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Das Pflanzenreich

Regni vegetabilis conspectus

Im Auftrage der Preuss Akademie der Wissenschaften

herausgegeben von

A. Engler (†)

Fortgesetzt von

L. Diels

IV. 165.

Sapindaceae III

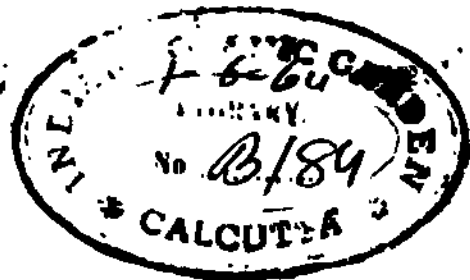
(Bogen 41—50)

von

L. Radlkofer (†)

Mit Unterstützung der Bayerischen Akademie der Wissenschaften

Ausgegeben am 16. August 1932



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WILHELM ENGELMANN, LEIPZIG

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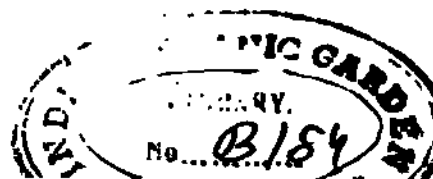


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saepius cc.; Knox, Cat. Pl. isle S. Thomas in Mem. Ace. di Torino, ser. 2, XVI. (1857) 87. — *Sapindus inaequalis* DC. Prodr. I. (1824) 608 n. 9! (coll. Bertero, Guadalupa); Spreng., Camb., Don II. saepius cc; Wikström, Primit. Flor. Guadal. in K. Vetensk. Ac. Handl. f. 1827 (1828) 66; Schlechtendal et Cham. Pl. Mexic. in Linnaea VI. (1831) 419 n. 1292! (coll. Schiede et Deppe); Benth. in Hook. Journ. Bot. III. (1851) 197 (coll. Spruce!, Blanchet n. 2755!, Pohl); Griseb. Fl. Brit. W. Ind. Isl. (1859) 126 et Cat. PL Cub. (1866) 46 n. 17!; Triana et PL Prodr. Fl. Novo-Granat. in Ann. Sc. nat. 4. sér. XVIII. (1862) 377 n. 2!; Hemsl. in Biol. Centr.-Am. I. (1879-1881) 214 n. 2! et ex Biol. repet. in Ann. Mus. Costaric. I. (1888) P. 2 p. 20; Eggers, Fl. St. Croix etc. (1879) 35 n. 130!; Bello, Apunt. Fl. Portoric. in Anal. Soc. Hist. Nat. X. (Madrid, 1881) 247, cf. Krug, Ic. ined. (in Mus. bot. Berol. ser. vat.) 1.1121 (coll. n.164deest); Sagot, Cat. PL Guian. in Ann. Sc. nat. 6. sér. XII. (1882) 195; Fawcett, Provis. List PL Jam. (1893) 8; Anonymus, FL St. Vincent etc. in Kew Bull. Nr.81 (1893) 243, »coll. Guilding«; J. Donnell Smith, Enum. PL Guatemal. etc. VII. (1895) 8 n. 8504; — non Tenore, nee Pasquale, nee Griseb. Symb.; cf. *S. mukorossi*. — *Sapindus laurifolius*, non Vahl etc. (cfr. *S. trifoliat.* L.), Hb. Balbis ed. DC. 1. anted — *Sapindus divaricatus* Camb. in St. Hil. Fl. Bras. I. (1825) 390 n. 1!; »Willd. Herb. (ex Hb. Kunth)« ed. Camb. 1. c. (coll. Hoffmannsegg, resp. Friedr. W. Sieber in Hb. Willd. n. 77421); Camb. in Mem. Mus. d'Hist. nat. XVIII. (1829) 26; »Hoffmannsegg, Hb. Willd. n. 7742« ed. Schlecht. et Cham. in Linnaea VI. (1831) 419 n. 1292 in synonym. *S. inaeq.* Mart. Syst. Mat. med. Bras. (1843) 127; Oliveira, Syst. Mat. med. Bras. (1854) 225;? Fermond in Bull. Soc. Bot. France VII. (1860) 494; (sphalm.: *vvaricatus* St. Hil.) Villafranca, PL utiles du Brésil. in Extr. du Bull. Thérap. (1879) 29, excl. nom. vulg. »Pitomba«; (»£., near *S. divaricatus* Willd.«) Hemsl. in Biol. Centr.-Am. IV. (1886—1888) 111 (coll. Gaumer, Cozumel Island!); Niederlein in Catal. Expos. Paris. (1889) 227, 240, 279 c. nom. vulg.: Casita, Ibarooajeta; J. B. Rodrigues, Hort. Flum. (1895) 70; R. Endlich in Notizbl. K. bot. Gart. u. Mus. Berlin IV. Nr. 31 (Jul. 1903). — *Sapindus microcarpa*, non R. et P. t. 341 (quae *Allophylus cominia* Sw., cf. Radlk. 1. c. [1878] 301 n. 60, p. 361), Don, Gen. Syst. I. (1831) 665 n. 5, quoad descript. folior. sec. R. et P. t. 342 conflat., in Walp. Rep. I. (1842) 417 reddit. (cf. Radlk. 1. c. [1878] 318 n. 41, p. 362). — *Sapindus Drummondii* W. Hook. et Arn. Bot. Beech. Voy. (inter 1836—1840) 281 n. 2, quoad var. !? (e Mexico forma 2.); Hemsley in Biol. Centr.-Am. I. (1879—1881) 214 n. 1! — *Quassia tricarpa* Blanco, Fl. Filip. (1837) 351, quoad fruct., c. nom. vulg. Tiquistiquis, Catiquis, Sausanli tagalice, Cusiben in lingua Ilocana, Malapalitpit in lingua Pampanga, excl. foliol., »basi glandulis 2 lignosis« instructis, cfr. *Guioa Perrottetii* R.; Ed. 2. (1845) 246 (pariter), reimpr. in Ed. 3. II. (1878) 94, ibique Naves tab. 388 c. syn. »*S. Forsythii* DC.« (apud Turcz. scil.), forma 3. — *Sapindus peruvianus* Walp. in Nov. Act. Ac. Caes. Leop. Car. XIX, Suppl. I. (sive XVI, Suppl. II.) (1843) 312, var. a. *Meyenianus* U 0. *Dombeyanus* Walp. Rep. V. (1845—1846) 363 n. 6. — *Sapindus microcarpus* (non alior., i. e. R. et Pav. 1802, quae *Allophylus cominia* Sw. [cf. supra sub *S. microcarpa* Don], Dietr. 1808, quae *Matayba arborescens* R.; Wight et Am. 1834, quae *Meliosma Arnottiana* Walp.; Kurz 1875, quae *Aphania microcarpa* FL; cf. Radlk. 1. c. [1878] 301 et [1879] 512 n. 60) Jardin, Hist. nat. lies Marquisbes in Extr. d. Mem. Soc. Sc. nat. Cherbourg VI. (1858) 25 t. Drake del Cast. Fl. Polynes. franc. 35. — *Ratonia stipitata*, non »Benth.«, J. Nadeaud, Enum. d. PL indig. de Tahiti (1873) 70! c. nom. vulg. »Aeae« (excl. syn. »*Aporetica pinnata* DC.«, i. e. *Pometia pinnata* Forst., quo synonymo Nadeaud verisimiliter Seemannum sequi voluit, qui ad *Ratoniā stipitatam* Benth. ex Australia — i. e. *Sarcopteryx stipitata* Radlk. — perperam *Aporeticam pinnatam* Hook. et Am., »non DC.*, citaverat, quae *Cupania emarginata* Camb., a Lay et Collie in insula Coral ad Brasiliae pram lecta, nee in insulis Societatis, uti Hook. et Arn. indicaverant, cf. *Cup. emarg.* et Radlk. in Sitzungsber. bayer. Akad. XX. [1890] 259 annot.), a Nadeaud a. 1857 wine fl. et fr., dein a. 1876 cum fl. et fr. lecta, fide fragmentorum ex Hb. Drake a. 1908 mecum com-

