Endosperm not (or not yet?) ruminant. The leaves resemble a little those of *G. calleryanum*.

EXCLUDED

Gonocaryum monostachyum K. Sch. & Laut., Fl. Schutzgeb. (1900) 415; Schellenb., Bot. Jahrb. 58 (1923) 166.

NEW GUINEA. Morobe Dist.: Sattelberg, *Bamler*, II-17 (B, type of *G. monostachyum*, †).

The type specimen was, according to Schellenberg, not present any longer with the New Guinea materials of the genus at Berlin investigated by him in 1923, and probably had been transferred to another

family; there is no trace of it among the *Icacinaeae* still preserved in Lauterbach's Herbarium at WRSL. To guess from the description, the species must be excluded from *Gonocaryum* by its very short, almost terete petioles (5–6 mm), very short petals (2 mm) which besides are hairy inside, characters which seem to be absent from the genus so far known.

Gonocaryum ? *lobosporum* (F. v. M.) Valet., Crit. Overz. Olacin. (1886) 249 ('*lobosperma*'). — *Phlebocalymna lobospora* F. v. M., Fragm. 9 (1875) 151 = *Sphenostemon lobosporus* (F. v. M.) L. S. Smith, Proc. R. Soc. Queensl. 68 (1957) 43, 49 (*Aquifoliaceae*).

Gonocaryum sinense Hand.-Mazz., Sinensia 3 (1933) 189. — *Osmanthus sinensis* (Hand.-Mazz.) Hand.-Mazz., Symb. Sin. 7, 4 (1936) 1006 = *Osmanthus marginatus* (Champ. ex Benth.) Hemsl., cf. Green, Not. R. Bot. Gard. Edinb. 22 (1958) 470.

9. HARTLEYA SLEUM., A NEW GENUS FROM NEW GUINEA

HARTLEYA

Sleum., *gen. nov.*

Arbor magna dioica. *Folia* spiralia, integra, coriacea, petiolata, pinnatinervia. *Inflorescentiae* axillares, e cymis 3—5 paucifloris pedunculatis modo paniculae brevis compositae. *Flores* unisexuales, ♀ tantum cogniti, subsessiles, apice pedunculorum secundariorum congesti; bracteae minutae caducae. *Calyx* cupulatus, usque fere ad medium (4-)5(-6)-lobus, lobis valvatis. *Petala* 4, oblonga, valvata, apice inflexa, intus laevia. *Staminodia* 4; filamenta carnosa, applanata, omnino glabra; antherae ellipticae, connectivo haud superatae, medifixae. *Ovarium* ovoideum, unilateraliter gibbosum, ovulis 2 anatomicis applanatis ex apice cavitatis pendulis; stigma sessile, subcapitatum, basi paullo constrictum itaque ab ovario bene discretum, papillosum, subbilobum, vel uno latere paullo depressum. *Discus* unilateralis liber, gibbositati ovarii oppositus, squamam crassam apice truncatam vel crenulatam ovarii basin semicircumdantem praebens. *Drupa* submatura convexa, a latere visa ovata et acuminata, exocarpio carnoso in sicco tenui tecta, latere convexo endocarpii crustacei costulis numerosioribus minute elevatis quasi nervis prominulis percursa, latere concavo endocarpii costa media longitudinali bene elevata instructa, per laterem concavum apice excepto appendice carnoso crasso obtecta, ima basi appendicis disco squamiformi semiorbiculari instructa, calycis reliquiis fulta. Semen nondum bene evolutum.

Genus monotypicum a genere *Gastrolepis* van Tieghem stigmate subcapitato basi paullo constricto itaque ab ovario discreto, endocarpio latere concavo costa media longitudinali bene elevata appendiceque carnoso abscondita disci squama basi tantum ovario adnata, ceterum libera (in genere *Gastrolepis* modo bursae utroque latere cum ovario connata), ceterum floribus unisexualibus filamentisque (certe in fl. ♀) omnino glabris diversum, cl. Thomas G. Hartley exploratori florum Novae Guineae orientalis intelligentissimo dedicatum.

Hartleya inopinata Sleum., *sp. nov.*

Arbor 20—35 m alta, trunco 60—120 cm diam., cortice griseo-brunneo longitudinaliter fisso. *Ramuli* sat breves, irregulares, 3—8 mm crassi, apicibus teretes in sicco rugulosi, glabri, nigrescentes, deorsum subangulati citoque cortice tenui griseo obtecti. *Folia* elliptica vel oblongo-elliptica, apice breviter subabrupte acuminata, vel obtusa, basi in petiolum cuneata et subinaequilateralia, in sicco coriacea et fragilia, nigrescenti-brunnea, supra lucidula, in vivo supra saturate viridia, subtus lutescenti-viridia vel glaucescentia, ut videtur carnosa, glabra, integra, in sicco paullo revoluta, apicem versus desiccatione in laminis juvenilibus quasi serrulata, 5—8 cm longa, 2.5—4.5 cm lata, costa supra leviter immersa, subtus crasse prominente, nervis lateralibus 5—6-paribus parum vel vix curvatis utrinque parum manifestis, reticulo venarum nullo; petioli c. 1 cm longi, 2 mm crassi.

Inflorescentiae in axillis superioribus 2 vel 3 solitariae, 3—4-ramosae, paniculatae, pedunculo incluso 3—4 cm longae, ramis subhorizontalibus c. 1 cm longis, inferne laxius, distaliter densius flavido-pubescentibus. *Flores* ♀ tantum cogniti, 2—3(—4) apicibus ramulorum cymose congesti, subsessiles. *Calyx* cupulatus, usque ad medium obtuse (4—)5(—6)-lobus, c. 1 mm altus. *Petala* 4 oblonga, luteo-viridia, glabra, c. 3 mm longa. *Staminodia* 4, ut videtur habitu staminum normalium, sed polline carentia; filamenta applanata glabra c. 3 mm longa; antherae ellipticae, c. 1 mm longae. *Ovarium* ovoideum, gibbosum, glabrum, 2 mm altum, stigmate depresso-capitato papilloso coronatum. *Discus* crasse squamatus, ovarium basi semicircumdans. *Drupa* submatura a latere visa elongato-ovata, acuminata, 1 cm longa, 4—5 mm lata, concava, exocarpio tenui in sicco nigrescente tecta, in sicco latere convexo costulis endocarpii numerosioribus longitudinalinalibus percursa, latere concavo costa mediana endocarpii crasse elevata instructa et apice excepto omnino appendice carnosio applanato obtecta, basi disci squama semiorbiculata reliquisque calycis fulva.

NEW GUINEA. Morobe Dist.: summit of Mt Kaindi, c. 2400 m, fr. submat. 9-5-1963, Hartley 11836; Mt Shungol, c. 5 miles SW. of Wagau, 1830 m, fl. ♀ & fr. immat., 12-12-1963, Hartley 12501 (A, n.v.; L, type; LAE, n.v.).

Possibly belonging here:

NEW GUINEA. Vogelkop Peninsula: Kebar Valley, Mt Nettoti, c. 1700 m, sterile, BW 10405 Versteegh (L).

10. THE GENUS *IODES* BL. IN SOUTHEAST ASIA AND MALESIA

The preparation of the genus *Iodes* Bl. for 'Flora Malesiana' obliged the author to revise all species found in SE. Asia and Malesia. In the literature on *I. ovalis* so many mistakes have been made, that the confusion about this species in most of the local floras concerned has become a source of faulty plantgeographical deductions. Only by the different types of indument and their combination, observed with a lens, it is possible to separate clearly the diverse species. These indument types are constant enough when leaves of ± the same state of maturity are compared, and with their help the author could bring ♂ and ♀ material of the same species together, especially in a case where ♂ and ♀ of different species have been combined into the description of one species (*I. balansae* Gagnep.).

IODES

Bl., Bijdr. (1825) 29 ('*Iodes*'); R. Br. in Benn. & Br., Pl. Jav. Rar. (1852) 243, 245; Miq., Fl. Ind. Bat. 1 (1856) 795; Benth. in Benth. & Hook. f., Gen. Pl. 1 (1862) 355; Baill., Adansonia 10 (1872) 267 (sect. *Euiodes* Baill.); in DC., Prod. 17 (1873) 22; Hist. Pl. 5 (1874) 340; Mast. in Hook. f., Fl. Br. Ind. 1 (1875) 595; Boerl., Handl. 1, 1 (1890) 222; King, J. As. Soc. Beng. 64, ii (1895) 126; Gagnep., Fl. Gén. I.-C. 1 (1911) 844; Ridl., Fl. Mal. Pen. 1 (1922) 434; Sleum. in E. & P., Nat. Pfl. Fam. ed. 2, 20 b (1942) 377; Back. & Bakh. v. d. Br., Fl. Java 2 (1965) 61. — *Erythrostaphyle* Hance, J. Bot. 11 (1873) 266.

KEY TO THE SPECIES IN ASIA AND MALESIA

1. Petals in the ♂ flowers practically free, i.e. united only at the base.
2. Indumentum on the undersurface of ± mature leaves consisting almost exclusively of rather sparse to more dense and manifestly appressed stiff hairs.
3. Flowers 5-merous. Pedicels of the ♂ flowers swollen and ± plate-like dilated distally, when the flower has gone. ♀ Flowers without staminodes. Veinlets of leaves rather faintly reticulated. Sumatra, Malay Peninsula, W. Java ***I. I. ovalis***
3. Flowers 4-merous. Pedicels of the ♂ flowers not swollen distally. Veinlets of leaves strongly reticulate.
4. Appressed hairs on the undersurface of leaves rather dense. ♀ Flowers with 4 staminodes. Sumatra ***I. I. yatesii* var. *yatesii***

4. Appressed hairs on the undersurface of leaves scattered. ♀ Flowers without staminodes. Borneo (Sarawak) 2. *I. yatesii* var. *glabrescens*
2. Indumentum on the undersurface of ± mature leaves consisting exclusively of either numerous fine and soft ± erect hairs, or both such hairs *and* more robust, stiff and generally appressed (rarely obliquely spreading) hairs of various density.
5. Indumentum on the undersurface of leaves practically consisting only of more soft and erect (or somewhat oblique) hairs.
6. Hairs on undersurface of leaves rather sparse. Flowers 4-merous. Petals present in ♀ flowers. Drupe 2.5—3 by 1.5 by 1 cm. Malay Peninsula 3. *I. reticulata*
6. Hairs on the undersurface of leaves (rather) dense. Flowers 5-merous. Petals absent in ♀ flowers. Drupe up to 2 by 1.2(—1.5) by 1 cm. Burma, Thailand, Indochina, Sumatra, Banka, Malay Peninsula, Borneo, Celebes 4. *I. cirrhosa*
5. Indumentum on the undersurface of leaves consisting of ± appressed (or sometimes ± erect) more robust *and* finer soft ± erect hairs of various density.
7. Flowers (3—)4-merous. Filaments elongate (at least 2 mm). Ovary on a low cushion-like swelling which is still recognizable as a kind of contraction at the base of the fruit. Drupe with coarsely lacunose endocarp, within the depressions distinctly finely prominent-reticulate, c. 3 by 2 by 1—1.3 cm. (Upper surface of leaves rather coarsely prominent-reticulate). Indochina (Tonkin), Yunnan, Kweichow, Kwangsi 5. *I. seguini*
7. Flowers generally 5-merous. Filaments, if any, very short. Ovary without a basal swelling. Drupe (1.5—)2—2.2 by 1—1.3 by 0.8—1 cm.
8. Endocarp coarsely lacunose-reticulate. Soft ± erect hairs predominant on the undersurface of leaves. (Upper surface of leaves finely prominent-reticulate). Indochina, Hainan, Kwangsi, Kweichow, Hongkong. 6. *I. vitiginea* var. *vitiginea*
8. Endocarp rather smooth. Scabrid ± appressed hairs predominant on the undersurface of leaves. Kweichow 6. *I. vitiginea* var. *levitensis*
1. Petals in the ♂ flowers united into a tube for about their lower $\frac{2}{3}$ (the tube at least 3 mm long).
9. Drupe oblong-ellipsoid, ± obtuse at both ends, 1.2—1.5 by 0.8—1.2 by 0.8—1 cm. Borneo, Philippines, Celebes, Moluccas 7. *I. philippinensis*
9. Drupe oblong-ovoid, apex broadly obtuse, base narrowed, 2.8—3.3 by 1.3—1.5 by 0.8—1.2 cm.
10. Indumentum on the undersurface of ± mature leaves consisting of ± appressed stiff *and* erect softer hairs on nerves, veins, and veinlets, the proper intervenium between the veinlets being hairless and green. Malay Peninsula 8. *I. velutina* var. *velutina*
10. Indumentum on the undersurface of ± mature leaves consisting of ± appressed stiff *and* erect softer hairs on nerves, veins, and veinlets, and besides of a tomentum of short soft hairs, which covers the whole intervenium which is of a greyish color. Sumatra, Borneo, ? New Guinea. 8. *I. velutina* var. *subvillosa*

I. Iodes ovalis Bl., Bijdr. (1825) 30; R. Br. in Benn. & Br., Pl. Jav. Rar. (1852) 243, t. 48; Miq., Fl. Ind. Bat. I (1856) 795 p.p.; Baill., Adansonia 3 (1863) 364, in text, p.p.; in DC., Prod. 17 (1873) 22, incl. var. *genuina* Baill., l.c. 23 p.p., *nom. illeg.*; Scheff., Ann. Jard. Bot. Btzg I (1876) 14; Hall. f., Meded. Rijksherb. I (1910) 13; Back., Schoolff. Java (1911) 230 & Addenda; Koord., Exk. Fl. Java 2 (1912) 532; Koord.-Schum., Syst. Verz. I, Fam. 162 (1912) 5; Amsh. in Back., Bekn. Fl. Java (em. ed.) 6 (1948) fam. 135, p. 7; Back. & Bakh. v. d. Br., Fl. Java 2 (1965) 61. — *I. horsfieldii* Baill., Adansonia 10 (1872) 267; in DC., Prod. 17 (1873) 24. — *Polyporandra junghuhnii* Koord., Kon. Ak. A'dam Versl. Verg. Wis- & Natuurk. 17 (1909) 780. — *I. oblonga* Planch. in Mast. in Hook. f., Fl. Br. Ind. I (1875) 597; King, J. As. Soc. Beng. 64, ii (1895) 128; Ridl., Fl. Mal. Pen. I (1922) 435.

SUMATRA. Tapanuli: Batak Lands, Tobing, *Junghuhn Pl. ined.* 542 (L, type of *Polyporandra junghuhnii*). — Eastcoast: Sibolangit, 300—400 m, *Loerzing* 5533, 5632 p.p., 12833 p.p.; Tandjung morawa, 50 m, *Loerzing* 4268; Kota Pinang, Mt Si Papan, R. Si Toroes 3873. — Westcoast: Mt Sago near Pajakumbuh, 600—800 m, *Meijer* 7466.

MALAY PENINSULA. Penang: *Wallich s.n.* (K; P, type of *I. oblonga* = *Fragm. ex K*), ♀; *Phillips* a. 1824 (K); Penara Bukit, *Curtis* a. 1894; Waterfall, *Curtis* 2438. — Perak: Mt Rapat, *Sinclair* 9875. — Wellesley: Bukit Juru, *Ridley* 6954. — Johore: Sg. Kahang, *Lake & Kelsall* a. 1892; Kangka Sedili Ketchil, SF 28570. — Singapore: *King's Coll.* 1185; Bot. Garden jungle, *Ridley* 4936, *Sinclair* 8906; Changi, *Ridley* 5916; Chan Chu Kang, *Ridley* 5673; Bidadari, *Ridley* 8429.

JAVA. W. Java: *Blume* (L, type of *I. ovalis*), ♂ & ♀; *Reinwardt* (L); *Horsfield* (BM; K, type of *I. horsfieldii* = Pl. Jav. Rar. t. 48; P, fragm. ex K). — Bantam: Bajah-Langkop, 100 m, *Backer* 1738. — Bogor: Depok, 90—110 m, *Schiffner* 1973, *Koorders* 31242, 42749, 43130, *Beumée* 6832, *Hallier* 393, *van Ooststroom* 12562, *J. J. Smith* 531, *Bakhuizen v. d. Brink* 2412; Mt Muara, N. of Leuwiliang, *Kuhl & van Hasselt* (L); Mt Tjibodas near Tjampea, 200—250 m, *Burck & de Monchy*, *Backer* 22102, *Bakhuizen v. d. Brink* 5709, 7208, *van Steenis* 630. — Priangan: Tasikmalaja, 350 m, *Backer* 9103; Tjitalahab, 700 m, *van Steenis* 12717 p.p. — Pekalongan: Margasari, 100 m, *Beumée* 5184.

Note. *I. ovalis* was mentioned from New Guinea: Morobe Dist., Finschhafen, Bussum, leg. *Warburg*, by K. Sch. & Laut., Fl. Schutzgeb. (1900) 417, and again by *Schellenberg*, Bot. Jahrb. 58 (1923) 176. *Schellenberg* has not seen *Warburg*'s plant in the Berlin Herbarium, and it is questionable if *Iodes* occurs in New Guinea at all (cf. also sub. 8. *I. velutina* var. *subvillosa*).

2. *Iodes yatesii* Merr., Pap. Mich. Ac. Sc. 19 (1934) 165.

var. *yatesii*

SUMATRA. Eastcoast: Asahan, Bandar Pulu, *Yates* 1342 (BO, K; MICH?, type of *I. yatesii*, n.v.; P), 1591 (BO, K, L, P); Aer Kandis (Radja Mas), near Rantau Prapat, Bila, R. Si Toroes 2530; Road Simpang-Toba, *Surbeck* 66, 335. — Westcoast: Muara Labu, 600 m, *Matthew* a. 1914 (K). — Indragiri: Sg. Akar, *Buwalda* 6908.

var. *glabrescens* (Ridl.) Sleum., *comb. nov.* — *I. reticulata* King var. *glabrescens* Ridl., Kew Bull. (1931) 35; Masam., En. Pl. Born. (1942) 422.

BORNBO. Sarawak: 1st Div., Kuching, *Haviland* 1651 (K, type of *I. reticulata* var. *glabrescens*; SAR).

3. *Iodes reticulata* King, J. As. Soc. Beng. 64, ii (1895) 126; Ridl., Fl. Mal. Pen. 1 (1922) 434.

MALAY PENINSULA. Perak: Larut, *King's Coll.* 6687 (BM; CAL, syntype of *I. reticulata*, n.v.; G, L, P); Ayer Larut, fl. ♀ & fr., *Wray* 1997 (BM; CAL, lectotype of *I. reticulata*, n.v.; K, SING); Goping, *King's Coll.* 6133 (BM, BO; CAL, syntype of *I. reticulata*, n.v.; FI, K, SING); Ketau Injor, *Wray* 2887; Sg. Chikus F. R., *For. Dep. F.M.S.* 24487. — Pahang: Kuala Lipis, 60 m, *SF* 15675. — Negri Sembilan: Gemas, *SF* 7002.

4. *Iodes cirrhosa* Turcz., Bull. Soc. Nat. Moscou 27, ii (1854) 281; Sleum., Notizbl. Berl.-Dahl. 15 (1940) 250; Amsh. in Back., Bekn. Fl. Java (em. ed.) 6 (1948) fam. 135, p. 7; Heine, Fedde Rep. 54 (1951) 238; Pfl. d. Samml. Clemens Kinabalu (1953) 58; Back. & Bakh. v. d. Br., Fl. Java 2 (1965) 62 ('*cirrosa*'). — *I. ovalis* (non Bl.) Hassk., Cat. Hort. Bog. (1844) 172; Miq., Fl. Ind. Bat. 1 (1856) 795 p.p.; Baill., *Adansonia* 3 (1863) 364, in text, p.p.; in DC., Prod. 17 (1873) 22, incl. var. *genuina* Baill., l.c. 23 p.p., *nom. illeg.* & var. *miquelii* Baill., l.c. 23 (based on *I. tomentella* Miq.); Mast. in Hook. f., Fl. Br. Ind. 1 (1875) 596; Becc., Malesia 1 (1877) 124 p.p.; King, J. As. Soc. Beng. 64, ii (1895) 128; Hochr., Pl. Bog. Exs. (1904) 18 (as var. *genuina*); Bull. Inst. Bot. Btzg 19 (1904) 40 (as var. *genuina*); ditto 22 (1905) 106 (as var. *genuina*); Brandis, Ind. Tr. (1906) 154; Gagnep., Fl. Gén. I.-C. 1 (1911) 844, incl. var. *cochinchinensis* Pierre ex Gagnep., l.c. 845; Merr., En. Born. (1921) 356; Ridl., Fl. Mal. Pen. 1 (1922) 433; Craib, Fl. Siam. En. 1 (1926) 276; Masam., En. Pl. Born. (1942) 422; Gagnep., Fl. Gén. I.-C. Suppl. (1948) 757; Dahl, J. Arn. Arb. 33 (1952) 274 (Pollen); *Hundley & Chit*, List Trees Burma ed. 3 (1961) 46. — *Natsiatum oppositifolium* Planch. in Hook., Lond. J. Bot. 5 (1846) 247, *nom. nud.* — *I. tomentella* Miq., Fl. Ind. Bat. 1 (1856) 796; Kurz, J. As. Soc. Beng. 44, ii (1875) 137; For. Fl. Br. Burma 1 (1877) 243; Becc., Malesia 1 (1877) 124 p.p.; Koord., Minah. (1898) 393; Back., Schoolfl. Java (1911) Addenda ad p. 229; Koord., Exk. Fl. Java 2 (1912) 532;

Koord.-Schum., Syst. Verz. 1, Fam. 162 (1912) 5; Dahl, J. Arn. Arb. 33 (1952) 274 (Pollen). — *I. brandisii* Kurz, J. As. Soc. Beng. 41, ii (1872) 298; *ditto* 44, ii (1875) 156; Mast. in Hook. f., Fl. Br. Ind. 1 (1875) 596; Kurz, For. Fl. Br. Burma 1 (1877) 243; Hundleley & Chit, List Trees Burma ed. 3 (1961) 46. — *I. horsfieldii* Baill., Adansonia 10 (1872) 267; in DC., Prod. 17 (1873) 24. — *I. floribunda* Merr., Pap. Mich. Ac. Sc. 19 (1934) 166, t. 29; Dahl, J. Arn. Arb. 33 (1952) 274, f. 65 (Pollen).

INDIA. Khasia: Griffith '826' (K).

BURMA. Lower Burma: Tenasserim, Gallatly 528 (K), 792 (K); *ibid.*, Thounggyin, Brandis 1084 (K, type of *I. brandisii*), Lace 4691; South Tenasserim, Parkinson 1910 (K); Moulmein, Herb. Beddome 1234 (BM); Mergui, Pataw 1, Parker 2770 (A).

THAILAND. Payap: Chiengsên, Mè Chan, c. 400 m, Kerr 5137. — Nakawn Sawan: Huai Krasa, 90 km S. of Tak, 1000 m, Hansen & Smitinand 12985. — Surat: Pato, Langsuan, 100 m, Kerr 12158 (K); Ranong, Ko Phayam, Hansen & Smitinand 12548. — Nakawn Sritamarat: Songkla, Ban Pien, 15 m, Kerr 14815 (K). — Pattani: Pattani, Kerr 7835 (P).

INDOCHINA. Laos: Haut Mekong, M. Luang, Poilane 26221; Tatom, Chienkwang, 200 m, Kerr 20873. — Annam: Thua-thiên, Hué-Tourane, Clemens 4095 (P); Phanrang, Ka Rom, 800 m, Poilane 9956. — Cochinchina: Bien-hoa, Pierre 1645 (K, L; P, type of *I. ovalis* var. *cochinchinensis*).

SUMATRA. Eastcoast: above Bandarbaru, 100 m, Loerzing 5908; Sibolangit, 300—500 m, Loerzing 4128, 4279, 5122, 5632 p.p., 12833 p.p.; Silo Maradja, Asahan, near Talun Djoring, R. Si Toroes 77 (A, n.v.; MICH, type of *I. floribunda*, n.v.; S, SING). — Westcoast: Padang, Ayer Mantjur, 360 m, Beccari P.S. 758; Pajakumbuh, Mt Sago, 700—1000 m, Meijer 5362, Maradjo 253. — 'Sumatra', Korthals (L).

BANKA. Muntok, Mt Menumbing, Teysmann 6673.

MALAY PENINSULA. Perak: Scortechini; Larut, 30—150 m, Wray 2362, King's Coll. 2877, 2961, 3169, 4095, 6433, 6783; Mt Rapat, on limestone rocks, Sinclair 9875; Mt Lanoh near Bukit Gajah, 120 m, SF 15067, on limestone; Batu Togoh, Wray 2153; Kamunting, Curtis 2892; Hermitage Hill, Ridley 2994. — Selangor: Ulu Langat, Phytocem. Surv. Malaya 1696; Kepong, For. Dep. F.M.S. 14652, 20887. — Johore: Sg. Tebrau, Ridley 13222. — Malacca: Maingay K.D. 379, 380.

JAVA. 'Java', Teysmann (K; U, type of *I. tomentella*). — Bantam: Nirmala, 1100 m, Backer 11071; Pandeglang, 250 m, Backer 7462; Mt Karang, Kuhl & van Hasselt a. 1823 (L). — Djakarta: Depok, Hallier a. 1896; Wanajasa, 600 m, Backer 13988; Laladon, 300—350 m, Bakuhuizen v. d. Brink 4058, 5109; Mt Kenaga, base of Mt Sanggabuwana, 200 m, van Steenis 5316. — Bogor: Salak, Blume (L); Djasinga, 400 m, Backer 10338; Tjampea, Burck & de Monchy a. 1890; Tjiburial, 325 m, Bakuhuizen v. d. Brink 1039, Nedi & Idjan 400; Cult. Hort. Bogor., Hochreutiner Pl. Bog. Exs. 27. — Priangan: Tasikmalaja, Nanggerang, 800 m, Backer 8785; Denu, 800 m, Backer 9083; Nusagede in the Lake of Pendjalu, 720 m, Koorders 47750, 47756; Tjitalahab, van Steenis 12717 p.p.; Mt Galunggung above Singaparna, 650 m, Backer 8567. — Cheribon: Mt Tjeremai, 720 m, Backer 4817. — Pekalongan: Dara-Bandar, 300 m, Backer 15574. — Djapara: Mt Muria, 500 m, Docters van Leeuwen-Reijnvaan 649. — Surabaja: Ranau, Ruttner 270. — Kediri: Prigi, Backer 11919. — Malang: in silvis prope Kedong Loo, X-1844, Zollinger 2464 (BO; CW, type of *I. cirrhosa*, n.v.; FI, G, P). — Besuki: Tjuramanis near Simpolan, 600 m, Koorders 21004, 21765, 28800, 28802; Puger-Watangan, 10 m, Koorders 21767; Rogodjampi, Koorders 29027. — No locality given: Leschenault 540 (P), Lobb 171 (P).

BORNEO. W. Borneo: Sg. Sambas, Hallier 1024. — Sarawak: 4th Div., Baram, Entoyut R., Hose 463. — N. Borneo: Mt Kinabalu foot hills at Dallas, 300 m, Clemens 26497; Kinabatangan, cliff at E. end of Comantong Caves Hill, c. 100 m, SAN A 4621.

PHILIPPINES. Palawan: Talimbobog, B.S. 77870 (K).

CELEBES. N. Celebes: Gurupahi, 600 m, Kaudern 50. — Minahasa: Amurang, Forsten a. 1840, Koorders 18347; Tondano, Forsten a. 1840; Mt Lolombulan near Paku-ure, 400 m, Koorders 18345; Kajuwatu, Pingsan, 50 m, Koorders 18343; Pinamorongan, 500 m, Koorders 18346, 18348. — NE. Celebes: Gorontalo, Riedel. — E. Celebes: Malili, Kawata, 150 m, Kjellberg 2763, on limestone; Lelewu, Preho, in forest on limestone, 400 m, Kjellberg 2554. — SW. Celebes: Tjamba near Makassar, Teysmann H.B. 12624. — S. Celebes: Alo-Caves near Kalosi, on limestone rocks, 600 m, van Steenis 10331.

'MOLUCCAS', de Vriese & Teysmann (L). Possibly collected on Java on the way to the Moluccas in 1859.

5. *Iodes seguini* (Lévl.) Rehd., J. Arn. Arb. 15 (1934) 3; Chen, Sargentia 3 (1943) 68; Wu & Wang, Act. Phytotax. Sin. 6 (1957) 283; Lauener, Not. Bot. Gard. Edinb. 27 (1967) 271. — *Vitis seguini* Lévl., Fedde Rep. 4 (1907) 331. — *I. rugosa* Gagnep., Not. Syst. 1 (1910) 200, 201 (*sphalm. I. reticulata*), *nom. illeg.*; Lévl., Fl. Kouy-Tchéou (1915)

291. — *I. balansae* Gagnep., Not. Syst. 1 (1910) 200 p.p. *quoad specim. fruct.*; Fl. Gén. I.-C. 1 (1911) 845 p.p. = f. 104, 6 & 7 (fr.); Suppl. (1948) 758; Wu & Wang, Act. Phytotax. Sin. 6 (1957) 282; *ditto* 7 (1958) 60.

INDOCHINA. Tonkin: Sai Wong Mo Shan, *W. T. Tsang* 29923 (A, n.v.; BO, E, K, P, SING), 30062 (A, n.v.; BO, E, K, P, SING); Tüphap, *Balansa* 3981 p.p., fr. (K; P, lectotype of *I. balansae*); Nui-biên, près Cho-bo, *Poilane* 13189 (P).

CHINA. Yunnan: Ping-pien hsien, 1200—1300 m, *H.T. Tsai* 60817 (A), 61172 (A). — Kwangsi: Shap Man Taai Shan, *W.T. Tsang* 22357 (A, P). — Kwangtung: Foo Lung, Sup Man Ta shan, fr. mat., *H.Y. Liang* 69753 (A). — Kweichow: Hoang-ko-chau, rocaillies de la cascade, *Séguin* (*Bodinier* 2614: A, fragm. ex E; E, type of *Vitis seguini*; P, type of *I. rugosa*).

6. *Iodes vitiginea* (Hance) Hemsl., J. Linn. Soc. Bot. 23 (1886) 115; Dunn & Tutch., Kew Bull. Add. Ser. 10 (1912) 58; Dahl, J. Arn. Arb. 33 (1952) 274 (Pollen). — *Erythrostaphyle vitiginea* Hance, J. Bot. 11 (1873) 266; *ditto* 12 (1874) 184 (as *Iodes*, but no combination made there). — *Vitis chrysobotrys* Lévl. & Vaniot, Fedde Rep. 3 (1907) 350. — *I. ovalis* Bl. var. *vitiginea* (Hance) Gagnep., Fl. Gén. I.-C. 1 (1911) 845; Craib, Fl. Siam. En. 1 (1926) 276; Wu & Wang, Act. Phytotax. Sin. 6 (1957) 282; Chum & Chang, Fl. Hainan. 2 (1965) 450, f. 513; Lauener, Not. Bot. Gard. Edinb. 27 (1967) 271. — *Vitis seguini* (non Lévl. 1907) Lévl., Fl. Kouy-Tchéou (1914) 28 p.p. — *Sabia edulis* Lévl., Fl. Kouy-Tchéou (1915) 379, *nom. nud.*, p.p. — *Hernandia sinensis* Lévl., l.c. 379 *pr. syn. Sabia edulis*. — *I. ovalis* (non Bl.) Merr. ex Groff, Lingn. Agr. Rev. 2 (1924) 33; Merr., Lingn. Sc. J. 5 (1927) 117; Rehd., J. Arn. Arb. 15 (1934) 2; *ditto* 18 (1937) 276; Hu, Wang & Hsia, Bull. Fan Mem. Inst. Biol. Bot. Ser. 8 (1938) 344; Chen, Sargentia 3 (1943) 68.

var. *vitiginea*

CHINA. Yunnan: Maan-bang, Dahmeng-lung, Che-li Hsien, 950 m, *C. W. Wang* 77496 (A); Red R. bank, Man-pan, *Henry* 9608 A (A, K). — Kweichow: S. *W. Teng* 90816 (A), *Esquirol* 508 (A, fragm. ex E; E, type of *Vitis chrysobotrys*), 868, 3652 (P), *Cavalerie* 3904 (A, fragm. ex E; E, as *Sabia edulis*; P); près fleuve Houa-kiang, *Cavalerie* 2033 (A, fragm. ex E; E, as *Sabia edulis* and *Hernandia sinensis* ms.). — Kwangsi: Tan-Ngra, 10 li E. of Hoo-Chi, 520 m, *R.C. Ching* 6405; Hin Yen, 610 m, *R.C. Ching* 6764. — Kwangtung: West R., *Ford* 2 (K); *ibid.*, on big rock Kai Kun shek, *Sampson* (*Herb. Hance* 16858: A, fragm.; BM, type of *Erythrostaphyle vitiginea*; GH, K, P); Kochow Dist., *Y. Tsiang* 2315. — Hainan: 30—250 m, *Chun* 2119, 6806, 6835 (all cit. Merrill), *Chun & Tso* 44651, *Ford* 432 (K), *Gressitt* 949 (A, E), *Henry* 8063, 8297 x, 8228, *F.C. How* 71583, *How & Chun* 70024, *S.K. Lau* 148, 357, 1420, 3109, 3625, 5041, 5898, 26709, *C.I. Lei* 587, 753, *H.Y. Liang* 61578, 61632, 62184, 62508, 66224, *McClure* 9268, 20104, *W.T. Tsang* 17, 44, 585, *Tsang, Tang & Fung* 232 B, 655 (K), *C. Wang* 32841, 33771, 34292.

INDOCHINA. Tonkin: Sai Wong Mo Shan, *W.T. Tsang* 30218; Tüphap, fl. ♂♂, *Balansa* 3981 p.p. (P, syntype of *I. balansae* = fig. 104, 1—5); Lai Chau, 150—200 m, *Poilane* 25743; Hanoi, *Demange* 1171; Quang Binh, *Pételot* 4369; Thai Nguyen, *Pételot* 4785; Bac Giang, *Pételot* 4783; Hoa Binh, *Colani* 2998, *Eberhardt* 4069, 4148, 4275, *Pételot* 2998, 4779; Ninh Binh, *Pételot* 909, 915; Vo Xa, in vall. Hô, *Bon* 2701; Kien Khê, in vall. Dong Bau, *Bon* 2150, 2547, 2611. — Laos: Mekong, Paklai, *Thorel*; Cahutrap, *Spire* 1132. — Annam: Prov. de Nghê-An (Vinh), Res. For. de Co-Ba, *Fleury* (*Herb. Chevalier* 32400, 32412); Route de Phoqui à Kebon, *Poilane* 16548.

THAILAND. Ubon: Kemmarat, *Thorel* (P). Udawn: Paknam Songkram, Nakawon Panom, 200 m, *Kerr* 21351 (K, L); Lakhon, *Thorel* (P).

var. *levitestis* Hand.-Mazz., Sitzungsanz. Akad. Wiss. Math.-Naturw. Kl. Wien 58 (1921) 150; Symb. Sin. 7 (1933) 668. — *Sabia edulis* Lévl., Fl. Kouy-Tchéou (1915) 379, *nom. nud.*, p.p.

CHINA. Kweichow: Tschening to Huang tsauba, 1100 m, fr., von *Handel-Mazzetti* 10374 (A, C; WU, type of *I. vitiginea* var. *levitestis*, n.v.); *ibid.*, 580 m, fl. ♂, von *Handel-Mazzetti* 10349 (WU, n.v.); Tchen-fong a Hin-y-fou, fr., *Cavalerie* 3932 (A, fragm. ex E; E, as *Sabia edulis*).