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municatorum hue recensenda, et quidem ad form. 3. *microcarpum*. — *Cupania pleuropteris*, non Bl., F.-Villar in Blanco, Fl. Filip. Ed. 3. IV. (1880) Mercado Libro de Medicinas p. 28 et Noviss. App. p. 51 quoad syn. »*Quassia tricarpa* Blanco« et »Naves tab. 388(1, cf. supra, perperam excludendo dicto syn. a Naves adjecto »*S. Forsythii* DC.« (apud Turcz. scil.); (forma 3.). — *Sapindus Turczaninowii* Vidal, Sinops. de Familias etc. (1883) Atlas p. 21 t. 34 f. .4!, c. syn. »*S. Forsythii* ? Turcz., non DC.«, *Quassia tricarpa* Blanco et *bCupania phuropteris* Naves [potius F.-Villar], non Bl.«, et c. nom. vulg. »Tiquis-tiquis«; id. Phanerog. Guming. (1885) 8,105, coll. Cuming n.5391; id. Revis. etc. (1886) 10 (coll. Gamelli in Hb. Sloane Musei Brit.) et p. 96! c. nom. vulg. »Tiquis-tiquis«; id. Cat. Herb. (1892) 54 (forma 3.). - »*Atalaya* sp.?« Hemsley, Bot. Voy. Ghalleng. I. (1885) Part III, South-Eastern Moluccas etc., p. 135, c. indie. »Timor Laut«, si recte hue duco specimen a Riedel in Timor Laut lectum, a Meyer a. 1884 c. Hb. Kew. communicatum ibique a. 1885. inter *Atalayae* specimina observatum, ad f. 3. recensendum. — *Matayba stipitata* Drake del Castillo, III. Fl. Ins. Maris Pacif. Fasc. VI. (1890) 144 et Fl. Polynés. franç. (1892) 36! (in quibus locis perperam autoritatis loco indicatur »Durand Ind. Gen. 78«, solummodo quoad *Ratoniam stipitatum* Nadeaud, cf. supra, excl. reliquis synonymis omnibus, quae sunt: *Guajacum dubium* Forst. = *Guioa glauca* R., *Aporetica pinnata* Hook, et Arn. = *Cupania emarginata* Camb., *Ratonia stipitata* Benth. = *Sarcopteryx stipitata* R., *Ratonia stipitata* Seem. = *Sarcopteryx stipitata* R. confusa c. *Guioa glauca* R., c. *Guioa lentiscifolia* Gav., c. *Cup. emarginata* Gamb. et quoad pi. »Samoanam« c. *Guioa subfalcala* R. — *Sapindus Thurstonii* Rock in Bot. Bull. Hawaii Board Agric. and Forest. Nr. 1 (IX. 1911) 6 tab. 2, 3!, c. nom. vulg. A'e et Manele (forma 2.), et in Fedde, Repert. Spec. nov. X. (1912) 368. — *Sapindus marginatus* (non Willd., nee autor. amer. plur.) Sargent 1. c. (1895,1902) et Robinson (1897) solummodo quoad »Lamarck III. II. 441 t. 307«, quae t. Poir. in Lam. Enc. VI. (1804) 663 specimen collections Gommerson ex ins. borbonica in Hb. Juss. (sub n. 11383!) servat., ad *S. Sapon.* f. *inaequ.* subf. *rigidum* recensenda; Cook et Collins, Economic Pl. of Porto Rico in Contr. U. S. Nat. Hb. VIII. 2. (1903) 169 sphalm. »*S. marginalise* et p. 235, errore, loco nominis antecedentis »*£. inaequalis*, Gurtiss in sched. PI. Ind. occ. n. 707! (Cuba, 1905), quae *S. Saponaria* L. f. 2. *inaequalis* R. — ?*Sapindus copalxocotl* Leon. Oliva, Fl. de Jalisco (1859) ed. Dugds in La Naturaleza V. (1880-1881) 90; cfr. *Copalxocotl* et *Copalcocote* t. Schiede (n. 1002 in Hb. Berol. ex Engl. Anac. p. 275), *Cyrtocarpa procera* H.B.K. Nov. Gen. et Sp. VII. (1825) Ed. in 4°, 20 tab. 609 »Copalcocote incolar.« — in Linnaea XVI. (1842) 485 i. obs. »Copal = Gummi, Xacotl = acidus, h. e. arbor copallifera fructu acido«. — ?*Sapindus amolle* Leon. Oliva ibid. — ?*Sapindus*——(an genus novum?) Leon. Oliva ibid. — ?*Sapindus AmoUi* Hog. et Sesse FL Mex. mss. (circ. 1804) ed. in La Naturaleza, ser. 2. II. 8. (1894) Apéndice 104. - *Sapindus* sp. Spruce in sched. (a. 1852)!; Hemsl. in Biol. Centr.-Am. 1. ^1879-1881) 214 n. 4, coll. Jürgensen n. 7711 (sphalm. 770), et n. 5, coll. Bourgeau n. 1466!, IV. (1886-1888) Artie. 3, p. III, coll. Gaumer a. 1886!; (?)Vasey et Rose, Pl. Socorro and Clarion Isl. in Proceed. U. S. Nat. Mus. XIII. (1890) 146; Millspaugh, Gontrib. Fl. Yucatan in Field Columbian Mus., Bot. 1.1. (1895) 33, coll. Gaumer a. 1886!, coll. Millsp. a. 1895 (cf. supra »*S. Sap.*« Radlk. in Millsp. Contrib. etc. I. 4. [1898] 402 »*£. Sap.* L. f. 2. *inaequ.* R., coll. Gaumer « ind. nota a Millsp. adjecta de coll. Millsp.). - *Sapindus* sp. (»near *S. acuminatus* Willd.« — sphalmate loco *S. marginatus* Willd., nisi loco *S. acuminatus* Rafin. —) Robinson et Greenman, Galápagos Fl. in Am. Journ. Scienc. L. (1895) 145: »Albemarle Isl., coll. Baur n. 57, sp. hujus Florae nova* (cf. supra »*£. Sap.*« Robinson 1. c. 1902.). — *Zanthoxylon* sp. Mandon in sched. PI. Andium Boliv. (1861) n. 859!, cf. Radlk. in Sitzungsber. bayer. Akad. VIII. (1878) 303.

Varia sunt nomina vulgaria in America indigena, vel ab Hispanis, Lusitanis, Gallis, Anglis, Belgis usitata: ?Charapu Mexicanis ex Nieremb. l.e. (1635); ?Quauhcoyolli Hernand., »de cuyas semillasse hacen cuentas de rosarios« Qavigero in La

Naturaleza VI. (1882 — 1884) Apendice 18, annot. 3; Copalxocotl Ramirez y Altamirano, Lista de Nombres vulgares etc. (Mexico 1894) 6; ? Copalxocote, Gopalxocol, Pompoacua (Tarasco) t. Herrera in Sinonimia etc. in La Naturaleza 111. (18-74—1875) 352; ? Amole de bolita, Iyamolle? Herrera ibid. p. 321; ? Amolli, Boliche Moc. et Sesse, Fl. mex. mss. ed. in La Naturaleza, ser. 2, II. 8. (1894) Apendice 104; ? Contasquahil L. Oliva ed. Dugès in La Naturaleza V. (1880—1881) 90; Chololote Misantlens. t. Schiede et Deppe ap. Schlecht. et Cham. 1. c; Monnie in Chihuahua t. Watson 1. c; Devanador in Vera Cruz t. Seler ap. Loesener 1. c. (1913); Moracia Costaricensib. t. Hoffmann in sched. coll. fruct. Berol.; Para-para Cumanensib. t. Humb. et Bonpl. apud Kunth 1. c; Noulourhoue t. Surian ed. Sloane 1. c; Arbol de las cuentas del Jabon t. Oviedo 1. c. (1535), Hernandez (1615); Cuental sive Rosario in Mexico t. Kerber in sched. (n. 123); Pater noster Pluk. Mant. p. 137, obs. ad Almag. p. 266, lin. 4; Arbol Jabonero Pav. Hb.; Jabonero comun, Palo de jabon Grosourdy; Jaboncillo Ramon de la Sagra, A. Rich., Griseb. etc.; Javonsillo in valle Magdalenae, Jamoncillo (corruptio antecedentis); in Mexico porro, ex Standley 1. c. (1923): Paloblanco in Chihuahua (cfr. *Allophylus occidentalis* Radlk.), Tehuistle, Tehuixtle, Tehuiztle, Tehoitzli in Nahuati, Matamuchacho in Sonora, Pipe, Pipal, Bibi in Oaxaca, Cholalo, Guatulo ibid.; Michu in prov. Socorro, Chumbimbo in prov. Antioquia t. Triana et Pl. 1. c, Chambimbe t. Lehmann in sched.; Siempre viva, Barbasco Levy Nicaragua (Paris 1875) t. Greshoff in Meded. uit's Lands Plantentuin X. (1893) 42, Bernardin 40 savons veget. (1875) 10; Quity Brasiliae indigenis t. Marcgr. in Hist. Pl. lib. III. cap. 5, p. 113 (in Piso, Hist. nat. Bras. 1648) et Piso in Hist. nat. et med. Ind. occ. lib. IV. cap. 24, p. 162 (in Ind. utriusque re nat. et med. 1658); Guity t. Glaziou in sched.; Jequitinguacu »of Anonymos Portugal of Brasile* Purchas, His Pilgrims IV. (1625) lib. VII. cap. 1, p. 1309; Ibaro tupice t. J. B. Rodrigues 1. sub *S. divaric.* c; Ibaro (i. e. fructus amarus) R. Endlich 1. sub *S. divaric.* c; Ibaro s. Casita Parodi, Not. Pl. Us. del Paraguay etc. (1877, ex Ann. Soc. Cientif. Argent.) 33; Ibarocajeta, Casita in Argent. territorio Misiones t. Niederlein in Catal. Expos. Paris, a. (1889) 227, 240, 279 (»*S. divaric.*«) Jisotoubou in Bolivia or. ex Herzog 1. c. (1910) 401; Maca-apa-ipu t. Mart, de nom. Tupi etc. (1858, 1867) et t. Peckolt 1. c, an recte?, cfr. *Matayba arborescens* Radlk.; Pao de Sabaon Lusitanis t. Marcgr. 1. c. et Piso 1. c; Pao de Sabao J. B. Rodrigues 1. c, R. Endlich 1. c; Sabao de Soldado Rodrigues 1. c; Sabaeira Wittmack in Bot. Zeit. (1873) 264 (»= *S. dwaricatus* Wedd.«, sphalm. 1. Willd.), Saboeiro Schwacke in sched. et I.e., Rodrigues 1. c, Saldanha da Gamal. c; Saboeiro t. Peckolt 1. c; Saboneteira in S. Paulo t. Hoehne in sched.; Savonete t. Mart, in Mat. med. Bras. 127 s. Sabonete t. St. Hil., Glaziou et adjecto nomine »Arbre a savon« Villafranca Pl. ut. du Br&il. in Extr. du Bull. de Therap. (1879) 29, excl. obs. »ou Pitomba« ad *Talisiam esculentam* (*Sap. esculentus* St. Hil. etc.) spectante; Chururu in Peruvia t. Weberbauer in sched. (an recte?); Choloco in Peruvia t. eod. in Engl. et Drude. Veg. Erde XII. (1911) 96; Savonier, Arbre a savonnette t. Poir. (1804); Bois ramon Duchesne, Pl. ut. (1846) 194; Bois a ramier aux feuilles blanches Vaillant Herb.; Bois savon, Savonette, Bois saponace, Savonnier gall., Soapwood angl. t. Saldanha da Gama 1. c; Savonettier Martinicensib. t. Duss 1. c. et in sched.; Bois mousseux t. eod. 1. c; Savonnier mousseux t. Descourt. 1. c; Soap-Tree P. Browne; Soap-Berry-Tree, Soap-apple-Tree Sloane; Black Nicker-Tree Hughes (1750), Halliday (1837). — In Senegambia nominatur: M'boull t. Lanessan, Pl. ut. (1886) 345. — Nomina philippinensia (formae 3.) sunt: Tiquis-tiquis, Gatiquis, Sansanli, Sausanli in lingua Tagalog, Cusiben in dialecto Ilocano, Malapalitpit in Pampango t. Blanco sub *Quassia tricarpa* ed. 1, p. 352-3, ed. 2, p. 246-7; Atalapilpic in Zambales t. Vidal, Sinops. p. 357; Malapalitpit-ito in Pampango ibid. p. 380, Sansali in lingua Tagalog ibid. p. 390; Casiben, Cosiben in d. Hoc, Malapatpit, Palicpic-pito in Pamp., Panosiben

in Tiagan, Baloc, Sausatli, Sansali in 1. Tagal. t. Merrill in Diet. (1903); Poas sive Puas t. Loher in Luzon (an recte?, cfr. *Harpullia arborea*); Alupag t. Gurrin et Merritt in Luzon, prov. Batangas (an recte?, cfr. *Euphoria cinerea*); — Nomina Marquesana (formae 3.) sunt: Kohouhou, Poukokou t. Drake 1. c. (1892). — Nomen Tahitense (formae 3.) est: Aeae t. Nadeaud, 1. c. (1873) (quo nomine in ins. Sandwic. *Lycium sandwicense* Gray salutatur ex Sinclair, Hawaiian Flowers [1885] t. 2i). — Nomina Hāwaiiēnsia sunt: A'e et Manele t. Rock, 1l. cc. (1911) (sub *Sap. Thurstonii* Rock) et 1913 (sub *S. Saponaria* L.), nec non quoad »Manele« etiam in Rock, Hawaiian