Note. Possibly a separate species. *Cavalerie* 3932 was cited under *I. seguini*, but without doubt represents *I. vitiginea* var. *levitestis*, the latter wrongly cited by Rehder as a synonym of *I. seguini*. Fruits resemble those of *Mappianthus*.

7. *Iodes philippinensis* Merr., Philip. J. Sc. 3 (1908) Bot. 241; C. B. Rob., *ditto* 6 (1911) Bot. 209; Merr., J. Str. Br. R. As. Soc. 86 (1922) 326; Holth. & Lam, *Blumea* 5 (1942) 205; Masam., En. Pl. Born. (1942) 422; Dahl, J. Arn. Arb. 33 (1952) 274, f. 68 (Pollen). — *I. ovalis* (non Bl.) Baill. in DC., Prod. 17 (1873) 22, *quoad Philip.*; F.-Vill., Novis. App. (1880) 46; Vidal, Phan. Cuming. Philip. (1885) 103; Rev. Pl. Vasc. Filip. (1886) 86; Merr., Philip. J. Sc. 30 (1926) 408; Holth. & Lam, *Blumea* 5 (1942) 205. — *I. tomentella* (non Miq.) Becc., Malesia 1 (1877) 124, *quoad Philip.* — *I. oblonga* Planch. ex Mast. var. *moluccana* Hochr., Pl. Bog. Exs. (1904) 18; Bull. Inst. Bot. Btzg 19 (1904) 40; *ditto* 22 (1905) 107; Ann. Jard. Bot. Btzg. Suppl. III, 2 (1910) 855.

BORNEO. N. Borneo: P. Banggi, *Fraser* 277 (K); Pandasan, edge of Kra swamp, *Darnton* 5 (K); Menetendok R., 915 m, *SF* 26750; Kudat, *SF* 19291; Bundu, Mempakul, *Br. N. Born. For. Dep.* 2323; Dallas, 915 m, *Clemens* 29460 A; Mt Kinabalu, Penibukan Ridge, 1220 m, *Clemens* 32172, 40406; Kundasan, 1265 m, *Sinclair* c.s. 8968; Tenompok, 1300—1525 m, *Clemens* 29460, 30299, 30300; Kota Belud, W. of Ranau, 580 m, *SAN* A 4425; Sandakan, *Ramos* 1410; *ibid.*, Elopura F. R., *Cuadra* A 2342; Sapeng, 250 m, *Yates* 26 (K).

PHILIPPINES. Palawan: B.S. 729 (cit. Merrill, n.v.); Victoria Mts, Panacan, Aborlan, 100 m, *PNH* 12376; Panalingajan R., B.S. 77377; Mt Capoas, B.S. 9511; Brooke's Point, *PNH* 240; Balabac I., B.S. 49869 (UC). — Mindoro: Pinamalayan, B.S. 40871, 41099; Baco, *Merrill* 1287, F.B. 5407 (cit. Merrill, n.v.); Calapan, *Merrill* 987; Mt Yagaw, 330 m, *PNH* 16793, 17604, 18740, 19160. — Luzon: Batangas, *Cuming* 1532 (BM, G, K); Albay, Bulan, *Vidal* 3298 (A, n.v.; K); Sorsogon, Mt Juban, 200 m, *PNH* 37168; Irosin, Mt Solikan, 190 m, *PNH* 38538; Mt Bulusan, *Elmer* 14499, 16418, *PNH* 37733. — Polillo: B.S. 9263. — Sibuyan: Magallanes, Mt Giting-Giting, *Elmer* 12498 (*I. curtiflora* ms.). — Romblon: *Hallier* 4383 (L). — Masbate: *Merrill* 3383. — Biliran: cit. Merrill, n.v. — Leyte: *Wenzel* 833, 1433, 1750; Palo, *Elmer* 7108. — Bohol: B.S. 42567 *Ramos*. — Cebu: B.S. 1709 (PNH, type of *I. philippinensis*, †), B.S. 11123 (L, P). — Negros: Dumaguete, Cuernos Mts, *Elmer* 9647. — Panay: Ilo-Ilo, B.S. 18137, *PNH* 33771, 33860; Capiz, Jamindan, B.S. 31299. — Guimaras I.: *PNH* 11753. — Sulu: Jolo, B.S. 44435 (BO, K, P, SING); *ibid.*, B.S. 44469. — Basilan: B.S. 9990, *Santos* 4356. — Mindanao: Surigao, F.B. 34343 (UC).

CELEBES. Central Eastern Celebes: Lelewau, Latón, 100 m, *Kjellberg* 2556.

MOLUCCAS. Talaud Is: Kaburuang, 130 m, *Lam* 3211; Karakelong, Mt Duata, 50 m, *Lam* 2807. — Morotai: Totodoku, 30 m, *Kostermans* 709, 1457. — Halmahera: *Teysmann & de Vriese* a. 1860 (L); Goal, 100 m, *Pleyte* 158; cult. Hort. Bogor., *Hochreutiner Pl. Bog. Exs.* 26 (BO; G, type of *I. oblonga* var. *moluccana*; K, L, P). — Ternate: 25 m, *Beguín* 980. — Ambon: *Teysmann* H.B. 1985.

8. *Iodes velutina* King, J. As. Soc. Beng. 64, ii (1895) 127; Ridl., Fl. Mal. Pen. 1 (1922) 434; Burk., Dict. (1935) 1245.

var. *velutina*

MALAY PENINSULA. Perak: *Scortechini* (BM; CAL, syntype of *I. velutina*, n.v.; G, K, L, P, SING), fl. ♂, Batu Togoh, 60 m, *Wray* 2141 (CAL, lectotype of *I. velutina*, n.v.; K, SING), fr. — Negri Sembilan: Bukit Danan, *Cantley (Alvins)* 58 (SING), fr. — Malacca: *Maingay* K.D. 380 & 1039 (K, syntypes of *I. velutina*), *Ridley* 208; Merlimau, *Cantley (Alvins)* a. 1885 (SING). — Singapore: Bukit Timah road, *Ridley* 2718 (BM, SING).

var. *subvillosa* Sleum., var. *nov.*

Folia subtus ad interstitia venularum tomento denso brevi pilorum substellatorum oblecta itaque cinerascientia (in var. *velutina* glabra et viridia). Floribus fructibusque a var. *velutina* nullo modo diversa.

SUMATRA. Eastcoast: Asahan, Kuala Masili, *Yates* 2224. — Benkulen: Rimbo Pendagang, 1000 m, *Ajoeb (Exp. Jacobson)* 164.

BORNEO. W. Borneo: Amai Ambit, *Hallier 3354*. — Sarawak: 1st Div., W. & E. passage of Sg. Serin 30 miles S. of Kuching, 100—300 m, fr., *Jacobs 5153* (L, typus); N. slopes of Mt Penrissen, 900—1000 m, fl. ♂, *Jacobs 5105* (B, G, K, L, S, SAR, US).

'NEW GUINEA', *Zippelius* (L). If this plant really was collected in New Guinea by Zippelius, then it must have been on the South coast, from where up to now no species of *Iodes* has been collected. Mentioned by Schellenberg as *I. tomentella* in *Bot. Jahrb.* 58 (1923) 176.

EXCLUDED

Iodes ferruginea K. Sch. & Laut., *Fl. Schutzgeb.* (1900) 418; Schellenb., *Bot. Jahrb.* 58 (1923) 176, note sub *I. tomentella* = *Alangium villosum* (Bl.) Wang.

NEW GUINEA. Madang Dist.: 'Schumann-Fluss' (= Nuru R. ?), 250 m, *Lauterbach 2387* (= 387, B, type of *I. ferruginea*, †; G-Boiss, K; WRSL, Herb. Lauterbach, part of type of *I. ferruginea*).

11. THE GENUS MAPPIANTHUS HAND.-MAZZ.

MAPPIANTHUS

Hand.-Mazz., *Sitzungsanz. Akad. Wiss. Math. Naturw. Kl. Wien* 58 (1921) 150; *Symb. Sin.* 7 (1933) 667, t. 10, f. 3; Sleum. in *E. & P.*, *Nat. Pfl. Fam. ed. 2*, 20 b (1942) 379. — *Iodes* Bl. sect. *Lasiodes* Baill., *Adansonia* 10 (1872) 268 (lectotype: *I. hookerianus* Baill.); in *DC.*, *Prod.* 17 (1873) 24; *Mast. in Hook. f.*, *Fl. Br. Ind.* 1 (1875) 596; Sleum. in *E. & P.*, *Nat. Pfl. Fam. ed. 2*, 20 b (1942) 379.

KEY TO THE SPECIES

1. Leaves with 4—5 pairs of lateral nerves, these sparsely set with substrigose appressed hairs underneath. Indochina (Tonkin), China (Fukien and Hunan to Kwangtung and Hainan), Hongkong.

1. *M. iodoides*

1. Leaves with 7—8(—9) pairs of lateral nerves, these ± densely covered with substrigose appressed hairs underneath. Assam, East Bengal, Sumatra, Borneo 2. *M. hookerianus*

1. *Mappianthus iodoides* Hand.-Mazz., *Sitzungsanz. Akad. Wiss. Math.-Naturw. Kl. Wien* 58 (1921) 150; *Symb. Sin.* 7 (1933) 667, t. 10, f. 3 (phot.); Merr., *Lingn. Sc. J.* 13 (1934) 61; Chun, *Sunyatsenia* 2 (1934) 72; Sleum., *Notizbl. Berl.-Dahl.* 15 (1940) 252; Dahl, *J. Arn. Arb.* 33 (1952) 274, f. 69, 69 A (Pollen); Wu & Wang, *Act. Phytotax. Sin.* 6 (1957) 283; Chun & Chang, *Fl. Hainan.* 2 (1965) 451, f. 514.

INDOCHINA. N. Tonkin: Cha-pa, 1500 m, *Pételot 8750* (A, n.v.; P).

CHINA. Fukien: Futschau, Kusan Hsien, Dec. 1887, *Warburg 6016* (B, †). — Hunan: Tsingtchou, near Moschi-se, 400 m, *von Handel-Mazzetti 11093* (A; WU, type of *M. iodoides*, n.v.). — Kwangtung: Lin Fa Shan, *W.T. Tsang 25598*. — Kweichow: Ping-chow, *Y. Tsiang 7142, 9367*. — Kwangsi: S.K. *Lau 28718*, C. *Wang 39946*; In-tung, Miu Shan, N. Luchen (border with Kweichow), 915 m, *R.C. Ching 6195*; Chen Pien Dist., S.P. *Ko 55946*; Ling Wang Shan, San Chiang Hsien, 2100 m, *Steward & Cheo 1093*. — Hainan: *H. Fung 20090* (cit. Merrill), *Tsang & Fung 18147* (cit. Merrill); Five Finger Mts, *McClure 8569*; Po-ting, 455—855 m, *F.C. How 72874, 73652*; Fan Yah, 915 m, *Chun & Tso 44158*; Ngo Ko Shan, S.K. *Lau 1895*. — Yunnan: Pinh-pien Hsien, 1400 m, *H.T. Tsai 61743*; Hei-lung-tarn, Fo-hai Hsien, 1800 m, *C.W. Wang 76273*; Meng-soong, Dahmeng-lung, Cheli Hsien, 1900 m, *C.W. Wang 78320* (A, K; P, as *Iodes crassinervia* Hu ms.); Szemao, 1370 m, *Henry 12063*.

HONGKONG. North side of Victoria Pic, halfway in a ravine, fl. ♀, *Bodiner 723* (E).

2. *Mappianthus hookerianus* (Baill.) Sleum., *comb. nov.* — *Iodes hookeriana* Baill., *Adansonia* 10 (1872) 268; in *DC.*, *Prod.* 17 (1873) 24; *Mast. in Hook. f.*, *Fl. Br. Ind.* 1 (1875) 596; Kurz, *J. As. Soc. Beng.* 44, ii (1875) 157; *For. Fl. Br. Burma* 1 (1877) 244; Brandis, *Ind. Tr.* (1906) 154; Kanjilal c.s., *Fl. Assam* 1, 2 (1936) 254. — *Iodes thomsoniana*

Baill., *Adansonia* 10 (1872) 270; in DC., *Prod.* 17 (1873) 25; Mast, in Hook. *f.*, *Fl. Br. Ind.* 1 (1875) 596; Brandis, *Ind. Tr.* (1906) 154. — *M. borneensis* Merr., *Webbia* 7 (1950) 317.

ASSAM. Ruffoo, *Griffith K.D.* 827 (K, P); Khasi and Jaintia hills, *Ruse* 420 (A, *n.v.*). After Kanjilal *c.s.* in Sibsagar, Darrang, and Khasi hills, no material seen by me.

EAST BENGAL. Terrya Ghat, *Hooker f. & Thomson* 2123 (K, type of *Iodes hookeriana*; P-Baillon, part of type *ex K*); Chittagong, *Hooker f. & Thomson s.n.* (K); *ibid.*, Seetakoend, *Hooker f. & Thomson s.n.* (K, type of *Iodes thomsoniana*; P, part of type *ex K*); Churra, Nunklow, Terrya Ghat, *Hooker f. & Thomson* (K, maybe part of type material of *Iodes hookeriana*).

SUMATRA. Locality unknown (probably from Westcoast), fl. ♂, *Korthals* 652 (L).

BORNEO. N. Borneo, Mt Kinabalu, Kiau, fr. 25-11-1915, *Clemens* 9978 (A, type of *M. borneensis*); *ibid.*, Dallas, 915 m, fr. 15-9-1931, *Clemens* 26403 (A, BM, BO, G, K, L).

12. THE GENUS MEDUSANTHERA SEEM. IN MALESIA

MEDUSANTHERA

Seem., *J. Bot.* 2 (1864) 74; Howard, *J. Arn. Arb.* 21 (1940) 469; Sleum. in E. & P., *Nat. Pfl. Fam. ed. 2*, 20 b (1942) 362; Howard, *Lloydia* 6 (1943) 133. — *Tylecarpus* Engl. in E. & P., *Nat. Pfl. Fam. III*, 5 (1893) 247; K. Sch. & Laut., *Fl. Schutzgeb.* (1900) 413 ('*Tylecarpus*'); Lloyd & Aiken, *Bull. Lloyd Lib. n. 33*, Bot. ser. 4 (1934) 65, fig.; Sleum., *Notizbl. Berl.-Dahl.* 15 (1940) 246; in E. & P., *Nat. Pfl. Fam. ed. 2*, 20 b (1942) 362, f. 103 A & B.

KEY TO THE SPECIES

1. Drupe 3—3.5 cm long, oblong, tapering to the blunt apex, with a single (median) longitudinal ridge on the convex surface.
 2. Leaves ± coriaceous.
 3. Leaves ovate, 5—7 by 3—4.5 cm. Samoa **M. ovata** Howard
 3. Leaves 6—10 by 3—5 cm, ovate to ovate-oblong. Fiji **M. vitiensis** Seem.
 2. Leaves thinner, elliptic to ovate-elliptic, 10—17 by 5—7 cm. Samoa.

M. samoensis (Reinecke) Howard
1. Drupe 1—2 cm long.
 4. Drupe subovate-oblong, base obtuse-truncate, apex gradually attenuate and subacute, with a single marked (median) longitudinal ridge on the convex side, other parallel ones rather indistinct. Leaves with (4—)5—6 (rarely —8) pairs of nerves. Petals 2(—2.5) mm. S. Thailand, Sumatra, Malay Peninsula. **I. M. gracilis**
 4. Drupe oblong-elliptic, blunt on both ends, with 3 (or 5) marked longitudinal ridges on the convex side. Leaves with (6—)8—10(—12) pairs of nerves. Petals 3—4 mm. Philippines and Celebes to Caroline Is, Moluccas, New Guinea, Aru & Kai Is, Bismarck Archipelago, and Solomon Is.

2. M. laxiflora

I. Medusanthera gracilis (King) Sleum., *comb. nov.* — *Gomphandra gracilis* King, *J. As. Soc. Beng.* 64, ii (1895) 115; Ridl., *Fl. Mal. Pen.* 1 (1922) 429, incl. var. *gracillima* Ridl., l.c. 430. — *Gomphandra lanceolata* (Mast.) King var. *angustifolia* King *ap. Ridl.*, *Fl. Mal. Pen.* 1 (1922) 429, *p.p.* — *Gomphandra yatesii* Merr., *Pap. Mich. Ac. Sc.* 19 (1934) 165, t. 28. — *Stemonurus yatesii* (Merr.) Howard, *J. Arn. Arb.* 21 (1940) 469; Dahl, *ditto* 33 (1952) 268 (Pollen).

THAILAND. Puket: Kao Pawta Luang Kéo, 900 m, *Kerr* 16920.

SUMATRA. Eastcoast: Asahan, Bandar Pulu and Masili, *Yates* 2248, 2637 (BO, L; MICH?, type of *Gomphandra yatesii*, *n.v.*; UC, *n.v.*); Huta Bagasan, *Rahmat Si Boeea* 6647; Habinsaran, between Parsoburan and Nassau, 900 m, *Loerzing* 7998. — Tapanuli: Toba, Tutupan, *Rahmat Si Boeea* 6020, 6031.

MALAY PENINSULA. Kedah/Perak border: Bukit Blakang Parang, G. Bintang, *SF* 21056. — Kelantan: Sg. Perias, 300 m, *FRI* 4127; Sg. Mersing, 200 m, *FRI* 5484. — Perak: Bujong Malacca, *Ridley* 9642 (K); Bubu F.R., lowland, *For. Dep. F.M.S.* 29878; Maxwell's Hill, 760 m, *Wray* 3002 (CAL, syntype of *Gomphandra gracilis*, *n.v.*; P, SING), *Ridley a.* 1892; Batu Puteh, 1035 m, *Wray* 481 (BO; CAL, syntype

of *Gomphandra gracilis*, *n.v.*; SING, U); Larut, 550—1160 m, King's Coll. 2026 (CAL, syntype of *Gomphandra gracilis*, *n.v.*; Fl, K, L, P), 2836 (BO; CAL, syntype of *Gomphandra gracilis*, *n.v.*; G, K), 2881 (CAL, syntype of *Gomphandra gracilis*, *n.v.*; K); Batu Pojoh (Togoh?), 60 m, Wray 2138 (CAL, syntype of *Gomphandra gracilis*, *n.v.*; SING); Chandleriang, 50—250 m, King's Coll. 5662 (fl. ♂ & ♀, fr.: BM, BO; CAL, lectotype of *Gomphandra gracilis*, *n.v.*; CGE, E, G, K, L, UPS), 5677 (BM, BO; CAL, syntype of *Gomphandra gracilis*, *n.v.*; CGE, E, K, L, P); Ulu Bubong, 120—180 m, King's Coll. 10626 (BM; CAL, syntype of *Gomphandra gracilis*, *n.v.*; G, K, L). — Pahang: Tanah Rata, G. Berembán, top, 1840 m, Ridley 13587; Mt Benom, Ulu Sg. Krau, 300 m, FRI 3428. — Selangor: Bukit Kutu, Ridley 7366 (K); Kajang, Bukit Payong, For. Dep. F.M.S. 24241; Ginting Bidai, Ridley a. 1896; Ulu Gombak F. R., 455 m, F.M.S. Mus. 9693 Hume, KEP 97794, 99505, FRI 2347; Near Klang Gates, Ridley (K); Ulu Langat F. R., Phyt. Surv. Malaya 1684, 2279, KEP 98405; Ginting Simpah, 610 m, SF 34311; Ulu Kerling, 120—150 m, King's Coll. 8676 (A, *n.v.*; BM; CAL, syntype of *Gomphandra gracilis*, *n.v.*; P); Bukit Lagong F.R., KEP 83402, 98706, 110213, FRI 1388. — Trengganu: Kemaman, Ulu Bendong, Bukit Kajang, 150 m, SF 30117, 30225, 30287, 30408. — Johore: Sg. Kaju, SF 32337.

2. *Medusanthera laxiflora* (Miers) Howard, J. Arn. Arb. 21 (1940) 470; Lloydia 6 (1943) 142; Dahl, J. Arn. Arb. 33 (1952) 269, f. 53, 53 A (Pollen). — *Platea laxiflora* Miers, Ann. Mag. Nat. Hist. II, 10 (1852) III; Contr. Bot. I (1852) 98, t. 16; Valet., Crit. Overz. Olacin. (1886) 255. — *Stemonurus laxiflorus* Miers, l.c., *nom. event. illeg.*; Merr., Philip. J. Sc. 3 (1908) Bot. 240. — *Cissus flexuosa* Turcz., Bull. Soc. Nat. Moscou 31, i (1858) 415, *nom. illeg.*; Planch. in DC., Monogr. Phan. 5 (1887) 624. — *Lasianthera papuana* Becc., Malesia 1 (1877) 108, t. 3; Valet., Crit. Overz. Olacin. (1886) 240; Boerl., Handl. 1, 1 (1890) 212. — *Gomphandra laxiflora* (Miers) Rolfe, J. Bot. 23 (July 1885) 211; Vidal, Phan. Cuming, Philip. (July—Dec. 1885) 25, 103; Rev. Pl. Vasc. Filip. (1886) 86; Merr., En. Philip. 2 (1923) 490. — *Tylecarpus papuanus* (Becc.) Engl. in E. & P., Nat. Pfl. Fam. III, 5 (1893) 247, f. 138, A & B; K. Sch. & Laut., Fl. Schutzgeb. (1900) 413; Schellenb., Bot. Jahrb. 58 (1923) 159; Birnie, Nova Guinea 14 (1926) 275. — *Tylecarpus sp.*, Pulle, Nova Guinea 8 (1912) 658. — *Gomphandra glabra* Merr., Philip. J. Sc. 17 (1920) 277; En. Philip. 2 (1923) 490. — *Gomphandra carolinensis* Kaneh., Fl. Micron. (1933) 198 (descr. japon.), f. 85, *nom. seminud.*; Bot. Mag. Tokyo 47 (1933) 673; J. Dep. Agric. Kyushu Imp. Univ. 4 (1935) 358. — *Tylecarpus carolinensis* (Kaneh.) Kaneh. & Hatus., Bot. Mag. Tokyo 50 (1936) 605. — *M. glabra* (Merr.) Howard, J. Arn. Arb. 21 (1940) 469, pl. 2, f. 8—15; Lloydia 6 (1943) 140, pl. 11, f. 1—4; Brittonia 5 (1943) 55, f. 3 a (Wood-Anat.); Dahl, J. Arn. Arb. 33 (1952) 269, f. 55, 55 A (Pollen). — *M. carolinensis* (Kaneh.) Howard, J. Arn. Arb. 21 (1940) 469; Lloydia 6 (1943) 142; Walker, For. Fl. Br. Solomon Is (1948) 127; Dahl, J. Arn. Arb. 33 (1952) 269, f. 56, 56 A (Pollen). — *M. papuana* (Becc.) Howard, J. Arn. Arb. 21 (1940) 469; Sleum. in E. & P., Nat. Pfl. Fam. ed. 2, 20 b (1942) 363, f. 103, A & B; Howard, Lloydia 6 (1943) 137; Dahl, J. Arn. Arb. 33 (1952) 269, f. 52 (Pollen). — *Tylecarpus coriifolius* Sleum., Notizbl. Berl.-Dahl. 15 (1940) 236. — *Tylecarpus peekelii* Sleum., l.c. 237. — *M. coriifolia* (Sleum.) Sleum., ditto 15 (1941) 364 ('*corriifolia*'); Howard, Lloydia 6 (1943) 138, *comb. superfl.* — *M. peekelii* (Sleum.) Sleum., Notizbl. Berl.-Dahl. 15 (1941) 364; Howard, Lloydia 6 (1943) 138, *comb. superfl.*

CELEBES. C. Celebes: Malili, Kawata, 250 m, Cel/V-180. — SE. Celebes: Muna I., 10 m, bb. 21359. PHILIPPINES. Luzon: Albay, Cuming 891 (BM, type of *Platea laxiflora* = fragm. ex Herb. Hook. & Lindl.; C, CGE; CW, type of *Cissus flexuosa*, *n.v.*; Fl, G, K, P). — Samar: B.S. 17660; Catubig R., Sablaya 16, B.S. 24241, 24547; Yabong, Merrill Pl. Philip. 1628 (BM, BO, G, L, P; PNH, type of *Gomphandra glabra*, ♀; SING; US, cit. Howard, *n.v.*). — Leyte: Wenzel 1029, 1722, 1744. — Mindoro: F.B. 11493 (K), 19926; Bongabong, Cawayan R. valley, F.B. 4060; Pinamalayan, B.S. 41089; Mt Halcon, B.S. 40664. — Mindanao: Surigao, Wenzel 2947, 3224, 3298, 3365.

MOLUCCAS. Halmahera: Loa Tobaru, 60 m, Beguin 1978. — Obi: Atasrip 71. — Kai Is: Jaheri 207, 376; Great Kai, Mt Daab, 300 m, Jensen 102 (BO, C).

NEW GUINEA. Nw. New Guinea: Warsamson Valley E. of Sorong, 30 m, BW 11744; Kebar Valley, Asiti, 470 m, BW 11407; *ibid.*, Tobie, 720 m, BW 7977; SW. Andjai, 500 m, van Royen & Sleumer 6720;

Manokwari, Tafelberg, 120—150 m, *BW* 650, 2342, 3525, 3686; Momi S. of Manokwari, 20—30 m, *Kostermans* 2697, 2951; Andai, *Beccari P.P.* 532 (Fl, type of *Lasianthera papuana*; K); Ransiki, 5—10 m, *Kostermans* 133, 2947; Wandammen Bay, Job I., 80 m, *BW* 14940; Geelvinkbay, Nabire, 3 m, *Kanehira & Hatusima* 11530; Rumabatu, *Ijiri & Niimura* 246, 248; Maccluer golf, Babo, 10 m, *Aet (Exp. Lundquist)* 682; Kowap, N. of Fak-Fak, 410 m, *BW* 12195. — S. New Guinea: Southcoast, *Branderhorst* 318 (B, †); Utakwa R., canoe camp, C.B. *Kloss* a. 1913 (BM, K); Noord R., *Von Römer* 226 (BO). — N. New Guinea: Numfur I., 3 m, *BW* 1046; Japen I., Serui, *Aet & Idjan* 967; Nassau Mts, Exploratie biv., 700—1000 m, *Docters van Leeuwen* 10579, 10678; Rouffaer R., 175 m, *Docters van Leeuwen* 9981, 10015, 10187; Mamberamo R., *Thomsen* 867; *ibid.*, Prauwenbiv., 10—150 m, *Lam* 427, 657, 1191; Otken R., 26 m; *Thomsen* 671; Hollandia, Polimac, 50 m, *BW* 1192; Red R., 70 m, *bb.* 25732; Tami R. mouth, 15 m, *BW* 3402; near Lake Sentani, 70—100 m, *BW* 3775, 3786; S. of Depapre, *Lam* 7802. — Sepik Dist.: Wewak-Angoram area, 25—30 m, *Pullen* 1353, 1362, 1399; August R., *NGF* 3811; Ana village, *NGF* 18983; Ossima village, 30 m, *NGF* 13289; Hauptlager Malu, 60—80 m, *Ledermann* 6637 (E, K), 6638 (E, K); 'Banischlucht', 80—100 m, *Ledermann* 6669 (K), 6798 (K); 'Zuckerhut', 560 m, *Ledermann* 7108 (B, †); *Loco haud indicato*, *Lauterbach* 586 (K, WRSL). — Madang Dist.: Wobbe, 500 m, *Schlechter* 16366 (B, †; UC, cit. Howard, *n.v.*); Umbili, 450 m, *Schlechter* 16432 (B, †; UC, cit. Howard, *n.v.*); Maijen, 50 m, *Schlechter* 17908 (P) & 17913 (B, †; P; UC, cit. Howard, *n.v.*); Ramu R. valley, Usino village, 125 m, *Hoogland* 5005; Fata, 215 m, *Saunders* 367; Ramu (= Jagei) R., 100—150 m, *Lauterbach* (2)586 (K), (2)627 (K, WRSL); Nuru (= 'Schumann'?) R., near Erima, 400 m, *Kersting (Lauterbach* 441 = 2441) a. 1896 (B, †; G, K, WRSL). — Southern Highlands: Lake Kutubu, *NGF* 8146. — Western Highlands: Nondugl, 1740 m, *NGF* 9026. — Morobe Dist.: Lae, *NGF* 4642; Lae Bot. Gard., *NGF* 9668; Oomsis Creek near Lae, 90—245 m, *NGF* 11356, 16487, *Hartley* 10498; Lae-Wau road, Wampit Hill, 365 m, *NGF* 14616; Markham R., 10—130 m, *Hartley* 10600, *NGF* 20065, 21125; Bulolo, Taun Creek, 700 m, *NGF* 15402; Bumbu R., 30 m, *NGF* 16694. Busu R. bridge, *NGF* 9545; Bupu R., *NGF* 10517; Yalu, *NGF* 3222; Sattelberg, Heldsbach, *Clemens* 100. — Central Dist.: Port Moresby, Brown R., 55 m, *NGF* 7133; Kairuku, Maipa village, 100 m, *Darbyshire* 918; Veiya, sea level, *Carr* 11654; Mori R., 60 m, *NGF* 8200; Sogeru, *Forbes* 269 & 330 (BM). — Northern Dist.: Dove village, Musa R., 15 m, *NGF* 22305; Tufi, near Guruguru, 25 m, *Hoogland* 4231; Awe R., 100 m, *NGF* 20783; Gwaiari, 30 m, *Hoogland* 3666; Popondetta, *NGF* 4496; Kokoda, 365 m, *Carr* 16151, 16174, 16316; Samboga R., 15 m, *Floyd & Hoogland* 3830. — Milne Bay Dist.: Kiriwina, Gusweta, *NGF* 25283; Cape Vogel, Ruaba, 100 m, *Saunders* 124; Peria Creek, Kwagira R., 50 m, *Brass* 24257, 24285; Fergusson I., 15 m, *Brass* 26007; Normanby I., Lebudowa R., *Brass* 25881; Goodenough I., 5—20 m, *Brass* 24403.

NEW BRITAIN. Near Cape Hoskins, *NGF* 3475; *ibid.*, base of Mt Lollo, *NGF* 6551.

NEW IRELAND. Lamekot near Kavieng, *Peekel* 17 (BO); *ibid.*, Lamangan, *Peekel* 1056 (B, type of *Tylecarpus peekelii*, †); *ibid.*, Pabakit, 200 m, *Peekel* 1064 (B, type of *Tylecarpus corifolius*, †).

SOLOMON IS. Bougainville: Buin, sea-level to 20 m, *Kajewski* 2274; Kuniguru, 900 m, *Kajewski* 2178; Siwai, *Waterhouse* 267-B, 292-B, 378-B; Tonolei Harbour, sea-level, *NGF* 19736, *BSIP* 4153. Torakina, *NGF* 807; Teop, *Waterhouse* 887. — Fauro I.: 80 m, *BSIP* 5701. — Shortland Is: 20—30 m, *BSIP* 5779, 5810. — Treasury I.: *Comins* 113, 262. — Gizo I.: *BSIP* 11745. — New Georgia: sea-level to 300 m, *BSIP* 2522, 3765, 6054, 6879. — New Georgia Group: Baga I., 45 m, *BSIP* 1313, 2867, 5552; Gizo I., 60 m, *BSIP* 5615; Rendova I., *BSIP* 1935; Vangunu I., *BSIP* 936, 954, 1278; Kolombangara, 6—100 m, *BSIP* 1446, 8456, 9848, 11531. — Santa Isabel: *BSIP* 6761. — Guadalcanal: *Corner* 220; Mt Austen, 245 m, *BSIP* 61; Lipaquetto, *BSIP* 3334; Rere R., *BSIP* 3828. — Malaita: *BSIP* 10622. — San Cristoval: *Comins* 41 (K), *Dennis* 22631, *Cuppy* 113 & 252 (K), *Whitmore* 6235; Kira Kira, *Brass* 2718; Magoha R., 150 m, *Brass* 2724; Santa Ana (Owa Raha) I., *Brass* 3135

PALAU IS. KORTOR: *Kanehira* 1882 (NY, cit. Howard, *n.v.*), 1908 (NY, isotype of *Gomphandra carolinensis*, *n.v.*; P). — Coral I., *Kanehira* 2473 (A, cit. Howard, *n.v.*; P). — Aimiriik, *Kanehira* 4578 (A, cit. Howard, *n.v.*). — Babelthuap, *Tuyama* 7198 (K), *Hosokawa* 9232 (K).

13. THE GENUS MERRILLIODENDRON KANEH.

MERRILLIODENDRON

Kaneh., *Bot. Mag. Tokyo* 48 (1934) 920, f. 7; l.c. 956 (japon.); *Sleum. in E. & P., Nat. Pfl. Fam. ed. 2*, 20 b (1942) 366, f. 104. — *Peekeliendendron* *Sleum.*, *Notizbl. Berl.-Dahl.* 13 (1937) 509.

1. *Merrilliodendron megacarpum* (Hemsl.) Sleum., *Notizbl. Berl.-Dahl.* 15 (1940) 243; in *E. & P., Nat. Pfl. Fam. ed. 2*, 20 b (1942) 366, f. 104 (fr.); Balgooy in *Steenis &*

Balgooy, Pacif. Pl. Areas 2 (1966) 176 (distr. map). — *Stemonurus* ? *megacarpus* Hemsl. in Hook., Ic. Pl. 24 (June 1895) t. 2398; Kew Bull. (June/July 1895) 133; K. Sch. & Laut., Fl. Schutzgeb. (1900) 414; Schellenb., Bot. Jahrb. 58 (1923) 164. — *M. rotense* Kaneh., Bot. Mag. Tokyo 48 (1934) 920, f. 7; l.c. 956 (japon.); J. Dep. Agric. Kyushu Imp. Univ. 4 (1935) 359; Kaneh. & Hatus., Bot. Mag. Tokyo 54 (1940) 435, f. 82, 83 (phot., fl. & fr.); Hosokawa, J. Jap. Bot. 16 (1940) 540; Merr. & Perry, J. Arn. Arb. 27 (1946) 324; Dahl, ditto 33 (1952) 265 (Pollen). — *Peekeliidendron missionariorum* Sleum., Notizbl. Berl.-Dahl. 13 (1937) 510; Peekel, Fl. Bismarck Arch. ms p. 1080 & fig.

CELEBES. SR. Celebes: Muna I., 5—10 m, *bb.* 21597, 24070.

PHILIPPINES. Palawan: Brook's Point (Addison Peak), fr., *Elmer* 12595, as *Gonocaryum angulare* ms.

NEW GUINEA. NW. New Guinea: Manokwari, *Tuyama* 764; Japen I., Serui, 700 m, *bb.* 30295. — N. New Guinea: Sekoli plain near Hollandia, S. of Lake Sentani, *BW* 9408. — Madang Dist., Aiome, 100 m, *NGF* 24743. — Morobe Dist., Wanaru Plantation, Markham road, 30 m, *NGF* 9907.

NEW BRITAIN. Cape Hoskins, sea-level, *NGF* 32614; Kandrian subdist., Fullerborn Harbour, 6 m, *NGF* 21767; Pulie R., 30 m, *NGF* 27224; Talasea, E. of Wasissi, *NGF* 10925; Eliak creek, *NGF* 10076; Matanakunei, Rabaul, *NGF* 38009.

NEW IRELAND. Umana opposite Lemakok, 10 m, fr., *Peekel* 129 (BO, L); *ibid.*, Labu, *Peekel* 1248 (B, type of *Peekeliidendron missionariorum*, †; K ex B); Namatanai, *Peekel* 120 (B, †).