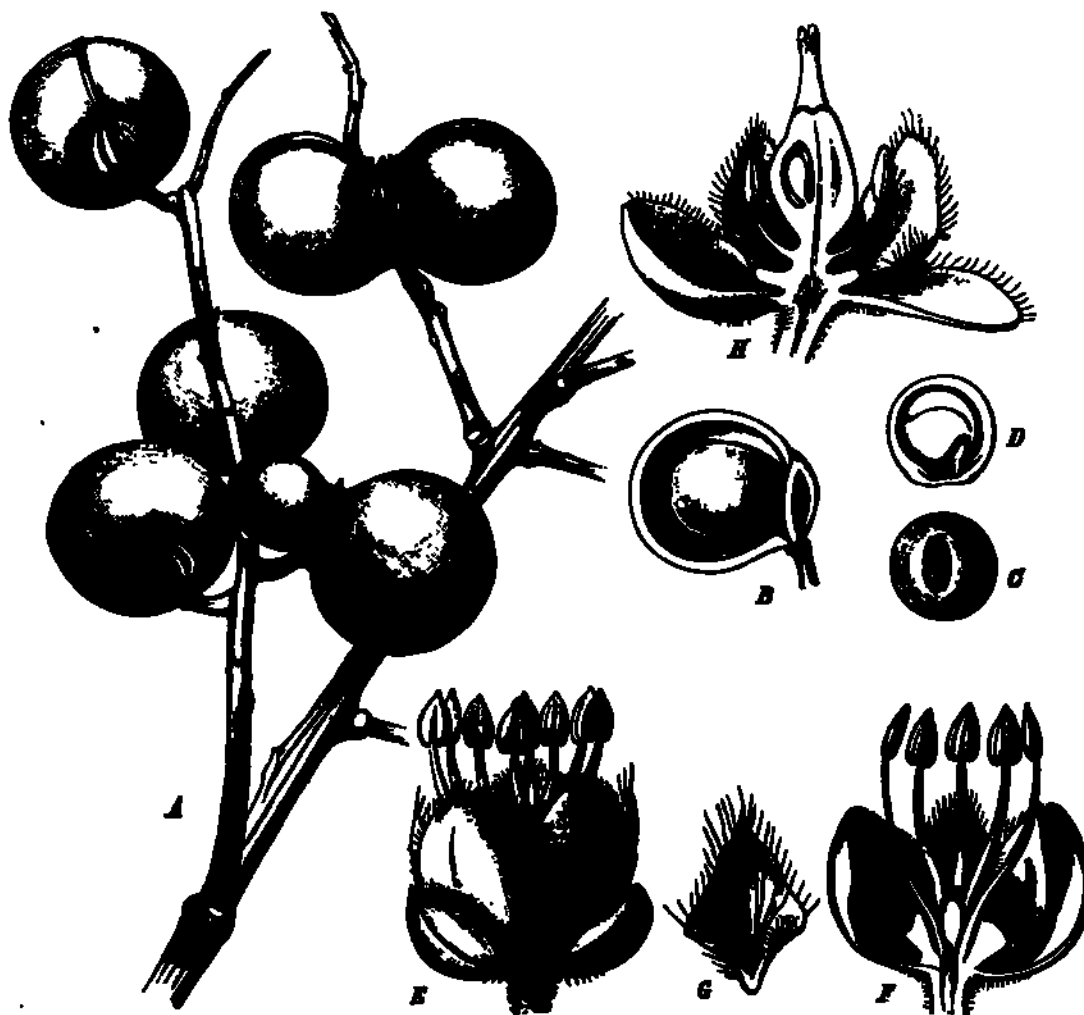


Fig. 14. *Sapindus Saponaria* L. A Ramulus fructifer. B Fructus longitud. sectus. C Semen, D longitud. sectum. E, F Flos. G Pet. alum. H Flos ?. — Sec. Radlkofer in Engl. u. Prantl, Nat. Pflanzenfam. III. 5, 316, Fig. 164.

Plant Names in Bot. Bull. Hawaii Board Agric. and Forestry Nr. 2 (1913) 11, ubi vero p. 4 sub nom. »A'e« solummodo indicatur *Xanihoxylum kauaiense* Gray. — Fructus audiunt: Jaboncillos, Bolitas, Bolillos, Boliche, Ghologues Pay. Hb.; Cerezo gommoso, Manzana de jabon Grosourdy; Mala de chivo Bertero in sched. *S. stenopt.*, S. Domingo; Cerise gommeuse, Pomme de savon Duchesne; Savonnette jaune Grosourdy; Savonet appel Boldingh 1. c; Soapberry Don 1. c; Soap-seed Eggers St. Groix (1879) 35; Bermuda berries Bernardin 1. c; Seepbessen, Seepnoten Greshoff I.e.; Fructo de sabaõ t. Peckolt 1. c, Sabaon t. Marcgr. 1. c. et Piso 1. c.

Arbor sat alta, subglabra; rami teretes, subglabri, cortice albido, interdum excavati formicis hospitium praebentes (t. Kerber in scheda ad n. 197 in Hb. Berol. servat.);

folia abrupte pinnata, 3 — 6-juga, rhachi (petioloque) nunc alata vel marginata, nunc nuda bisulcata; foliola nunc latiora, ex oblongo elliptico-lanceolata, subaequilatera, subsessilia, acuta, nunc (in forma 2.) angustiora, ovato-lanceolata, inaequilatera, ± falcata et recurvata, in acumen acutum attenuata, breviter petiolulata, integerrima, membranacea, nervis lateralibus sat remotis angulose arcuatis adscendentibus, laete viridia, subtus pallidiora, glabra vel subtus molliter pubescentia, praesertim subtus glandulis microscopicis ad foveolarum conchiformium marginem oblique insertis deflexis et impressis crebris adpersa, saepius cellulis secretoriis parvis minutim pellucide punctata; paniculae magnae, divaricato-ramosae, ramis fructiferis basi discoideo-incrassatis cicatrices orbiculares relinquentibus, pube vel tomento brevi ex albido flavescente indutae, alabastris glomeratis globosis praeter basin glabriusculis sat parvis; flores sat parvi; fructus 1-, rarius 2—3-coccus, coccis globosis majusculis vel (in forma 3.) minoribus glabris, siccis spadiceis crustaceis, piano commissurali obovato minore laevi pallidiora; semen globosum.

Arbor 4—9 (t. Riedel 12—20) m alta, patenter ramosa, cortice tenui laevigato (Malme) cinerascete. Rami diametro 3—6 mm, lenticellarum seriebus notati, interdum fistulosi (a formicis habitati t.-Kerber sub n. 197, specimina mexicana foliolis subtus pubescentibus). Folia superiora petiolo 2 — 7 cm longo adjecto 20—30 cm longa, 10—15 cm lata, inferiora duplo majora, suprema minora, rhacheos segmentis 2—5 cm longis, alis, ubi sunt, utrinque 2 — 6 mm latis; foliola petiolulo 2—3 mm vix excedente adjecto 1—13 cm et ultra longa, 3—5 cm lata. Paniculae in ramulis terminales ad 36 cm longae, 16 cm latae; alabastra in dichasiis vel pleiochasiis perbrevibus glomeratim subsessilia, bracteolata, diametro 1,5—2 mm. Flores albi (Spruce): Sepala rotundata vel interiora elliptica, praeter basin puberulam et marginem minute ciliolatum glabra. Petala 3 mm longa, vix 1,5 mm lata, subhastato-lanceolata, margine villosiuscula, lobulis supra unguem brevem inflexis subsquamulata vel marginibus incrassatis viscositas tantum instructa. Discus completus, carnosus, cupuliformis, crenulatus et staminum pressione supra sulcatus, glaber. Stamina exserta, filiformia, basi villosa; antherae ovatae, glabrae. Germen trigono-ovatum, glabrum, stylo aequilongo coronatum (floris rudimentarium). Fructus cocci colore vitri flavidi (O. Kuntze), sicci subspadicei, (sicci) diametro 1,5—2 cm, piano commissurali circ. 8 mm longo, 6 mm la to. Semen diametro 1,2 cm.

For mas 3 distinguere par est et formae 2. subformam parum insignem:

F. 1. *genuinus* Radlk. in Fl. Bras. XIII. 3. (1900) 517 (*Sapindus Forsythii* DC, *S. Drummondii* Hook, et Arn. var. ?; *S. peruvianus* Walp.; *Zanthoxylon* sp. Mandon, etc.): Foliorum rhachis (petiolusque) plerumque alata; foliola latiora, ex oblongo elliptico-lanceolata, subaequilatera, subsessilia, acuta; fructus cocci majusculi.

F. 2. *inaequalis* (DC.) Radlk. in Mills p. Gontr. 1. c. (1898) et in Fl. Bras. 1. c. (*Cupania saponarioides* Sw., quoad ramum foliatum; *Sapindus inaequalis* DC; *S. stenopterus* DC; *S. laurifolius* Hb. Balbis, ed. DC; *S. divaricatus* W. Hb. ed. Camb.; *S. longifolius* W.; *S. marginatus*, non W., Sargent etc., cf. supra; *S. Thurstonii* Rock): Foliorum rhachis (petiolusque) plerumque nuda; foliola angustius ovato-lanceolata, inaequilatera, saepius subfalcata, petiolulata, acuminata; fructus ut. in forma 1.

Subforma a. *rigidus* (Mill.) Radlk. in Fl. Bras. 1. c. (*Sapindus rigidus* Mill.): Foliola foliorum superiorum depauperatorum rigidiuscula, pallide viridia.

F. 3. *microcarpus* Radlk. in Fl. Bras. 1. c. (1900) et in J. Perkins, Fragm. Fl. Philipp. I. (1904) 59; Merrill, Review etc. (1905) 34, c. syn. *Quassia tricarpa* Blanco et Spec. Blanc. (1918) 238, quoad id. syn., coll. n. 183 (?*Sapindus Saponaria* Forst. 1. c. 1786, Endl. 1. c. 1836, A. Gray 1. c. 1854, Seem. 1. c. 1865, Drake 11. cc. 1890, 1892; *Quassia tricarpa* Blanco 1. c. 1837, part., cf. supra; *S. microcarpus* Jardin I.e. 1858; *S. Forsythii*, non DC, Turcz. 1. c. 1858; *Ratonia stiptiata*, non Benth., Nadeaud 1. c. 1873; *Cupania pleuropteris*, non Bl., F.-Villar 1. c. 1880; *S. Turezaniowii* Vidal 1. c. 1883, etc.; »*Atalaya* sp.«? Hemsl. 1. c. [1885]»; *Matayba stiptiata* Drake 11. cc. 1890,

1892; de nominib. vulg. hanc formam spect. cf. supra): Folia ut in forma 1., rarius ut in forma 2.; fructus cocci parvi.

In America calidiorē, et quidem in Mexico, America centrali, Antillis et in America australi usque ad Argentinam, spontanea et culta, nee non (ex America aufuga) in Africa occidentali, in insulis Mascarensibus et Sandwicensibus, praeterea (forma 3. *microcarpus*) in Timor Laut, in insulis Philippinis nonnullisque oceanicis (inclusa Nova-Guinea). Specimina e Georgia et Carolina australi (quam quidem Schöpf l. c. 1787, indicat, adjecta obs. hospitans?) non exstant; caeterum specimina exstant in omnibus collectionibus, e quibus hie praesertim mihi visa et numeris insignita enumerantur, adjectis quibusdam locis et collectionibus ab autoribus indicatis:

Forma 1: Lecta in Florida: Hugel n. 114a! (ins. Key West, a. 1846, steril., foliol. subtus pubesc.; Hb. Boiss.); Gurtiss n. 487*! (rich sandy thickets at Gape Sable, m. Jul., alab. et fr.; fol. subtus pubesc.; Hb. Berol., Monac.); Gabanis! (leg. Leitner; steril.; Hb. Krug et Urb.); - in Mexico: Née! (fr. juv.; Hb. Pavon, nunc Boiss.); Liebmann, Sapind. n. 9! (Saldani, m. Nov. 1842, fr.; fol. subtus pubesc.; Hb. Havn.); Bourgeau n. 1466! (Vallée de Cordoba, m. Dec. 1865, fr.; Hb. Berol., Bruxell. ex Hb. Paris.); — in Antillis et quidem in Ant. parvis: Ryan! (St. Groix; steril.; Hb. Schumacher, nunc Havn.); Maycock (Barbados; l. e. 1830); Forsyth! (in arenosis maritimis insulae Granatae, DC. l. c. sub *S. Forsythii*; Hb. Prodr.); Eggers n. 6416! (Grenada in lagunis prope La Pomte gregaria, m. Dec. 1889; Hb. Krug et Urb.); W. F. R. Suringar! (Curasao ad Savonnet, m. Jan. 1885, fol.; Hb. Krug et Urb.); in Ant. magnis: Gundlach in Hb. Krug n. 163! (Portorico, prope Quebradulas, a. 1876, steril.; Krug ic. ined. 1.113, cf. lit.; Hb. Krug et Urb.); Sintenis n. 3010! (Portorico, Goamo in silvis juxta flumen Juey, m. Dec. 1885, steril.; Hb. DC, Monac. etc.); Stahl n. 354! (Portorico a. 1886, fr.; m. Oct. 1889, fl.; Hb. Krug et Urb.); Bertero n. 104! (S. Domingo; Hb. Spreng., nunc Berol.); Distin! (Jamaica; Hb. Kew.); W. Harris n. 6666! (Jamaica, Halberstadt, altit. 2900 ped., m. Dec. 1896, fl.; Hb. Krug et Urb.); C. Wright n. 2167! (Cuba, a. 1860-1864, fl.; fol. subtus pubesc.; Hb. Griseb., DC, Boiss.); E. L. Ekman n. 45871 4840! 6167! 8416! (Cuba, prov. Oriente, prope Mir in silvis, ad Rio Rioja etc., m. Febr.-Jun. 1919, fl. et fr.; Hb. Krug et Urb.); - in Guiana: Patris(?)! (Cayenne; Hb. Prodr. DC); — in Venezuela: Humboldt et Bonpland n. 143! (prope Bordones Cumanensium, m. Aug.—Sept. 1799, fl.; Hb. Kunth, nunc Berol.; Hb. Willd. n. 7739, plagula 1); Funck n. 392! (Leonias, Sierra de Caracas, alt. 2000 ped., m. Oct. 1842-1843, fl.; fol. subtus pubesc.; Hb. Kew., Boiss.); Fendler n. 155! (prope coloniam Tovar, 1857, fl. et fr.; fol. subtus pubesc.; Hb. Griseb., Boiss., Canby); Ernst (Island of Margarita, Santa Ana, a. 1873, ex Johnston, l. c. 1909); O. O. Miller et J. O. Johnson n. 1271 (Island of Margarita, El Valle, m. Jul. 1901, fl.; cf. Johnston l. c. 1909; Hb. Krug et Urb.); — in Columbia: Triana (partout dans-la région chaude, jusqu'a 1200 m d'altitude, l. e.); H. Smith n. 445! (Santa Marta, a. 1898-1899, fl.); - in Ecuador: Humboldt et Bonpland n. 3651! (ad ripam fluminis Amazonum, inter Tomependa et Gbamaya, alt. 200 hex., m. Aug. — Sept. 1801, flor.; Hb. Kunth, nunc Berol.; Hb. Paris, gen., comm. a Bonpl., corrigenda indicatione Gumana, cf. supra Humb. et Bonpl. n. 143; hue reensendum quoque, ut videtur, specimen ex Hb. Link in Hb. Berol. translatum, nee no. nee loco insignitum); Eggers n. 14621! (Balao, in savannis, m. Apr.—Maj. 1892, fl.; Hb. Berol., Monac.), n. 15792! (prov. Manabi, El Recreo, m. Apr. 1897, fl.; Hb. Monac.); — in Peruvia: Ruiz! (Lima, Huanuco etc., fl.; Hb. Berol.); Pavon! (in Surco, Huanuco et in Huaura, m. Jan. 1781, fl.; Hb. DC, Boiss., Webb.); Dombey sine no.! (Hb. Turcz., Franquev.), n. 6331 (Hb. DC. ex Mus. Paris.), n. 637! (Lima, fl.; ex Mus. Paris, a. 1829 comm. c. Hb. Kunth, nunc Berol.); Dr. Woitschach n. 211 (Tacua prope Para, m. Jun. 1891, fl.; a C Reiche comm. c. Hb. Berol.); Weberbauer n. 26491 (Dep. Ancachp, Caracha, am Wege von Supe nach Ocros, alt. 1200—1400 m, m. Mart. 1903, fl. et fr. juv.;

Hb. Berol.);—in Bolivia: G. Mandon n. 8591 (prov. Larecaja, in vicinis Soratà, inter rivum de San-Pedro et Garacirca, reg. temp., alt. 2650 m, m. Mart. 1861, fl.; Hb. DC., Deless., Franquev., Vindob., Petrop.); — in Brasilia: Martius!, cf. Fl. Bras. XIII. 3, 518, ut et ad seqq.; Gardner n. 14991; Glaziou n. 10423!; Fr. G. Hoehne n. 18751 (S. Paulo, CananSa, m. Apr. 1918, fl.); O. Kuntze!; G. O. Malme n. 1762BI; A. Robert n. 818! (Percy Sladen Exp. a. 1902 — 1903: Matto Grosso, Gorumbà, m. Dec. 1902, fr.; Hb. Berol.); Fr. G. Hoehne n. 3983! (Gommissão Rondon, Matto Grosso, Gorumbà, m. Febr. 1911, fl.); — in Paraguay: Balansa n. 2470! (L'Assomption, m. Maj. 1874, fl. et fr.; Hb. Kew., DG. etc.); Anisits n. 533! (Asuncion, Recoleta, m. Febr. 1894, fl. et fr. semimat.; Hb. Holm.); Hassler n. 586! (in silva prope San Bernardino, m. Jan. 1885—1895, fl.), n. 586a! (fruct.), n. 3764! (in dumetis ad ripam lacus Ypacaray, m. Jan. fl.); Fiebrig n. 879! (Cordillera de Altos, Loma, bei Siedelung Tapequeza, m. Febr. 1903, fl.; Hb. Berol.), n. 4693! (inter flumina Apa et Aquidaban, Villa Sana, m. Maj. 1907?, fl.; Hb. Hassler); — in Argentina: Lorentz et Hieronymus, Fl. Argent. n. 582! (Dragones entre Oran y Gran Chaco, m. Aug. 1873, fr.; Hb. Berol. etc.); Niederlein n. 2071 (Rio de Oro, m. Dec. 1892, alab.; Hb. Berol.); - in Africa (introduc-ta): Durand (Senegambia, prope Gorte, fid. ic. cit.); Brunnerl (Promontorium viride, in silvis vallis S. Domingo insulae St. Yago, steril., fol. subtus pubesc; c. nota L.e., 1840, adjecta: In Senegambia quoque provenire dicitur; Hb. Franquev., Deless., Webb, Taurin., Bonon., Vindob., Petrop.).