SOLOMON IS. S. Vella Lavella; 15 m, *BSIP* 11321. — New Georgia I.: 3—6 m, *BSIP* 3147, 4827, 5999. — New Georgia Group: Baga I., near sea, *BSIP* 2938, 4212; Kolombangara I., *BSIP* 1185, 8403, 8572, 9845; Roviana Lagoon, *BSIP* 2017; Rendova I., 30 m, *BSIP* 1878. — Santa Isabel I.: *BSIP* 6655. — Malaita: *BSIP* 10684, 10779. — Guadalcanal: *BSIP* 1832, 9452. — San Cristobal: *Comins* 89 (K, type of *Stemonurus megacarpus*). — Santa Cruz Group: Vanicoro I., *BSIP* 1781.

Also known from the Marianas (Rota) and Caroline Is (Kusaie).

14. THE GENUS MIQUELIA MEISN. IN MALESIA

MIQUELIA

Meisn., Pl. Vasc. Gen. 1 (Sept. 1838) 152; *ditto* 2 (Sept. 1838) 109; Endl., Gen. (1839) 795; Meisn. Pl. Vasc. Gen. 2 (1843) 359; Bl., Mus. Bot. Lugd. Bat. 1 (1849) 42; Rumphia 4 (1849) 37; R. Br. in Benn. & Br., Pl. Jav. Rar. (1852) 245; Miq., Fl. Ind. Bat. 1 (1856) 797; Benth. in Benth. & Hook. f., Gen. Pl. 1 (1862) 354; Baill., Adansonia 10 (1872) 262, 278; in DC., Prod. 17 (1873) 13; Hist. Pl. 5 (1874) 337; Mast. in Hook. f., Fl. Br. Ind. 1 (1875) 593; Becc., Malesia 1 (1877) 124; Boerl., Handl. 1, 1 (1890) 220; Engl. in E. & P., Nat. Pfl. Fam. III, 5 (1893) 256; King, J. As. Soc. Beng. 64, ii (1895) 124; Gagnep., Fl. Gén. I.-C. 1 (1911) 835; Gamble, Fl. Pres. Madras 1 (1915) 197; Ridl., Fl. Mal. Pen. 1 (1922) 433; Mansf. in Fedde, Rep. 39 (1935) 28; Sleum. in E. & P., Nat. Pfl. Fam. ed. 2, 20 b (1942) 388; Taxon 17 (1968) 449, *nom. cons. prop., non Bl.*, Bull. Sci. Phys. & Nat. Néerl. 1 (June 1838) 94; Ann. Sci. Nat. Bot. II, 10 (Oct. 1838) 256 (= *Stauranthera* Benth. 1835), *non Arn. & Nees* 1843 (= *Garnotia* Brongn.). — *Jenkinsia* Griff., Calc. J. Nat. Hist. 4 (1843) 231; *ditto* (1844) t. 12, *non Hook.*, Gen. Fil. (1842) text opp. pl. 75 b, *non Wall. ex Voigt*, Hort. Suburb. Calc. (1845) 544, *nom. in syn.* (= *Myriopterion* Griff.).

Type species: *M. kleinii* Meisn. (= *Jenkinsia assamica* Griff.).

KEY TO THE SPECIES

1. Calyx and lobes of the petals distinctly spaced both in the ♀ and ♂ flowers by the elongate flower axis (= the basal connate tube-like part of the petals). Drupe 'pseudopedicelled' by this axis (and besides much narrowed towards the base into a kind of stalk which equally might be present in the other group of species under 1).

2. Leaves oblong to subovate-oblong, (10—)12—17 by 4—6.5 cm; inner basal pair of nerves ascending to the lower third of the lamina. Umbels c. 10-flowered. Philippines (Camiguin & Bohol I.)

1. *M. reticulata*

2. Leaves ovate, 7—11 by 5—9 cm; inner basal pair of nerves ascending to half or $\frac{3}{4}$ of the length of the lamina. Umbels c. 5-flowered. Philippines (N. Luzon) 2. *M. philippinensis*
1. Calyx and lobes of the petals close to each other in the ♀ flowers resp. below the drupe, and whether or not spaced in the ♂ flowers.
3. Calyx and lobes of the petals apparently close to each other in the ♂ flowers. Leaves sinuate-dented.
 4. Leaves oblong-lanceolate, 8—14 by 4—6 cm. Laos *M. paniculata* Gagnep.
 4. Leaves broadly ovate-lanceolate, (15—)20—22 by 9—10 cm. India (Western Ghats: Anamalais).
M. dentata Bedd.
3. Calyx and lobes of the petals distinctly (already in developed bud stage) spaced in the ♂ flowers. Leaves entire or practically so (sometimes coarsely few-lobed or undulate).
5. Anthers markedly sagittate. (Drupe not known). Laos *M. umbellata* Gagnep.
5. Anthers elongate-oblong, hardly or not sagittate.
6. Base of drupe very shortly or hardly narrowed, rounded in general. Assam, Burma?, Thailand.
M. kleinii
6. Base of drupe suddenly narrowed into a slender pedicel-like stalk for at least 3 mm.
 7. Drupe 2.3—3.3 by 1.3—1.8 by 0.7—1 cm, narrowed at apex into a shorter or longer rather slender beak; endocarp coarsely lacunose. Malay Peninsula (Kemaman, Kedah, Perak, Pahang, Selangor), Borneo 4. *M. caudata*
 7. Drupe (0.8—)1—1.2(—1.7) by 0.7—0.8(—1.2) by 0.6 cm, shortly and rather gradually narrowed at apex; endocarp more finely lacunose. W. Sumatra, Borneo, Celebes, Philippines (Luzon to Mindanao) 5. *M. celebica*

Note. Only ♀ flowers known and not placed: *M. thorelii* Gagnep. (Laos).

1. *Miquelia reticulata* Merr., Philip. J. Sc. 9 (1914) Bot. 312; En. Philip. 2 (1923) 493.

PHILIPPINES. Camiguin I.: Panatayuan, B.S. 14674, fl. ♀, fr. (BM, K, P; PNH, type, †). — Bohol: B.S. 43303, fl. ♀, fr. (L, SING, UC).

2. *Miquelia philippinensis* Merr., Philip. J. Sc. 14 (1919) 416; En. Philip. 2 (1923) 493.

PHILIPPINES. Luzon: Ilocos Norte, Burgos, B.S. 32885 (K, P; PNH, type, †).

3. *Miquelia kleinii* Meisn., Pl. Vasc. Gen. 2 (1838) 109; Bl., Rumphia 4 (1849) 37; Mus. Bot. Lugd. Bat. 1 (1849) 42; Walp., Ann. 2 (1851) 22; Miq., Fl. Ind. Bat. 1 (1856) 798; Baill. in DC., Prod. 17 (1873) 13; Mast. in Hook. f., Fl. Br. Ind. 1 (1875) 593 (*M. 'assamica* Bl.' in syn.); King, J. As. Soc. Beng. 64, ii (1895) 124, *nota*; Brandis, Ind. Tr. (1906) 152; Kanjilal c.s., Fl. Assam 1, 2 (1926) 253. — *Araliaceae* ? *kleinii* W. & A. [in Wight, Cat. (1833) 71, n. 1211, *nom. nud.*] Prod. 1 (1834) 375, *nom. illeg.* — *Jenkinsia assamica* Griff., Calc. J. Nat. Hist. 4 (1843) 231; *ditto* (1844) t. 12; Not. 4 (1854) 370; Ic. (1854) t. 537, f. 2. — *Zanonina* ? *oblonga* Wall., Cat. (1832) n. 6760, *nom. nud.* — *M. assamica* (Griff.) R. Br. in Benn. & Br., Pl. Jav. Rar. (1852) 242.

INDIA. Assam: various collections. — *M. kleinii* is based on '*Araliaceae* ? *kleinii* W. & A.', i.e. the specimen representing Wight Cat. n. 1911 'obtained from the herbarium of Klein', preserved in Arnott's herbarium at GL, a duplicate of which is in Herb. Wight prop. at Kew, no locality mentioned. *Jenkinsia assamica* is based on *Griffith 140* (= K.D. 825) from Sadiya (Suddiyah) in Upper Assam at Kew.

THAILAND. Prachinburi: Sriracha, 20—30 m, fr., *Collins 1309* (K). — Surat: Siepyuan, Chumpawn, fr., *Put 988* (K).

4. *Miquelia caudata* King, J. As. Soc. Beng. 64, ii (1895) 124; Ridl., Fl. Mal. Pen. 1 (1922) 433; Burk., Dict. (1935) 1478.

MALAY PENINSULA. Trengganu: Kemaman, *Vaughan-Stevens* a. 1890 (SING); Bukit Kajang, 150 m, *SF 30102*. — Kedah/Perak border: Mt Bintang, Batas Tinggi, *SF 21005*. — Perak: *Scortechini* (CAL, syntype of *M. caudata*, n.v.); Thaiping Hills, cit. Ridley; Maxwell's Hill, *Ridley 5229*; Larut, *King's Coll. 5385* (BM; CAL, syntype of *M. caudata*, n.v.; K, P); Chandleriang, 90—150 m, *King's Coll. 5680* (CAL,

syntype of *M. caudata*, n.v.; SING); Mt Bubu Ra., 90—245 m, *King's Coll.* 7621 (BM; CAL, lectotype of *M. caudata*, n.v.; G, K, L, SING); Ipoh, *Curtis* 3321; Batu Hampar, 60 m, *Shah & Sidek* 1168. — Pahang: Ulu Sg. Kuantan, 215 m, *SF* 28798 (SING, differing by glabrous and more distinctly reticulate leaves). — Selangor: Ampang F. R., *For. Dep. F.M.S.* 21366; Sempang mines, Semangkok Pass, *Ridley* 17340 (K).

BORNEO. Western part: Mont(e)rado, SE. of Singkawang, *Teysmann H.B.* 10856 (L). — Sarawak: 1st Div., Lundu, Mt Gading, *Clemens* 22257 (BO, K); 3rd Div., Hose Mts, base of Mt Temedo, 1100 m, *S* 19017. — N. Borneo: Mt Kinabalu, Dallas-Tenompok trail, 1220 m, *Clemens* 26425, 27608; Tenompok, 1430—1525 m, *Clemens* 28731, 28737, 29018, *SAN* 20310, *SF* 27222; Penibukan, 1220 m, *Clemens* 32030; Eastern slope, 1980 m, *Chew, Corner & Stainton* 174.

5. *Miquelia celebica* Bl., *Rumphia* 4 (1849) 37; *Mus. Bot. Lugd. Bat.* 1 (1849) 42, f. 8; *Walp., Ann.* 2 (1851) 22; *Miq., Fl. Ind. Bat.* 1 (1856) 798; *Schnizl., Ic.* 3 (1857/65) t. 172, f. 22—31; *Baill. in DC., Prod.* 17 (1873) 14; *Becc., Malesia* 1 (1877) 124; *Koord., Minah.* (1898) 393. — *M. cumingii* *Baill., Adansonia* 10 (1872) 278; in *DC., Prod.* 17 (1873) 14; *Vidal, Phan. Cuming. Philip.* (1885) 103; *Rev. Pl. Vasc. Filip.* (1886) 86; *Merr., En. Philip.* 2 (1923) 492; *Dahl, J. Arn. Arb.* 33 (1952) 275, f. 74 (Pollen). — *M. rostrata* *Merr., Pl. Elm. Born.* (1929) 172; *Masam., En. Pl. Born.* (1942) 423.

SUMATRA. Westcoast: Padang, Ayer Mantjur, 360 m, fr., *Beccari P.S.* 492 (FI, K, L).

BORNEO. W. Borneo: Landak, *Teysmann s.n.* (BO). — N. Borneo: Sandakan, *Elmer* 20297 (BM, BO, G, K, L; PNH, type of *M. rostrata*, †); Tawao, *Elmer* 21798. — SE. Borneo: Balikpapan Bay, Muan region near Sg. Riko, *Kostermans* 4378.

CELEBES. Minahasa: near Belang (fl. ♀), hot water spring near Tataran-Tondano (fl. ♂), Tondano (fr.), *Forsten a.* 1840 (BM, BO; L, 3 coll. = type of *M. celebica*; P, fragm. ex L; U ex L); Tondano, *Kruyff* 23 (L); Mt Lulumbulan, 700 m, *Koorders* 19594. — SE. Celebes: Buton I., Passar Wadjo, 0—100 m, *Exp. Elbert (Gründler)* 2818 (L).

PHILIPPINES. LUZON: Batanes, Batan I., *B.S.* 80631 (K). Cagayan, Peñablanca, *B.S.* 46606 (UC); Benguet, Kias, *Elmer* 6440 (G, K, P); Twin Peaks, *Elmer* 6321 (G, P); Laguna, Majayjay, *B.S.* 49997 (UC); Tayabas, Lucban, *Elmer* 9111 a (BO, E, FI, G); Albay, fl. ♂, *Cuming* 1378 (BM, C, FI, G; K, type of *M. cumingii*; P, fragm. ex K). — Mindoro: Pinamalayan, *B.S.* 40843; Baco R., *McGregor* 229 (K); Puerto Galera, 600 m, *Kienholz* 286 (UC). — Leyte: *Wenzel* 1767 (A, n.v.; BM); Cabalian, *B.S.* 41523 (A, n.v.; BO). — Negros: Dumaguete, Cuernos Mts, *Elmer* 9894. — Mindanao: Davao, Mati, *B.S.* 48986 (UC), 49155 (K, SING); Siargao I., *B.S.* 34869 (A, n.v.; UC). — Locality not known, cited by *Merrill: B.S.* 19526, 24572.

EXCLUDED

Miquelia cancellata *Kurz, J. As. Soc. Beng.* 44, ii (1875) 201 = *Phytocrene oblonga* *Wall.*

Miquelia gibba *Baill., Adansonia* 10 (1872) 278; in *DC., Prod.* 17 (1873) 15 = *Tinorniscium* sp., cf. *Gagnepain, Not. Syst.* 1 (1910) 205.

15. THE GENUS NATSIATUM BUCH.-HAM.

NATSIATUM

Buch.-Ham. [in *Wall., Cat.* (1831) n. 4252 (Sylhet: Bagduyar, leg. Hamilton), *nom. nud.*] ex *Arn., Edinb. N. Phil. J.* 16 (April 1834) 314; *W. & A., Prod.* 1 (Oct. 1834) 161, *nota*; *Endl., Gen.* 1 (1837) 355; *Walp., Rep.* 1 (1842) 98; *R. Br. in Benn. & Br., Pl. Jav. Rar.* (1852) 245 ('*Nansiatum*'); *Miq., Fl. Ind. Bat.* 1 (1856) 797 ('*Nansiatum*'); *Baill., Adansonia* 3 (1862/63) 357; *Benth. in Benth. & Hook. f., Gen. Pl.* 1 (1862) 355; *Baill., Adansonia* 10 (1872) 267; in *DC., Prod.* 17 (1873) 17; *Hist. Pl.* 5 (1874) 338; *Mast. in Hook. f., Fl. Br. Ind.* 1 (1875) 595; *Kurz, For. Fl. Br. Burma* 1 (1877) 242; *Becc., Malesia* 1 (1877) 128; *Engl. in E. & P., Nat. Pfl. Fam.* III, 5 (1893) 253; *Gagnep., Fl. Gén. I.-C.* 1 (1911) 830, f. 98; *Gamble, Fl. Pres. Madras* 1 (1915) 197; *Sleum. in E. & P., Nat. Pfl. Fam.* ed. 2, 20 b (1942) 381, f. 101, F—H.

Natsiatum herpeticum Buch.-Ham. ex Arn. Edinb. New Phil. J. 16 (Apr. 1834) 314 (based on *Wallich 4252* from Sylhet, Bagduyar, K; P); W. & A., Prod. (Oct. 1834) 161, *nota*; Walp., Rep. 1 (1842) 98; R. Br. in Benn. & Br., Pl. Jav. Rar. (1852) 245; Miq., Fl. Ind. Bat. 1 (1856) 797; Baill. in DC., Prod. 17 (1873) 17; Mast. in Hook. f., Fl. Br. Ind. 1 (1875) 595; Kurz, For. Fl. Br. Burma 1 (1877) 242; Hochr., Bull. Inst. Bot. Btzg 19 (1904) 40; Brandis, Ind. Tr. (1906) 154; Gamble, Fl. Pres. Madras 1 (1915) 197; Kanjilal c.s., Fl. Assam 1, 2 (1936) 253; Sleum. in E. & P., Nat. Pfl. Fam. ed. 2, 20 b (1942) 381, f. 101, F—H; Dahl, J. Arn. Arb. 33 (1952) 271, f. 31 (Pollen); Hurdley & Chit, List Trees Burma ed. 3 (1961) 46. — *Sicyos pentandrus* Wall., Cat. (1832) n. 6682 B, *nom. nud.* — *N. tonkinense* Gagnep., Not. Syst. 1 (1910) 205; Fl. Gén. I.-C. 1 (1911) 830, f. 98; Suppl. (1948) 756.

Distr. India (N. Circars), Nepal, Sikkim, Assam, East Bengal (Chittagong), Tonkin, N. Thailand, Lower Burma.

INDOCHINA. Tonkin: vallé de Lankok au Mt Bavi, *Balansa 3193* (P, type of *N. tonkinense*, = *N. herpeticum* var. *tonkinense* Pierre ms.); Muong-thon, route de Hanoi à Hoa-binh, *Pétiot* (P).

THAILAND. Payap: Doi Chiengdao, *Put 4429* (K).

16. THE GENUS NOTHAPODYTES BL.

NOTHAPODYTES

Bl., Mus. Bot. Lugd. Bat. 1 (1850) 248; Walp., Ann. 2 (1851) 180; Baill., *Adansonia* 3 (1862/63) 90; Sleum., Notizbl. Berl.-Dahl. 15 (1940) 246; in E. & P., Nat. Pfl. Fam. ed. 2, 20 b (1942) 374; Howard, J. Arn. Arb. 23 (1942) 56, 66—73; Back. & Bakh. v. d. Brink, Fl. Java 2 (1965) 61. — *Mappia* Jacq. sect. *Trichocrater* Miers, Ann. Mag. Nat. Hist. II, 9 (1852) 395, repr. Contr. Bot. 1 (1852) 64; Engl. in E. & P., Nat. Pfl. Fam. III, 5 (1897) 249. — *Mappia* Jacq.; Benth. in Benth. & Hook. f., Gen. Pl. 1 (1862) 351, *p.p.*; Valet., Crit. Overz. Olacin. (1886) 177, *p.p.*; Boerl., Handl. 1, 1 (1890) 214. — *Mappia* Jacq. sect. *Nothapodytes* (Bl.) O. Ktze in Post & Ktze, Lex. Gen. Phan. (1904) 350. — *Neoleretia* Bachni, C. R. Soc. Phys. Hist. Nat. Genève 53, 1 (1936) 33; Candollea 7 (1936) 177.

KEY TO THE SPECIES

1. Leaves ± unequal at base; petiole 2—3—5(—6) cm. Petals 4—5(—6) mm, densely to sparsely villose within. S. India, Ceylon, Assam, Burma, Thailand, Cambodge, Lan Yu I. (SE. of Formosa, Botel Tobago, Kôtyôsyo), Ryu-Kyu Is. (Yaeyama group), W. Sumatra, Philippines (N. Luzon).
 1. *N. foetida* s. l.
1. Leaves ± equal at base; petiole 1—2 (rarely —2.5) cm.
 2. Leaves rounded-obtuse at apex. Petals c. 7 mm, weakly hirsute within. Hainan . 2. *N. obtusifolia*
 2. Leaves acuminate-attenuate at apex.
 3. Leaves finely prominent-reticulate on both faces. Petals 4—5 mm, sparsely hairy below or practically glabrous within. Thailand, NE. Sumatra, W. Java, W. Sumbawa 3. *N. montana*
 3. Leaves smooth (not distinctly reticulate) on both faces. Petals 6—7 mm, all over villose within. China (Szechuan, Yunnan, Kwangtung, Kweichow, Hunan, Hupeh), Indochina (Tonkin).
 4. *N. pittosporoides*

1. **Nothapodytes foetida** (Wight) Sleum., Notizbl. Berl.-Dahl. 15 (1940) 247; Howard, J. Arn. Arb. 23 (1942) 70; Dahl, *ditto* 33 (1952) 273 (Pollen). — *Stemonurus foetidus* Wight, Ic. 3 (1845) t. 955; Spicil. Neilgh. 1 (1851) 23; Baill., *Adansonia* 3 (1862/63) 89 (Fl.). — *Mappia foetida* (Wight) Miers, Ann. Mag. Nat. Hist. II, 9 (1852) 395, repr. Contr. Bot. 1 (1852) 64; Thwait., En. Pl. Zeyl. (1858) 43, incl. var. *gardneriana* (Miers) Thwait. & var. *championiana* (Miers) Thwait., l.c.; Bedd., Fl. Sylv. 3 (1871) LXII, t. 141; Mast. in Hook.

f., Fl. Br. Ind. 1 (1875) 589; Valet., Crit. Overz. Olacin. (1886) 182, pl. 5, f. 26; Brandis, Ind. Tr. (1906) 151, f. 70; Fyson, Fl. Nilgiri & Pulney Hill-tops 2 (1915) 58; Gamble, Fl. Pres. Madras 1 (1915) 196; Fyson, Fl. South. India Hill Stations 2 (1932) t. 81; Kanjilal c.s., Fl. Assam 1, 2 (1936) 252. — *Mappia gardneriana* Miers, Ann. Mag. Nat. Hist. II, 9 (1852) 396, repr. Contr. Bot. 1 (1852) 66. — *Mappia oblonga* Miers, Ann. Mag. Nat. Hist. II, 9 (1852) 396, repr. Contr. Bot. 1 (1852) 65, incl. var. *elliptica* Miers; Dalz. & Gibson, Bombay Fl. (1861) 28; Mast in Hook. *f.*, Fl. Br. Ind. 1 (1875) 589; Valet., Crit. Overz. Olacin. (1886) 181, f. 26, a—g; Talbot, For. Fl. Bombay 1 (1909) 266; Gamble, Fl. Pres. Madras 1 (1915) 196. — *Mappia ovata* Miers, Ann. Mag. Nat. Hist. II, 9 (1852) 396, repr. Contr. Bot. 1 (1852) 65, pl. 8; Mast. in Hook. *f.*, Fl. Br. Ind. 1 (1875) 589; Valet., Crit. Overz. Olacin. (1886) 182, pl. 5, f. 27 a—e; Trimen, Handb. Fl. Ceylon 1 (1893) 262, incl. var. *championiana* (Miers) Trimen, l.c. 263; Gamble, Fl. Pres. Madras 1 (1915) 196. — *Mappia championiana* Miers, Ann. Mag. Nat. Hist. II, 9 (1852) 397, repr. Contr. Bot. 1 (1852) 66. — *Mappia wightiana* Miers, Ann. Mag. Nat. Hist. II, 9 (1852) 397, repr. Contr. Bot. 1 (1852) 66; Gamble, Fl. Pres. Madras 1 (1915) 197. — *Mappia tomentosa* Miers, Ann. Mag. Nat. Hist. II, 9 (1852) 397, repr. Contr. Bot. 1 (1852) 67; Schnizl., l.c. 4 (1866) t. 233 a (Fr.); Mast. in Hook. *f.*, Fl. Br. Ind. 1 (1875) 589; Gamble, Fl. Pres. Madras 1 (1915) 196; Hundley & Chit, List Trees Burma ed. 3 (1961) 46. — *Mappia sp.*, Thwait., Kew J. Bot. Lond. 7 (1855) 212. — *Mappia tomentella* Miers ex Valet., Crit. Overz. Olacin. (1886) 183. — *Mappia cambodiana* Pierre, Fl. For. Cochinch. (1892) t. 267; Gagnep., Fl. Gén. I.—C. 1 (1911) 824. — *Mappia ovata* Miers var. *insularis* Matsum., Bot. Mag. Tokyo 15 (1901) 55; Matsum. & Hayata, En. Pl. Formos. (1906) 80; Masam., Short Fl. Formosa (1936) 128; Liu, Sasaki & Keng, Quart. J. Taiwan Mus. 8 (1955) 305. — *Mappia dimorpha* Craib, Kew Bull. (1926) 347; Fl. Siam. En. 1 (1926) 274. — *Neoleretia foetida* (Wight) Baehni, Candollea 7 (1936) 177, pl. 4, f. 2, D—F. — *Neoleretia dimorpha* (Craib) Baehni, Candollea 7 (1936) 178. — *N. dimorpha* (Craib) Sleum., Notizbl. Berl.-Dahl. 15 (1940) 247; Howard, J. Arn. Arb. 23 (1942) 68, pl. 3, f. 1—7; Wu & Wang, Act. Phytotax. Sin. 6 (1957) 281.

The above given synonymy refers to *N. foetida sensu lato*. I have investigated all material available to me from India, Thailand, Indochina, China, and Malesia, and did not find a single character constant enough to divide this species into infraspecific units. The materials from N. Luzon agree in their glabrescence with several so-called species described by Miers from Ceylon, whilst the collection from W. Sumatra matches Wight's type specimen almost completely.

THAILAND. Payap: Doi Inthanond, 1800 m, *Smitinand 10284*; Mè Li, Lampun, *Winit 136, 350*. — Maharat: Lampang, Mè Pèng, 130 m, *Winit 1709*; Prae, Sup Sai, *Vanpruk 258, 267 a*. — Pitsanulok: Sukotai, *Kerr 5952* (K, type of *Mappia dimorpha*).

SUMATRA. Westcoast: Mt Sago near Pajakumbuh, 1000 m, fr. 11-6-1957, *Maradjo 423* (L).

PHILIPPINES. Luzon: Ilocos Norte Prov., Mt Quebrada, 110 m, *PNH 17792, 17804*; Mt Pico de Loro, 300 m, *PNH 18004*; Isabela, Ganui, *Vidal 3342* (K).

2. *Nothapodytes obtusifolia* (Merr.) Howard, J. Arn. Arb. 23 (1942) 70; Chun & Chang, Fl. Hainan. 2 (1965) 447, f. 509. — *Mappia obtusifolia* Merr., Lingn. Sc. J. 14 (1935) 28, f. 9.

HAINAN. Naam Shan Leng, S.K. *Lau 233* (BM, isotype of *Mappia obtusifolia*).

3. *Nothapodytes montana* Bl., Mus. Bot. Lugd. Bat. 1 (1850) 248; Walp., Ann. 2 (1851) 180; Sleum., Notizbl. Berl.-Dahl. 15 (1940) 247; Howard, J. Arn. Arb. 23 (1942) 67; Amsh. in Back., Beckn. Fl. Java (em. ed.) 6 (1948) fam. 135, p. 6; Back. & Bakh. v. d.

Brink, Fl. Java 2 (1965) 61. — *Mappia montana* (Bl.) Miers, Ann. Mag. Nat. Hist. II, 9 (1852) 398, repr. Contr. Bot. I (1852) 67; Miq., Fl. Ind. Bat. I (1856) 790; Suppl. I (1860) 136; Becc., Malesia I (1877) 118; Valet., Crit. Overz. Olacin. (1886) 183, t. 5, f. 28 (Fl.); K. & V., Bijdr. 5 (1900) 143; Back., Schoolfl. Java (1911) 226; Koord., Exk. Fl. Java 2 (1912) 532.

THAILAND. Rachaburi: Korat, Kao Lem, *Put* 3566. — Prachinburi: Kao Yai Nat. Park, Kao Kieo, 800 m, *van Beusekom* 48 (L).

SUMATRA. Eastcoast: Sarinembah W. of Kalandjaha, 750 m, *Galoengi* 28 (L).

JAVA. Bantam: Peutjang I., Udjungkulon Res., on coral limestone, low, *Kostermans & Kuswata* 53. — Priangan: Telaga Bodas, 1650 m, *Korthals* (L); Bandung, Manderang, 2120 m, *Ja.* 1384 (BO). — Locality not given: *Blume* (C; L, type of *N. montana*; P, S; U ex L).

SUMBAWA. Western part: Semongkat Atas, c. 17 km SW. of Sumbawa Besar, 200 m, *Kuswata* 115, 153; Mt Batulanteh, Batu Burung ridges, 500—600 m, fr. mat., *Kostermans* 18579.

Note. According to Back. & Bakh. v. d. Brink l.c. recently collected on Mt Pajung in extreme SW. of Bantam. I have not seen specimens of *N. montana* collected there.

4. *Nothapodytes pittosporoides* (Oliv.) Sleum., Notizbl. Berl.-Dahl. 15 (1940) 247; Howard, J. Arn. Arb. 23 (1942) 68; Dahl, *ditto* 33 (1952) 273 (Pollen); Wu & Wang, Act. Phytotax. Sin. 6 (1957) 281. — *Mappia pittosporoides* Oliv. in Hook., Ic. 18 (1888) t. 1762; J. Bot. 27 (1889) 154; Diels, Bot. Jahrb. 29 (1900) 447; Rehd. & Wils. in Sargent, Pl. Wilson. 2 (1914) 190; Hand.-Mazz., Symb. Sin. 7 (1933) 667; Chun, Sunyatsenia 2 (1934) 72; *ditto* 4 (1940) 229. — *Neoleretia pittosporoides* (Oliv.) Bachni, Candollea 7 (1936) 178.

CHINA. Szechuan, Yunnan (Ichang, *Henry* 3536, lectotype of *Mappia pittosporoides*: A, n.v.; K), Kwangtung, Kweichow, Hunan, Hupeh.

Note. Very close to *N. montana* Bl.

EXCLUDED

Nothapodytes philippinensis (Merr.) Sleum., Notizbl. Berl.-Dahl. 15 (1940) 247 = *Apodytes dimidiata* E. Mey. ex Arn. (= *Apodytes cambodiana* Pierre, cf. Howard, J. Arn. Arb. 23, 1942, 73).

17. A REVISION OF THE GENUS PHYTOCRENE WALL.

PHYTOCRENE

Wall., [Phil. Mag. N.S. 3 (1828) 223, *nom. nud.*] Pl. As. Rar. 3 (Dec. 1831) II, t. 216, *nom. cons. prop.*, cf. Sleum., Taxon 17 (1968) 448; Arn., Edinb. New Phil. J. 16 (1834) 314; Meisn., Pl. Vasc. Gen. I (1838) 152; *ditto* 2 (1838) 109; Endl., Gen. (June 1839) 828; Bl., Mus. Bot. Lugd. Bat. I (1849) 41 & Corrigenda (1851) 396; Rumphia 4 (1849) 36; R. Br. in Benn. & Br., Pl. Jav. Rar. (1852) 244; Miq., Fl. Ind. Bat. I (1856) 796; Benth. in Benth. & Hook. f., Gen. Pl. I (1862) 354 ('*Gynocephala*' Bl. in syn.); Baill., Adansonia 3 (1863) 363; *ditto* 10 (1872) 262; in DC., Prod. 17 (1873) 9; Hist. Pl. 5 (1874) 336; Mast. in Hook. f., Fl. Br. Ind. I (1875) 591; Becc., Malesia I (1877) 126; Boerl., Handl. I, I (1890) 219; Engl. in E. & P., Nat. Pfl. Fam. III, 5 (1893) 254, f. 140; King, J. As. Soc. Beng. 64, ii (1895) 121; Gagnep., Fl. Gén. I.-C. I (1911) 839; Ridl., Fl. Mal. Pen. I (1922) 433; Sleum. in E. & P., Nat. Pfl. Fam. ed. 2, 20 b (1942) 390, f. 116; Back. & Bakh. v. d. Brink, Fl. Java 2 (1965) 62. — *Gynocephalum* Bl., Bijdr. (1825) 483 ('*Gynocephalum*'); Endl., Gen. (1837) 281 (*orth. mut. Gynocephalum*); Reichb., Nom. (1841) 67 ('*Gyrocephalum*');

Hassk., Cat. Hort. Bog. (1844) 78 ('*Gynaecocephalum*'); Trécul, Ann. Sc. Nat. III, 8 (1847) 69, 147; Bl., Rumphia 4 (1849) 36, *nota* ('*Gynocephalum*'), *nom. gen. rej.*

Lectotype species: *P. gigantea* Wall. = *P. macrophylla* (Bl.) Bl., cf. Sleum., Taxon 17 (1968) 448.

KEY TO THE SPECIES

1. ♂ Flower heads solitary, each on top of an axillary or slightly supra-axillary peduncle (as is always the case with the ♀ ones) on younger foliate parts of the branchlets. Borneo 1. *P. anomala*
1. ♂ Flower heads several together, united to an inflorescence, the latter either from foliate or defoliate axils, or from tubercles on the stem.
 2. ♂ Flower heads rather few, united to a true raceme, i.e. the peduncled heads spaced along a rachis. Borneo 2. *P. racemosa*
 2. ♂ Flower heads numerous, united to a spike-like panicle.
 3. ♂ Flower heads in fascicles or glomerules, these markedly spaced at least in the lower half of the rachis.
 4. Leaves broadly oblong, base slightly cordate, flat in dry specimens. New Guinea.
 3. *P. interrupta*
 4. Leaves ovate, base rounded, ± bullate by impressed nerves and veins in dry specimens. New Guinea 4. *P. malacothrix*
 3. ♂ Flower heads in short-peduncled cymes, secondary racemes, or panicles, these generally crowded (rarely spaced) along the rachis.
 5. Bracts in the ♂ inflorescences very distinct, persistent, markedly plumed by ± spreading hairs.
 6. Basal part of bracts hardly or not widened. Malay Peninsula (Perak, Pahang, Selangor).
 5. *P. trichura*
 6. Basal part of bracts widened up to 6 mm. Borneo 6. *P. borneensis*
 5. Bracts in the ♂ inflorescences wanting (already gone in full anthesis) or, if persistent, filiform to narrow-subulate and not markedly plumed.
 7. ♂ Inflorescences rather short, 2.5—5 by (0.5—)1—1.5 cm. Leaves normally oblong or oblong-lanceolate, early glabrescent. Lower Burma, S. Thailand, Indochina (Cochinchina, Annam), Malay Peninsula 7. *P. oblonga*
 7. ♂ Inflorescences elongate to caudate, i.e. markedly longer and at least 2 cm ∅. Leaves oblong to ovate-cordate, or palmate, generally tardily or hardly glabrescent.
 8. Leaves normally palmate, i.e. deeply and narrowly (3—)5(—7)-lobed in flowering specimens. S. Thailand, Malay Peninsula, SE. Sumatra, Riouw Arch. (P. Bintan).
 8. *P. palmata*
 8. Leaves normally entire or ± broadly 3-lobed in flowering specimens (sometimes palmate in sterile juvenile specimens).
 9. ♂ Inflorescences slender, c. 2 cm ∅. Bracts ± persistent, numerous, much exerted beyond the partial inflorescences. Drupe 4.5—8 by 1.5—2.3 cm incl. the hollow beak of the exocarp. S. Thailand, Malay Peninsula, Sumatra, Lingga Arch., Borneo.
 9. *P. bracteata*
 9. ♂ Inflorescences thickish, (2.5—)3 cm or more ∅. Bracts, if persistent, rather few and less exerted.
 10. Mature drupe 3—4(—4.5) by 1.5—2 cm incl. the hollow short beak of the exocarp; hard endocarp (2—)2.5—3(—3.5) cm long. Celebes. 10. *P. hirsuta*
 10. Mature drupe (5.5—)6—10(—13) cm long incl. the hollow elongate beak of the exocarp.
 11. Drupe (7—)7.5—10(—13) by 3—3.5 cm; endocarp (4—)5—6 by 2—2.5 cm. Burma, Sumatra, Java, Philippines.
 11. *P. macrophylla* var. *macrophylla*
 11. Drupe (5.5—)6—6.5(—7) by 1.5—2 cm.
 12. Endocarp 4—4.5 by c. 1.5 cm. Borneo (Mt Kinabalu).
 11. *P. macrophylla* var. *caudigera*
 12. Endocarp c. 2.5 by 1 cm. Celebes.
 11. *P. macrophylla* var. *dasycarpa*

1. *Phytocrene anomala* Merr., J. Str. Br. R. As. Soc. 86 (1922) 325; Masam., En. Pl. Born. (1942) 423.