Forma 2: In Mexico: Nee! (1789—1794, steril.; Hb. Pavon, nunc Boiss.); Houston! (Vera Gruz, a. 1730—1731, fruct., a Gärtn. 1. c. tab. 70 delin. sub. nom. *Sap. rigida* Mill.; subf. *rigidus* R.; Hb. Miller in Hb. Banks Musei Brit.); Berlandier n. 1! (Tampico de Tamaulipas, m. Dec. 1826, fl.; Hb. Berol., DG. etc.); Lay et Collie in Beechey's Voyage sine no.! (Tepic, a. 1827—1828; *S. Drummondii* var. jf? Hook, et Arn. in Bot. Beech. Voy. 281); Schiede et Deppe n. 1292! (Misantla, m. Mart. 1829, fr. semimat.; partim subf. *rigidus* R.; Hb. Hal., Berol., Petrop., Vindob.); G. Ehrenberg n. 10011 (a. 1831—1839, fl.; Hb. Berol.); Liebmann, Sapindac. n. 4! (St. Barbara, m. Mart. 1841; fr. semimat.; subf. *rigidus* R.; Hb. Havn., ut et seqq.), n. 51 (Tintutlan, m. Maj., 1842, fr.), n. 6! (ibid.), n. 7! (Oajaca, m. Maj. 1842, alab.; fol. subt. pubesc), n. 8! (Golipa, m. Mart. 1841, ster.); Jiirgensen n. 771! (Sierra San Pedro Nolasco, Talea etc., 1843—1844, fl.; Hb. Boiss., Deless., Webb, etc.); Galeotti n. 3516! (Oaxaca, alt. 3000 ped., 1835—1840, fl.; Hb. Paris., Deless., Turcz.); Bourgeau n. 1466! (Vallée de Cordova, m. Dec. 1865, fr.; Hb. Paris., Boiss., Mart.); Kerber n. 1231 (Golima, m. Jul. 1880, fol. et fr.; Hb. Berol.), n. 146a! 1971 200! (Atoyac, m. Dec. 1882, fl. et fr.; fol. subtus pubesc.; partim subf. *rigidus* R.; Hb. Berol., Monac, Gotting., DG., Boiss.); Ed. Palmer n. 1370! (Manzanillo, m. Mart. 1891, fl.; fol. subtus pubesc.; comm. Rose, cf. lit.; Hb. Berol.); Seler n. 3659! (Vera Gruz, in silva primaeva in via ad Tajin prope Papantla, m. Dec. 1902, fl.; Hb. Berol.); G. F. Gaumer sine no.! (Yúcatan, Island of Gozumel, a. 1886, fl.; Hb. Berol.), n. 396! (Yucatan, common about Izamal, m. Febr. 1895, fl.; comm. Millspaugh, cf. lit.); Mills paugh (Laguna Columbia and Gedral, Island of Gozumel, m. Jan. 1895, fruct., ex Mi lisp. 1l. cc. 1895 sub *Sap.* sp. et 1898 sub *Sap. Sapon.*); id. (Izamal, ex ipso ibid. 1898); id. n. 1471 (open woodlands about San Miguel, Gozumel, ex ipso in Pl. Utowanæ 1. c. 1900); — in Antillis et quidem in Ant. parvis: Ravn! (Crabbeneiland, fl.; Hb. Havn.); P. E. BenzonI (ibid., fl.; Hb. Havn.); Friedrichsthal n. 402! (Grabeiland, fl.; Hb. Vindob.); Krebs(?)I (St. Thomas, fl.; Hb. Schumach., nunc Havn.); L. Cl. Richard! (St. Jean, Rift-bay, ad imos montes, m. Jan.—Febr., fl., m. Mart.—Apr. fr.; Hb. Franquev.); Eggers! (St. Croix, Kings-hill Bak, m. Mart. 1874; Hb. Havn.); id. n. 1066! ed. Ad. Toepffer a. 1880sq. (St. Kitts, ad Lamberts, m. Jan. 1883, fl.; Hb. Berol., Monac, Bruxell., Boiss. etc.); id. n. 11461 (ibid.; Hb. Krug et Urb.); W. F. R. Suringar! (St. Eustache in montibus, m. Apr. 1885., fol.; Hb. Krug et Urb.); Nicholson (Antigua, t. Griseb.); J. N. Rose n. 34441 (ibid. m. Febr. 1913, fl.; Hb. Krug et Urb.); Bertero! (Guadeloupe, ca. 1821, fl.;

S. laurifol. Bert. = *S. inaequal.* DC Prodr.; Hb. Prodr., Berol., Taurin., Bonon., Webb.); Duchassaingl (ibid., steril.; Hb. Griseb., Berol.); Duss n. 3590! (rivière de la Petite-Plaine — Pointe Noire —, environs des Aymes et du Moule, alt. 0—300 m., 1. c; Hb. Krug et Urb.); De Ponthieu! (Dominica, fl., semine adjecto; Hb. Banks in Mus. Brit., et ex hoc in Hb. Deless.); Duss n. 614! (Martinique, Saint-Pierre, cours de Phospice, Fort de France, Lamentin, 1. c, m. Maj.-Jun. 1890 fl., m. Oct.—Nov. fr.; Hb. Krug et Urb.); Crudy(?)! (Sta. Lucia?; fl.; Hb. Schreber, nunc Monac); Al. Anderson! (Sta. Lucia?, Hb. Banks, steril., adjecta inflorescentia *Cupaniae americanae* L. fructus juveniles gerente, inde a Sw. 1. c. sub nom. *Cup. saponarioides* descripta cum nota: *folia Sapindi Saponariae* foliis simillima, excepta costa alata [scil. in *S. Sapon.* genuino]); Martfeldt (Barbadoes, fl.; Hb. Vahl, nunc Havn.); Caley! (S. Vincent, fl.; Hb. Turcz. adjecto folio Protii cujusdam; Hb. Deless.); Guilding (S. Vincent, t. Griseb.); W. E. Broadway n.3389! (Tobago, Fort Road, Scarborough, m. Dec. 1909, fl.; Hb. Krug et Urb.); Sieber, Fl. Trinit. n. 158! (Trinidad, fl. et fr. juv.; leg. Metz; Hb. Steudel, dein Franquev., fol. subtus pubesc; Hb. DC, Berol., Vindob. etc.); Broadway n. 4199! (ibid., m. Nov. 1911, fl.; Hb. Krug et Urb.); - in Ant. magnis: Krug (Portorico, fid. ic.ined. n. 164!, cf. lit. sub *S. inaequali*); Surian n. 152! (S. Domingo; Hb. Vaillant in Hb. Paris.); Bertero sine no.! (ibid., a. 1821, fl.; *S. stenopterus* DC; Hb. Prodr. DC, Taurin., Berol.); Prenleloup n. 101! (ibid., in silva ad Playa de Andres, m. Febr. 1869, alab.; Hb. Krug et Urb.); Picarda n. 874! (ibid., resp. Haiti, Jardin du sem. coll. St. Martial, a. 1888, alab.; Hb. Krug et Urb.), n. 961! (ibid., St. Michel près Miragoane, a. 1892, fl.; Hb. Krug et Urb.); Fuertes n. 1379! (Santo Domingo, prov. Barahona, prope Barahona ad maris aequor, m. Sept. 1912, fl.; Hb. Krug et Urb.); W. Buch n. 1178! (Haiti, Port au Prince, in hortis, m. Mart. 1916, fl.; id. Hb.); Ramon de la Sagra! (Cuba, fr.; Hb. Franquev., Berol., Vindob.); Morales n. 27! (Cuba, prope Habana, m. Nov. 1889, fl., m. Dec. fr.; Hb. Krug et Urb.); Curtiss n. 707! (Cuba, prope Havana, m. Apr. 1905, fr., edit, sub nom. *S. marginatus* Willd.; Hb. Monac); £. L. Ekman n. 1354! (prov. Habana, in rupibus calcareis ad flumen Gajimar, m. Jun. 1914, *sterH.*; Hb. *Holm.*, Berol.); n. 12628/ (prov. Habana, Basabano*, m. Dez. 1920, fl.; id. Hb.); W. Harris n. 5815! (Jamaica, Constant Spring, alt. 600 ped., m. Jul. 1895, alab.; Hb. Krug et Urb.); - in Guatemala: J. Donnell Smith n. 2057! (Depart. Escuintla, Escuintla, alt. 1100 ped., m. Mart. 1890, fruct.), n. 8504 (leg. H. v. Türckheim, Depart. Alta Verapaz, Cubilquitz, alt. 350 m, m. Dec. 1903; *S. inaequalis* DC. 1. c); — in Nicaragua: Oersted, Sapindac. n. 10! (a. 1845-1848, fr.; subf. *rigidus* R.; Hb. Havn.), sine no.! (inter Chinandega et Granada, m. Dec. 1849, fl.; Hb. Havn.); P. Lévy n. 287! (in silvis prope Granada, alt. 40 m, m. Dec. 1869, fl.; subf. *rigidus* R.; Hb. DC, Boiss.); — in Costarica: Oersted, Sapindac. n. 11! (Guanacaste, a. 1845—1848, fr.; fol. subt. pubesc; Hb. Havn.); Tonduz n. 13784! (environs de Nicoya, alt. 300 m, m. Jan. 1900, fl.; subf. *rigidus* R.), n. 138181 (ibid., m. Febr. 1900, fr. semimat. ad num.13784); — in Guiana: Poiteau! (Guiana gallica, a. 1819—1821, fr.; Hb. Deless., Petrop.); — in Surinam: Wullschlaegel n. 1392! (Jodensavanna, fr.; Hb. Monac); — in Venezuela: Bredemeyer et Schücht! (Caracas, fl.; Hb. Jacq., nunc Vindob.); — in Panama: Sutton Hayes! (fl.; Hb. Florent.); id. n. 347 (Rio Grande Station, m. Oct. 1861, fl.; Hb. Kew.); Pittier n. 2494! (in canalis zona, inter Miraflores et Pedro Miguel, alt. 30—50 m, m. Jan. 1911, fr.; Hb. nat.); — in Columbia: Goudot! (S. Fe de Bogota, ca. 1844, fl. et fr. juv.; Hb. Griseb.); F. Holton, Fl. Neogranadina-Caucana n. 821! (La Paila, m. Jul. 1853, fl.; Hb. DC, Boiss.); Karsten I (a. 1853—1856, fl.; Hb. Berol.); Triana n. 3466! (prov. de Bogota, Tena, La Mesa, el Magdalena, alt. 600—1200 m, a. 1851—1857 in sched.; fl. et fr. juv.; Hb. DC, Monac, Florent.); Anapoima, valtte du Magdalena, jusqu'à l'altitude de 000m, 1. c sub *S. inaeq.*); F. C. Lehmann n. 77331; — in Ecuador: Baur n. 57 (Galápagos Islands, Albemarie; *Sap. sp.* near *S. acuminatus* Willd. ex Robins, et Greenm. 1. c 1895; *Sap. Saponaria*, Robins. 1. c. 1902); Stuart n. 1947 (ead. ins., Villamil, alt. 120—230, immo 430 m, 1. c,