BORNEO. Sarawak: 4th Div., Upper Baram R., Lio-Matu, *Moulton 6703/25* (SING). — N. Borneo: Sandakan, B.S. 1840 (cited '1848': K, L, P); *ibid.*, Batu Lima & Sibuga, B.S. 1508 (BM, BO, L, P), 1534 (K, P; PNH, type of *P. anomala*, †); Bettotan, SF 19158 (SING); Sg. Binuang, fr. immat., SAN 30690 (K, L, SAR). — E. Borneo: Berau, Tdg. Redeb, Kelai R. near Long Lanuk, 30 m, *Kostermans 21068*.

2. *Phytocrene racemosa* Sleum., *sp. nov.*

Scandens, usque ad 40 m alta, caule c. 1.5 cm diam., cortice brunneo longitudinaliter striato et fisso, lenticellis linearibus transversis paucis obsito, partibus junioribus foliigeris breviter pallide ferrugineo-tomentosulis. *Folia* oblonga usque oblongo-obovata, apice abrupte per c. 1.5 cm longe acuminata vel subcuspidata, acutiuscula, basi late cuneata leviterque cordata, fere subpeltata, chartacea usque subcoriacea, supra maturitate nervorum basali parte piloso excepto glabra, subtus ad costam, nervos, venas et venulas pilis brevibus subappressis vel patentibus pallide ferrugineis densius vel laxius obsita tactuque mollia, leviter sinuato-denticulata vel integra, 18—32 cm longa, 7—20 cm lata, costa nervisque supra planis, subtus cum reticulo venarum venularumque bene prominentibus, nervis basalibus utroque latere costae 2-paribus, parte exteriori brevi, interiori alte (usque ad mediam laminae partem) suberecto-ascendente, paribus a costa altius abeuntibus iis paris interioris subparallelis 3 vel 4; petioli sicut ramuli tomento fere scabrido fulvo-tomentoso induti, 1.5—3 cm longi, 2—4 mm crassi. *Racemi*, e tuberculis ligni veteris vel c. 1 cm supra axillas ramulorum crassiorum (c. 7 mm diam.) saepius jam defoliatas enascentes, laxe distanterque capitula 5—10 c. 1 cm longe et 1 mm crasse pedunculata basi pedunculorum bractea brevissima, ut videtur, cito caduco fulva gerentes, omnibus partibus fulvo-tomentosi, 6—12 cm longi; capitula multiflora, c. 5 mm diam. *Calycis segmenta* 5 fere libera, lineari-spathulata, longepilosa, 2 mm longa. *Petala* 4 lineari-oblancoolata, inferne tantum connata, dorso longepilosa, intus glabra, 2.5 mm longa. *Stamina* 4; filamenta filiformia, glabra, basi in columnam brevem apice ovarii rudimentum hirsutum gerentem connata, parte libera c. 1 mm longa; antherae late ellipticae, 0.4 mm longae. *Racemi* ♀ (Ridley a. 1915) c. 1 cm supra axillas defoliatas orti, capitula c. 5 laxe disposita gerentes, ad rhachem c. 4 cm longam et pedunculos fulvo-hirsuti; capitula multiflora, globosa, c. 5 mm diam., pedunculis crassis 1.5—2 cm longis. *Calycis segmenta et petala* ut in fl. ♂. *Ovarium* cylindricum, hirsutum, c. 2 mm longum. *Drupa* valde immatura (Ridley a. 1915) subovoideo-cylindrica, c. 1 cm longa, emergentiis aculeiformibus vel bulbosis obsita, emergentiis ipsis in parte superiore drupae brevioribus breviusque hirsutis, in parte inferiore drupae longioribus, angustioribus et longius hirsutis, stylo crasso e stigmatibus inferne connatis formato c. 1 mm longo. Fructificatio matura (S 17155) globosa, c. 8 cm diam., e drupis c. 30 formata; drupae subelliptico-oblongoideae, basi apiceque attenuatae, superne emergentiis exocarpii aculeiformibus 1—3 mm longis retrorsis breviterque hirsutis, inferne emergentiis angustioribus 6—8 mm longis densissime hirsutis et prorsus versis indutae, 4—5 cm longae, 2—3 cm crassae; endocarpium oblongoideo-ellipticum, apice basique obtusum, lateraliter valde compressum, lignosum, laeve, extus foveis elongatis numerosis sat profundis lineatum, intus loco fovearum verrucosum, c. 3 cm longum, 1.5 cm latum, 1.3 cm crassum.

BORNEO. Sarawak: 1st Div., Kuching, Mt Mattang, fl. ♀ & fr. immat., *Ridley a. 1915* (K); 3rd Div., Kapit, Ulu Sg. Bena, 215 m, fr. mat., S 17155 (SAR); 4th Div., Batang Tinjar, Ulu Atun, Setap shale ridge, 200 m, in mixed Dipterocarp forest, fl. ♂ 25-3-1965, S 22325 *Murthy & Ashton* (K; L, type; SAR, SING); Bintulu, Bukit Kemantan, Sg. Muput, fr., S 19513 (K).

3. *Phytocrene interrupta* Sleum., Notizbl. Berl.-Dahl. 15 (1940) 252.

NEW GUINEA. Central Dist.: Koitaki, 450 m, fl. ♂, *Carr 12612* (A, n.v.; B, type, †; L, SING).

4. *Phytocrene malacothrix* Sleum., Notizbl. Berl.-Dahl. 15 (1941) 361.

NEW GUINEA. Morobe Dist.: Boana, Sattelberg area, 1030 m, ♂ fl. bud, *Clemens 8620* (B, type, ♀).

Note. Imperfectly known species, said to be related to *Phytocrene interrupta* Sleum. in the original diagnosis. The 'tomentose tendrils' mentioned there are possibly nothing but curved ends of branchlets and not real tendrils which are unknown in *Phytocrene*. Two other characters given in the original description, viz. 'petiole thickened distally' and 'midrib prominent above' are also further practically absent from the genus. There is a possibility that the species really belongs to an other family (*Cucurbitaceae?*, *Menispermaceae?*, *Rhamnaceae*), but in absence of type material this also remains doubtful.

5. *Phytocrene trichura* Ridl., Fl. Mal. Pen. 1 (1922) 433.

MALAY PENINSULA. Perak: just inside Batang Padang Valley from Telom, fl. ♂, *Ridley a.* 1908 (K, fragm. ex SING; SING, type). — Pahang: Cameron Highl., Lubok Tamang, 1065 m, *Henderson 10928* (SING). — Selangor: Mt Bunga Bua, *FRI 351* (KEP).

6. *Phytocrene borneensis* Becc., Malesia 1 (1877) 128; Merr., En. Born. (1921) 356; Masam., En. Pl. Born. (1942) 423. — *P. porphyrea* Stapf, Kew Bull. (1906) 72.

BORNEO. W. Borneo: Kapuas, *Teysmann H.B. 8459* (BO, L); Sg. Tulit, Sg. Liat, *Amđjah 699* (BO, L). — Sarawak: 1st Div., Kuching, *Beccari (Herb. n. 2503)*, *Hanada Bor 4* (BO), *Hewitt a.* 1905 (SAR), *Haviland 3140* (K, type of *P. porphyrea*; SAR); *ibid.*, Pininjau, E. of Bau, fl. ♂, *Beccari P.B. 783* (Fl, type of *P. borneensis*); 3rd Div., Sibul, Rejang R., *Haviland 729* (K, SAR). — Central Borneo: Dingei, Jaheri (*Exp. Nieuwenhuis 986* (L)). — N. Borneo: Suanlamba R., *B.S. 636 Castillo* (L); Timbun Mata F. R., *Br. N. Born. For. Dep. 7651 Agama* (BO, L); Sandakan, Bettotan, *SF 19018* (SING); Gadong camp, *SAN 39827* (K); Mt Kinabalu area, Dallas, 1065 m, *Clemens 26897* (BM, BO, K, L); Kadamian R. above Koung, 455 m, *Clemens 51551* (BM). — Central eastern Borneo: Sg. Mandjalu, *Amđjah (Exp. Nieuwenhuis) 415* (BO, L). — E. Borneo: Loa Haur, W. of Samarinda, 40 m, *Kostermans 6912*; Central Kutei, Belajan R. near Tabang, 30 m, *Kostermans 10543*. — S. Borneo: Banjarmasin, *Motley 897* (K).

7. *Phytocrene oblonga* Wall., Pl. As. Rar. 3 (1831) 12; Cat. (1832) n. 4948; Walp., Rep. 1 (1842) 98; Baill. in DC., Prod. 17 (1873) 13; Mast. in Hook. f., Fl. Br. Ind. 1 (1875) 592; King, J. As. Soc. Beng. 64, ii (1895) 122; Gagnep., Fl. Gén. I.-C. 1 (1911) 839, f. 102, 4—8; Ridl., Fl. Mal. Pen. 1 (1922) 432; Craib, Fl. Siam. En. 1 (1926) 275; Gagnep., Fl. Gén. I.-C. Suppl. (1948) 757. — *Gynoccephalum oblongum* (Wall.) Trécul, Ann. Sc. Nat. III, 8 (1847) 149. — *Miquelia cancellata* Kurz, J. As. Soc. Beng. 44, ii (1875) 201.

BURMA. Lower Burma, Moulmein, *Meebold 17398* (S).

THAILAND. Pattani: Banang Sta, 100 m, *Kerr 7345*.

INDOCHINA. Annam: Ba-na près Hué, *Poilane 1499* (P). — Cochinchina: Bien-hoa, *Pierre 2837* (A, n.v.; C, K, L, P); *ibid.*, Arboretum de Trang-bom, *Poilane 23623*.

MALAY PENINSULA. Penang: *Porter in Herb. Wallich 4948* (K, type of *P. oblonga*); Telok Bahang (♂) and Government Hill (♀), *Curtis 3051* (K, SING). — Perak: Larut, 30—150 m, *King's Coll. 3185, 3864, 5606, 6725*; Temengoh, *Father Shebesta* (SING). — Selangor: Ulu Langat, *Phyt. Surv. Fed. Malaya 844, 1759* (K). — Malacca: Ayer Panas, *Griffith K.D. 831* (K); No locality given, *Maingay 1849 & 1849 A* (= *K.D. 376*). CAL, type of *Miquelia cancellata*, n.v.; K, L). — Johore: base of Mt Pulai, 60 m, *SF 28420*; Ulu Kahang, c. 100 m, *SF 10901*.

8. *Phytocrene palmata* Wall., Pl. As. Rar. 3 (1831) 12; Cat. (1832) n. 4949; Walp., Rep. 1 (1842) 98; Miq., Ann. Mus. Bot. Lugd. Bat. 3 (1867) 248; Baill. in DC., Prod. 17 (1873) 11; Mast. in Hook. f., Fl. Br. Ind. 1 (1875) 592; Becc., Malesia 1 (1877) 127; King, J. As. Soc. Beng. 64, ii (1895) 123; Ridl., Fl. Mal. Pen. 1 (1922) 433; Burk., Dict.

(1935) 1722. — *Gynocephalum palmatum* (Wall.) Trécul, Ann. Sc. Nat. III, 8 (1847) 149. — *P. stylocarpa* Griff., Not. 4 (1854) 320; Ic. (1854) t. 489, I.

THAILAND. Pattani: Betong, 500 m, Kerr 7647 (BM, K).

MALAY PENINSULA. Penang: Porter in Herb. Wallich 4949 (BM, E, G; K, type of *P. palmata*, Norris (K, P), Cantor (K, S); Penang Hills, 150—200 m, Griffith K.D. 829 (CAL, possibly type of *P. stylocarpa*, n.v.; K, P); Government Hill, 455 m, Curtis 2227 p.p. (P, SING); Balik Pulau & Telok Bahang, Curtis 2227 p.p.; (BM, SING). — Perak: Wray (cit. King, n.v.), Scortechini (Fl, P), King's Coll. 6835 (BM); Larut, 30—300 m, King's Coll. 2226, 5560, 7575; Maxwell's Hill, SF 38825. — Selangor: Kuala Lumpur, Mahomet in Herb. Ridley (SING); Kepong, Plantation Field 10, For. Dep. F.M.S. 45989 (KEP). — Malacca: Durian Tungul, Goodenough 1828 (SING).

SUMATRA. Palembang: Rawas, 200 m, Dumas 1644 (BO, L). — Riouw: P. Bintan, Tandjung Pinang, Teysmann H.B. 19806 (BO, L).

9. *Phytocrene bracteata* Wall., Pl. As. Rar. 3 (1831) 12; Cat. (1832) n. 4947; Walp., Rep. 1 (1842) 98; Baill. in DC., Prod. 17 (1873) 12; Mast. in Hook. f., Fl. Br. Ind. 1 (1875) 592; Becc., Malesia 1 (1877) 127; Merr., En. Born. (1921) 357 p.p.; Ridl., Fl. Mal. Pen. 1 (1922) 432; Bak. f., J. Bot. 62 (1924) Suppl. 21; Merr., Pl. Elm. Born. (1929) 172; Masam., En. Pl. Born. (1942) 423; Dahl, J. Arn. Arb. 33 (1952) 275 (Pollen). — *Gynocephalum bracteatum* (Wall.) Trécul, Ann. Sc. Nat. III, 8 (1847) 149. — *P. macrocarpa* Griff., Not. 4 (1854) 322; Ic. (1854) t. 487 (fl. ♀) & 488 (fr.).

THAILAND. Surat: Bangson, Chumpawn, Put 1074 (BM, K); Sawng Pi Nawng, 100 m, Kerr 12397 (BM, K). — Nakawn Sritamarat: Khao Ram, 455 m, E. Smith 596 (BM).

MALAY PENINSULA. Penang: Porter in Herb. Wallich n. 4947 (BM, E, G; GH, n.v.; K, type of *P. bracteata*; SING), Cantor (K); Penang Hill, 300—600 m, Nauen a. 1940 & 1941 (SING), Griffith K.D. 830 (K, P); Curtis a. 1900 (SING); Balik Pulau, Curtis 1754 (SING). — Perak: Kuala Kangsar, Phyt. Surv. Malaya 118; Larut, 915—1065 m, King's Coll. 6911 (BM, G). — Johore: Pulau Tinggi, SF 902 (SING). — Selangor: Kuala Lumpur, KEP 70409, 71570; Ulu Langat, Phyt. Surv. Malaya 1128. — Malacca: Bukit Bruang, cit. Griffith as type locality of *P. macrocarpa*; ibid., Derry 405 (SING); No locality given, Maingay 2715 (= K.D. 377). — Singapore: Bukit Mandai road, Ridley 1831 (BM); Bukit Timah road, Ridley a. 1907 (BM); Cluny road, Ridley 10359 (K, SING), Furtado 2028; Bukit Panjang, Ridley 5900 (BM, SING); Changi, Ridley a. 1891 (BM); Tanjong Katong, Hullett a. 1893 (SING); North end of Seletar Res., at 11½ miles Mandai road, Sinclair a. 1951. — Natuna Is.: Bunguran I., Mt Ranai, 200 m, van Steenis 1186 (BO, L).

SUMATRA. Eastcoast: Asahan, Gurach Batu, Yates 1724 (BO). — Palembang: Tandjong Ring, Bliti R., 150 m, Forbes '2784' (BM; L, sub 2789).

LINGGA ARCH. Lingga I., Sg. Tanda, Teysmann (L).

Note. Materials with not yet fully developed inflorescences or infructescences, and possibly belonging to *P. borneensis* Becc.:

BORNEO. Sarawak: 1st Div., Kuching, Haviland 3069 (BM, K, SAR., SING), Hanada Bor 5 (BO), Hewitt a. 1907 (SAR); Lobang Angin, Piniinjau E. of Bau, Beccari P.B. 925 (Fl, K, P); 3rd Div., Rejang R., Sibiu, Haviland 728 (= a. 1891: K, SAR., SING). — N. Borneo: Mt Kinabalu area, Dallas, 900 m, SF 25346; Mt Kalawat, Clemens 11178 (K, L); Sandakan, Sibuga road, SAN 42978 (K); Tawao, Elmer 21444; ibid., mile 12½ Apas road, SAN 19369 (K, L, SAR); mile 15, Quoin Hill road, SAN 35913 (K).

Note. *P. bracteata* has been indicated from Lower Burma (Mergui) by Baillon in DC., Prod. 17 (1873) 12, and subsequently by Kurz, J. As. Soc. Beng. 44, ii (1875) & For. Fl. Br. Burma 1 (1877) 242, *nota*, by Beccari, Malesia 1 (1877) 127, and Brandis, Ind. Tr. (1906) 152, but the specimen Griffith K.D. 830 Baillon refers to, was collected in Penang.

10. *Phytocrene hirsuta* Bl., Rumphia 4 (1849) 37; Mus. Bot. Lugd. Bat. 1 (1849) 42; Walp., Ann. 2 (1851) 22; Miq., Fl. Ind. Bat. 1 (1856) 797; Ann. Mus. Bot. Lugd. Bat. 3 (1867) 247; Baill. in DC., Prod. 17 (1873) 12; Becc., Malesia 1 (1877) 127; Koord., Minah.

(1898) 629; Hall, *f.*, Meded. Rijksherb. I (1910) 14, non Teysm. & Binn., Hort. Bog. (1866) 207. — *P. crinipes* Baill. ex Bureau, Mon. Bign. (1864) 146, in text, *nom. nud.* — *P. minahassae* Koord., Minah. (1898) 394, *nom. nud.* — *P. dasycarpa* (non Miq.) Dahl, J. Arn. Arb. 33 (1952) 275 (Pollen).

CELEBES. Minahasa: Tondano, *Forsten a.* 1840 (L, type of *P. hirsuta*; P); Pinamorongan, Kajuwatu, 500 m, *Koorders 19411* (BO, K, L, P); Paku-ure, 450 m, *Koorders 18361* (BO, K; L, as *P. minahassae*; P). — Central Part: Todjambu, near Makale, 800 m, *Kjellberg 1887* (BO, S); Bone, Nengo, 450 m, *van der Pijl 776*. — Southwestern part: Tjamba, *Teysmann H.B. 12714*; Pankadjene, *Teysmann H.B. 11823, 11838, 12258* (all BO, L); Bikeru, *Warburg 16683* (A); Peak of Bonthain, Lokka, *Teysmann H.B. 14055* (BO, L); *ibid.*, Buakang Kampaliang, *Teysmann H.B. 13690* (BO, L); Makassar, waterfall near Bantimurung, *Rant 905* (BO, L). — Southeastern part: Rumbia, 25—150 m, *Elbert 2997* (BO, L); Kandari, *Beccari a.* 1874 (FI, K); Buton I., (*La*) *Billardière a.* 1793 (BM, FI, G, K; P, as *Gynoccephalum billardieri* Planch. *ms.*); Kabungka, 180 m, *Kjellberg 255 & 311* (BO, S).

MOLUCCAS. Buru: *Lahaie 1646* (P).

II. *Phytocrene macrophylla* (Bl.) Bl., Rumphia 4 (1849) 36; Mus. Bot. Lugd. Bat. I (1849) 41, f. 7; Walp., Ann. 2 (1851) 22; Zoll., Syst. Verz. 2 (1854) 112; Miq., Fl. Ind. Bat. I (1856) 796; Suppl. I (1860) 137; Ann. Mus. Bot. Lugd. Bat. 3 (1867) 247; Baill. in DC., Prod. 17 (1873) 10; Hist. Pl. 5 (1874) 282, f. 330 & 331 (Fl.); Becc., Malesia I (1877) 127; Robinson, Bot. Zeitg. 47 (1889) 645 (Wood-Anat.); Engl. in E. & P., Nat. Pfl. Fam. III, 5 (1893) 255, f. 140; Raciborski, Flora 87 (1900) 13 (Foliar Biology); Hochr., Bull. Inst. Bot. Btzg 19 (1904) 39; Pl. Bog. Exs. (1904) 17; Bull. Inst. Bot. Btzg 22 (1905) 114; Back., Schoolfl. Java (1911) 229 ('*macrocarpa*'); Koord., Exk. Fl. Java 2 (1912) 533; Koord.-Schum., Syst. Verz. I, Fam. 162 (1912) 6; Warb., Pflanzenwelt 2 (1916) 348, f. 231 A, 1—9, & 232 (phot.); Doct. v. Leeuwen, Zoococcidia (1926) 332 (Galls); Uittien, Rec. Trav. Bot. Néerl. 25 (1929) 464 (Veg.); Amsh. in Back., Bekn. Fl. Java (em. ed.) 6 (1948) fam. 135, p. 8; Back. & Bakh. v. d. Brink, Fl. Java 2 (1965) 62. — *Gynoccephalum macrophyllum* Bl., Bijdr. (1825) 483; Trécul, Ann. Sc. Nat. III, 8 (1847) 148. — *P. gigantea* Wall., [Phil. Mag. N. S. 3 (1828) 223, *nom. nud.*] Pl. As. Rar. 3 (1831) 11, t. 216; Cat. (1832) n. 4946; Walp., Rep. I (1842) 98; Bl., Rumphia 4 (1849) 36; Ann. Mus. Bot. Lugd. Bat. I (1849) 41; Zoll., Syst. Verz. 2 (1854) 112; Griff., Not. 4 (1854) 329; Ic. (1854) t. 490, f. II (Fl. ♂ & Anat.); Miq., Fl. Ind. Bat. I (1856) 796; Schnizl., Ic. 3 (1857/65) t. 172, f. 1—21; Baill. in DC., Prod. 17 (1873) 9; Mast. in Hook. *f.*, Fl. Br. Ind. I (1875) 591; Kurz, J. As. Soc. Beng. 44, ii (1875) 156; For. Fl. Br. Burma I (1877) 241; Becc., Malesia I (1877) 127; Brandis, Ind. Tr. (1906) 152; Hundley & Chit, List Trees Burma ed. 3 (1961) 46. — *Kadsura blancoi* Azaola in Blanco, Fl. Filip. ed. 2 (1845) 594; ed. 3, 3 (1879) 118. — *Gynoccephalum giganteum* (Wall.) Trécul, Ann. Sc. Nat. III, 8 (1847) 149. — *P. calicarpa* Griff., Not. 4 (1854) 327; Ic. (1854) t. 490, f. I (Fr.). — *Gynoccephalum luzoniense* Llanos, Rev. Progr. Cienc. 15 (1865) 55, *nom. illeg.* — *P. dasycarpa* Miq., Ann. Mus. Lugd. Bat. 3 (1867) 248, t. 7, as to fruits only. — *P. luzoniensis* (Llanos) Baill., Adansonia 10 (1872) 281; in DC., Prod. 17 (1873) 10; Hist. Pl. 5 (1874) 283, f. 332 & 333 (Fr.); F.-Vill. & Naves in Blanco, Fl. Filip. ed. 3, 4 (1880) 86; F.-Vill., Novis. App. (1880) 46; Ceron, Cat. Pl. Herb. Manila (1892) 46. — *P. blancoi* (Azaola) Merr., Philip. J. Sc. 2 (1907) Bot. 432; Sp. Blancoan. (1918) 237; En. Philip. 2 (1923) 492; Dahl, J. Arn. Arb. 33 (1952) 275, f. 75 (Pollen). — *P. obovoidea* Merr., Philip. J. Sc. 10 (1915) Bot. 322; En. Philip. 2 (1923) 492. — *P. forbesii* Bak. *f.*, J. Bot. 62 (1924) Suppl. 21.

var. *macrophylla*.

BURMA. Amherst, *Wallich 4946* (BM, G; K, type of *P. gigantea*; P, SING); Thaunggyin, *Maung Ba Pe 13003* (K); Pegu, Yoma Mts, *Kurz 1912*; Tenasserim, cit. Kurz to be frequent there; Donat Ra., *Beddome 8193* (BM).

SUMATRA. No locality given: *Korthals* (L), *Teysmann* (L). — Eastcoast: Sibolangit, 325—350 m, *Loerzing* 5066, 5592; Bukit Luang near Medan, *SF* 7441. — Westcoast: Padang, Ayer Mantjur, 360 m, *Beccari* P.S. 627; Pulu Pisang, *Teysmann* H.B. 2110 (U); Lubu Alung, *Teysmann* H.B. 1131 (U); Priaman, *Teysmann* H.B. 755 (BO, L, U). — Palembang: Tandjong Ring on Saling R. near Tebingtinggi, *Forbes* 2784 (Fl, L); Ranau Lake, 520 m, *van Steenis* 3351. — Simalur I.: Tapah, *Achmad* 266, 1541.

JAVA. 'W. Java': *Blume*, *Reinwardt*, *Korthals*, *Kuhl & van Hasselt*, *Zollinger* 3066. — Bantam: Tjandjur, Mt Sanggabuwana, 700 m, *Backer* 23767. — Bogor: Mt Salak, *Blume* (BM; L, type of *Gynoccephalum macrophyllum*; P); Laladon udik, SW. of Bogor, 320 m, *Backer* 26317; Depok, Natuurmonum., 95 m, *Beumée* 6087, 6746; Tjiratjap (Djampang Kulon), 5 m, *Backer* 17359; Cult. Hort. Bog., *Hochreutiner* 25. — Priangan: Tjampea near Pengalengan, 600 m, *Forbes* 1219 (BM, type of *P. forbesii*); Palabuan Ratu, Sukabumi, 50 m, *Koorders* 34523, 34524; Tjialak, 600 m, *Bakhuizen v. d. Brink* 3047; Ujung Genteng, *van Steenis* 11333; Wijnkooopsbaai, Karang Hawu, *Docters van Leeuwen-Reijnvaan* 14074. — Pekalongan: Tegal, 60 m, *Beumée* 4501. — Banjumas: Nusa Kambangan, *Koorders* 39674; *ibid.*, Mt Brambang, *Amdjah* 28.

PHILIPPINES. Luzon: Bulacan, *Angat*, *Llanos* (G-DC, type of *Gynoccephalum luzoniense*; P, fragm. ex G; PNH, type of *Kadsura blancoi*, †); Rizal, B.S. 6768, F.B. 2439; San Mateo, *Vidal* 3874; Morong, *Vidal* 2382, 2383, *Loher* 297, 298; Oriud, B.S. 13821; Angilog, B.S. 14180; Antipolo, *Merrill* 1661; Balacbac, *Loher* a. 1912 (UC); Paningtingan, B.S. 13536; Montalban, *Merrill* Sp. Blanc. 417, *Loher* 5182, 5747, 5794; *ibid.*, R. Puray, *Loher* 299 (K); Laguna, B.S. 23100; *ibid.*, San Antonio, F.B. 13183; Tayabas, Luchan, *Elmer* 7421; Casiguran, B.S. 45266; Sorsogon, Irosin, Mt Bulusan, *Elmer* 15487, 15960. — Polillo: B.S. 10339. — Mindoro: Mt Yagaw, PNH 17660. — Samar: B.S. 17463, PNH 14558. — Biliran: B.S. 18832 (K, P; PNH, type of *P. obovoidea*, †). — Leyte: *Wenzel* 44, 1073, *Elmer* 7134. — Bohol: B.S. 42817, 43153. — Mindanao: Agusan, Butuan, *Weber* 1032, PNH 42324; Lanao, Lake Lanao, *Clemens* 447 (cit. *Merrill, n.v.*); Bukidnon, Mt Katanglad, PNH 9891; Zamboanga, *Perottet* (G), PNH 38045, 38363, 38437; Davao, Sta. Cruz, *Williams* 2765 (K), 2995 (K); Mt Apo, Todaya, *Elmer* 11724; Mati, B.S. 48958, 49173. — Palawan: Puerto Princesa, Mt Pulgar, *Elmer* 12925; *ibid.*, Mt Balsahan, *Ebalo* 370.

var. *caudigera* (Sleum.) Sleum., *stat. nov.* — *P. caudigera* Sleum., *Notizbl. Berl.-Dahl.* 15 (1940) 253; Heine, Pfl. d. Samml. *Clemens* Kinabalu (1953) 57.

BORNEO. N. Borneo: Mt Kinabalu, Dallas and vicinity, 915—1370 m, *Clemens* 26544, 26544 bis, 26806 bis (B, type of *P. caudigera*, †; BO, G, K, L, SING).

var. *dasycarpa* (Miq.) Sleum., *stat. nov.* — *P. dasycarpa* Miq., *Ann. Mus. Bot. Lugd. Bat.* 3 (1867) 248, t. 7, the fruit excluded (which is var. *macrophylla*); *Baill. in DC., Prod.* 17 (1873) 11; *Becc., Malesia* 1 (1877) 127; *Koord., Minah.* (1898) 394; *Hochr., Pl. Bog. Exs.* (1904) 44; *Bull. Inst. Bot. Btzg* 22 (1905) 114; *Ic. Bog.* 2 (1906) t. 180; *Koord.-Schum., Syst. Verz.* 3 (1914) 74; *Koord., Minah. Suppl.* 2 (1922) t. 49; *Suppl.* 3 (1922) 25. — *P. hirsuta* (non Bl. 1849) *Teysm. & Binn., Hort. Bog.* (1866) 207. — *P. ovalifolia* *Koord., Minah.* (1898) [394, *nom. nud.*] 629; *Koord.-Schum., Syst. Verz.* 3 (1914) 74; *Koord., Minah. Suppl.* 2 (1922) t. 50; *Suppl.* 3 (1922) 26. — *P. tinosporifolia* *Koord., Minah.* (1898) [394, *nom. nud.*] 629; *Koord.-Schum., Syst. Verz.* 3 (1914) 74; *Koord., Minah. Suppl.* 2 (1922) t. 51; *Suppl.* 3 (1922) 26.

CELEBES. *De Vriese & Teysmann* (fr.: L). — Minahasa: in montis Lukkon, *Reinwardt*, Oct. 1821 (L); Menado, *Teysmann* H.B. 5271 (BO, L, U, lectotype of *P. dasycarpa*, fl. ♂), 5721 (BO, fl. ♀), 5791 (BO & L: fl. ♂; U, syntype of *P. dasycarpa*, leaves only); Kajuwatu, 50 m, *Koorders* 17996 (BO, type of *P. tinosporifolia*; L), 18359 & 18360 (BO, L); Road from Singkel to Buha, 20 m, *Koorders* 17992 (BO, type of *P. ovalifolia*; K, L); Mt Batu, *Angus Res., Alston* 16054. — Central eastern part: Malili, 350 m, *Kjellberg* 2279 (BO, S); Kawata, 150 m, *Kjellberg* 2341 (BO, S); Lelewao, 100 m, *Kjellberg* 2570 (S). — Southeastern part: Kandari, Lepo-lepo, *Beccari*, July 1874 (Fl, leaves only). — Cult. Hort. Bog., intr. from Celebes: *Hochreutiner* 92.

Note. The fruits figured in *Miquel, Ann. Mus. Bot. Lugd. Bat.* 3 (1867) t. 7, and preserved at U, belong to var. *macrophylla*; they apparently were collected in Java (*Hort. Bog.*). The description of the fruit of var. *dasycarpa* is drawn from drupes preserved at L, apparently collected by *Teysmann & De Vriese* in Menado. The holotype of *P. dasycarpa* preserved at U only bears ♂ flowers.

Phytocrene sp. nov.

Scandens, caule fructigero cortice longitudinaliter c. 1 mm profunde rimoso 1.8 cm diam. *Ramuli* graciles, setulosi, aculeis minutis retrorsis obsiti. *Folia* subovato-elliptica vel -oblonga, apice breviter et \pm obtuse subcuspidato-acuminata, basi leviter cordata, subcoriacea, supra glabra, subtus ad costam et nervos sparse appresse setuloso-pilosa ceterum glabra, integra, (8—)10—18 cm longa, (2—)4—10 cm lata, e basi 5-nervia, pare nervorum exteriore breviter, interiore alte usque ad laminae fere medium ascendente, nervis ceteris altius a costa abeuntibus 4—5-paribus inferne subrectis, ante marginem curvatis, omnibus subtus tantum prominentibus, reticulatione venarum venularumque denso utrinque prominulo; petioli (1—)2—3.5 cm longi. *Infructescentia* tantum cognita, e caule defoliato oriens, pedunculo c. 2 cm longo, c. 4 mm diam. *Drupa* elliptico-ovoidea, lateraliter valde forma amygdalarum compressa, 6 cm longa, 4.5 cm lata, 2 cm crassa, exocarpio in sicco irregulariter profunde lacunoso, \pm dense setuloso-piloso tactuque rugoso, stylis 4 vel 5 vix 1 mm altis.

NEW GUINEA. Northern part: Cycloop Mts, Kujabu R., 75 m, fr. 10-10-1954, BW 748 Lam & Versteegh (L), on temporarily inundated soil along river in young secondary forest, scattered.

Phytocrene sp.; Engl. in E. & P., Nat. Pfl. Fam. III, 5 (1893) 256; Schellenb., Bot. Jahrb. 58 (1923) 177; Sleum., Notizbl. Berl.-Dahl. 15 (1940) 253, nota sub *P. interrupta*.

NEW GUINEA. Madang Dist., Hatzfeld Harbour, *Holhrung* 385 (B, †), leaves obovate, 20—30 by 14—18 cm, no flowers.

EXCLUDED

Phytocrene loheri Merr., Philip. J. Sc. 7 (1912) Bot. 293; En. Philip. 2 (1923) 492, nom. illeg., Code 70. PHILIPPINES. Luzon: Montalban, *Loher* 5769 (K; PNH, type of *P. loheri*, †).

The leaves in the Kew specimen are Menispermaceous (probably belonging to *Hypserpa* sp.), whilst the loose fruits belong to *P. macrophylla* var. *macrophylla*.

18. THE GENUS *PITTOSPOROPSIS* CRAIB*PITTOSPOROPSIS*

Craib, Kew Bull. (1911) 28; Gagnep., Fl. Gén. I.-C. 1 (1911) 831; Engl. in E. & P., Nat. Pfl. Fam. Nachtr. 4 (1915) 189; Sleum. in E. & P., Nat. Pfl. Fam. ed. 2, 20 b (1942) 370.

1. *Pittosporopsis kerrii* Craib, Kew Bull. (1911) 28; Gagnep., Fl. Gén. I.-C. 1 (1911) 832; Craib, Contr. Fl. Siam, Aberdeen Univ. Stud. n. 57 (1912) 38; Fl. Siam. En. 1 (1926) 273; Narayanaswami, Rec. Bot. Surv. India 11 (1926) 108; Howard, Lloydia 6 (1943) 152; Gagnep., Fl. Gén. I.-C. Suppl. (1948) 745, f. 88, 6—7; Dahl, J. Arn. Arb. 33 (1952) 258, f. 8 & 8a (Pollen); Wu, Act. Phytotax. Sin. 6 (1957) 185, f. 4 (distr. map); Wu & Wang, l.c. 279; Hundley & Chit, List Trees Burma ed. 3 (1961) 46. — *Stemonurus yunnanensis* Hu, Bull. Fan Mem. Inst. Biol. Bot. Ser. 10 (1940) 156. — *P. nervosa* Gagnep., Not. Syst. 13 (1947) 136; Fl. Gén. I.-C. Suppl. (1948) 745, f. 88, 1—5.

BURMA. Upper Shan States, *Macgregor* 1292 (CAL, n.v.; E, K).