1911); — in Brasilia: Hoffmannsegg, resp. Fr.W. Sieberl cf. Fl.Bras. XIII. 3, 518, utetadseqq.; Spruce n.777! et sine n.l.; Blanchet n.27551; St. Hilaire!; Glaussen n. 5001 6591 sine n.l.; Schwacke n. 8771110851!; Riedel n. 951!; Pohl, resp. Schott n. 682!; Glaziou n. 8308! 15872! 167331; Malme sine n.! (Matto Grosso, Itacy, m. Jul. 1903, steril.); Hb. Osw. Cruz n. 18751 (leg. Hoehne; Cananéa, S. Paulo, m. Apr. 1918, fl.); — in Africa (introducata): Gommerson! (tie de Bourbon, fr., subf. *rigidus* R!; Hb. Paris., Hb. Juss.n. 11383, specim. 1 et2, Hb. Deless. ex Hb.Ventenat, Hb.Webb ex Hb. Desfont.; hue [t. Poir., cf. lit. sub *S. rigid.*] pertinet Lam. III. Gen. t. 307 f. 2 et 4 [sphalm. 3, ap. Poir.]; perperam a Sargent et Robinson cum *S. marginato* W. confusa, cf. supra); Richard! (ins. Mauritius, fr.; Hb. Franquev.), id.? (ibid., Hb. Kunth, nunc Berol., ex Mus. Paris., a. 1820); Burke! (ibid., fl.; Hb. Deless. ex Hb. Banks); collector ignotus! (Madagascar, fr.; a Lamarck comm. c. Hb. Vahl, nunc Havn.); — in archipelagi Hawaiiensis insula Hawaii: J. F. Rock (sub nom. *Sap. Thurstonii* I.e. 1911, p. 6-8) n. 3827! (in declivibus montis Hualalai, Puuwaawaa dictis, alt. 2700 ped., m. Jun. 1909, alabastr.), n. 87721 (in monte Mauna Loa orientem versus, alt. 4500 ped., m. Apr. 1911, fruct.; comm. Rock); obvia quoque ex eodem in locis incultis Kipuka Ki et Puaulu dictis territorii Keauhou, haud procul a vulcano Kilauea. — Accedit specimen in Hb. Linn, servat.! nee loco nee collectore indicato, an ex Hb. P. Browne? Cf. lit.

Forma 3: In Timor Laut: Riedel! (a Meyer a. 1884 comm. c. Hb. Kew., ubi specimen florigerum inter Atalayas vidi a. 1885, vix dubie specimen ab Hemsley I.e. [1885]i4ta2a^asp.? e Timor Laut dictum); — in Philippinarum ins. Luzon: Kamel (ca.1690; Hb. Sloane in Mus. Brit. fid. Vidal Revis. [1886] 10, *S. Turczaninowii* Vidal); Haenke! (a. 1792-1793, steril.; Hb. Prag.); G. Barros n. 20456! (prov. Gagayan, m. Dec. 1912, fr.; comm. ex Hb.Manil., uti plur. seqq.); W. Klemme n.5649! (prov. Ilocos Sur, m. Oct.-Nov. 1906, fl.; comm. ex Hb. Manil.); T. G. Zschokke n. 6033! (prov. Nueva Eccija, m. Nov. 1906, fl.; comm. ex Hb. Manil.); R. J. AJvarez n. 221101 (ead. prov., m. Dec. 1910, fr.; comm. ex Hb. Manil.); Merrill n. 1574! (prov. Bataan, Dinalupihan, m. Jan.—Febr., steril.; Hb. Berol.); M. Ramos n. 21759! (prov. Bulacan, m. Sept. 1913, fl.; comm. ex Hb. Manil.); Perrottet! (Manila, a. 1820—1823; Hb. Lugd.-Bat.); Callery n. 63 bis! (Manille-Galawan, a.1840, fl.; Hb. Paris.); Vidal n. 218! 1225! (Manila; Hb. Kew.); Warburg n. 12563! (prov. Rizal, Montalban, m. Mart. 1888, steril.; Hb. Berol.); Loher n. 2058! (Luzon central, fl.); id. sine n.l (prov. Rizal, Montalban, m. Dec. 1904, fr.); id. n. 5873! (ibid., m. Jan. 1906, fr.; ead. Hb.); id. n. 12628! (prov. Rizal, Montalban, m. Oct. 1912, fl.; Hb. Manil., Monac); Ahern's collector n. 18391 (prov. Rizal, San Mateo, m. Sept. 1904, alab.; Hb. Manil., Berol.^ n. 1980! (ead. prov., Bosoboso, m. Nov.-Dec. 1904, fl.; Hb. Manil.); ·Merrill Hb. Philipp. n. 1006! (leg. Ramos, ead. prov., m. Oct. 1911, fl.); Guming n. 539! (prov. Laguna, a. 1842, fl.; rhachis foliorum nunc alata, nunc exalata; Hb. Kew., Paris., Berol., Vindob., Turcz., DC. etc.); Loher n. 2057! (prov. Laguna, in monte Maquiling, m. Jan. 1891, fr.; Hb. Kew., Monac); Blanco (prov. Batangas, I.e.); Curran et Merritt n. 7720! (prov. Batangas, in silvis, alt. 100 m, m. Nov. 1907, fl.; Hb. Berol.); Merrill, Spec. Blanc. (1918). coll. n. 183 (prov. Rizal, Antipolo, m. Nov. 1914, hoc loco vulgo Tiquis-tiquis); — in insulis oceanicis et quidem in Nova-Guinea meridionali: Rev. R. Lister Turner sine n.l (Papua, Rigo district, fl.; Hb. Queensland, comm. G. T. White, m. Jan. 1926); — in ins. Marquesas: Dupetit-Thouars (a. 1837—1839; t. Drake II. cc); Hombron! (Nukahiva, Voyage de PAstrolabe etc. 1838-1840; Hb. Hasskarl ex Hb. Paris.); Jar din (ibid., ca. 1845; *Sap. microcarpus* 1. c); Le Bastard n.34 (ibid., t. Drake II. cc.); Lesson n.6! (ibid., ca. 1845, m. Jun., fl.; Hb. Deless.), id.?! (Hb. Boiss.); - in ins. Societatis: Gook! (Tahiti, a. 1775; Hb. Banks in Mus. Brit, sub nom. alio a Solander adscripto); Dupetit-Thouars (ibid. t. Drake II. ee); Hombron (ibid., t. Drake II. cc); Rich et Brackenridge in Wilkes Exp. (Eimeo;cf. A. Gray 1. c. [1854] 252); Nadeaud sine n.l (Tahiti, dans la vallée de Pirae et au Pinai

— Vallée de Punaruu in scheda — m. Jul. 1857, steril., rhachi folior. alata; *Ratonia stipitata* Nad. 1. c. fide fragmentorum ex Hb. Drake comm.), n. 961 (ibid., m. Maj. 1876, fl. et fruct.; Hb. Drake); — in ins. Pitcairn: Miss Young! (m. Aug. 1899, folia tantum, ut in form. 1.; Hb. Sydney); — in ins. Paschatis: (?) Forster (a. 1774, I.e.; an hue specim. florig. foliis formae 2. in Hb. Jacq. I, nunc Vindob., ex Hb* Banks c. indicat. Ins. Oceani pacifici, sub nom. alius Forsteri plantae ex alio genere?); — in ins. Sandwicensibus: ?Remy n. 566 bis! (a. 1851—1855, fl.; Hb. Paris.).

Quoad formas indeterminatas relinquo, quia specimina scribenti mihi ad manus non sunt: Schöpf (Carolina, hospitans?; ins. Bahamens.; I.e. 1787); Jones (ins. Qermudas, ex Hemsley I.e. 1884; e seminibus a mare allatis); Warming (Venezuela: S. Esteban, Puerto Cabello, m. Jan. 1892, fl.; Hb. Havn.); Morong n. 722 (Paraguay, Asuncion, m. Maj. 1888-1890, fr.; cf. lit.); R. Endlich n. 37 (Paraguay, San Bernardino, saepius culta, m. Febr., fl.; 1. c. 1903); Seler n. 3659 (prov. Vera Cruz, in silva primaeva juxta Tajin apud Papantla, m. Dec. 1902, fl.; Hb. BeroL; cf. lit. sub Loesener [1913]).

Culta in Hortis variis, praesertim forma 2., sub nominibus variis, ex. gr. in Ht. Cliffortiano! (rhachi foliorum anguste alata; Hb. Cliff., dein Banks in Mus. Brit.), in Ht. Kewensi (t. Aiton I.e.), in Ht. Paris.! (form. 1., vidi vivam), in Ht. Genevensi (t. DC. in Prodr. I. 607 c. nota: Frutex nascens foliis simplicibus elongatis fere Dodonaeam refert; in Hb. Prodr. deest), in Ht. Neapolitano! (vidi vivam), in Ht. Panormitanol (vidi vivam), in Ht. Cairensi Ducis d'Aumontl (a Schweinfurth comm. c. Hb. BeroL), in Ht. Mauritiano (t. Bojer 1. c.), in Ht. Calcuttensi! (a. 1808 florens et fructificans, t. Roxb. Fl. Ind. II. [1832] 281, obs.; specimina Roxburghiana ^American *S. Saponaria** a Roxb. ipso inscripta adsunt in Hb. Prodr. DC, a Lambert a. 1816 comm., et in Hb. Martius, forma 2., non confundenda c. %*S. Saponaria* Hb. Roxb. «Wallich Cat. n. 8034, cfr. *S. mukorossi*), in Ht. Manilensi (t. Vidal 1. c., 1883) etc.

4. **S. mukorossi** Gärtner. Fruct. I. (1788) 342 t. 70 f. 3, g, A; Poir. in Lam. Enc. Suppl. V. (1817) 72 et in Lam. III. Gen. II. (circ. 1817) 441 n. 3 t. 307 (1793) f. 3, a, b; DC. Prodr. I. (1824) 609; Spreng. Syst. II. (1825) 251; Don, Gen. Syst. I. (1831) 666; Siebold et Zuccarini, Fl. Jap. Famil. natur. etc. in Abh. Acad. München IV. 2. (1845) 152 (delenda cit. FL Jap. 1.164, nunquam edit.); Bl. Rumph. III. (1847) 96 (»£. *mukurosU*)\ Walp. Ann. I. (1848-1849) Add. 963; Teyism. et Binn. Cat. Hort. Bogor. (1866) 215; Miq. Prolus. Fl. Jap. V in Ann. Mus. Lugd.-Bat. III. (1867) 92 (seOrs. impr. 256) et Caractère de la FL du Japon in Adansonia VIII. (1867-1868) 234; J. Mater, Cat. Hort. Siebold (1868-1869) 27. (c. f. fruct. albis); Hiern in Hook. Fl. Brit. Ind. I. (1875) 683; Franchet et Savat. Enum. PL Jap. etc. I. (1875) 86 n. 355; Kanitz, Anthophyta Japoniae (1878); Radlk. in Sitzungsber. bayer. Akad. VIII. (1878) 265, 319, 321, 395 (var. fructu valde carinato, cfr. infra *S. util.* Trab.), in Engl. u. Prantl, Nat. Pflanzenfam. III. 5. (1895) 315 et in Fl. Bras. XIII. 3. (1900) 518 (cult); Bretschn. Europ. Early Research. Fl. Chin. (1880) 144 (sec. Loureiro); Forbes et Hemsl. Enum. PL Chin, in Journ. Litin. Soc. XXIII. (1886) 139; Greshoff, De PI_____ ad pise, capiend. adhib. in Meded. Plantent. X. (1893) 42, XXIX. (1900) 38; Gammie, Bot. Tour in Chamba etc. in Records Bot. Surv. Ind. I, Nr. 10. (1898) 195 (cult); S. Kawai, Unterscheid. d. J&pan. Laubhölzer in Bull. Coll. Agric. IV. 2. (Tokio 1900) 114 f. 26; Ito et Matsum. Tent. FL Lutch. (1900) 384(117); Henry, List PL Formos. in Trans. As. Soc. Japan XXIV, Suppl. (1896) 28; id. Bot. Formosa in Kew Bull. Miscell. Inform. (1896) 70; Matsum. et Hayata, Enum. PL Formos. (1906) 94; Yabe, Fl. Tsusimens. in Bot. Mag. XVIII. (Tokyo 1904) 13; Matsum. Ind. PL Japon. II. 2. (1912) 335; Diels, FL Qentral-China in Engler's Bot. Jahrb. XXIX. 2. (1900) 450; Wood, PL Chutia Nagpur in Records Bot. Surv. Ind. II. Nr. 1. (1902) 92 (c. nom. vulg. Reti s. Rethi); Duthie, Fl. Upper Gangetic Plain 1.1 (1903) 180; Gage, Veget. Minbu-Distr., Upper Burma in Records Bot. Surv. Ind. III. 1. (1904) 37; Prain, Veget. Distr. Hughli-Howrah etc. in Records Bot. Surv. Ind. III. 2. (1905) 190; Brandis, Indian trees (1906) 191; Lecomte, FL Ind.-Chin. 1.(1912) 1041 M31

(p. 1048, fruct.); Wilson, E. H., The Bonin Islands etc. in Sargent Journ. Arnold Arboret. I. 2. (1919) 109; id., The Liukiu Id. etc., *ibid.* I. 3. (1920) 180; id., Phytogeogr. Sketch, lign. Fl. Formosa, *ibid.* II. 1. (1920) 31; — non Corinaldi (1835), cfr. *S. trifoliat.* — *S. foliis alternis* Thunb. Fl. Jap. (1784) 356, inter plant, obsc. n. 37 (»japonice: Mukorossi«). - (?) *S. abruptus* Lour. Fl. Cochinch. I. (1790) 238, Ed. II. (cur. Willd. 1793) I, 293; Poir. 1. c. 72 n. 15; DC; Spr.; Don 1L cc; Spach, Hist. nat. Végét., Phanérog. III. (1834) 57. — *S. indicus*, non Poir., Hort. Paris, (a. 18 . ?) fide specim. a Siebke comm. c. Hb. Schumacher! — *S. detergens* Roxb. Hort. Beng. (1814) 29 et Fl. Ind. II. (1832) 280! (»forma foliolis obtusis« Hiern 1. c.); Piddington, Index Ind. Pl. (1832) 79; Wight et Am. Prodr. Fl. Penins. Ind. or. I. (1834) 111 in obs. ad *S. emarg.* Vahl, excl. syn. »*£. absterg.* Roxb.« ad *S. trifoliat.* recens.; Voigt, Hort. suburb. Calc. (1845) 94; Walp. Rep. V. (1845—1846) 362; Teysm. et Binn. Cat. Hort. Bogor. (1866) 215; ? Stewart, Punjab PL (1869) 32 (anne ad *S. trifoliat.* recensend. ? ob nom. vulg. »Ritha«, quod vero apud Roxb. quoque 1. c. invenitur); Drury, Useful PL Ind. (1873) 384; Brandis, Forest FL (1874) 107; — non Wall. Gat. n. 8042 nee Cat. Kew. Hb. Griff, etc. n. 1006/4, quoad specim. certe c. Hb. Paris, comm., ad *£. rarak* recens. — *S. acuminatus* Wall. mss. in Hb. Ind. or. ed. Royle, III. Bot. Himal. Mount. I. (1839) 139 (»forma foliolis lanceolatis acuminatis« Hiern I.e.) excl. stirpe »e Bechiaco«!, quae *Aphania rubra* Radlk.; Walp. Rep. I. (1842) 416; Voigt 1. c. (1845) 94; Wall. Cat. (1847) n. 8035A! B! excl. stirpe »e Bechiaco« in Hb. post B inserta, a Royle indicata (cf. supra); Greshoff 1. c. (1893) 42, sphalm. »Vahl« loco Wall. — *S. emarginatus*, non Vahl, Tenore Cat. Hort. Neap. (1845) 64 et Pasquale Cat. (Napoli 1867) 92, cf. Radlk. I.e. (1878) 317, 396; cf. et infra syn. *S. utilis*. — *S. inaequalis*, non DC, Tenore 1. c. et Pasquale 1. c. cf. Radlk. I.e. (1878) 318, 397; Griseb. Symb. ad Fl. Argent. (1879) 80 n. 460! (Lorentz et Hieronymus n. 208). — *S. Saponaria* (non Linn.) »Hb. Roxb.« Wall. Cat. (1847) n. 8034! (»Native of Bengal« Wall, in scheda; forma foliolis obtusis partim emarginatis; non confundenda cum *S. Saponaria* L. e sem. americ. in Hort. Calc. nato, a. 1808 florib. et fruct. ornato, a Roxb. in obs. ad *S. deterg.* 1. c, 1832, descripto et a specieb. asiaticis distincto, ad quern vix dubie pertinent specimina Roxburghiana ^American *Sapindus Saponaria* inscripta, in Hb. Prodr. DC. et in Hb. Martius servata, cfr. *S. Sapon.* L.); — *is Mahurosi* Benth. et Hook. f. Gen. I. 1. (1862) 396 in obs. (sphalm.). — *S. utilis* Trabut in Revue horticole LXVII, Nr. 9. (m. Maj. 1895) 199 et Nr. 13. (m. Jul. 1895) 305 f. 90—92 c. syn. *S. mukorossi* Gärtn. var. *carinatus* Radlk. (1. c. [1878] 395), *S. indicus* (non Poir.) Hort. Hamma, *S. emarginatus* (non Vahl) Hort. Hamma et Naudin, Manuel de rAcclimateur (1887) 487 (ubi patriae indicatione confunditur c. *S. marginato* Autor. americ. ut vice versa in Sargent, Silva II. [1895] 72, cfr. *S. Drummondii*, *S. surinamensis* (non Poir.) Hort. Hamma, etc. var. *a. paniculatus*, f. 91, /?. *condensatus*, f. 90; id. in Bull. agricole de l'Algérie et de la Tunisie Nr. 11. (1895) 4 f. 1-5 c. iisd. syn. et var., quibus acced. *S. marginatus* (Zaccar n. III) 2 et forma *latifolia* (in sched.); L. L. Beulaygue, Du Sapindus utilis et des differents Saponines, Thèse etc. (Montpellier 1896) 28 etc. f. 1-7; Kew Bull. Miscell. Inform. 1896, Append. II. 52, inter Nov. Hortor. PL (secund. loc. cit. »Rev. hortic. 1895«). — Vulgo in Japonia: Mukorossi t. Ttfunb. I.e., Mukurozi s. Tsuba (fruct.) t. BL, Moukourozi et Tsoûbou (in Miyako) t. Hoffmann et Schultes, Noms indigènes etc. Ed. II. (1864) 53, Mukurozi et Tasubu t. Miq., Mukuroji t. Kawai; Huang-mu-shu in Formosat. Henry I.e. 1896; in China (Canton): Mu hdan xuf t. Lour. 1. c. (quod nomen, uti Bretsch. 1. c. refert, etiam t. Parker, *Sap. mukorossi* in Canton audit), Woù hoán tseù t. Hoffm. et Sch., Wû hoán ts& (fructus), etiam Bodai si (grana sapientiae) t. BL (ex Hoffm. et Sch. vero Bo dai zjou, arbor sapientiae, est *Koelreuteriapaniculata*); Mu-huan-zte ex Henry I.e. 1896; Kuei Kiéù tseu i.e. taedium diaboli (arbor) t. BL, PUn md t. Hoffm. et Sch.; in Tonkin: Cáy bdn hdn t. Bon in sched. (nomen t. Lour, a *Sap. rarak* auditum); in India: Reetha (bengalice), Urista (Sanskrit) t. Roxb., Arista phenila t. Piddingt., nomina, ut videtur, a *S. trifoliata* ob fructus similitudinem ad *S. mukorossi*