THAILAND. Payap: Chiangmai, Doi Sutep, 670—750 m, *Kerr* 558 (BM, E; K, type of *Pittosporopsis kerrii*), 558 A (BM, C), 3215, 3545; Mé Baw Ku, 610 m, *Winit* 8; Pang Tawn, *Put* 3828; Doi Chiengdao, *Put* 4540; Fang, 700 m, *Sørensen, Larsen & Hansen* 1737; Wang Tao, 700—800 m, *Sørensen, Larsen & Hansen* 1071. — Maharat: Nan, Doi Yao, 400 m, *Kerr* 4880; Mé Charim, 300 m, *Kerr* 1767; Doi Pa Ngua, 980 m, *Garrett* 138; Lampang, Ché Sawm, 600 m, *Kerr* 4759.

INDOCHINA. Tonkin: 15 km S. de Phang-tho, prov. Lao kay, 600—800 m, *Poilane 25530* (K; P, type of *Pittosporopsis nervosa*). — Laos: NE. de M-ngoï, prov. Luang Prabang, *Poilane 20731*; Chienkwang, Tawieng, 400 m, *Kerr 20915*.

CHINA. Yunnan: Che-li Hsien, 1100—1200 m, fr., C. Wang 78092 & 79188 (A, n.v., cit Howard); Szemao, 1525 m, *Henry 11778 & 11778 A* (E, K). For further localities in Yunnan cf. Wu & Wang, l.c. 280.

19. A REVISION OF THE GENUS PLATEA BL.

PLATEA

Bl., *Bijdr.* (1826) 646; Lindl., *Veg. Kingd.* (1846) 444; Bl., *Mus. Bot. Lugd. Bat.* 1 (1850) 249; Miers, *Ann. Mag. Nat. Hist.* II, 10 (1852) 109, repr. *Contr. Bot.* 1 (1852) 96; Miq., *Fl. Ind. Bat.* 1 (1856) 793; Benth. in Benth. & Hook. *f.*, *Gen. Pl.* 1 (1862) 353; Baill., *Hist. Pl.* 5 (1874) 334; Becc., *Malesia* 1 (1877) 116, 257; Valet., *Crit. Overz. Olacin.* (1886) 249, t. 6, f. 39—42; Boerl., *Handl.* 1, 1 (1890) 217; Engl. in E. & P., *Nat. Pfl. Fam.* III, 5 (1893) 245; King, *J. As. Soc. Beng.* 64, ii (1895) 110; K. & V., *Bijdr.* 5 (1900) 151; Ridl., *Fl. Mal. Pen.* 1 (1922) 426; Merr., *En. Philip.* 2 (1923) 489; Bailey & Howard, *J. Arn. Arb.* 22 (1941) 175 (Wood-Anat.); Sleum. in E. & P., *Nat. Pfl. Fam.* ed. 2, 20 b (1942) 360; Back. & Bakh. v. d. Brink, *Fl. Java* 2 (1965) 59. — *Platystigma* R. Br. [in Wall., *Cat.* (1832) n. 7523, *nom. nud.*] ex. Hook. *f.*, *l.c. Pl.* 18 (1887) t. 1707, *nom. illeg.*, non Benth. 1834; Pax in E. & P., *Nat. Pfl. Fam.* III, 5 (1890) 117; Hall. *f.*, *Meded. Rijks-herb.* 36 (1918) 5.

Lectotype species: *P. excelsa* Bl. (Sleum. in E. & P., *Nat. Pfl. Fam.* ed. 2, 20 b, 1942, 361).

KEY TO THE SPECIES

1. Indumentum on the undersurface of young leaves of a woolly appearance to the naked eye, and under a lens composed of two distinct strata, i.e. an upper layer of partly flattish, though mostly obliquely erect star-shaped or fasciated hairs (with a very small or generally invisible dark centre), and a lower layer of small scales.
 2. Leaves shortly cordate at base, almost peltate, lateral nerves, veins, and veinlets ± distinctly impressed above, the lamina ± bullate, hairs persistent. Borneo (Sarawak) 1. *P. bullata*
 2. Leaves never properly cordate at base, nerves sometimes, veins and veinlets never impressed above, hairs generally early disappearing except along midrib and nerves. Sikkim, East Bengal (Sylhet), Indochina, Kwangsi, Hainan, Sumatra, Banka, Malay Peninsula, Java, Borneo, Philippines (Biliran, Mindanao), Celebes, New Guinea 2. *P. latifolia*
1. Indumentum on the undersurface of young leaves of a scaly appearance to the naked eye, consisting of one single layer of scales, or at least seemingly so.
 3. Indumentum on the undersurface of young leaves consisting under the lens of a single layer of scattered to subdensely arranged, flat, stellate scales of medium size which disappear early, the lamina becoming practically glabrous with age. Hainan, Indochina (Tonkin-Kwangtung border).
 3. *P. parvifolia*
 3. Indumentum on the undersurface of young leaves consisting under the lens of two layers of flat star-shaped scales, i.e. a 'lower' layer of ± persistent, minor, densely arranged scales, and an 'upper' layer of similar, but larger and more scattered, rather caducous scales.
 4. Leaves (elliptic or ovate-elliptic, rarely ovate coriaceous, rigid. Borneo (Mt Kinabalu).
 4. *P. sclerophylla*
 4. Leaves coriaceous to subcoriaceous, ± flexible.
 5. Leaves oblong to elliptic, rarely subovate-elliptic or -oblong, up to 4.5 (rarely —6) cm wide.
 6. Leaves ± acutely acuminate at apex, nerves 10—14 pairs, rather straight from the midrib. Drupes 3.5—4.5 by 1—2 cm. Sumatra, W. Java. 5. *P. excelsa* var. *excelsa*
 6. Leaves obtusely acuminate or rounded at apex, nerves 6—8(—10) pairs, ± curved-ascending from the midrib. Drupes 2.5—3 by 1—1.5 cm.
 7. Leaves markedly finely reticulate, generally up to 6 cm wide. Sumatra, Banka, Billiton, Malay Peninsula (Johore), Borneo 5. *P. excelsa* var. *riedeliana*
 7. Leaves more faintly or hardly reticulate, generally up to 4.5 cm wide. New Guinea.
 5. *P. excelsa* var. *microphylla*

5. Leaves either ovate or ovate-elliptic, or, if elliptic or oblong-elliptic, generally wider than 6 cm.
 8. Leaves shortly subacutely or obtusely acuminate, faintly reticulate in general, nerves (8—)10—12(—14) pairs, these usually rather close and/or subparallel to each other, (9—)12—17(—26) by (4.5—)6—9(—12) cm. Sumatra, Java, Bali, Lombok, Sumbawa,, Flores, Borneo, Philippines, Celebes, Moluccas, New Guinea, New Britain.
5. *P. excelsa* var. *borneensis*
 8. Leaves subcaudate-acuminate and subacute, ± distinctly reticulate on both faces, nerves 6—8 pairs, these curved-ascending and rather distant from each other, 8—12 by 3.5—5.5 cm. Borneo (Mt Kinabalu) 5. *P. excelsa* var. *kinabaluensis*

1. *Platea bullata* Sleum., *sp. nov.*

Arbor, 13—14 m alta, trunco c. 15 cm diam., cortice laevi griseo-brunneo. *Ramuli* foliigeri c. 5 mm diam., sicut petioli et rhachis in sicco longitudinaliter sulcati, rufo-brunneo-tomentosi. *Folia* laxa, subobovato-elliptica vel -oblonga, apice per c. 1.5 cm subacute acuminata, basi rotundata, ipsa basi breviter cordata quasi peltata, firme chartacea, in sicco opaca et olivaceo- vel (imprimis subtus) rufescenti-brunnea, matura supra ad costam et nervos breviter, subtus per faciem laxe, ad costam, nervos et venas densius et paullo longius pilis stellatis vel fasciculatis oblique erectis persistentibus tomentosus tactuque mollia, ultro subtus per totam faciem lepidibus stellatis (pila stellata aemulantibus) minutis planis et omnino appressis in sicco argenteo-albescentibus induta, 14—32 cm longa, (6—)7—13 cm lata, costa, nervis, venis et parte venularum supra leviter sed distincte impressis, subtus prominentibus, nervis lateralibus 7—10(—12)-paribus leviter curvato-ascendentibus interque sese arcuato-conjunctis, reticulatione minuta densissima supra parum elevata, subtus sat obscura; petioli 2—2.5 cm longi, 2—3 mm crassi. *Paniculae* ♂ parum evolutae tantum cognitae, axillares, e racemis paucis densifloris subspicatis vel breviter paniculatis ramosis inter sese bene distantibus 1.5—3 cm longis formatae; rhachis 6—12 cm longa, 2—3 mm crassa. *Flores* pro descr. nimis juveniles.

BORNEO. Sarawak: 3rd Div., Rejang, Carapa Pila, Ulu Pila, in steep sided valley in basalt beside waterfall, in mixed Dipterocarp forest at 900 m, fl. ♂, 9-4-1964, S 19638 P.S. Ashton (A, n.v.; BO, K, KEP, L, type; MEL, SAN, SING).

2. *Platea latifolia* Bl., Bijdr. (1826) 647; Walp., Rep. 1 (1842) 378; Hassk., Cat. Hort. Bog. (1844) 214; Miers, Ann. Mag. Nat. Hist. II, 10 (1852) 110, repr. Contr. Bot. 1 (1852) 97; Miq., Fl. Ind. Bat. 1 (1856) 793, incl. var. *sumatrana* (Bl.) Miq., l.c.; Becc., Malesia 1 (1877) 116; Valet., Crit. Overz. Olacin. (1886) 251, 253, t. 6, f. 40 & 41; K. & V., Bijdr. 5 (1900) 156; Hochr., Pl. Bog. Exs. (1904) 45, n. 94; Bull. Inst. Bot. Btzg 22 (1905) 50; Back., Schoolfl. Java (1911) 227; Koord., Exk. Fl. Java 2 (1912) 531; Koord.-Schum., Syst. Verz. 1, Fam. 162 (1912) 1, p.p.; Koord., Atlas 1 (1913) t. 119; Ridl., Fl. Mal. Pen. 1 (1922) 426; Burk., Dict. (1935) 1768; Merr., J. Arn. Arb. 19 (1938) 44; Chun, Sunyatsenia 4 (1940) 229; Gagnep., Fl. Gén. I.-C. Suppl. (1948) 754; Amsh. in Back., Bekn. Fl. Java (em. ed.) 6 (1948) fam. 135, p. 4; Heyne, Nutt. Pl. 1 (1950) 986; Back. & Bakh. v. d. Brink, Fl. Java 2 (1965) 60. — *P. sumatrana* Bl., Mus. Bot. Lugd. Bat. 1 (1850) 249; Walp., Ann. 2 (1851) 182; Miers, Ann. Mag. Nat. Hist. II, 10 (1852) 110, repr. Contr. Bot. 1 (1852) 97. — *Sideroxylon gamblei* C.B. Clarke in Hook. f., Fl. Br. Ind. 3 (1882) 538. — *Platystigma myristiceum* R. Br. [in Wall., Cat. (1832) n. 7523, *nom. nud.*] ex Hook. f., Ic. Pl. 18 (1887) t. 1707; Fl. Br. Ind. 5 (1887) 381. — *P. excelsa* (non Bl.) King, J. As. Soc. Beng. 64, ii (1895) 111. — *P. fuliginea* Elm., Leaf. Philip. Bot. 8 (1915) 2790; Merr., En. Philip. 2 (1923) 489. — *P. myristicea* (R. Br. ex Hook. f.) Hall. f., Meded. Rijksherb. 36 (1918) 5; Sleum., Notizbl. Berl.-Dahl. 15 (1940) 360. — *Planchonella gamblei* (Clarke) H. J. Lam, Bull. Jard. Bot. Btzg III, 7 (1925) 199. — *P. ledermannii* Sleum., Notizbl.

Berl.-Dahl. 15 (1941) 360. — *P. hainanensis* Howard, Lloydia 6 (1943) 149, pl. 2; Dahl, J. Arn. Arb. 33 (1952) 261; Chun & Chang, Fl. Hainan. 2 (1965) 449, f. 512. — *P. parviflora* (non K. & V.) Dahl, J. Arn. Arb. 33 (1952) 261 (Pollen). — '*Gomphocarpus*' *gamblei* (Clarke) van Royen, Blumea 8 (1957) 425. — *Gomphandra gamblei* (Clarke) van Royen ex Ind. Kew. Suppl. 13 (1966) 61.

SIKKIM. Rangbi (Rungbee), 1525 m, *Gamble 2299 A* (K, type of *Sideroxylon gamblei*; L, phot.).

EAST BENGAL. Sylhet, ♀, F.D. (*Francis de Silva?*), Herb. Wallich 7523 (K, type of *Platystigma myristiceum*); ibid., ♂, Gomez, Herb. Wallich 9017 (K, '*Myristicea*' Wall. Cat. n. 9017).

INDOCHINA. Tonkin: Taai Wong Mo Shan, on the Tonkin/Kwangtung border, W.T. Tsang 27279. — Annam: km 119, route de Haut Donnai, fr., Poilane 20987 (K, P).

THAILAND. Payap: Pang Tawn, Chiangmai, Put 3838.

CHINA. Hainan: Chun & Tso 44051, F.C. How 72951, 73310, S.K. Lau 3808 (A, paratype of *P. hainanensis*, n.v.; P, S), 27855 (A, type of *P. hainanensis*, n.v.), 28304 (A, paratype of *P. hainanensis*, n.v.), H.Y. Liang 64940 (A, paratype of *P. hainanensis*; E), 65128, 65157 (E), 65285 (P, S), 69704 (A, paratype of *P. hainanensis*, n.v.), C. Wang 33741. — Kwangsi: C. Wang 39933 (A, paratype of *P. hainanensis*, n.v.).

MALAY PENINSULA. Penang: Penang Hill, King's Coll. 1302, Ridley 10245; Government Hill, 600 m, Curtis 3001; Waterfall, 220 m, Fox 29, Curtis 2421 (SING); Mt Erskine, 200 m, SF 3501 (SING). — Kedah: Enggang F.R., KEP 73758, 73786. — Perak: *Scortechini*, Wray (cit. King, n.v.); Larut, 90—150 m, King's Coll. 5885. — Pahang: Cameron Highlands, 1400 m, SF 23479, KEP 36164; Frazier's Hill, 1220 m, *Shah & Noor 885*, For. Dep. F.M.S. 7762, KEP 78583. — Johore: Kota Tinggi—Mawai road, SF 40618; Kota Tinggi, KEP 104476, Ridley 15443; Mt Berassau, Mawai—Jamaluang road, Corner a. 1935 (SING); Labis, KEP 100075. — Singapore: Mandai road, SF 37723 (SING).

SUMATRA. *Korthals* (L). — Eastcoast: Karo lands, Tongkoh, 1500 m, bb. 6818. — Tapanuli: Dairi Lands, 1060 m, bb. 15360. — Indragiri uplands, Danau Meng Kuang, 60 m, bb. 27498. — Palembang: *Praetorius* (L, type of *P. sumatrana*).

BANKA. Lobok besar, 20 m, *Kostermans & Anta 1190*; Muntok, bb. 7832; Rindik, 20 m, bb. 12709; Perlang, 20 m, bb. 34193; Kepo, 10 m, bb. 10674.

JAVA. Bantam: Mt Karang, 700—1100 m, *Koorders 3201, 3791, 3795*. — Bogor: Sukabumi, 1200 m, Ja. 3143; Mt Salak, *Blume* (BO, C, K; L, type of *P. latifolia*; P, S), *Koorders 24306*. — Djakarta: Purwakarta (Krawang), *Korthals* (L). — Priangan: *Junghuhn*; *Tjibodas*, *Koorders 3744/46, 12190, 12502, 13221/22, 13237, 41912, 41915*; Mt Gegerbintang, *Koorders 15540*; *Tjisaat*, *Uhl 6595*; *Tjigenteng*, *Koorders 3737/39, 24145, 26271*; Pengalengan, *Wind P 6*; *Tjitjurug*, *Uhl 6507*; Mt Papandajan, *Korthals* (L); Takoka, 1050—1100 m, *Koorders 3535/36, 3748/50, 12012, 25673*; Pasir Kiamis, *Korthals* (L). — Pekalongan, Tegal, Mt Slamet, 1360—1500 m, *Koorders 3752/55*. — Banjumas: Pringombo, 700—1000 m, *Koorders 3583, 3756, 33967*. — Semarang: Mt Telemojo, *Koorders 3539, 3541, 3546, 3549, 3552/54, 3751*; Mt Ungaran, *Junghuhn* (L). — Kedu: Pagergunung, 1300 m, *Koorders 36580*; Ngasinn, *Koorders 27880*. — Besuki: *Tjurananis*, *Koorders 4533*; *Pantjur-Ildjen*, 1000—1100 m, *Koorders 3633, 3655, 3757, 14491/92, 21770, 32443, 32469*. — Cult. Hort. Bog.: *Hochreutiner 94*.

BORNEO. Sarawak: 1st Div., Bako Nat. Park, S 6853 (SAR), 6874 (SING); 3rd Div., Sg. Kenaban, Upper Plieran, 560 m, S 3464 (SAR, SING). — E. Borneo: Loa Djanan, W. of Samarinda, *Kostermans 6750*; Nunukan I., 40 m, *Kostermans 9013*.

PHILIPPINES. Biliran, Mt Suiro, 460 m, PNH 21597. — Mindanao: Agusan, Cabadbaran, Mt Urdaneta, *Elmer 13748*; Davao, Todaya, Mt Apo, 1525 m, *Elmer 10613* (A, n.v.; BM, BO, E, FI, G, K, L, P; PNH, type of *P. fuliginea*, †; WRSL).

CILIBES. Central part: Manado, Palu Ngilalaki, 1250 m, bb. 28260; Mamasa, Lombonan, 1800 m, bb. 20869. — Central Eastern part: Masamba near Malili, Biridondok, 1300 m, bb. 24167. — Southwestern part: Pinrang, Letta, 1000 m, bb. 28311; Papepekan, route to Peak of Bonthain, *Teysmann H.B. 13665, 13668*.

NEW GUINEA. Vogelkop Peninsula: Manokwari, Woseggi-Macoean, 10 m, BW 10882; Warmare valley, BW 15710. — Western New Guinea: Babo, Sjuga-Wajura area, BW 12954; Wissel Lakes, N. of Kebo, BW 8793, 8868. — Sepik Dist.: Hunsteinspitze, 1300 m, *Ledermann 11236* (B, type of *P. ledermannii*, †). — Eastern Highl.: Sassaura, 1675 m, *Hartley 12424*; Omaura, 1675 m, *Hartley 11973*; Ikana, 1525 m, *Hartley 12098*; Aiyura, 1770 m, NGF 6007. — Central Dist.: Lala R., 1675 m, Carr 15826. — Morobe Dist.: Wagau, Buang region, 1220 m, NGF 17915; Matap, 1525—1830 m, *Clemens 11163* (A, as *P. parviflora*).

3. *Platea parvifolia* Merr. & Chun, Sunyatsenia 5 (1940) 112, pl. 15; Chun & Chang, Fl. Hainan. 2 (1965) 450.

CHINA. Hainan: H.Y. Liang 63382 (cit. Merr. & Chun, n.v.), 63422 (A, type, n.v.; S), 65267 (A, n.v.), Tsang & Fung 567 (BM).

INDOCHINA. Tonkin: along Kwangtung border, Taai Wong Mo Shan, fr., *W.T. Tsang 27299* (A, n.v.; C, E, K, P).

4. *Platea sclerophylla* Sleum., *sp. nov.*

Arbor 9—18 m alta, ramis divaricatis. *Ramuli* subgraciles, in sicco nigrescentes, striati, apicibus foliigeri et lepidoti. *Folia* elliptica vel ovato-elliptica, rarius ovata, apice breviter attenuata vel obtusa, interdum paullo emarginata, basi late cuneata usque rotundata, coriacea, rigida, in sicco brunnea, supra interdum nitentia, subtus opaca, supra cito glabra, subtus subdense lepidibus stellatis minoribus parvis pro parte sese margine contingentibus centro minuto instructis quasi strato inferiore oblecta, ultro lepidibus multo maioribus stellatis sparsis quasi strato superiore induta (strato superiore cito, inferiore tarde et gradatim evanescente), maturitate etiam subtus ± glabrata, 5—9 cm longa, (2.5—)3—6 cm lata, costa nervisque supra paullo usque profundius impressis, subtus prominentibus, nervis 6—8(—9)-paribus strictioribus vel distinctius curvatis, ante marginem excurrentibus, rete venarum venularumque densissimo supra levissime impresso, subtus prominulo beneque visibili; petioli 5—10 mm longi, 2(—3) mm crassi, supra valde canaliculati, ± distincte transverse rugosuli. *Inflorescentiae* ♂ ex axillis superioribus orti, modo paniculae 3—5 cm longae e ramulis spiciformibus laxae florigeris 1—3 cm longis formatae, petalis exceptis ad axes dense, ad bracteas et calycis lobos laxius stellato-lepidotae; rhachis angulata, c. 1 mm diam. Pedicelli subnulli. *Calycis lobi* ovato-acuminati, subcoriacei, ciliati, 1.5 mm longi. *Petala* 5 saturate rubra, glabra, 2.5 mm longa. Antherae ellipticae, 1.5 mm longae. *Inflorescentiae* ♀ racemosae, sat pauciflorae, (1—)2—3.5 cm longae, pedicellis crassis 2—5 mm longis. *Calycis lobi* ut in floribus. *Petala* et staminodia nulla. *Ovarium* crasse cylindricum, dense minute stellato-pilosum, stigmatibus magno peltato glabro. *Drupa* nondum cognita.

BORNEO. N. Borneo: Mt Kinabalu, Eastern shoulder, 6° 05' N, 116° 36—40' E, 2895 m, fl. ♂, 13-7-1961, *Chew, Corner & Stainton 837* (BO, K, L); *ibid.*, Mesilau, 2440 m, fl. ♀, 31-3-1964, *Chew & Corner* (*R. Soc. Exp.*) 8026 (K, type; L).

5. *Platea excelsa* Bl., *Bijdr.* (1826) 697; *Walp., Rep.* 1 (1842) 378; *Hassk., Cat. Hort. Bog.* (1844) 214; *Miers, Ann. Mag. Nat. Hist.* II, 10 (1852) 110, repr. *Contr. Bot.* 1 (1852) 97; *Miq., Fl. Ind. Bat.* 1 (1856) 793; *Becc., Malesia* 1 (1877) 116; *Valet., Crit. Overz. Olacin.* (1886) 250, 253, t. 6, f. 39 a—h; *K. & V., Bijdr.* 5 (1900) 153; *Hochr., Pl. Bog. Exs.* (Dec. 1904) 45, n. 93; *Bull. Inst. Bot. Btzg* 22 (1905) 50; *Back., Schoolfl. Java* (1911) 227; *Koord., Exk. Fl. Java* 2 (1912) 530; *Koord.-Schum., Syst. Verz.* 1, *Fam.* 162 (1912) 1; *Koord., Atlas* 1 (1913) t. 118; *Bak. f., J. Bot.* 62 (1924) *Suppl.* 21; *Amsh. in Back., Bekn. Fl. Java* (em. ed.) 6 (1948) *fam.* 135, p. 3; *Back. & Bakh. v. d. Brink, Fl. Java* 2 (1965) 60.

var. *excelsa*

SUMATRA. *De Vriese* (K). — Tapanuli: Nias I., southern part, 240 m, *bb.* 5736. — Westcoast: Lubuk Sikaping, 370 m, *bb.* 6506. — Benkulen: Kroë, 900 m, *bb.* 10296, 10304.

JAVA. Bantam: Pasir Orai, Kosala, 790 m, *Forbes 583*; Ujung Kulon Nat. Res., Mt Pajung, 300—400 m, *Wirawan 262, 288*. — Bogor: Mt Salak & Gedé, *Blume* (C, K; L, type of *P. excelsa*; P, S, U); Mt Salak, 900—2200 m, *Koorders 24308, 24310/11, 24494/95*; Mt Gedé, *Junghuhn* (L); Pasir Sireungit, Leuwiliang, 600 m, *Dakkus 166, Bakhuisen v. d. Brink 6406*. — Priangan: Tasikmalaya, 700 m, *Koorders 47752*. — Banjumas: Mt Slamet, 915—1830 m, *Waitz* (L); Bandjarnegara, Pringombo, 780 m, *Ja. 2611*. — Cult.: Hort. Bogor, *Hochreutiner Pl. Exs. n. 93, Beccari a. 1878*.

var. *riedeliana* (Becc.) Sleum., *comb. nov.* — *P. riedeliana* Becc., *Malesia* 1 (1877) 116;

Valet., Crit. Overz. Olacin. (1886) 253. — *P. excelsa* (non. Bl. s. str.) Anderson, Gard. Bull. Sing. 20 (1963) 166.

SUMATRA. Eastcoast: Bengkalis (Selat Pandjang), P. Kebal, *bb.* 12484; Tamansaris, 5 m, *Beguin* 291 (BO); P. Mendol, 5 m, *bb.* 21460.

BANKA. Rias, 10 m, *bb.* 15394.

BILLITON. *Riedel* a. 1876, fr. (FI, Herb. Beccari 2462 & 2463, type of *P. riedeliana*; K); Tandjongpandan. 30 m, *bb.* 7262.

MALAY PENINSULA. Johore, Pengkalan Raya, Pontian, peat forest, *SF* 36686 (SING).

BORNEO. Sarawak: 1st Div., Mt Poé, fl. ♂, *Beccari P.B.* 2438 (FI, L); 2nd Div., Betong, Saribas For. Res., *S* 8404 (SAR); Triso P.F., *S* 14544; Simanggang, 1 mile from Triso, *S* 9796; 3rd Div., Loba Kabang South, P.F., *S* 2688; 4th Div., Bintulu, Sg. Segan, *S* 12037; Batang Baram, *S* 2894 (SAR); 5th Div., Kayangeran Lawas, *S* 1774. — Brunei: Badas For. Res., *S* 5889. — N. Borneo: Sipitang, Mengalong Crown Land, *SAN A* 4553; Mt Kinabalu, Gurulau Spur, 1525 m, *Clemens* 50464 (A, n.v.; BM, K).

var. *microphylla* (Sleum.) Sleum., *comb. nov.* — *P. microphylla* Sleum., Notizbl. Berl.-Dahl. 15 (1941) 360. — *P. montana* Howard, *Lloydia* 6 (1943) 150, pl. 3.

NEW GUINEA. Western part: Vogelkop Peninsula, Kebar, Aitfat R. valley, between Senopi and Aitfatfakaan, 810 m, *BW* 12833; Mt Nettoti, 1750 m, *van Royen & Sleumer* 7944; Arfak Mts, Anggi Gita Lake, 2200 m, *Kanehira & Hatusima* 14098 (BO); *ibid.*, base of Mt Mesenuk, 1850 m, *Sleumer & Vink* 4204 a, host of *Cladomyza kaniensis* (Pilg.) Stauffer (= 4204); Japen I., 700–800 m, *bb.* 30299, 30314, 30322; Wessel Lakes area, 1750–1800 m, *Eyma* 4862, 5167; Idenburg R., Bernhard Camp, 1140–1740 m, *Brass & Versteegh* 11910 (A, type of *P. montana*, n.v.; BM, BO, L), 11947, 12554. — Sepik Dist., Etappenberg, 850 m, *Ledermann* 9300 (B, type of *P. microphylla*, †). — Central Dist., Boridi, 1525–1830 m, *Carr* 14371, 14411, 14617. — Milne Bay Dist., Mt Dayman, 1550 m, *Brass* 23351; Goodenough I., 1570–1600 m, *Brass* 24719.

var. *borneensis* (Heine) Sleum., *comb. nov.* — *P. latifolia* Bl. var. *borneensis* Heine in Fedde, Rep. 54 (1951) 238; Pfl. d. Samml. Clemens Kinabalu (1953) 58. — *P. parviflora* K. & V., Bull. Inst. Bot. Botz 2 (1899) 3; Bijdr. 5 (1900) 155; Nat. Tijd. N. I. 60 (1901) 383; Moll & Janss., Mikr. 2 (1908) 254 (Wood-Anat.); Back., Schoolfl. Java (1911) 228; Koord., Exk. Fl. Java 2 (1912) 530; Koord.-Schum., Syst. Verz. 1, Fam. 162 (1912) 3; Koord., Atlas 1 (1913) t. 120. — *P. latifolia* (non Bl. s. str.) Merr., Philip. J. Sc. 1 (1906) Suppl. 58; Hall. f., Meded. Rijksherb. 1 (1910) 13; Schellenb., Bot. Jahrb. 58 (1923) 159. — *P. excelsa* (non Bl. s. str.) Koord., Junghuhn Gedenkb. (1910) 175. — *P. philippinensis* Merr., Philip. J. Sc. 9 (1914) Bot. 313; En. Philip. 2 (1923) 489; Howard, J. Arn. Arb. 21 (1940) 488, pl. 2, f. 26; Dahl, *ditto* 33 (1952) 260, f. 23 & 23 A (Pollen). — *P. apoensis* Elm., Leaf. Philip. Bot. 8 (1915) 2789; Merr., En. Philip. 2 (1923) 489.

SUMATRA. Eastcoast: Karo lands, 1500 m, *bb.* 7206, 8611; For. Res. Sibua, 1400 m, *bb.* 2781; Berastagi Karo Plateau, 1550 m, *Loerzing* 15798. — Tapanuli: Sibolga, 10 m, *bb.* 3804, 3806, 3815; P. Nias, 240 m, *bb.* 5738. — Westcoast, Padang Pandjang, 600 m, *bb.* 6698. — Palembang: Banjuasin, Kubu, 5–20 m *Thorenaar* 34 P 38; Lematang ilir, 75 m, *Bosbouwproefstation T 3 P* 885. — Simalur I.: *Achmad* 634, 803, 1215, 1336.

JAVA. *Plantae Junghuhnianae* 277 (K, L, = *P. excelsa* ap. Koord., *P. latifolia* ap. Hall. f.). — Djakarta, Depok, *Koorders* 31035. — Bogor: Mt Salak, *Blume* (part of type coll. of *P. latifolia* in L); *ibid.*, 2215 m, *Koorders* 36730, *van Steenis* 5068; Tjibodas, *Sapiin* 110, 2368, *Koorders* 3740/43, 3747, 12587, 12604, 13236, 15585, 25839, 25844, 25874, 32181, 41810. — Priangan: Mt Kendeng near Sukabumi, *Koorders* 3353; Takoka, *Koorders* 15524; Mt Halimun, W. of Nirmala, 1700 m, *van Steenis* 12437; Bandung, 1900–2000 m, *Ja.* 3982, 3999; Tasikmalaja, 730 m, *Koorders* 47751; Mt Patuha, 1600–2200 m, *Hildebrand* 219, *Loerzing* 1339. — Banjumas: Nusa Kambangan, *Koorders* 20264 (BO, lectotype of *P. parviflora*; L), 24618 (BO, syntype of *P. parviflora*; L). — Kedu: Mt Merbabu, 1500 m, *Ja.* 2219. — Semarang: Mt Telemojo, *Koorders* 3555/56, 3558, 27879. — Kediri: Tulungagung, Sendang, 1900 m, *Ja.* 3604. — Malang: Pasuruan, Tangkil, 400–500 m, *Koorders* 23743; Probolinggo, Tengger, *Koorders* 37951; Mt Ardjuno, 2100–2400 m, *Koorders* 37980. — Besuki: W. slope of Mt Hijang, 1400–1600 m, *van Steenis* 10818.

BALI. Mt Batukau, 1300 m, *Kostermans c.s.* 75, 149; Mt Patas, *Maier (Sarip)* 492; Buleleng, 1300–1400 m, *bb.* 11630, 17268.

- LOMBOK. Rindjani Mts, 1250—1600 m, *Elbert (leg. Gründler) 1701, 1787*.
- SUMBAWA. W. Sumbawa, Mt Batulanteh, 500—1400 m, *Kostermans 18515, 18753, 19162*.
- FLORES. Manggarai, 1400 m, *bb. 6972*; Ende, 900 m, *bb. 8938*. Ruteng, 1760 m, *Verheijen 1953 a (L)*.
- BORNEO. Western part: Amai Ambit, *Hallier 3386*. — Brunei: Kuala Belalong, 60 m, *Ashton a. 1959 (SAR)*. — N. Borneo: Penampang, Bangai, 1220 m, *SAN 44358*; Mt Kinabalu, Dallas, 760—915 m, *Clemens 27461 (BO, G, K, L; M, type of P. latifolia var. borneensis; SING)*; Sandakan, Kabili-Sepilok For. Res., For. Dep. Br. N. Borneo 7130 *Puasa*. — Central eastern part: W. Kutai, Belajan R. near Tabang, 100 m, *Kostermans 12698*; near Long Petah, 600 m, *Enderst 3142*. — Northeastern part: Bulungan, 25 m, *bb. 11244*. — Southeastern part: Sg. Wain near Balikpapan, 5—10 m, *bb. 34245, Kostermans 4017, 4308*. — S. Borneo: Sampit, 5 m, *Buwalda 7981*.
- PHILIPPINES. Luzon: Mountain Prov., Mt Tabayoc, 2110 m, *Jacobs 7559*; Mt Polis, B.S. 37693 (BO, P); Mt Pulogloco, B.S. 40381; Mt Nañgaoto, *PNH 7779*; Banaue, 1220 m, *PNH 72393, 79606*; Bataan, Mt Mariveles, fl. ♀, *Whitford 1202 (K; PNH, type of P. philippinensis, †)*, *Elmer 6835 (K)*; *ibid.*, Lanao R., F.B. 2098 (BO, E, K); Sorsogon, Lake Polog, B.S. 23596; Irosin, Mt Bulusan, *PNH 2741, Elmer 15264, 16355*. — Negros: Negros Orient., Cuernos Mts, Dumaguete, *Elmer 9777 (A, n.v.; BM, BO, E, FI, G, K, L, WRSL)*; Lake Danao, Sibulan, *PNH 6622, 6622 A*. — Panay: Capiz, Mt Macosolon, B.S. 30781 (K). — Leyte: *Wenzel 1047*; Dagami, B.S. 15242 (BM, BO, K, L, P). — Mindanao: Davao, Mt Apo, Todaya, *Elmer 10582, 10875, 11412 (A, n.v.; BM, E, FI, G, K, L, P; PNH, type of P. apoensis, †; WRSL)*; Camiguin de Mindanao, B.S. 14651 (K, P).
- Celebes. Central part: Binuang near Lindu (Matanga), *bb. 29658*; Tomado near Lake Lindu, Palo, 750 m, *bb. 28243*; Malili, B. Takale Kaju, 1500 m, *bb. 24093*; Oesoe, *Cel II/477*; Tabarano, 600 m, *bb. 9702, Porehu, 800 m, bb. 19571*. — Southwestern part: Pinrang, 1000 m, *bb. 28315*.
- MOLUCCAS. Ambon: 400—500 m, *bb. 14298, 17723*; Mt Latua, *Boerlage 413*. — Batjan: Mt Sibela, 500—2100 m, *bb. 23234, 23239, 23246, Roepke 9*. — Buru: Kak Tua, 800 m, *bb. 22828*.
- NEW GUINEA. Vogelkop Peninsula: Arfak Mts, *Mayr 513 (BO)*; Ransiki, Meoswaar I., 10 m, *BW 1231*; Wondiwoi Mts, Wandammen Peninsula, *BW 13436*; Kebar, Mt Nettoti, 1600 m, *BW 10415*; *ibid.*, 1750 m, *van Royen & Sleumer 7482 a (L, host of Cladomyza kaniensis (Pilg.) Stauffer = 7482)*; *ibid.*, Wekari R. camp, 1550 m, *van Royen & Sleumer 8115*; Sorong, Warsamson Valley, 50 m, *BW 12328*; Beriat, c. 12 km S. of Teminabuan, *BW 6038*; Steenkool to Tembuni, 50 m, *van Royen 3575*; Manokwari, *BW 1745*; *ibid.*, Sidei, 10—20 m, *BW 4431, 5762, 5849, 6789, 6844, 6932, 6949*; Prafi, 150 m, *BW 460*. — Biak I.: 50 m, *bb. 30808*. — Japen I.: 350 m, *bb. 30505*. — Central New Guinea: Idenburg R., Bernhard camp, 1260—1850 m, *Brass & Versteegh 11949, 12600*; Lake Habbema, Bele R., *Brass 11564, Brass & Versteegh 11119, 11141*. — South New Guinea: Muju, Opka, 50 m, *BW 6477*. — North New Guinea, Sidoarsi Mts, c. 200 km W. of Hollandia, *BW 9051*; Hollandia, Dok 5, *BW 1980*; Netar, Lake Sentani, 400 m, *bb. 25025*; Cycloop Mts, 230—530 m, *BW 1990, 4280*. — Sepik Dist.: April R., 200—400 m, *Ledermann 9727 (K, L, cited by Schellenberg as P. latifolia)*; Telefomin, 1525 m, *NGF 32120*. — Madang Dist.: Finisterre Mts, Naho-Rawa Div., Moro, 1830 m, *NGF 21481*. — Morobe Dist.: Lae, Oomsis creek 300 m, *NGF 10482, 14589*; ridge above Markham R. bridge, 150—275 m, *NGF 11968, 11994, 17235, 20124, 20133*; Mt Kaindi, 2250 m, *Brass 29679*; Edie Creek, 2135 m, *Hartley 11722*; Mt Saruwaged area, Abe, 1200—1830 m, *Clemens 8355*; Sambanga, 1500—1800 m, *Clemens 6885*; Quembung, 600—900 m, *Clemens 1167*. — Western Highlands: Wabag, Yaibos, 2135 m, *Flenley ANU 2332*. — Southern Highlands: Anga valley, 2000 m, *Schoöde 1506*; Enep, N. of Mendi, 2165 m, *Schoöde 2140*. — Central Dist.: Isuarava, 1465 m, *Carr 15402*; Boridi, 1525 m, *Carr 13327, 13554, 14543*; Alola, 1830 m, *Carr 13615, 13676*; Sogere, *Forbes 644*. — Northern Dist.: Oro Bay, *NGF 2423*; Hydrographers Ra., Managalase area, 1125 m, *Pullen 5504*. — Milne Bay Dist., Fergusson I., 900 m, *Brass 27066*.
- NEW BRITAIN. Kandrian, Pirilongi village, 400 m, *NGF 21951*; Wariai area, 300 m, *NGF 27363*; Gasmata, Torlu R., 1065 m, *NGF 24237*.

var. *kinabaluensis* (Sleum.) Sleum., *stat. nov.* — *P. kinabaluensis* Sleum., *Notizbl. Berl.-Dahl.* 15 (1940) 234; Heine, *Pfl. d. Samml. Clemens Kinabalu (1953) 57*. — *P. latifolia* (*non Bl.*) Dahl, *J. Arn. Arb.* 33 (1952) 260 (Pollen).

BORNEO. N. Borneo: Mt Kinabalu, Marai Parai, 1430 m, *Clemens 32396 (A, n.v.; B, type of P. kinabaluensis, †; BM, BO, G, K, L; UC, n.v.)*; Mesilau R., 1525 m, *Chew & Corner (R. Soc. Exp.) 4327 (K)*.

EXCLUDED

Platea axillaris Wall. ex Thwait., *En. Pl. Zeyl.* (1858) 44 = *Gomphandra tetrandra* (Wall. in Roxb.) Sleum. (1940).

- Platea coriacea* (Wight) Thwait., En. Pl. Zeyl. (1858) 44 = *Gomphandra coriacea* Wight (1840).
Platea corniculata Becc., Malesia 1 (1877) 117 = *Cantleya corniculata* (Becc.) Howard (1940).
Platea crassipes (Kurz) Kurz, Prel. Rep. For. & Veg. Pegu App. A p. XXXIV (1875) = *Anacolosia crassipes* (Kurz) Kurz (1875), based on *Stemonurus ? crassipes* Kurz (1872).
Platea griffithiana Miers, Ann. Mag. Nat. Hist. II, 10 (1852) 110, repr. Contr. Bot. I (1852) 97 = *Gonocaryum lobbianum* (Miers) Kurz (1870), based on *Platea lobbiana* Miers (1852).
Platea laxiflora Miers, Ann. Mag. Nat. Hist. II, 10 (1852) 111, repr. Contr. Bot. I (1852) 98 = *Medusanthera laxiflora* (Miers) Howard (1940).
Platea lobbiana Miers, Ann. Mag. Nat. Hist. II, 10 (1852) 111, repr. Contr. Bot. I (1852) 97 = *Gonocaryum lobbianum* (Miers) Kurz (1870).
Platea oblonga Korth. ex Valet., Crit. Overz. Olacin. (1886) 252, in text, & pl. VI, f. 42 a—d; Sleum., Notizbl. Berl.-Dahl. 15 (1940) 234, in text = *Prunus javancia* (T. & B.) Miq.
Platea papuana Becc., Malesia 1 (1883) 257 = *Gomphandra papuana* (Becc.) Sleum. (1940).
Platea wightiana Miers, Ann. Mag. Nat. Hist. II, 10 (1852) 111, repr. Contr. Bot. I (1852) 98, 305 (Errata) = *Gomphandra tetrandra* (Wall. in Roxb.) Sleum. (1940).

20. THE GENUS POLYPORANDRA BECC.

POLYPORANDRA

Becc., Malesia 1 (1877) 125, t. 7; Boerl., Handl. 1, 1 (1890) 221; Engl. in E. & P., Nat. Pfl. Fam. III, 5 (1893) 253; Sleum. in E. & P., Nat. Pfl. Fam. ed. 2, 20 b (1942) 379, f. 109.

1. *Polyporandra scandens* Becc., Malesia 1 (1877) 125, t. 7; Pulle, Nova Guinea 8 (1912) 660; Schellenb., Bot. Jahrb. 58 (1923) 176; Birnie, Nova Guinea 14 (1926) 277; White, J. Arn. Arb. 10 (1929) 235; Sleum. in E. & P., Nat. Pfl. Fam. ed. 2, 20 b (1942) 379, f. 109; Dahl, J. Arn. Arb. 22 (1952) 275, f. 70 (Pollen); Steen., Nova Guinea Bot. n. 23 (1965) 495. — *Iodes ovalis* (non Bl.) Warb., Bot. Jahrb. 13 (1891) 299. — *P. hansemannii* Engl., Bot. Jahrb. 16, Beibl. 39 (1893) 13 ('hansemanni'); in E. & P., Nat. Pfl. Fam. III, 5 (1895) 253; K. Sch. & Laut., Fl. Schutzgeb. (1900) 418. — *Iodes sogerensis* Bak. f., J. Bot. 61 (1923) Suppl. 10.

MOLUCCAS. Halmahera: *Beguín 2268*; Telaga Ranao, 500 m, *Pleyte 201*. — Batjan: Mt Damar Masuring, 200 m, *Nedi (Exp. de Haan) 43*.

NEW GUINEA. NNW. New Guinea: Ramoi (= Sorong), fl. ♀, *Beccari P.P. 267* (FI, lectotype of *P. scandens*; K, P); Manokwari, road to Warmare, 100 m, *van Royen & Sleumer 6696*; Andai, fl. ♂, *Beccari P.P. 674* (A, n.v.; FI, syntype of *P. scandens*; K); Kebar Valley Andjai to Mt Nettoti, 650 m, *van Royen & Sleumer 6830*. — S. New Guinea: *Zippelius 199* (L); Noord (Lorentz) R., Bivouac I, *Versteeg 1785*; *ibid.*, Kloofbivouac, 40 m, *Pulle 137*. — N. New Guinea: Nassau Mts, 700 m, *Docters van Leeuwen 10596, 10613, 10634, 10706*; Sawia near Hollandia, 100 m, *Gjellerup 635*. — Sepik Dist.: Sepik R., *Hollrung 703* (B, type of *P. hansemannii*, †); *ibid.*, Hauptlager Malu, 20—100 m, *Ledermann 8019* (B, †; K), *11540* (B, †), *12251* (B, †); April R., 200 m, *Ledermann 8738* (B, †; E, K). — Madang Dist.: Kani Mts, *Schlechter 17835* (P); Lower Ramu R. valley, Atitau area, *Pullen 1064*; Wobbe, 250 m, *Schlechter 16474* (B, †); Malia, 150 m, *Schlechter 18360* (P). — Central Dist.: Sogere, 600 m, fr., *Forbes 162, 265, 376* (BM, type of *Iodes sogerensis*); Jawawere, 300 m, *Brass 829* (K); *Veiya, Carr 11696*; Maipa, on Akaiфу R., 45 m, *Darbyshire 1008*; Koitaki, 455 m, *Carr 12533, 12584, 12610*. — Northern Dist.: Kokoda trail, 365 m, *Carr 16170 A, 16514, 16435, NGF 23577*; Budi, Tufi subdist., 75 m, *Hoogland 4580*; Popondetta, 150 m, *Hoogland 3276*. — Morobe Dist.: Bussum near Finschhafen, *Warburg a. 1889* (B, as *Iodes ovalis*, †, supposed to have belonged to *Polyporandra*); Sattelberg, 1000 m, *Clemens 1090*; Oomsis creek, 120 m, *Hartley 10461*; Busu R., 60 m, *Hartley 12229*; Bunga R., 20 m, *Hartley 10302*; Partep creek, Wau road, 760 m, *NGF 7813*. — Milne Bay Dist.: Gwariu R., 200 m, *Brass 23788*; Peria creek, *Brass 24221*.

SOLOMON IS. Bougainville: 50—150 m, *Kajewski 1932, 2206*. — Malaita: sea-level, *Kajewski 2352, BSIP 3512*. — N. Kolombangara: *BSIP 8742*.

21. THE GENUS PSEUDOBOTRYS MOESER

PSEUDOBOTRYS

Moeser in Fedde, Rep. 10 (1912) 310; Engl. in E. & P., Nat. Pfl. Fam. Nachtr. 4 (1915) 190; Sleum. in E. & P., Nat. Pfl. Fam. ed. 2, 20 b (1942) 360, f. 101, A & B.

KEY TO THE SPECIES

1. Ovary densely brownish-pubescent. Petals 2.8—3.2 cm. Anthers 5—6 mm. New Guinea 1. *P. dorae*
 1. Ovary glabrous. Petals c. 2.2 cm. Anthers 3—4 mm. New Guinea. 2. *P. cauliflora*

1. *Pseudobotrys dorae* Moeser in Fedde, Rep. 10 (1912) 310; Sleum., Notizbl. Berl.-Dahl. 15 (1940) 235; in E. & P., Nat. Pfl. Fam. ed. 2, 20 b (1942) 360, f. 101, A & B.

NEW GUINEA. Morobe Dist.: Yunzaing, Sattelberg area, 1500 m, *Clemens 4155* (B, †); Lower Waria R. area, Mt Gomadjidji, 450 m, *Schlechter 19926* (B, type of *P. dorae*, †; P). — Central Dist.: Boridi, 1370—1525 m, *Carr 13109, 14904*; Koitaki, 455 m, *Carr 12128, 12760*. — Northern Dist.: N. of Ioma, 30 m, *NGF 29976*.

2. *Pseudobotrys cauliflora* (Pulle) Sleum., Notizbl. Berl.-Dahl. 15 (1940) 235; Dahl, J. Arn. Arb. 36 (1955) 160, f. 1 & 1 A (Pollen). — *Chariessa cauliflora* Pulle, Nova Guinea 8 (1912) 657; Schellenb., Bot. Jahrb. 58 (1923) 159; Birnie, Nova Guinea 14 (1926) 275.

NEW GUINEA. NW. New Guinea: Geelvinkbay, Momi, 10 m, *Kostermans 2739*; Nabire, 3 m, *Kanehira & Hatusima 11561*. — N. New Guinea: Mamberamo R., Albatros biv., 30—60 m, *Docters van Leeuwen 9119, 9127, 11243*; base of the Van Rees Mts, *Moszkowski 273* (B, †); Van Rees Mts, Van Gelder R., 100 m, *Docters van Leeuwen 9307*; Rouffaer R., 175 m, *Docters van Leeuwen 9945*; Idenburg R., Bernhard Camp, 75 m, *Brass 13805*; Tor R., 25 m, *Gjellerup 749*. — S. New Guinea: Noord R., near Alkmaar, 30 m, *Pulle (Versteeg) 1576* (BO, K, L; U, type of *Chariessa cauliflora*). — Sepik Dist.: August R., *NGF 3815*; Mori village, 60 m, *NGF 19524*. — Western Dist.: Palmer R., 100 m, *Brass 7005*. — Morobe Dist., Wau-Salamaua road, Skindeway, 1645 m, *NGF 8466*.

22. THE GENUS PYRENACANTHA HOOK. IN MALESIA

PYRENACANTHA

Hook., Bot. Misc. 2, 4 (1830) 107, Suppl. t. 9 & 10, *nom. cons.*; R. Br. in Benn. & Br., Pl. Jav. Rar. (1852) 245. — *Freeria* Merr., Philip. J. Sc. 7 (1912) Bot. 292; Engl. in E. & P., Nat. Pfl. Fam. Nachtr. 4 (1915) 190.

Pyrenacantha repanda (Merr.) Merr., En. Philip., 2 (1923) 492. — *P. sp.*, Ceron, Cat. Pl. Herb. Manila (1892) 46. — *Freeria repanda* Merr., Philip. J. Sc. 7 (1912) Bot. 292. — *Tragia luzoniensis* Merr., Philip. J. Sc. 16 (1920) 564.

PHILIPPINES. LUZON: Ilocos Norte, Burgos, B.S. 32854 (K; PNH, type of *Tragia luzoniensis*, †); Bulacan, *Vidal 2387* (K); Tayabas, Kabibihan, B.S. 13289 (K; PNH, type of *Freeria repanda*, †); Sorsogon, Mt Bulusan, Irosin, *Elmer 17359* (as *Freeria strongei* ms.). — Samar: B.S. 24369 (PNH, cited by Merrill, †). — Mindanao, Surigao, B.S. 34929 (PNH, cited by Merrill, †), *Wenzel 2607* (A, n.v.; K, UC), *2667* (A, n.v.; BO, G. K); 3290 (UC).

23. A REVISION OF THE GENUS RHYTICARYUM BECC.

RHYTICARYUM

Becc., Malesia 1 (1877) 120, t. 5, f. 18—25 (*'Ryticaryum'*); *ditto* (1878) 256 (corr.: *Rhyticaryum*); Valet., Crit. Overz. Olacin. (1886) 256; Boerl., Handl. 1, 1 (1890) 215 (*'Ryticarum'*); Engl. in E. & P., Nat. Pfl. Fam. III, 5 (1893) 250; K. Sch. & Laut., Fl. Schutzgeb. (1900) 415 (*'Rhytidocaryum'*, non F. v. M. 1883); Post & Ktze, Lex. Gen. Phan. (1904) 485 (*'Ryticaryum'*); Schellenb., Bot. Jahrb. 58 (1923) 166 (*'Rhyti(do)caryum'*); Sleum. in E. & P., Nat. Pfl. Fam. ed. 2, 20 b (1942) 376. — *Pocillaria* Ridl., Trans. Linn. Soc. II, Bot. 9 (1916) 28.

Lectotype species: *R. oleraceum* Becc.; cf. Sleum. in E. & P., Nat. Pfl. Fam. ed. 2, 20 b (1942) 376.

KEY TO THE SPECIES

1. Flowers in the same specimen both in axillary (rather lax) spikes *and* in panicles composed of such spikes. New Guinea **1. *R. novoguineense***
1. Flowers exclusively in axillary spikes (these sometimes very short in ♀ specimens, the flowers seemingly fasciated then).
 2. Both ♂ and ♀ inflorescences very laxly appressedly hairy, i.e. practically glabrous to the naked eye.
 3. Leaves becoming purplish when dried. ♂ Spikes longer than 20 cm. New Guinea. **2. *R. purpurascens***
 3. Leaves becoming brownish or blackish green, or remaining green-yellowish when dried. ♂ Spikes in general shorter than 20 cm.
 4. Base of leaves properly rounded. New Guinea. **3. *R. rotundatum***
 4. Base of leaves attenuate, rarely almost rounded and cuneate in the same specimen.
 5. Drupe 3.5—4.3 by 2.5—3 by c. 1.5 cm. New Guinea. **4. *R. macrocarpum***
 5. Drupe much smaller, rarely up to 2.6 by 1.5 cm.
 6. Leaves blackish green and hardly reticulate above in the dry state, nerves 6—7 pairs. ♀ Spikes lax-flowered, laxly hairy. New Guinea **5. *R. lucidum***
 6. Leaves greenish yellowish, or maybe greenish greyish in the dry state, reticulation generally distinct (at least slightly prominent) above.
 7. Flowers laxly arranged, i.e. (much) spaced. Basal pair of nerves curved-ascendent, upper pairs ± rectangularly from the midrib and straight. Rachis slender. New Guinea **6. *R. elegans***
 7. Flowers (sub)densely arranged. Nerves of leaves all ± distinctly curved-ascendent.
 8. Leaves membranous to chartaceous, with a very fine and very dense prominent reticulation on both faces, nerves (10—)12—14 pairs. Tanimbar Is, Moluccas (Ceram, Amboina, Morotai, Batjan), Sula Is, Kai Is, New Guinea. **7. *R. oleraceum***
 8. Leaves subcoriaceous to thin-coriaceous, reticulation more coarse, nerves 6—8(—10) pairs. New Guinea **8. *R. oxycarpum***
 2. Both ♂ and ♀ inflorescences ± densely set with brownish substrigose hairs (tomentose in juvenile state).
 9. ♂ Flowers ± distant from each other along the rachis.
 10. Rachis filiform. Leaves with 6—8 pairs of nerves. New Guinea. **9. *R. gracile***
 10. Rachis slender. Leaves with 8—10 pairs of nerves. New Guinea. **10. *R. racemosum***
 9. ♂ Flowers close to each other along the ± stoutish rachis.
 11. Spikes very short (c. 6 mm), the few flowers together almost in a fascicle. Leaves thin. New Guinea. **11. *R. fasciculatum***
 11. Spikes longer to elongate (rachis at least 1 cm) and with numerous flowers. Leaves firm. New Guinea, Solomon Is, Australia (Queensland). **12. *R. longifolium***

1. *Rhyticaryum novoguineense* (Warb.) Sleum., *comb. nov.* — *Buchanania novoguineensis* Warb., Bot. Jahrb. 13 (1891) 363.

NEW GUINEA. Madang Dist.: Hatzfeldhafen, *Warburg* a. 1889 (B, syntype of *Buchanania novoguineensis*, †).
Morobe Dist.: Sattelberg, 600 m, *Warburg* a. 1889 (B, syntype of *Buchanania novoguineensis*, †); near Skindeway, Wau-Salamaua road, 1645 m, fl. ♂, 6-1-1956, NGF 8386 (A, n.v.; K, L).

Note. The combination made above is based in the first place on a remark in Lauterbach's Revision of the *Anacardiaceae* of New Guinea (Bot. Jahrb. 56, 1921, 349), that Warburg's species belongs to *Rhyticaryum*, though Schellenberg in his work on the *Icacinaeae* (Bot. Jahrb. 58, 1923, 166) does not mention it. Possibly, the material of *Buchanania novoguineensis* was not transferred yet to *Rhyticaryum* in the Berlin Herbarium when Schellenberg revised the latter. As there is only one species known in *Rhyticaryum* to have compound inflorescences, and the NGF material cited above matches the original description in practically all characters given, it seems advisable, rather to make the new combination than to describe a new species. Warburg's original specimens of *Buchanania novoguineensis* are lost, and no isotypes or fragments could be traced.

2. *Rhyticaryum purpurascens* Schellenb., Bot. Jahrb. 58 (1923) 172.

NEW GUINEA. Sepik Dist.: Leonhardt Schultze R., 20—50 m, *Ledermann 7756* (B, type, †).

3. *Rhyticaryum rotundatum* Schellenb., Bot. Jahrb. 58 (1923) 172.

NEW GUINEA. Sepik Dist.: Sepik R., 20—30 m, *Ledermann 12277 a* (B, type, †).

4. *Rhyticaryum macrocarpum* Becc., Malesia 1 (1878) 256; Valet., Crit. Overz. Olacin. (1886) 257; Schellenb., Bot. Jahrb. 58 (1923) 173.

NEW GUINEA. Sepik Dist.: August R., fr., *NGF 3816* (A, n.v.; BO, K, L). — Western Dist.: Fly R., fr., *d'Albertis a.* 1876 (FI: Herb. Beccari 2484, 2486, 2489, type material of *R. macrocarpum*; MEL, n.v.). — Vogelkop Peninsula: Kebar, Asiti, 475 m, fr., *BW 11381*; *ibid.*, 445 m, fl. ♂, *BW 11366*.

5. *Rhyticaryum lucidum* Schellenb., Bot. Jahrb. 58 (1923) 175.

NEW GUINEA. Sepik Dist.: Hunstein Mts, 1300 m, *Ledermann 11262* (B, type, †).

6. *Rhyticaryum elegans* Schellenb., Bot. Jahrb. 58 (1923) 174; Birnie, Nova Guinea 14 (1926) 276; Dahl, J. Arn. Arb. 33 (1952) 276 (Pollen).

NEW GUINEA. Western part: Wandammen Peninsula, Wondiwoi Mts, 800—1050 m, *BW 13351, 13648, 13692*; Wissel Lakes, Mt Digatara, 2250 m, *Eyma 5376*. — Southern part: Lorentz R., 1350 m, *von Römer 1019* (BO, L). — Central part: Bele R., 18 km NE. of Lake Habbema, 2300 m, *Brass 11059*. — Madang Dist.: Bismarck Mts, northern foothills, 1000 m, *Schlechter 18681* (B, type of *R. elegans*, †; P, UC). — Central Dist.: Lala R., 1675 m, *Carr 14053*.

7. *Rhyticaryum oleraceum* Becc., Malesia 1 (1877) 121, t. 4, f. 18—21; Valet., Crit. Overz. Olacin. (1886) 257; Schellenb., Bot. Jahrb. 58 (1923) 173. — *R. parviflorum* Pulle, Nova Guinea 8 (1912) 659; Schellenb., Bot. Jahrb. 58 (1923) 173. — *R. oncocarpum* (non K. Sch. & Laut.) Birnie, Nova Guinea 14 (1926) 276.

LESSER SUNDA IS. Tanimbar Is: P. Jamdena, Otimmer, *Buwalda 4306, 4471*.

MOLUCCAS. Ceram: Roho, 100—200 m, *Kornassi (Exp. Rutton) 503*; Hatuolo, 600 m, *Kornassi (Exp. Rutton) 1544*; Mt Murkele, 1000—1900 m, *Kornassi (Exp. Rutton) 1450* (BO); Mt Pipilaina-Manusela, *Eyma 1935 a*; Wahai, *Treub a.* 1893 (BO); Kaniki, 600 m, *Kornassi (Exp. Rutton) 1396*. — Morotai: Mt Sangowo, 900 m, *Kostermans 1109*; Mt Sabatar, 200 m, *Lam 3571* (L). — Sula Is: P. Mangoli, 10 m, *Bloembergen 4685* (L). — Amboina: *Teysmann*; Mt Horiel, *Boerlage 48*; Mt Latua, *Boerlage 471, 480*. — Batjan: *Vorderman 23* (BO).

KAI IS. Great Kai, westcoast, Weru, *Beccari a.* 1873 (FI, Herb. n. 2479, fl. ♂ & fr., lectotype of *R. oleraceum*; n. 2483, fr., n. 2483 A, defl., n. 2483 B, fr., FI, syntypes); Pulu ubur, *Warburg 20215* (B, †, cit. Schellenberg). No locality given: *Jaheri 82 & 156*, fl. ♂ (BO, L).

NEW GUINEA. Northwestern part: Geelvinkbay, 40 km inward Nabire, 100 m, *Kanehira & Hatusima 12847* (BO); Napan, Waobu, *Satake & Niimura 710*. — Southern part: Lorentz (Noord) R., *von Römer 333*, fr. (BO, L); Sabankamp, *Versteeg 1354*, fl. ♂ (BO, L, type of *R. parviflorum*); Bivak I., 40 m, *Pulle 2, 37, 60, 1233* (all BO & L); Southcoast near Uta, 3—4 m, fr., *Aet (Exp. Lundquist) 338, 373, 389*.

8. *Rhyticaryum oxycarpum* K. Sch. & Laut., Fl. Schutzgeb. (1900) 416; Schellenb., Bot. Jahrb. 58 (1923) 175. — *R. pulchrum* Schellenb., Bot. Jahrb. 58 (1923) 173. — *R. urophyllum* Schellenb., l.c. 174.

NEW GUINEA. Madang Dist., Ramu R., 100 m, *Lauterbach 2502* (B, type of *R. oxycarpum*, †; WRSL, fragm. fol. & fr. ex B). — Sepik Dist.: April R., 20—40 m, *Ledermann 7164* (fr., B, †), *8768* (fl. ♂, B, †, K); *ibid.*, 'Pyramide', 100—200 m, fl. ♂, *Ledermann 7564* (B, type of *R. urophyllum*, †; K); *ibid.*, 'Lordberg', 1000 m, fl. ♀, *Ledermann 10211* (B, type of *R. pulchrum*, †; K, sub '20211'; L); Wewak-Angoram area, near Kanduanu village, c. 25 m, *Pullen 1781*, fl. ♂.

Note. I find no essential differences between the 3 species lumped above, though the leaves of the type of *R. oxycarpum* are slightly less markedly reticulate than the leaves of the other specimens.

9. *Rhyticaryum gracile* Schellenb., Bot. Jahrb. 58 (1923) 170.

NEW GUINEA. Sepik Dist.: Sepik R., Hauptlager Malu, 200 m, fl. ♂ juv., *Ledermann 10114 b* (B, syntype, †); Upper April R., 'Lordberg', 1000 m, fl. ♂ juv., *Ledermann 10180* (B, lectotype, †; K).

10. *Rhyticaryum racemosum* Becc., Malesia I (1877) 121, t. 4, f. 22 & 23; Valet., Crit. Overz. Olacin. (1886) 257; Schellenb., Bot. Jahrb. 58 (1923) 168, as to the type only.

NEW GUINEA. Vogelkop Peninsula: Sorong (Ramoi), fr., *Beccari P.P. 264* (FI, type); Klamono SE. Sorong, 20 m, fl. ♂, *Pleyte 574, 734*; Cape Casuaris, N. of Sorong, 2 m, fr., *van Royen 3129*; Road from Steenkool to Tambuni, 45 m, fr., *van Royen 3448*.

11. *Rhyticaryum fasciculatum* Becc., Malesia I (1877) 121, t. 4, f. 24 & 25; Valet., Crit. Overz. Olacin. (1886) 257; Schellenb., Bot. Jahrb. 58 (1923) 168.

NEW GUINEA. Vogelkop Peninsula: Amberbaken (country along N. coast W. of Manokwari), fr., *Beccari* anno 1872 (FI, Herb. *Beccari 2478 & 2480*, type); Andai near Manokwari, fl. ♀ (= f. 24 & 25), *Beccari a. 1872* (FI, Herb. *Beccari 2481*, not mentioned in the original descr.); *ibid.*, fr., *Tuyama 1085*; Momi, 60 miles S. of Manokwari, 30 m, *Kanehira & Hatusima 13278* (BO).

12. *Rhyticaryum longifolium* K. Sch. & Laut., Fl. Schutzgeb. (1900) 415; Nachtr. (1905) 306. — *R. oncocarpum* K. Sch. & Laut., Fl. Schutzgeb. (1900) 416; Schellenb., Bot. Jahrb. 58 (1923) 171. — *R. ? oxycarpum* (non K. Sch. & Laut.) Valet., Bull. Dep. Agric. Ind. Néerl. 10 (1907) 30. — *Pocillaria pubescens* Ridl., Trans. Linn. Soc. II, Bot. 9 (1916) 28. — *R. bullatum* Schellenb., Bot. Jahrb. 58 (1923) 169. — *R. oblongum* Schellenb., l.c. 169. — *R. elongatum* Schellenb., l.c. 170. — *R. ovale* Schellenb., l.c. 171. — *R. racemosum* (non Becc.) Schellenb., l.c. 168; Birnie, Nova Guinea 14 (1926) 276. — *Antidesma megalocarpum* Sp. Moore, J. Bot. 61 (1923) Suppl. 46. — *R. pubescens* (Ridl.) Sleum., Notizbl. Berl.-Dahl. 15 (1940) 250.

NEW GUINEA. Vogelkop Peninsula: Arfak Mts, trail from Momi to Anggi Gita Lake, 500 m, *Kostermans 2057*. — Southern part: Lorentz R., Alkmaar, 750 m, *von Römer 933* (L); Utakwa R. to Mt Carstenz, camp I, 520 m, *B.C. Kloss a. 1912* (BM, type of *Pocillaria pubescens*); *ibid.*, camp VI a & b, *B.C. Kloss a. 1913* (K). — Wandammen Peninsula: Wondiwoi Mts, 300—900 m, *BW 10656, 10666, 13582*. — Japen: Woda, 60 m, *BW 11192*. — Northern part: Idenburg R., Bernhard camp, 175 m, *Brass 13869*; Cycloop Mts, Mt Singajam near Hollandia, *Atasrip 221*; Hollandia, 50 m, *Meijer Drees 234*; Lake Sentani, 75 m, *BW 4807, 4833*; Road from Netar to Northcoast, 900 m, *Meijer Drees 7*; *ibid.*, path Ifar-Ormu, 1200—1270 m, *van Royen 3627, van Royen & Sleumer 6136*. — Western Dist.: Lower Fly R., Gaima, *Brass 8375*. — Western Highl.: Upper Kaugel R. valley, 2500 m, *Bowers 84*; Wabag, Pokaris, 2000 m, *ANU 2858 Flenley*; Nondugl, *NGF 4332*. — Sepik Dist.: Aitape, along Biri R., 75 m, *Darbyshire & Hoogland 8184*. Sepik R., Malu, 50—100 m, *Ledermann 8012* (E, K), *10451* (B, †), *10866* (B, †); *ibid.*, 'Peilungsberg', 100—150 m, *Ledermann 6916* (K); Frieda R., 300—400 m, *Ledermann 7486* (B, †, syntype of *R. ovale*; K); May R., 50—100 m, *Ledermann 7329* (B, type of *R. elongatum*, †); April R., 50—200 m, *Ledermann 8615* (B, †), *8797* (B, lectotype of *R. ovale*, †; K); West Ra., 'Felsspitze', 1400—1500 m, *Ledermann 13497* (B, syntype of *R. bullatum*, †), *12967* (B, lectotype of *R. bullatum*, †; BM, K). — Madang Dist.: Malia R. (one of the affluents of the Ramu R.), 150 m, *Schlechter 18412* (P); Ramu R., *Tappenbeck 39* (B, lectotype of *R. oncocarpum*, †; WRSL, fragm. ex B); Constantinhafen, fl. ♂, *Schlechter 14280* (BM, BO, G, K, L, P, WRSL); Finisterre Mts, 150 m, *Schlechter 18146* (B, †). — Morobe Dist.: Lac, Oomsis logging area, 600 m, *NGF 14305*; Busu R., 60 m, *Hartley 11342*; Wagau, 1340—1400 m, *NGF 21515, 23471*; Finschhafen, Kelana Station, *Hellwig 175* (K, L); *ibid.*, Ibekippo near Bonga, *Lauterbach 773* (B, type of *R. longifolium*, †; WRSL, fragm. ex B); Sattelberg area, 800—1220 m, *Lauterbach 561* (B, syntype of *R. oncocarpum*, †), *Nyman 429* (C, S, UPS), *Clemens 295, 749* (fasciation), *1028, 1058*; *ibid.*, Heldsbach, 30 m, *Clemens 118* (L, with pubescent leaves, fr.); Wau, Quali Creek, 1220 m, fl. ♀, *Hartley 11478*; Wau-Salamaua

road, 1800 m, NGF 8315; Bulolo, 600—1065 m, NGF 7462, 21104, Hartley 9979; Waria R. valley, Garaina, 1000 m, Hartley 10385; above Wakaina, 1220 m, NGF 26433; Waube Bach, 400 m, Schlechter 19432 (B, type of *R. oblongum*, †; P). — Central Dist.: Yodda R., 1370 m, Carr 13922; Sogere, Forbes 225 (BM, K), 417 (BM), 497 (BM, type of *Antidesma megalocarpum*); Boridi, 1000—1065 m, Carr 14735, 14970; Isuarava, 1220 m, Carr 16090; Brown R., Karema, 15 m, Schodde 2598; Koitaki, 450 m, Carr 11903, 12569, 12799; Dieni, Ononge road, 500 m, Brass 3878; Mt Scratchley, 1220 m, Giulianetti a. 1896 (K). — Northern Dist.: Kokoda, 325 m, Hoogland 3958. — Milne Bay Dist.: Mt Dayman, Maneau R., 700 m, Brass 23559; Rossel I., 700 m, Brass 28391.

SOLOMON IS. Bougainville: Waterhouse Y 87 (K), NGF 30581, 31098; SW. of Crown Prince Ra., 910 m, Voyce B 5; Kieta, 100 m, Kajewski 1609; Koniguru, Buin, 900 m, Kajewski 2072; Barapinang, Cole 26; Lake Loloru, W. of Buin, 700—790 m, Schodde (& Craven) 3774, 3831. — Wagina I.: BSIP 5453, 5538. — Guadalcanal: Whitmore 6009, 6081; Popomanasiu, 900 m, Corner (Roy. Soc. Exp.) 146; Vulolo, Mt Tutuve, 1200 m, Kajewski 2585. — New Georgia group: Gizo I., BSIP 5588, 11744; Vangunu I., BSIP 1245; Baga I., BSIP 3059. — Malaita: BSIP 3426, 10278. — San Cristobal, Wairaha R., BSIP 4317; Ulawa I., BSIP 6218.

AUSTRALIA. Queensland: Cape York Peninsula, Iron Ra., 20—50 m, Brass 19054, 19264.

INCOMPLETE MATERIAL

Rhyticaryum sp.

NEW GUINEA. Nassau Mts, Explor. biv., 700 m, fl. ♂, Docters van Leeuwen 10611 (L).

Rhyticaryum sp.

NEW GUINEA. Mamberamo R., opp. Albatros biv., 75 m, fl. ♂ juv., Docters van Leeuwen 9542 (BO, K, L).

Rhyticaryum sp.

NEW GUINEA. 'Meervlakte', Motor biv., Albatros R., 100 m, fr. mat., Docters van Leeuwen 11050 (BO, K, L).

Rhyticaryum sp.

NEW GUINEA. Vogelkop Peninsula: Arfak Mts, near Iray, 1900 m, fr., Kanehira & Hatusima 13769 (BO).

Rhyticaryum sp.

NEW GUINEA. Central Mts, Swart Valley, Kadubaka, 1600—2000 m, fl. ♂, D. Bergman 336 (L, S).

NEW BRITAIN. Kandrian, Pulie R., 30 m, NGF 27231; Pirilongi village, 400 m, fr., NGF 21932; Arawe area, Omoi, 3 m, fl. ♂ juv., NGF 26543.

Similar in leaves to *R. longifolium* K. Sch. & Laut., but drupes larger.

Rhyticaryum sp.

NEW IRELAND. Ugana, Lelet Mts, 600 m, fr., Peekel 113 (L).

ADMIRALTY IS. Fl. ♂ juv., Manus, Moseley Exp. (K).

24. THE GENUS *SARCOSTIGMA* W. & A.

SARCOSTIGMA

W. & A., Edinb. New Phil. J. 14 (1833) 299; R. Br. in Benn. & Br., Pl. Jav. Rar. (1852) 244; Miers, Ann. Mag. Nat. Hist. II, 10 (1852) 116, repr. Contr. Bot. I (1852) 103, p.p.; Baill., Hist. Pl. 5 (1874) 338; Boerl., Handl. 1, 1 (1890) 221; Engl. in E. & P., Nat. Pfl. Fam. III, 5 (1893) 253; Sleum. in *ditto* ed. 2, 20 b (1942) 382; Back. & Bakh. v. d. Brink, Fl. Java 2 (1965) 62.

In the genus only two species can be distinguished, which are easily recognized by their inflorescence type. The holo- resp. isotypes of the Asiatic species, part of which are considered here as synonyms, have been checked in various herbaria.

KEY TO THE SPECIES

1. Flowers in simple racemes, ♂ ones sessile, ♀ ones pedicelled. India (Western Ghats from Concan and N. Kanara to Travancore), Lower Burma, Andamans, S. Annam, Malesia (Malay Peninsula, Java).

1. *S. kleinii*

1. Flowers in panicles, ♂ and ♀ ones sessile. Cochinchina, Sumatra, Malay Peninsula, Borneo, Philippines

2. *S. paniculata*.

1. *Sarcostigma kleinii* W. & A., Edinb. New Phil. J. 14 (1833) 299; Miers, Ann. Mag. Nat. Hist. II, 10 (1852) 116, repr. Contr. Bot. 1 (1852) 103, pl. 18; Wight, Ic. 5, 2 (1852) t. 1854; Dalz. & Gibs., Fl. Bombay (1861) 221; Baill., Adansonia 3 (1863) 365; in DC., Prod. 17 (1873) 15; Mast. in Hook. f., Fl. Br. Ind. 1 (1875) 594; Brandis, Ind. Tr. (1906) 153, f. 71; Gamble, Fl. Pres. Madras 1 (1915) 199; Ridl., Fl. Mal. Pen. 5 (1925) 297; Kirtikar & Basu, Ind. Med. Pl. ed. 2, 1 (1935) 570, t. 233. — *S. horsfieldii* R. Br. in Benn. & Br., Pl. Jav. Rar. (1852) 241, t. 47; Miers, Ann. Mag. Nat. Hist. II, 10 (1852) 118, repr. Contr. Bot. 1 (1852) 105; Miq., Fl. Ind. Bat. 1, 1 (1856) 795; Hassk., Hort. Bog. Retziae ed. nov. (1858) 360; Schnizl., Ic. 3 (1857/65) t. 172, f. 32 & 33; Baill. in DC., Prod. 17 (1873) 16; Becc., Malesia 1 (1877) 125; Hochr., Bull. Inst. Bot. Btzg 19 (1904) 39; Pl. Bog. Exs. (1904) 16; Koord., Junghuhn Gedenkb. (1910) 175; Back., Schoolfl. Java (1911) 229; Koord., Exk. Fl. Java 2 (1912) 533; Koord.-Schum., Syst. Verz. 1, Fam. 162 (1912) 5; Amsh. in Back., Bekn. Fl. Java (em. ed.) 6 (1948) fam. 135, p. 7; Dahl, J. Arn. Arb. 33 (1952) 276 (Pollen); Back. & Bakh. v. d. Brink, Fl. Java 2 (1965) 62. — *S. wallichii* Baill., Adansonia 10 (1872) 282; in DC., Prod. 17 (1873) 16; Mast. in Hook. f., Fl. Br. Ind. 1 (1875) 594; Kurz, J. As. Soc. Beng. 44, ii (1875) 156; King, ditto 64, ii (1895) 125; Brandis, Ind. Tr. (1906) 154; Dahl, J. Arn. Arb. 33 (1952) 277 (Pollen); Hundley & Chit, List Trees Burma ed. 3 (1961) 46. — *S. edule* Kurz, J. As. Soc. Beng. 41, ii (1872) 298; Mast. in Hook. f., Fl. Br. Ind. 1 (1875) 594; Kurz, For. Fl. Br. Burma 1 (1877) 242. For specimens outside Malesia cf. also the literature cited above.

INDOCHINA. Annam: Prov. Nhatrang, massif de la Mère et de l'Enfant, 600 m, *Poilane 6677* (P). MALAY PENINSULA. Perak: Slim Hills, Sg. Geliting, 600 m, *FRI 729*. — Kelantan: Sg. Ketch, *SF 12013*; Sg. Lebir, base of Bukit Batu Papan, *SF 29569*. — Selangor: Ulu Langat, *Phytochem. Surv. Malaya 828, 1448*. — Malacca: *Maingay 378*; Jasin, Batang Melaka F. R., 100 m, *KEP 94804*. — No locality given: *Furtado K.h. 828 bis*. JAVA. Djakarta: Bongkok near Purwakarta, 550 m, *Backer 13914*. — Bogor: cult. Hort. Bog., *Hochreutiner 23*. — Priangan: Bolang, 400 m, *van Steenis 2164*. — Semarang: Kedungjati, *Koorders 25355, 28167*. — Rembang: Ngandang, 150 m, *Koorders 36467*. — Jogjakarta: Prambanan, *Junghuhn Pl. Ined. 525*. — Madiun: Patjatan ('Pagetan'), *Horsfield a.* 1809 (cit. Rob. Brown and Baillon, syntype of *S. horsfieldii*, apparently lost, i.e. not in BM, K, P, P-Baillon); Mt Pandan, 400—900 m, *Elbert a.* 1907 (BO). — Kediri: Krandang, *den Berger 397*; Utan Pandjang near Badjulan, 300 m, *den Berger a.* 1920; Gadungan Pare, *Koorders 22860*. Tegal, *Beumée 4393*. — Malang: Peteng near Sumberputjung, *Beumée 2873*. — Besuki: Tjuramanis-Simpolan, *Koorders 28768*; Rogodjampi, *Koorders 29015*; in silvis inter Blimbingan et Tagal, XI-1858, *Zollinger 3991* (L); Blambangan, *Horsfield a.* 1806 (cit. Rob. Brown and Baillon, syntype of *S. horsfieldii*, apparently lost, i.e. not in BM, K, K-Horsfield, P). — Locality not given: *Leschenault 534* (P).

2. *Sarcostigma paniculata* Pierre, Bull. Soc. Linn. Paris 2 (1897) 1319; Gagnep., Fl. Gén. I.-C. 1 (1911) 841, f. 102, 1—3, incl. var. *angustifolia* (Pierre) Gagnep., l.c. 842; Ridl., Fl. Mal. Pen. 5 (1925) 298. — *S. angustifolia* Pierre, Bull. Soc. Linn. Paris 2 (1897) 1320. — *S. philippinensis* Merr., Philip. J. Sc. 10 (1915) Bot. 276; En. Philip. 2 (1923) 492; Dahl, J. Arn. Arb. 33 (1952) 276, f. 71 (Pollen). — *S. surigaoensis* Elm., Leaf. Philip. Bot. 10 (1939) 3749, *nom. illeg.* (Code art. 36); Dahl, J. Arn. Arb. 33 (1952) 277 (Pollen).

INDOCHINA. Cochinchina: Bien-hoa, prope Chiao Khan, *Pierre 1888* (K; P, type of *S. angustifolia*); *ibid.*, Monts Lu, *Pierre 1644* (A, n.v.; K; P, type of *S. paniculata*).

SUMATRA. Riouw: Indragiri, Pangian, *Buwalda 6292* (BO, L); Kateman I., sea-level, *de Haan 87* (BO).

MALAY PENINSULA. Perak: Larut, 150 m, *King's Coll. 7534* (K).

BORNEO. Sarawak: 3rd Div., Kapit, Upper Rejang R., *Clemens 21048* (BO, K). — Brunei: Temburong, mile 1½ Bangar—Batu Apas road, *SAN 17107*; Bangar, 50 m, *Ashton BRUN 3313, 3373*. — N. Borneo: Mt Kinabalu, Ranau, 1370 m, *SAN 44670*; Lahat Datu, Diwata F. R., 30 m, *SAN 39985*; *ibid.*, Takun Quarry Hill, Kennedy Bay, 100 m, fr., *SAN 26117*; Tawau, mile 15, Apas road, *SAN 24459*; mile 15, Quoin Hill road, *SAN 32937*; Elopura, Suan Lamba, *For. Dep. N. Borneo 10624 Puasa & Enggoh* (K); Kinabatangan, Tanegang Besar, *SAN 51832*; Sandakan, Sekong camp, 40 m, *SAN 34938* (SAR).

PHILIPPINES. Leyte: Buenavista near Jaro, 500 m, *Wenzel 987* (A, n.v.; BM, G; PNH, type of *S. philip-*

pinensis, †). — Mindanao: Agusan, Cabadbaran, Mt Urdaneta, 1065 m, fl. ♂, *Elmer 13732* (A, n.v.; BO, C, Fl, G, K, L, P; PNH, syntype of *S. surigaoensis* †; S); *ibid.*, fr., *Elmer 13930* (A, n.v.; BM, BO, C, Fl, G, L, P; PNH, lectotype of *S. surigaoensis* †; S). — Samar: Mt Candayo, Catarman, 200 m, *PNH 14563*.

25. A REVISION OF THE GENUS *STEMONURUS* BL. EMEND. BECC.**STEMONURUS**

Bl., *Bijdr.* (1826) 648, *p.p.*; Hassk., *Cat. Hort. Bog.* (1844) 214 ('*Stemonura*'); Bl., *Mus. Bot. Lugd. Bat.* 1 (1850) 249, *p.p. lectotyp.*; Miers, *Ann. Mag. Nat. Hist.* II, 10 (1852) 30, 34, *p.p.*, repr. *Contr. Bot.* 1 (1852) 80, 85, *p.p.*; Thwait., *En. Pl. Zeyl.* (1858) 43; *emend. Becc.*, *Malesia* 1 (1877) 108, 109, 111; Valet., *Crit. Overz. Olacin.* (1886) 230; Boerl., *Handl.* 1, 1 (1890) 214; K. & V., *Bijdr.* 5 (1900) 144; Valet., *Ic. Bog.* 1 (1901) t. 88, *nota*; Hochr., *Pl. Bog. Exs.* (1904) 41, *nota*; Bull. *Inst. Bot. Btzg* 22 (1905) 42, *nota*; Ridl., *Fl. Mal. Pen.* 1 (1922) 430; Merr., *En. Philip.* 2 (1923) 489; Sleum., *Notizbl. Berl.-Dahl.* 15 (1940) 242; *ditto* (1941) 363; Merr., *J. Arn. Arb.* 23 (1942) 176 ff.; Sleum. in E. & P., *Nat. Pfl. Fam.* ed. 2, 20 b (1942) 364; Amsh. in Back., *Bekn. Fl. Java* (em. ed.) 6 (1948) fam. 135, p. 5; Back. & Bakh. v. d. Brink, *Fl. Java* 2 (1965) 60. — *Urandra* Thwait. in Hook., *Kew J.* 7 (1855) 211; O. Ktze, *Rev. Gen. Pl.* 2 (1891) 113; Engl. in E. & P., *Nat. Pfl. Fam.* III, 5 (1893) 248; Schellenb., *Bot. Jahrb.* 58 (1923) 164; Howard, *J. Arn. Arb.* 21 (1940) 462; Lloydia 6 (1942) 146. — *Lasianthera* (non P. Beauv.) Miq., *Fl. Ind. Bat.* 1 (1856) 790, *p.p.*; Benth. in Benth. & Hook. *f.*, *Gen. Pl.* 1 (1862) 350, *p.p.*; Mast. in Hook. *f.*, *Fl. Br. Ind.* 1 (1875) 584, *p.p.*; King, *J. As. Soc. Beng.* 64, ii (1895) 116; Gagnep., *Fl. Gén. I.-C. Suppl.* (1948) 742. — *Gomphandra* (non Wall.) Boerl., *Handl.* 1, 1 (1890) 213.

Lectotype species: *S. secundiflorus* Bl.

Note. *Stemonurus* in Blume's original circumscription of 1826 comprises 4 species: *S. javanicus* with ♂ flowers, *S. pauciflorus* with ♀ flowers (this is the ♀ plant of *S. javanicus*) and *S. secundiflorus* with hermaphrodite flowers in Sect. 1 (*Stemonurus*), and *S. frutescens* Bl. (with hermaphrodite flowers) in Sect. 2 *Anacolosa*. Howard (*J. Arn. Arb.* 21, 1940, 464; Lloydia 6, 1943, 144) stresses that the generic description is based on the dioecious *S. javanicus* (incl. *S. pauciflorus*) by a majority of characters, and that *S. secundiflorus* is only represented by the character of hermaphrodite flowers. This is true as far as only 'limiting' characters are considered — though obviously also the character 'flores spicati' points much more distinctly to *S. secundiflorus* than to *S. javanicus* in my opinion — but there are numerous other characters mentioned which are applicable to both *S. javanicus* and *S. secundiflorus*. There is no doubt at all that both species are included in this first description of the genus.

In 1850 Blume made the section *Anacolosa* a proper genus, and gave a description of what he considered now to represent *Stemonurus*, emending and enlarging his 1826 description of the genus considerably. He added a plate with details of *S. secundiflorus* and described 7 new species (3 of which, as we know to-day, belong to *Gomphandra*, others to *Gonocaryum*). Howard says, that Blume here 'did not merely alter or amplify his original description but described an entirely different genus'. I cannot follow this extravagant argumentation. First, it is clear that Blume still wanted to include the dioecious species in *Stemonurus* — at least 4 'limiting' characters apply only to *S. javanicus* —, secondly, among these new species added is one, *S. parviflorus*, of which Blume says 'S. javanico maxime affinis'.

Among the subsequent botanists dealing with *Stemonurus sensu* Blume the confusion is still maintained by Miers (1852) and Bentham (1862), and it was Beccari in 1877 who first divided *Stemonurus* Bl. into two distinct genera, applying the name *Stemonurus* to

that combination of characters which is found in *S. secundiflorus*, and naming *Gomphandra* Wall. that part which points to those of *S. javanicus*.

Under the Code this first quite free decision made by Beccari (and *not* by Koorders & Valetton in 1900, as repeatedly stated by Howard, who ignores completely Beccari's decision) has to be respected, as it cannot be proved, that he was wrong. Subsequent authors followed Beccari's decision: Valetton (1886), Boerlage (1890), Koorders & Valetton (1900), Valetton (1901), Hochreutiner (1904, 1905), Gagnepain (1911), Gamble (1915), Ridley (1922), Merrill (1923), Sleumer (1940, 1941, 1942), Merrill (1942), Amshoff in Backer (1948), and Backer & Bakhuizen v. d. Brink (1965).

The contrary view — the choice of *Stemonurus javanicus* as a lectotype — has been expressed by O. Kuntze (1891) on a '2/3 majority reasoning', practically the same as given by Howard; he was followed by Engler (1893), Schellenberg (1923), Handel-Mazzetti (1931), Howard (1940, 1943), and Dahl (1952).

KEY TO THE SPECIES

1. Flowers uni- or biseriate along the whole or at least the upper part of the branches of the umbel, generally 5—12 per branch (when only 3 flowers are present, one of them terminal, the other 2 lateral). 'SECONDFLORI'.
 2. Bracts at the base of the umbel persistent for a while during anthesis, (3—)4—5 by *c.* 1 mm.
 3. Leaves (18—)26—36 by 7—11(—13) cm, very coriaceous, generally a little shining above only in the dry state, nerves 15—20 pairs, generally very slightly or hardly raised on both faces, veins \pm obscure. Drupe ellipsoid-ovoid, 2—2.4 by 1.2—1.5 cm. Borneo . . . 1. *S. grandifolius*
 3. Leaves 11—23(—30) by 6—9(—11) cm, coriaceous, generally shining on both faces in the dry state, nerves 15—20 pairs, slightly though markedly raised on both faces as are the rather lax veins. Drupe ovoid-ellipsoid, 4.5—5.5(—6.5) by 2—2.5(—3) cm. Sumatra, Simalur, Riouw Arch., Lingga, Banka, Malay Peninsula, Borneo 2. *S. scorpioides*
 2. Bracts at the base of the umbel fugacious, 1—2 by *c.* 0.5 mm.
 4. Inflorescences robust, peduncle *c.* 3 mm \varnothing . Calyx slightly lobed or almost entire. Petals 5—6 (—7) mm. Drupe ovoid to oblong-ovoid, 2.5—3(—4) by (1.6—)2 cm. Celebes 3. *S. celebicus*
 4. Inflorescences relatively slender, peduncle 1—2 mm \varnothing . Calyx lobed \pm halfway. Petals *c.* 4 mm. Drupe oblong-ellipsoid, 4.5—5.5 by 1—1.5 cm.
 5. Leaves (subcoriaceous to coriaceous) generally oblong to obovate-oblong, nerves (8—)10—12 (—14) pairs, \pm distant from each other, a little or hardly raised, veins \pm obscure. Sumatra, Simalur, Mentawai Is, Enggano, Banka, Billiton, Malay Peninsula, W. Java.
 4. *S. secundiflorus* var. *secundiflorus*
 5. Leaves with 14—18 pairs of nerves, these close together and generally a little raised on both faces as are the lax veins.
 6. Leaves obovate-oblong to elliptic, rigidly coriaceous. Borneo.
 4. *S. secundiflorus* var. *hosei*
 6. Leaves lanceolate-oblong to narrowly elliptic, coriaceous. Borneo.
 4. *S. secundiflorus* var. *lanceolatus*
 1. Flowers clustered at the end of the branches of the umbel or even at the end of the peduncle when the branches of the umbel are very short. 'UMBELLATI'.
 7. Bracts at the base of the branches of the umbel ovate, persistent, (3—)4 by 2 mm. Calyx lobed about halfway. Petals *c.* 4 mm. Drupe oblongoid, subacutely attenuate at both ends, 3.2—4.3(—5.5) by 1.4—2(—2.5) cm. Ceylon 5. *S. apicalis*
 7. Bracts at the base of the branches of the umbel generally small and caducous, rarely subsistent.
 8. Drupe subovoid-oblongoid to almost fusiform, at least 2 times as long as (or mostly longer than) across. (Leaves generally smooth on the undersurface, maybe except some tubercles found close to and along the midrib).
 9. Calyx rather deeply obtusely lobed. Petals (2.5—)3(—4) mm. Disk cup-shaped. Drupe 4.5—5 by (1—)1.5—2.2 cm. Lower Burma, S. Thailand, Malay Peninsula, Borneo.
 6. *S. malaccensis*
 9. Calyx slightly lobed. Petals (4—)5 mm. Disk low, almost patellar. Drupe (4.3—)4.5—5 by 1.5—1.7 cm. Eastern part of New Guinea, New Britain, Solomon & Palau Is. 7. *S. ammui*

8. Drupe ellipsoid-ovoid to ovoid, up to ± 2 times as long as across.
10. Drupe \pm ovoid. Disk cup-shaped and slightly lobed.
11. Leaves practically smooth on the undersurface; petiole (2—)2.5—3 cm. Calyx rather distinctly lobed. Philippines (Sibuyan, Panay). 8. *S. gitingensis*
11. Leaves generally rather densely tubercled all over the undersurface or at least in a broad stripe along the midrib; petiole 1—2 (very rarely up to 3) cm.
12. Calyx \pm distinctly obtusely lobed. Petals 3(—4, very rarely —4.5) mm. Central, northern, and western part of New Guinea 9. *S. monticolus*
12. Calyx truncate or hardly (apicately) lobed. Petals (4—)5(—6) mm. Malay Peninsula, Borneo, Philippines (Basilan; Mindanao: Zamboanga, Surigao).
10. *S. umbellatus*
10. Drupe subvoid-ellipsoid or ellipsoid. Disk thick, almost annular, edge undulate, not properly lobed at all.
13. Drupe 4.5 by 2.5—3 cm. Annam, Cochinchina 11. *S. perobtusus*
13. Drupe 2.5—2.7 by 1.5—1.6 cm. Annam 12. *S. dichrocarpus*

I. *Stemonurus grandifolius* Becc., Malesia 1 (1877) 114, t. 5, f. 1; Valet., Crit. Overz. Oclacin. (1886) 235; Merr., En. Born. (1921) 356; Masam., En. Pl. Born. (1942) 423. — *Urandra grandifolia* (Becc.) O. Ktze, Rev. Gen. Pl. 1 (1891) 113. — *S. dolichophyllus* Merr., Univ. Calif. Publ. Bot. 15 (1929) 171. — *Urandra dolichophylla* (Merr.) Howard, J. Arn. Arb. 21 (1940) 468; Dahl, *ditto* 33 (1952) 270 (Pollen).

BORNEO. Sarawak: 1st Div., Kuching, Mt Mattang, *Beccari P.B. 3014* (Fl, type of *S. grandifolius*; G, K); *ibid.*, Selang, *S 7224* (SAR); Semengoh F. R., *S 15020*; Simungan, on top of Sedilu hill, *S 315*; Bako Nat. Park, 60 m, *S 6795*; 3rd Div., Bintulu, Kedurong, *S 4426*. — N. Borneo: Beaufort Hill, *SAN 43886*; Mt Kinabalu, Mamut R., 1220 m, in *Tristania* forest, *Chew, Corner & Stainton 1664* (K, a form with narrower leaves); Sandakan, B.S. 1890 (P); *ibid.*, mile 60 opp. PWD camp, *SAN 37881*; Sg. Muned, Lokan F. R., 100 m, *SAN 36912*; Bettotan, *Puasa 4635*; Lungmanis, *SAN 34470*; Kabili-Sepilok F. R., 10—30 m, *For. Dep. N. Borneo A 529, A 842, 7209, SAN 15356, 15387, 16506*; Sipitang, Ulu Mendalong, 680 m, *SAN 16782* (var. ?); Tawao, *Elmer 21415* (A, n.v.); BM, BO, C, G; GH, n.v., K, L, P, SING, U; UC, type of *S. dolichophyllus*; *ibid.*, mile 15 Quoin hill road, *SAN 31342*; Lahad Datu, Bukit Silam, 300 m, *SAN 57267*; Semporna, Kuala Kalumpang, 270 m, *SAN 57368*. — NE. Borneo: Bulungan, 25 m, *Rutten 85, Kostermans 9245, bb. 11224*. — E. Borneo: near mouth of Mahakam R., *Kostermans 7081*. — SE. Borneo: W. Kutei, Mt Palimasan near Tabang on Belajan R., 600 m, *Kostermans 12885*; E. Kutei, Sg. Tiram, 40 m, *bb. 35024*.

2. *Stemonurus scorpioides* Becc., Malesia 1 (1877) 113, t. 6; Valet., Crit. Overz. Oclacin. (1886) 234; Hochr., Bull. Inst. Bot. Btzg 22 (1905) 6 (var.); Merr., En. Born. (1921) 356 ('*scorpiurus*'); Ridl., Fl. Mal. Pen. 5 (1925) 296; Burk., Dict. (1935) 2074; Masam., En. Pl. Born. (1942) 424 ('*scorpiurus*'); Heyne, Nutt. Pl. 1 (1950) 986; Anders., Gard. Bull. Sing. 20 (1963) 166. — *Urandra scorpioides* (Becc.) O. Ktze, Rev. Gen. Pl. 1 (1891) 113 ('*scorpiodes*'); Dahl, J. Arn. Arb. 33 (1952) 270, f. 58 & 58 A (Pollen). — *Lasianthera secundiflora* [non (Bl.) Miq.] King, J. As. Soc. Beng, 64, ii (1895) 177, p.p. — *S. secundiflorus* (non Bl.) Ridl., Fl. Mal. Pen. 1 (1922) 430, p.p.

SUMATRA. Tapanuli: Sibolga, *bb. 28168*; *ibid.*, Lumut, *Junghuhn a. 1839*. — Eastcoast: Rantau Parapat, R. Si Toroes 2921, 3046; Asahan, Guru Batu, *Yates 765, 2070*; Labuhan Batu, 6 m, *bb. 10365, 10630*, R. Si Toroes 4323; Selat Pandjang, *bb. 12488*; Sg. Kampar, P. Muda, 5 m, *bb. 22056*; P. Bengkalis, 2—5 m, *Beguin 244, bb. 5782, 12851*; P. Rangsang, 3 m, *Beguin 527, 528*; P. Tebingtinggi, *Bruinier 80*. — Indragiri Lowlands, 4—10 m, *bb. 10268, 28541, 29118*; *ibid.*, Sg. Simpang, 4 m, *bb. 9959*; Sg. Tjenako, 18 m, *bb. 26083*. — Djambi: 5—45 m, *bb. 11329, 13118*.

RIOUW ARCH. Karimun, 1 m, *bb. 5389*.

LINGGA ARCH. Lingga: Manggu, 12 m, *bb. 5611*; Sg. Santil, 5 m, *bb. 3153, 31651, 31652, 31653*; P. Singkep, *bb. 2049, 2061*.

SIMALUR. Achmad 612, 956, 1815.

BANKA. Djebus, *Teysmann H.B. 6713*; Belinju, *Grasshoff 51*.

MALAY PENINSULA. Perak: Larut, *King's Coll. 6538, 6585, 4065*; Sg. Krian Estate, sea-level, *SF 34575, 36740*; Kota, *Wray 3122*; Assam Kumbang, *Wray 2116*. — Pahang: Rompin, *For. Dep. F.M.S. 15445*;

Bentong, Kemasul F. R., 60 m, *For. Dep. F.M.S. 10692, KEP 78673, 92120, 92200, 92213, 92318, 92507*. — Selangor: Kuala Selangor road, *KEP 99938*; Rantan Panjang, *For. Dep. F.M.S. 14488*; Sg. Tinggi, *SF 34098*; Ulu Selangor, *Ridley (leg. Goodenough) 10558*. Sg. Buloh, C.F. 5201, *For. Dep. F.M.S. 16466, 24437*. — Trengganu: Dungun, State land Jerangau, *KEP 81060*; Kuala Trengganu—Besut road, *SF 40757*. — Johore: Kota Tinggi, *Ridley 4215, 15348, SF 29475*; Mawai, *SF 34764*; Mawai—Temulang road, Sg. Berassau, *SF 29288*; Sedenak, *SF 16357*; Sedili R., *Kostermans a. 1938*; Sg. Kayu, *SF 31952, 32374*. — Singapore: Bukit Mandai, *Ridley 1836, 1837, 5103, 11239*; Selitar, *Ridley 4583*; Chanchukang, *Ridley a. 1892*; Kallang Valley, *SF 7830*.

BORNEO. W. Borneo: Kubu, Sg. Terentang, 5 m, *bb. 12614*; Pontianak, *Teysmann, Mondi 50*; Sg. Landak, *Teysmann H.B. 19308*; Kapuas, *Teysmann H.B. 10890*. — Sarawak: 1st Div., Sarawak R. near Kuching, *Beccari P.B. 882* (Fl, syntype of *S. scortioides*; G, K), *Dickson 2, B.S. 1047*; *ibid.*, near Sg. Mahun, *Beccari P.B. 3577* (A, n.v.; Fl, lectotype of *S. scortioides*; K, P). Lundu, *S 9631*; 3rd Div., Lower Rejang R., Batang Belawai, Sg. Mekia, *S 18558*; Loba Kabang F. R., *KEP 79321, S 699*; Pulau Bruit, Binatang, *S 9020*; *ibid.*, Sg. Kelepa, *S 7932*; 4th Div., Bintulu, Sg. Sebekai, *S 909*; Bukit Orang, *S 8851, 11925*; Bintulu to Miri, *Hotta 14337*; 5th Div., West Kayangeran F. R., *BRUN 1003*; Lawas, Engeriting, sea-level, *S 167*; Tanjung Kibong, *SF 36076*. — Brunei: Seria, *van Niel 4136* (L); Temburong, Labu F. R., *SAN 17426*; Badas F. R., *BRUN 684, 687, S 2829, Sinclair & Kadim 10457*. — N. Borneo: Wood 1196; Beaufort, Membakut, mile 42, *B.N.B. For. Dep. 3255*; Menggalang F. R., *SAN A 4556, 21835*; Pasah Camp, *SAN 27134*; Lupak area, *SAN 15860, 15868*; Kota Klias, *B.N.B. For. Dep. 2392, SAN 26614*; Lumat, *SAN 24315, 25251, 44547, 50099*; Weston Rail line, *SAN 34576*; Bukau swamp, *B.N.B. For. Dep. 4218*; Papar, Bongawan, 5 m, *B.N.B. For. Dep. 2554, For. Dep. N. Borneo A 1394*; Mandahan, *SAN 32211*; Binoni, *SAN 37738*; Kimanis F. R., 6 m, *SAN 28169, 33662, 36270, 41548, 47860*; Kalatuan, *For. Dep. N. Borneo A 390*; Sandakan, Sg. Kapur, *SAN 22951*; Beluran, *SAN 25116*; Kinabatangan, *SAN 51944*. — NE. Borneo: Simenggaris, *Amdjah 982*.

3. *Stemonurus celebicus* Valet. in Koord., Minah. (1898) 394; Ic. Bog. I (1901) t. 88; Hochr., Pl. Bog. Exs. (1904) 45; Bull. Inst. Bot. Btzg 22 (1905) 48. — *Urandra celebica* (Valet.) Howard, J. Arn. Arb. 21 (1940) 468.

CELEBES. NE. Celebes: Minahasa, top of Mt Lolombulan, 1000 m, *Koorders 18363* (BO, syntype of *S. celebicus*; K, L); Pinamorongan near Kajuwatu, 500 m, *Koorders 19572* (BO, lectotype of *S. celebicus*; K, L, P). — Central Celebes: Malili, 50 m, *bb. 13485, Kjellberg s.n.* (S); La Rona, *bb. 1903, 1923, 1931*; Lawoli, 20 m, *bb. 23256*; Tjerekang, 20 m, *Cel III/152*; Angkona, 100 m, *bb. 24967*; Usu, 30—100 m, *Cel III/339, Cel IV/95*; Lake Matana, 380 m, *Kjellberg 2802*.

Cult. Hort. Bogor. from seeds of the type tree, introduced by Koorders from the Minahasa, sub III-G-94, leg. *Hochreutiner 95*.

4. *Stemonurus secundiflorus* Bl., *Bijdr.* (1826) 649; Walp., *Rep.* I (1842) 378; Hassk., *Cat. Hort. Bog.* (1844) 214; Bl., *Mus. Bot. Lugd. Bat.* I (1850) fig. 45; Miers, *Ann. Mag. Nat. Hist.* II, 10 (1852) 36, repr. *Contr. Bot.* I (1852) 86; Schnizl., *Ic.* 3 (1866/70) t. 223; Becc., *Malesia* I (1877) 112, t. 4, f. 16—17; Valet., *Crit. Overz. Olacin.* (1886) 234; K. & V., *Bijdr.* 5 (1900) 145; Hochr., *Pl. Bog. Exs.* (1904) 46, incl. var. *valetonii* Hochr., l.c.; Bull. Inst. Bot. Btzg 22 (1905) 41, incl. var. *valetonii* Hochr., l.c.; Moll & Janss., *Mikr.* 2 (1908) 234, f. 105 (Wood-Anat.); Back., *Schoolfl. Java* (1911) 226; Koord., *Exk. Fl. Java* I (1912) 531; Koord.-Schum., *Syst. Verz.* I, *Fam.* 162 (1912) 3; Koord., *Atlas* I (1913) t. 121; Ridl., *Fl. Mal. Pen.* I (1922) 430, p.p.; Bak. f., *J. Bot.* 62 (1924) Suppl. 21; Ridl., *Fl. Mal. Pen.* 5 (1925) 296; Burk., *Dict.* (1935) 2074; Doct. v. Leeuwen, *Ned. Kruidk. Arch.* 51 (1941) 175, f. 48 (Gall); Amsh. in Back., *Bekn. Fl. Java* (em. ed.) 6 (1948) *fam.* 135, p. 5; Back. & Bakh. v. d. Brink, *Fl. Java* 2 (1965) 60. — *Croton laurifolius* Nor., *Verh. Bat. Gen.* 5 (1790) ed. I Art. IV, 13, *nom. nud.* — *Lasianthera secundiflora* (Bl.) Miq., *Fl. Ind. Bat.* I (1856) 792, incl. var. *sumatrana* Miq., *ditto* (1858) 1097; Suppl. I (1860) 137, incl. var. *sumatrana*; *ditto* (1861) 342, incl. f. *sumatrana* Miq., l.c. = t. 2; King, *J. As. Soc. Beng.* 64, ii (1895) 117, p.p. — *Urandra secundiflora* (Bl.) O. Ktze, *Rev. Gen. Pl.* I (1891) 113; Engl. in E. & P., *Nat. Pfl. Fam.* III, 5 (1893) 248; Heyne, *Nutt. Pl.* I (1950) 987. — *S. pauciflorus* Ridl., *Kew Bull.* (1926) 61, *non* Bl. (1826); Howard, *J. Arn. Arb.* 21 (1940) 481, in text. — *S. ridleyanus* Sleum., *Notizbl. Berl.-Dahl.* 15 (1940) 243.

var. *secundiflorus*

SUMATRA. Eastcoast: P. Bengkalis, 5 m, *bb.* 21287. — Westcoast: P(a)riaman, *Diepenhorst H.B.* 2218 (BO, FI, L; U, lectotype of *Lasianthera secundiflora* var. *sumatrana*), 2230 (L, U), 2857 (L; U, syntype of *Lasianthera secundiflora* var. *sumatrana*); Padang, Sg. Bulu, sea-level, *Beccari P.S.* 895; Balaiselasa, 30 m, *bb.* 5951. — Indragiri Uplands: Kotabaru, *Buwalda* 7009. — Palembang: Banjuasin, Kubu area, 15 m, *Thorenaar T.* 33.

SIMALUR. *Achmad* 46, 161, 176, 752.

MENTAWAI Is. Siberut: 4 m, *bb.* 17479, *B. Kloss SF* 14487 (BO; K, type of *S. pauciflorus* Ridl. = *S. ridleyanus*; SING); Sipora, *Iboet* 492.

ENGGANO. *Lütjeharms* 4938.

BANKA. Sg. Liat, *Teysmann H.B.* 6714.

BILLITON. *Riedel a.* 1876 (FI).

MALAY PENINSULA. Perak: S. Kroh Res., *For. Dep. F.M.S.* 9351; Hutan Melintang F.R., *FRI* 5688; P. Pangkor, *Curtis* 912, *p.p.* — Pahang: Pekan, *KEP* 94630; Kuantan, road to Pekan, sea-level, *KEP* 77954; Cameron Highl., Boh Plantation, 1220 m, *SF* 32669; Batu Brinchang camp, 1525 m, *SF* 18041. — Selangor: Klang, Sg. Langat South F. R., *KEP* 79064, 93455; Telok F. R., *For. Dep. F.M.S.* 48011, *KEP* 94743, 98564, 98566, *FRI* 1620, 1622, 2063, 8858. — Johore: Kuala Sedili new road, *Kadim & Noor* 139, 220; Mawai-Kuala Sedili new road, *Chew Wee Lek* 225, *Sinclair* 10569; Endau, *Kadim & Noor* 315; Sedenak, *Ridley* 13510 (BM, SING; cited '13570'); Pengkatan Raja, Pontian, *SF* 36761.

WEST JAVA. Bantam: Pasir Orai near Tjipanas, 820 m, *Forbes* 590; Rawa Danau, c. 100 m, *Endert* 1198, *van Steenis* 10509, *Koorders* 40501, 40532, 40533, 41680; Mt Karang, 1000 m, *Koorders* 40102, 40112; Garu Tjibohbor, *Hasskarl*; Bantam Southcoast, *Junghuhn*; Ujung Kulon, Peutjang (Meeuwen) I., *Soegeng* 144. — Djakarta, Meester Cornelis, Bidara Tjina, *Edeling a.* 1864 (BO). — Bogor: Mt Salak, 700 m, *Blume* (BO, C, G, K; L, type of *S. secundiflorus*; P, S), *Kuhl & van Hasselt (L)*, *Koorders* 24312, 24497, 31038. — Cult. Hort. Bogor. sub III-G-25, *Hochreutiner* 96 (BO, G, type of *S. secundiflorus* var. *valetonii*; K, L, P, WRSL).

var. *hosei* Sleum., var. *nov.* — *S. labuanensis* Stapf, *Kew Bull.* (1906) 71, *p.p.*; Merr., *En. Born.* (1921) 356, *p.p.*

Folia elliptica, brevissime obtuse abrupteque acuminata, rigide coriacea, 6—9.5 cm longa, 3—6 cm lata, nervis numerosioribus c. 18-paribus iis *S. umbellati* similibus, utrinque cum venis prominulis. Inflorescentia ut in var. *lanceolatus*, ramis floriferis 3—4. Fructus ignotus.

BORNEO. Sarawak: Baram, *Hose* 107 *p.p. maiore* (BM; K, syn-, not lectotype of *S. labuanensis*; L, type of *S. secundiflorus* var. *hosei*).

var. *lanceolatus* (Becc.) Sleum., *stat. nov.* — *S. lanceolatus* Becc., *Malesia* 1 (1877) 114, t. 5, f. 2—4; Valet., *Crit. Overz. Olacin.* (1886) 235; Merr., *En. Born.* (1921) 356; Masam., *En. Pl. Born.* (1942) 424. — *Urandra lanceolata* (Becc.) O. Ktze, *Rev. Gen. Pl.* 1 (1891) 113; Howard, *J. Arn. Arb.* 21 (1940) 468, pl. 1, f. 1—6. — *Urandra 'secundiflora'* apud Dahl, *J. Arn. Arb.* 33 (1952) 270, f. 57 & 57 A (Pollen). — *S. umbellatus* (non Becc.) Anders., *Gard. Bull. Sing.* 20 (1963) 166.

BORNEO. W. Borneo: Pontianak, *Teysmann*. — Sarawak: locality not given, *B.S.* 380, 819, 1056 *Nat. Coll.*; 1st Div., Kuching, *Haviland* 1632, *Haviland & Hose* 1544, 1773; Sg. Sempadi F. R., *S* 6059 (SAR); 2nd Div., Lingga, *S* 4810; Batan Lupar, Undup, *Beccari P.B.* 471 (FI, type of *S. lanceolatus*); Betong, Saribas F. R., *S* 8543; Tanjong Keranji, Meludam P. F., *S* 13009; Triso P. F., *S* 14541; 3rd Div., Binatang, Daro F. R., *S* 9712; Pulau Bruit, *S* 9006, 9247, 9259, 13809; Loba Kabang P. F., *S* 518, 539, 2770, 2785; 4th Div., Lobok Pasar, 25 m, *Fuchs* 21241; Batang Baram, Sg. Dua, *S* 2868. — Brunei: Badas F. R., Bindang Terr., *S* 1092; Andulau F. R., *S* 9110. — N. Borneo: Kalumpang—Tawau road, mile 21½, *SAN* 29833. — E. Borneo: W. of Samarinda, *Kostermans* 9966; E. Kutei, Sg. Bambang, SE. of Samarinda, *Kostermans* 6075 (→ var. *secundiflorus*). — SE. Borneo: Lower Dajak R. region, 1 m, *bb.* 9874, 11601 (→ var. *secundiflorus*). — S. Borneo: Sampit R. region, 5—20 m, *Buwalda* 7800, 7807, *Kostermans* 7924 & 8038 (→ var. *secundiflorus* *p.p.*).

5. *Stemonurus apicalis* (Thwait.) Miers, *Trans. Linn. Soc.* 22 (1856) 110, in text; Thwait., *En. Pl. Zeyl.* (1858) 43; Miers, *Contr. Bot.* 1 (1861) 305 (Errata) Becc.,

Malesia 1 (1877) t. 4, f. 14 & 15; Valet., Crit. Overz. Olacin. (1886) 236. — *Urandra apicalis* Thwait. in Hook., Kew J. Bot. 7 (1855) 211; O. Ktze, Rev. Gen. Pl. 1 (1891) 113. — *Lasianthera apicalis* (Thwait.) Benth. in Benth. & Hook. f., Gen. Pl. 1 (1862) 350; Thwait., En. Pl. Zeyl. (1864) 405; Bedd., Fl. Sylv. (1871) LXI, t. 139; Mast. in Hook. f., Fl. Br. Ind. 1 (1875) 584, excl. the Labuan plant; Trimen, Handb. Fl. Ceylon 1 (1893) 260.

CEYLON. Pasdun Korale & Allagala, *Thwaites C.P.* 2569 (A, n.v.; BM, CGE, FI, G; K, type of *Urandra apicalis*; L, P), etc.

6. *Stemonurus malaccensis* (Mast.) Sleum., Notizbl. Berl.-Dahl. 15 (1940) 243. — *Lasianthera apicalis* (Thwait.) Benth. in Mast. in Hook. f., Fl. Br. Ind. 1 (1875) 584, as to the Labuan plant only. — *Lasianthera malaccensis* Mast. in Hook. f., Fl. Br. Ind. 1 (1875) 584; Becc., Malesia 1 (1883) 257; King, J. As. Soc. Beng. 64, ii (1895) 118. — *S. capitatus* Becc., Malesia 1 (1877) 114, t. 5, f. 7—11; Valet., Crit. Overz. Olacin. (1886) 236; Merr., En. Born. (1921) 355; Ridl., Fl. Mal. Pen. 1 (1922) 431; Craib, Fl. Siam. En. 1 (1926) 272; Burk., Dict. (1935) 2074. — *Urandra capitata* (Becc.) O. Ktze, Rev. Gen. Pl. 1 (1891) 113. — *S. labuanensis* Stapf, Kew Bull. (1906) 71, p.p. lectotyp.; Merr., En. Born. (1921) 356, p.p. — *Urandra nitida* Howard, Lloydia 6 (1943) 147, pl. 1, f. 3—6. — *S. umbellatus* (non Becc.) Hundley & Chit, List Trees Burma ed. 3 (1961) 46.

BURMA. Lower Burma: Mergui, Victoria Point, *Parker* 3153.

THAILAND. Surat: Bangbae, *Smitinand* 3800; Ban Na, *Yuang* 17. — Puket: Ranawng, Kao Lahu, *Kerr* 11841; Satul, Terutao L., *Kerr* 14216, *SF* 7452. — Nakawng Sritamarat: *Suvanakes* 292; Songkla, Kampéngpet, *Kerr* 15975; Kao Luang, 1100 m, *Kerr* 15481. — Pattani: Kao Kalakiri, *Kerr* 14918.

MALAY PENINSULA. Kedah: P. Langkawi, *SF* 17411; *ibid.*, Mt Raya, *Corner* a. 1941, *Haniff* (*Herb. Ridley* 15549); 48th mile Jeniang road, *SF* 35976. — Penang: P. Penang, *Curtis* 912 p.p.; Waterfall Gardens, 150 m, *SF* 801, 3356; Muka Head, *Curtis* 957; Ayer Etam Reservoir, *Haniff* 152 (C; UC, type of *Urandra nitida*); Weld's Hill F. R., *Murdoch* (*Ridley* 14438). — Kelantan: Sg. Sebir, *FRI* 4332. — Trengganu: Jambu Bongkok F.R., in *Shorea materialis* heath forest, *KEP* 77993. — Perak: *Scortechini* 170 b, 426, 470 b, 476; Ulu Bubong, 120—180 m, *King's Coll.* 10125; Ulu Luat Lenggong, *For. Dep. F.M.S.* 10366; Bintang Hijau F. R., *KEP* 98528; Taiping, 915—1065 m, *King's Coll.* 8305; Kuala Temengor, 150 m, *KEP* 98672; Ulu Slim, 245 m, *King's Coll.* 10668; Slim Hills F. R., *Whitmore* 777. — Pahang: Taman Negara, Sg. Keniyum, *FRI* 8508; Kuantan, Berserah F. R., *KEP* 76124; between Mesah and Bukit Jelateh, *SF* 11904; Temerloh, Bukit Petai Berjuntai, *For. Dep. F.M.S.* 13781. — Selangor: Ulu Langat F. R., *Whitmore* 114, *Phyt. Surv. Malaya* 2261 (KEP); Klang, Telok F. R., *KEP* 94743; 18th mile Ginting Simpoh, *For. Dep. F.M.S.* 13616; Weld's Hill F. R., *C.F.* 886 *Cubbitt*, *Abdul Rahman* a. 1918; Kuala Pilah F. R., *For. Dep. F.M.S.* 46061. — Malacca: *Maingay* 1133 = *K.D.* 385 p.p. (K, lectotype of *Lasianthera malaccensis*), *Maingay* 1711 = *K.D.* 385 p.p. (K, syntype of *Lasianthera malaccensis*; P). — Trengganu: Kemaman, Bukit Kajang, 150 m, *SF* 30331. — Johore: Mawai—Jemaluang road, Sg. Berassau, *SF* 28985.

BORNEO. W. Borneo: Pontianak, *Teysmann*. — Sarawak: mouth of Sarawak R. near Santubong, *Beccari P.B.* 2141 (FI, syntype of *S. capitatus*); SW. of Kuching, *Haviland* 1782 p.p. = Nov. 1892 (BO); N. slopes of Mt Penrissen, 900—1000 m, *Jacobs* 5091; 3rd Div., Bukit Iju, Ulu Sg. Arip, *S* 23736; 4th Div., Bukit Mentegai, 120 m, *S* 23282; Bintulu, near the sea, *Beccari P.B.* 3713 (FI, lectotype of *S. capitatus*; G, K, P); Miri, Lambir Hills, *S* 3002; Niah, *Haviland* 1782 p.p. (BM). — Brunei: Kuala Temburong Machang, 610 m, *BRUN* 2610. — N. Borneo: Labuan, *Motley* (*Barber*) 131 (K, lectotype of *S. labuanensis*; P); Labuan F. R., 30 m, *For. Dep. N. Borneo* 7685; Kinabatangan, Tedong, *SAN* 31072; Beaufort, *SAN* 36762; Jesselton, Subak camp, *SAN* 33205; Tanjong Keruing, Pababag I. F. R., *For. Dep. N. Borneo* 9266; Ranau, Poring-Nalunad path, 1000 m, *SAN* 26721; Lohan F. R., 1370 m, *SAN* 44687; Sandakan, Bettotan, 35 m, *SF* 19043, *For. Dep. N. Borneo* 4013; Sepilok F. R., *SAN* 17684, 22535; Jalau Ujong, 30 m, *SAN* 30985; N. of Sg. Obar, 3 m, *SAN* 27604; Tawau, Merotai Besar, *SAN* 31282, 31318; Tawau R. F. R., 120 m, *SAN* 22834; Lahad Datu, mile 7, Tekun, 150 m, *SAN* 26697; Silabuka Falls F. R., Bakapit, 455 m, *SAN* 52958. — NE. Borneo: Nunukan I., 100 m, *Kostermans* 9025. — S. Borneo: Mt Sakumbang SE. of Bandjermasin, *Korthals*.

7. *Stemonurus ammui* (Kaneh.) Sleum., *comb. nov.* — *Urandra elliptica* Schellenb., Bot. Jahrb. 59 (1924) 17, *nom. illeg., non Merr.* 1910. — ? *Urandra scorpioides* [non (Becc.) O Ktze] Pulle, Nova Guinea 8 (1912) 659; Schellenb., Bot. Jahrb. 58 (1923) 165. —

Urandra ammui Kaneh., Bot. Mag. Tokyo 45 (1931) 293; Fl. Micron. (1933) 199, f. 86 (text japan.); J. Dep. Agric. Kyushu Imp. Univ. 4 (1935) 359. — *S. ellipticus* (Schellenb.) Sleum., Notizbl. Berl.-Dahl. 15 (1940) 242.

PALAU. Babeltaop, near Ngatkip, 100 m, *Ledermann* 14528 (B, type of *Urandra elliptica* Schellenb. = base of *Urandra ammui*, †; K); Kamsset, *Kanehira* 538 (A, n.v.). Aimiriik, *Kanehira* 1922 (cit. Kaneh., n.v.), 1935 (P); Garikiai, *Takamatsu* 1736 (K).

NEW GUINEA. Morobe Dist.: Morobe, *NGF* 3131; Lae, 30 m, *NGF* 4604, 4606, 13646, 31669; Malahang, *Hartley* 10253; Markham R. area, near Lae, *NGF* 19201, 20069; Yalu near Lae, *NGF* 872; Atzera Ra., 2 miles N. of Lae, *Hartley* 11334. — Northern Dist.: Buna hinterland, 15 m, *NGF* 1262; Dobodura area, *NGF* 2027, 2079.

NEW BRITAIN. Fullerborn Harbour, 6° 06' S 150° 40' E, sea-level, *NGF* 21719; Nantambu, Open Bay, 4° 55' S 151° 35' E, *NGF* 1890; Wariai, Benim village, 300 m, *NGF* 27382. Arawe area, Omoi, *NGF* 26515.

SOLOMON IS. Vella Lavella: 15 m, *BSIP* 11159. — Rob Roy I. SE. of Choiseul: 30 m, *BSIP* 5301. — Wagina I.: 10 m, *BSIP* 5446. — Kolombangara I.: sea-level, *BSIP* 187, 810, 4093, 7558, 8756, 8887, 9579, 11398. — Baga I.: 30—60 m, *BSIP* 1333, 2808, 2892, 5563. — Roviana Lagoon: 30 m, *BSIP* 1944. — Gizo I.: *BSIP* 3043. — New Georgia I.: 15—200 m, *BSIP* 3105, 3207, 3233, 3790, 5196, 6191, 6195, 7145. — Vangunu I.: *BSIP* 432. — Santa Isabel I.: *BSIP* 2617, 2730, 3598, 7314, 7656, 7709.

Note. The following sterile materials possibly belong to *S. ammui*, or maybe to *S. monticolus*:

NEW GUINEA. Noord R., lowland, von Römer 205 (L, U; cited as *Urandra scorpioides* by Pulle and Schellenb.); Asmat region, Erma, *BW* 6532, 6548 (L), in primary forest, inundated in wet season, sea-level, 'permeh' or 'pirmir' in the Asmat language.

8. *Stemonurus gitingensis* (Elm.) Sleum., *comb. nov.* — *Urandra gitingensis* Elm., *Leafl. Philip. Bot.* 4 (1912) 1476. — *S. secundiflorus* (non Bl.) Merr., *En. Philip.* 2 (1923) 489.

PHILIPPINES. Sibuyan: Magellanes, Mt Giting-giting, 750—1750 m, *Elmer* 12076 (A, n.v.; BO, E, G, K; PNH, syntype of *Urandra gitingensis*, †; WRSL), 12277 (A, n.v.; BM, BO, E, G, FI, K, L; PNH, lectotype of *Urandra gitingensis*, †; WRSL); San Fernando, *F.B.* 27043 (BM, P); Panay: *F.B.* 22606, 23930 (cit. Merrill, n.v.).

9. *Stemonurus monticolus* (Schellenb.) Sleum., *Notizbl. Berl.-Dahl.* 15 (1940) 243 ('*monticola*'). — ? *Urandra scorpioides* [non (Becc.) O. Ktze] Pulle, *Nova Guinea* 8 (1912) 659; Schellenb., *Bot. Jahrb.* 58 (1923) 165. — *Urandra monticola* Schellenb., *Bot. Jahrb.* 58 (1923) 164. — *Urandra umbellata* (non Becc.) Pulle, *Nova Guinea* 8 (1912) 658; Schellenb., *Bot. Jahrb.* 58 (1923) 165. — *Urandra brassii* Howard, *Lloydia* 6 (1943) 146, pl. I, f. 1 & 2; Dahl, *J. Arn. Arb.* 33 (1952) 270 (Pollen).

NEW GUINEA. Central New Guinea: Fly R., Oroville camp, 30 miles above d'Albertis Junction, *Brass* 7421 (A, type of *Urandra brassii*, n.v.; BM, BO, K, L). — N. New Guinea: Sepik Dist., Etappenberg, April R., 850 m, *Ledermann* 8892 (B, syntype of *Urandra monticola*, †; E, K, SING), 8893 (B, syntype of *Urandra monticola*, †), 9365 (B, syntype of *Urandra monticola*, †; K, L), 9592 (B, lectotype of *Urandra monticola*, †; K, L); Hollandia, 40—50 m, *bb.* 25059, *BW* 670, 4802, *Brass* 9006; S. slope of the Makanoi Ra., N. of Kotanica, 620 m, *van Royen & Sleumer* 6249; Cycloop Mts, Faita R. bank, 1000 m, *van Royen & Sleumer* 5725; *ibid.*, path Ifar-Ormu, 800 m, *van Royen & Sleumer* 5815; Sarmi, Bu R., 60 m, *BW* 5338; Urub biv., 200 km W. of Hollandia, 50 m, *BW* 8494; Idenburg R., Bernhard Camp, 650 m, *Brass & Versteegh* 13536. — S. New Guinea: Noord R., Nepenthes Hill, *Versteeg* 1304 ('*Urandra umbellata*'); Western Dist., Kiunga subdist., 120 m, *NGF* 31992. — W. New Guinea: Wissel Lakes, Motito, 1800 m, *BW* 8683; Lake Tigi, 1750 m, *BW* 3271; Schouten I., Meosnum I., 200 m, *bb.* 30955, 30982; Biak I., 7—60 m, *bb.* 15911, 30701, 30708, 30712, 30742, 30870, 30877, 30894, *BW* 2411, 9648; Japen I., 50—250 m, *Aet & Idjan* 323, 840, *bb.* 30479, 30616, 30620, 30701, *BW* 1005, 10018, 10024, 10533, 10537, 10544. — NW. New Guinea: Vogelkop Peninsula, Steenkool to Tembuni, 15 m, *van Royen* 3493; Sorong, 70 m, *van Royen* 3347; Warsamson Valley E. of Sorong, 40—60 m, *BW* 5957, 11680, 12753, 13275; Kebar Valley West, between Senopi and Aitafekaan, 920 m, *BW* 12844; Manokwari, Masni Plain, 2—5 m, *BW* 10434, 11056; Andai, 30 m, *BW* 11863; Sidei, c. 65 km W. of Manokwari, 5—20 m, *BW* 6741, 6958;

Oransbari, 15—45 m, *BW* 2113, 4785; Wandammen Peninsula, Wondiwoi Mts, 900 m, *BW* 13451; Job I., 50 m, *BW* 13978. Geelvinkbay, Dalman near Nabire, 400 m, *Kanehira & Hatusima* 12066.

10. *Stemonurus umbellatus* Becc., *Malesia* 1 (1877) 115, t. 5, f. 5 & 6, incl. var. *ovalifolius* Becc., l.c. t. 4, f. 14 & 15; Valet., *Crit. Overz. Olacin.* (1886) 235; Ridl., *Fl. Mal. Pen.* 1 (1922) 431, p.p.; Burk., *Dict.* (1935) 2074, p.p. — *Urandra umbellata* (Becc.) O. Ktze, *Rev. Gen. Pl.* 1 (1891) 113; Dahl, *J. Arn. Arb.* 33 (1952) 270, f. 59, 59 A (Pollen). — *Lasianthera umbellata* (Becc.) King, *J. As. Soc. Beng.* 64, ii (1895) 117, excl. *specim. cit.* (= *S. malaccensis*); Merr., *En. Born.* (1921) 355, incl. var. *ovalifolia* (Becc.) Merr., l.c. — *S. evenius* Stapf, *Kew Bull.* (1906) 71; Merr., *En. Born.* (1921) 355. — *Urandra hallieri* Merr., *Philip. J. Sc.* 5 (1910) Bot. 194; Dahl, *J. Arn. Arb.* 33 (1952) 270 (Pollen). — *S. hallieri* (Merr.) Merr., *En. Philip.* 2 (1923) 489. — *Urandra evenia* (Stapf) Howard, *J. Arn. Arb.* 21 (1940) 468. — *S. intercedens* Heine, *Fedde Rep.* 54 (1951) 237; Pfl. d. Samml. Clemens Kinabalu (1953) 57, 114.

MALAY PENINSULA. Perak: Dindings, 300 m, *KEP* 76737; Larut, *King's Coll.* 2905 (K); Sg. Pangkor F. R., 150 m, *FRI* 3100; Mt Keledang, *Ridley a.* 1898 (SING). — Pahang: Ulu Sungei Anak Endau, 400 m, *FRI* 8149; Bentong, Kemasul F.R., 80 m, *KEP* 78663. Cameron Highlands, 1430 m, *KEP* 69458; Mt Jasar, 1500 m, *FRI* 5942; Sg. Parang, *For. Dep. F.M.S.* 36153; Sg. Bertam, *For. Dep. F.M.S.* 36252; 47th mile Telom road, 1465 m, *SF* 31267; Mt Benom Game R., 550 m, *KEP* 99122. — Selangor: Sg. Buloh F. R., *For. Dep. F.M.S.* 23920. — Negri Sembilan: Port Dickson, *KEP* 66533. — Malacca: Bukit Sadanen, 180 m, *Derry* (*Ridley* 1108). Alor Gajah F. R., *KEP* 67260. — Johore: Mt Blumut, 400 m, *FRI* 8841; Panti F. R., *FRI* 1715; Mersing, Mt Arong F.R., *KEP* 77808; Batu Pahat, *KEP* 79381, 79469.

BORNEO. W. Borneo: Tajan, 100 m, *bb.* 14183; Lianggagang, *Hallier* 2918. — Sarawak: 1st Div., Lundu, Mt Pueh, 1065 m, *S* 13638; near Kuching, 10-1892, *Haviland* 1780, 1782 p.p., *S* 371; Sadong, *S* 72; *ibid.*, Sabal F. R., 150 m, *S* 13396; Bako National Park, 60—180 m, *S* 2470, 12071; *ibid.*, Tanjong Po, *Haviland* 1909 (K, type of *S. evenius*; SAR, SING); *ibid.*, Paya Jelutong, 120 m, *S* 12488; Telok Bandong, Santubong, *S* 8335; 2nd Div., Batan Lupar, Undup (c. 111° 32' E 1° 06' N), 9-1865, *Beccari P.B.* 473 (FI, type of *S. umbellatus*); 4th Div., Niah, 5-1892, *Haviland* 1782 p.p. (BO); Bintulu, near the sea, *Beccari P.B.* 3663 (FI, type of *S. umbellatus* var. *ovalifolius*; K); *ibid.*, Similajau F. R., *S* 8641; *ibid.*, Nyabau F. R., *S* 17403; Bukit Orang, 15 m, *S* 4698; Usun Apau plateau, 950 m, *S* 3832, 3934; Baram R., *Hose* 107 p.p. (K, L). — Brunei: Bukit Pasir Puteh, *BRUN* 5112; Kuala Belait, Andulau F. R., 30—60 m, *SAN* 17489, *S* 2138; Badas F. R., *Hotta* 13032; Mt Pagon Periok, 1800 m, *BRUN* 2453 (SAR). — N. Borneo: Kota Belud, Bukit Matindok, 305 m, *SAN* 32186; Mt Kinabalu, Penibukan, 1220 m, *Clemens* 31606 (A, n.v.; BM, BO, G, K, L; M, type of *S. intercedens*); Sandakan, Beluran, Sg. Sepi, 30 m, *SAN* 36311; mile 81, Labuk road, 180 m, *SAN* 38782; ¼ mile to Telupid Camp, *SAN* 38918. — NE. Borneo: Bulungan, Sg. Sebakis region, *Kostermans* 9287. — E. Borneo: W. Kutei, Mt Palimasan near Tabang on Belajan R., 400—700 m, *Kostermans* 12817, 12892, 13125; Peak of Balikpapan (Mt Beratus), 640 m, *Kostermans* 7522. — S. Borneo: Sampit, sea-level, *Kostermans* 7919.

PHILIPPINES. Basilan: fl. 22-1-1904, *Hallier* 4497 (A, n.v.; L; PNH, type of *Urandra hallieri*, †). — Mindanao: Surigao, *F.B.* 21872, *Wenzel* 2983, 3483; Zamboanga, Port Banga, *F.B.* 9176 (cit. Merrill, n.v.); Butuan subprov., *F.B.* 20767 (K).

11. *Stemonurus perobtus* (Gagnep.) Sleum., *comb. nov.* — *Lasianthera perobtus* Gagnep., *Not. Syst.* 13 (1948) 188; *Fl. Gén. I.-C. Suppl.* (1948) 743, f. 87, 9—14.

INDOCHINA. Annam: km 26 de la route de Nhatrang a Ninh-hoa, *Poilane* 8211 (K; P, syntype of *Lasianthera perobtus*). — Cochinchina: Bien-hoa, Gia-ray, fl. fr., *Poilane* 187 (K; P, lectotype of *Lasianthera perobtus*), 19485; in montibus Chuiá Chiang, *Pierre* 2838.

12. *Stemonurus dichrocarpus* (Gagnep.) Sleum., *comb. nov.* — *Lasianthera dichrocarpa* Gagnep., *Not. Syst.* 13 (1948) 188; *Fl. Gén. I.-C. Suppl.* (1948) 744, f. 87, 5—8.

INDOCHINA. Annam: Haut Donnai, Braian près de Djiring, 1000—1200 m, *Poilane* 24679, fr. (K; P, type of *Lasianthera dichrocarpa*).

INCOMPLETE MATERIAL

Stemonurus sp. nov.

Ex aff. *S. grandiflori*, foliis permagnis usque ad 35 cm longis et 16 cm latis, margine ipso subtus manifeste catenato-punctato, inflorescentia umbellata, bracteis 3—5 mm longis persistentibus, fructu submaturo ± late elliptico usque ad 3 cm longo et 2.5 cm lato viso.

BORNEO. Sarawak: 3rd Div., Bukit Iju, Ulu Arip, Balingian, c. 120 m. fr. 31-7-1965, *Sibat ak. Luang S 23676* (L).

EXCLUDED

Stemonurus africanus (P. Beauv.) Miers, Ann. Mag. Nat. Hist. II, 10 (1852) 36, repr. Contr. Bot. I (1852) 87 = *Lasianthera africana* P. Beauv.

Stemonurus ? *crassipes* Kurz, J. As. Soc. Beng. 41, ii (1872) 298; Prel. Rep. For. & Veg. Pegu (1875) 37; O. Ktze, Rev. Gen. Pl. I (1891) 112 = *Anacolsa crassipes* (Kurz) Kurz, J. As. Soc. Beng. 44, ii (1875) 153.

Stemonurus litoralis Bl., Mus. Bot. Lugd. Bat. I (1850) 250 = *Gonocaryum litorale* (Bl.) Sleum.

Stemonurus macrocarpus Bl., Mus. Bot. Lugd. Bat. I (1850) 250 = *Gonocaryum lobbianum* (Miers) Kurz.

Stemonurus macrophyllus Bl., Mus. Bot. Lugd. Bat. I (1850) 250 = *Gonocaryum macrophyllum* (Bl.) Sleum.

Stemonurus ? *membranaceus* Bl., Mus. Bot. Lugd. Bat. I (1850) 250; Walp., Ann. 2 (1851) 182; Miers, Ann. Mag. Nat. Hist. II, 10 (1852) 36, repr. Contr. Bot. I (1852) 87. — *Lasianthera membranacea* (Bl.) Miq., Fl. Ind. Bat. I (1856) 792; Becc., Malesia I (1877) 111. — *Strombosia membranacea* (Bl.) Valet., Crit. Overz. Olacin. (1886) 87. — *Strombosia ceylanica* Gardn. var. *membranacea* (Bl.) Hochr., Pl. Bog. Exs. (1904) n. 101 = *Strombosia ceylanica* Gardn. 1846.

Stemonurus mindanaensis Merr. ms. — *Cyclostemon mindanaensis* Merr., Philip. J. Sc. 9 (1915) Bot. 479 = *Drypetes mindanaensis* (Merr.) Pax & Hoffm.

Stemonurus vitiensis (Seem.) Seem., Fl. Vit. (1865) 39, pl. 12 = *Medusanthera vitiensis* Seem.

Stemonurus yatesii (Merr.) Howard, J. Arn. Arb. 21 (1940) 469 = *Medusanthera gracilis* (King) Sleum.

Stemonurus yuhnanensis Hu, Bull. Fan Mem. Inst. Biol. Bot. Ser. 10 (1940) 156 = *Pittosporopsis kerrii* Craib, cf. Wu & Wang, Act. Phytotax. Sin. 6 (1957) 279.

Stemonurus sp. Merr., Interpr. Rumph. Herb. Amb. (1917) 335. — *Fructus bobae* Rumph., Herb. Amb. 3 (1743) 166, t. 105. To judge from the nervation of the leaves and the fruit certainly not belonging to *Stemonurus*. Teysmann, quoted by Hasskarl, Neue Schlüssel (1866) 62, placed it in *Platea*. Possibly *Merrilliodendron megacarpum* (Hemsl.) Sleum., which, however, is not yet known from Amboina.

Urandra elliptica Merr., Philip. J. Sc. 5 (1910) Bot. 195, non Schellenb. 1923 = *Sapium luzonicum* (Vidal) Merr., En. Philip. 2 (1923) 461.

Urandra plumbea Elm. ms. = *Mastixia philippinensis* Wang., cf. Merr., En. Philip. 3 (1923) 241.

26. WHITMOREA SLEUM., A NEW GENUS FROM THE SOLOMON ISLANDS

WHITMOREA

Sleum., gen. nov.

Arbor. *Folia* spiralia, integra, coriacea, pinnatinervia, petiolata. *Inflorescentiae* axillares pedunculatae, apice pedunculi cymas scorpioideas 3 vel 4 pedunculatas sat paucifloras modo umbellae cruciformis gerentes, bracteis basi umbellae tuberculiformibus sat obscuris. *Flores* bisexuales, generaliter breviter pedicellati, uni- vel biserialiter dispositi; bracteae basi pedunculorum secundariorum tuberculatae, sat obscurae. *Calyx* alte campanulatus, truncatus, persistens. *Petala* (4—)5, oblonga, valvata, parte apicali sat brevi tantum libera, ceterum connata, apice minute acutato-inflexa, intus costata, caduca, inodora. *Stamina* (4—)5, cum petalis alternantia, ima basi petalorum inserta; filamenta linearia, loco insertionis tenuia, ceterum carnosae, intus infra antheras, extus ad connectivum pilis subclavatis elongatis subdense adpersae; antherae lineares, basi thecis divergentes, basifixae. *Discus* anguste annularis, vix incrassatus, subinteger, sat

obscurus. *Ovarium* superum, ovoideo-conicum, apice quasi truncatum, i.e. summa parte modo cupulae inversum ibique in marginis parte unilaterali stigma parvum papillosum subbilobum gerens, uniloculare, ovulis pendulis 2. *Drupa* oblongo-ellipsoidea, per partem $\frac{3}{4}$ inferiorem laevis, superne papillosa et discolor, apiculata; exocarpium carnosum tenue, mox dissolutum; endocarpium strato exteriori longitudinaliter fibrosum, interiore crustaceum, intus laeve. *Semen* 1, ellipsoideo-subquadrangulare, medio circumdepressum; albumen copiosum; embryo minutum apice albuminis instructum.

Genus monotypicum, a genere *Stemonurus* Bl., cui proximum, floribus generaliter pedicellatis multoque maioribus, petalis alte connatis, et praecipue ovario apice cupuliformi-depresso stigmatemque unilaterali in margine cupulae istae instructo diversum. Insulas Solomonenses incolum, cl. T.C. Whitmore, exploratori insularum illarum indefesso dedicatum.

Whitmorea grandiflora Sleum., *sp. nov.* — *Urandra umbellata* [non (Becc.) O. Ktze] Walker, For. Fl. Br. Solomon Is (1948) 127.

Arbor 6—25 m, cortice cinereo vel brunneo. *Folia* elliptica vel oblongo-elliptica, apice obtusa saepius brevissime emarginata, basi late cuneata vel rotundata, coriacea, firma, glabra, 14—22 cm longa, 4—8(—12) cm lata, costa supra leviter immersa, subtus bene elevata et obtusa, nervis lateralibus 20—25-paribus inter sese subparallelis, ceteris intercalaribus minus distinctis additis, omnibus utrinque prominulis, rete venarum venularumque denso supra tantum parum conspicuo; petioli 2—3 (—4) cm longi, 2(—3) mm crassi. *Inflorescentiae* axillares solitariae, petalis exceptis puberulae punctisque resinosis obtectae, vel interdum totae resina illinitae; pedunculus 2.5—4 cm longus, 1.5—2 mm crassus; pedunculi secundarii 3 vel 4 umbellatim modoque crucis dispositi, 1—2(—3) cm longi, apice recurvo flores 3—5(—7) uni- vel biserialiter instructos gerentes. Pedicelli 0.5—2(—3) mm longi, 1.5 mm crassi. *Calyx* obconico-cupulatus, in sicco rugosus, apice truncatus, basi haud raro quasi in stipitem brevem contractus, 4—5 mm altus, 6—7 mm diam., sub fructu applanato-expansus. *Petala* oblonga, ab apice secreta, chartacea, viridilutescentia, glabra, (12—)13—15 mm longa, 3—4 mm lata. *Filamenta* 9—10 mm longa, 1 mm crassa, infra thecas dorsoque ad connectivum subdense longeque albido-pilosa; antherae lineares, 4 mm longae, 1 mm latae. *Discus* obscurus glaber. *Ovarium* ovoideo-conicum, apice quasi truncatum ibique modo cupulae inversum. *Drupa* oblongo-ellipsoidea, basi obtusa, apice apiculata, 3.5—4 cm longa, 2—2.5 cm lata; exocarpium in parte $\frac{3}{4}$ inferiore laeve pleneque maturitate rubro-tinctum, superne papillosum et griseolutescens.

SOLOMON IS. Bougainville: Buin, Koniguru, 275—950 m, common, *Kajewski 2046* (A, n.v.; BM, BO, G, L, SING), *Schodde (& Craven) 3629*; Maisua, *Waterhouse 542* (BO, K, L); S. slopes of Lake Loloru crater, 730 m, *Craven (& Schodde) 139*. — SW. Shortland I., 30 m, *BSIP 5917*. — E. Shortland I., *BSIP 5798, 5800*. — Faro I., fl. & fr. mat., *Guppy 252* (K). — Choiseul: southeastern part, near Ruruvai, *BSIP 280*; *ibid.*, 30 m, fl. & fr. submat., *BSIP 5212* (K; L, type). — Kolombangara: Bat Harbour, *BSIP 187* (K). — Santa Isabel: Tatamba, 50 m, *Brass 3418 A* (A, n.v.; BM, BO, G, L). — Guadalcanal: 60—100 m, *BSIP 3391, 9362, 10097, 11266, 12047, 12234*. — San Cristobal: 200 m, *BSIP 4253, 10974, 11086*.