translata; Soap-nut tree of North. India (Duthie I.e.); Dodan, Dodani in Pendschab t. Brandis 1. c; Kanmar in prov. septentr. occid., t. Brandis I.e. 1874; Ritha, Thali, North West Himalaya, t. Brandis 1. c. 1906; in Argentina planta culta, Quillai sive, uti *S. Saponaria*, Jaboncillo t. Lorentz et Hieronymus (cfr. Fl. Bras. XIII.3., 518). — Arbor sat alta; rami teretes, striati, juveniles puberuli, mox glabrati, lenticellosopunctati; folia 5—7-juga, rhachi teretiuscula superne leviter bisulcata (minus exacte a Royle l?c. p. 139 »angustissime marginata« dicta) glabra; foliola alterna vel opposita, oblongo-vel ovato-lanceolata, ± inaequilatera (latere exteriori angustiore saepius etiam conspicue breviori) acuta vel acute acuminata, interdum obtusa et (morbidè) retusa, basi subacuta in petiolulos plerumque longiusculos oblique attenuata, chartacea, nervis lateralibus intermediis adjectis approximatis patulis tenuibus subtus prominulis pallidis, tenuiter reticulato-venosa, subglabra, supra nitida, subtus opaca, saturate viridia, glandulis crebris gracilioribus apice fuscis foveolis incumbentibus adpersa; panicula terminalis, pyramidalis, ramosissima, rhachi sulcata et ramis ramisque thyrsoidis divaricatis sordide tomentellis sat dense cymuligeris, cymulis subsessilibus; alabastra subglobosa, parvula; flores albi vel purpurei (t. Hiern), sicci nigro-fusci; sepala 5, ovalia, glanduloso-ciliolata (glandulis creberrimis), extus puberula; petala 5, lanceolata, ciliolata, extus basi villosiuscula, intus supra unguem squamulis binis (si mavis lobulis baseos inflexis) villosissimis aucta; discus regularis, glaber; stamina 8, exserta, filamenta filiformia, inferne villosa, antherae breviter ellipticae, glabrae; germen trigono-ovatum, 3-loculare, glabrum, in stylum rectiusculum attenuatum; fructus plerumque abortu 1-coccus, cocci e globoso breviter obovoidei, conspicue (in var. *carinatus*) obscuriusve circumcirciter carinati, glabri, lutei, sicci spadicei nitiduli tenuius crustacei, loculis abortivis dilatatis modice prominentibus (in var. minoribus magis prominentibus), piano commissurali late obovato magno laevi, intus basi albide villosi; semen e subgloboso breviter ellipsoideum, laeve, hilo lineari.

Arbor 10—15-metralis. Rami 5—6 mm crassi. Folia petiolo 6—10 cm longo adjecto 25—40 cm longa; foliola 10—14 cm longa, 4—5 cm lata, petiolulis ad 5 mm longis. Panicula 20—30 cm longa. Alabastra diametro vix 2 mm. Fructus cocci ad 2 cm longi, 1,5 cm lati (resp. alti) et crassi (in var. majores). Semen 1,3 cm longum, 1,2 cm latum, 1,1 cm crassum, hilo 6 mm longo.

Var. *carinatus* Radlk. (*S. mukorossi* fructibus valde carinatis Radlk. 1. c. [1878] 395; *S. mukorossi* rarak? id. ibid.; *S. utilis* Trab. c. syn. variis, cf. supra): Fructus cocci magni, lateraliter compressi, basi ultra insertionem producti, valde carinati, 2,5 cm alti et lati, 2 cm crassi, punctis pallidioribus (lenticellis) conspicue notati, pericarpio crassiore (attamen formis intermediis minus carinatis et subglobosis transeuntes in fructus normales). Foliola interdum maxima (20 cm longa, 9 cm lata).

In China indigena, in Japonia (introducenda) locis montanis, a mense Junio ad Augustum florens (ex Bl.), in Tonkin et Laos (vix spontanea), in India septentrionali et Bengala culta et spontanea, vix indigena, in Himalaya adscendens usque ad 4000 ped. ex Brandis I.e., in India indigena t. Prain I.e. 1905, necnon in Burma superiore: In Ghinae prov. Hupeh: A. Henry n. 1652! (Ichang, a. 1885—1888; Hb. Barbey); in prov. Tschekiang: Allen (Ningpo, t. Forbes et Hemsl. I.e.); Carles n. 48! (Ningpo, m. Sept. 1881, fruct.; Hb. Berol.); in prov. Fokien: Bourne (Futschu, t. F. et H. 1. c); — in prov. Kwantung: Loureiro (Canton, 1. c); Reeves (Canton, t. F. et H. 1. c); Hance n. 10963! (Canton, culta a. 1875; Hb. Kew.); A. Henry n. 7960! part. (part. *Euphoria Longana*; ins. Hainan, m. Nov. 1889, flor.; ex Hb. Kew. comm. c. Hb. Berol., Barb.); ex Diels (1900): Ost-Distrikt von Central-China, prope Ichang (Henry); Stuhlmann! (ibid., flor.; Hb. Berol.); — in Tonkin: H. Bon n. 15611 (prov. Ninh Binh, Minh Thinh, m. Maj. 1882, flor., arbor vix subspontanea; Hb. Turic); Balansa n. 3429! (Tu-Phap, in hortis, m. Maj. 1887, fruct.; Hb. Barb.); — in insula Formosa: Faurie, Pl. Form. n. 32! (Maruyama, m. Jun. 1903, fl., arb. 7—8 m alta, Hb. Berol.), id. n. 3791 (prope Paohina,

m. Jun. 1903, fl., Hb. Berol.); Warburg n. 10267! (Mittelformosa); — in Laos: Spire (ex Lecomte, l. c.); — in Japonia (Bonin, Nippon, Tsusima, Liukiu, Formosa, ex Matsu mura l. c. 1912): Thunberg (in Jedo, l. c.); Lect. ignot., Pl. japon. index n. 811 (Tokio; fl. et fr. juv.; a Krebs comm. c. Hb. Havn.); Buerger (ex Miq. l. a.); Siebold! (flor.; a. 1842 comm. c. Hb. Zuccarini; ex Hb. Lugd.-Bat. comm. c. Hb. Monac. etc.); Maximo wicz it. secund. l (Jokohama, a. 1862, flop, et fr. adjecti; Hb. Vindob., Berol. etc.); Wawra n. 15731 (Jokohama, Erdumseglung S. M. Freg. Donau 1868—1871; fr. sutfmat.; Hb. Vindob.); Pierot (in ripa lacus Oots prope Miako urbem ins. Nippon, ex Miq. l. o.); R. Oldham n. 1751 (prope Nagasaki a. 1862, fl. et fr.; ex Hb. Kew. comm. c. Hb. Berol., Vindob. etc.); Wright! (in insulis Bonin; ex Hb. U. S. North Pacif. Expl. Exped. und. Ringgold et Rogers 1853—1856 comm. c. Hb. Paris.); — in Korea: Taquet, Pl. Cor. n. 27461 (Quelpaert, insilvis Honguo, m. Jun. 1909, fl., Hb. Berol.). — in India: Carey! (East Indies; Hb. Kew.); Roxburgh! (*S. detergens*; Hb. Hook., Benth.; Hb. Willd. n. 77431 flor.); id. I (*S. detergens*; many of the flowers <J; Bengal, April; foliolis obtusis; Hb. Deless.); id. sub Wall. Gat. 80341 (*S. Saponaria*; native of Bengal; foliol. obtus.); Voigt?! (*S. Saponaria*; fruct.; a Voigt comm. c. Hb. Havn.); ? Stewart (Punjab, l. c. 1869, nisi *S. trifoliat.* intelligend.); Wallich, Gat. 8035 AI (*S. acuminatus*; Nepalia, m. Jun. 1821, flor.) et B! (*S. acuminatus*; Silhet, flor., foliol. lanceol. acuminat.; Hb. var.); Royle! (Deyra Doon and other valleys within the Himalaya, flowering in May l. c. sub *S. acuminat.*; Hb. Kew.); Thomson n. 11381 (Hb. Kew.); Hooker f. et Thomson, Hb. Ind. orl (*S. acuminatus* Wall., Kumaon, regio subtrop., flor.; Hb. Berol.); Gage (Upper Burma, Minbu District, Arracan Yomahs; undoubtedly wild, l. c., 1904).

Gulta in India or.: Gammie (Punjab, in the town of Ghamba and in the Kangra valley, planted as a road-side tree, I.e., 1898); Wood (Bengala, Jaspurnagar, cult. in hort., l. c. 1902); Duthie (Upper Gangetic plain, as far as the Ghenab, also in Bengal, l. c. 1905); Prain l. c. 1905 (planted near villages, Bengala); — in Brasilia et Argentina!, cf. Radlk. in Fl. Brasil., I.e.: Riedell, Glaziou n. 68471, Lorentz et Hieronymus n. 208! (cfr. supra inter synonym. *Sap. inaequalis* Griseb., errore in Fl. Bras. sub *Sap. Saponaria* quoque enumerata); — in Hort. Neapol. sub nom. *S. emarginatus, inaequalis* (v. viv.) ut et sub iisdem et aliis nominibus Bon edendis in Hort. Panormitanol, Mediolanol, Parisiensil et Monacensil (v. viv.); in Hort. Kewensil (a. 1781.; Hb. Banks in Mus. Brit. sub nom. alio a Solander adscripto).

Var. *carinatus* solummodo culta nota est ex Algeriae Horto Hammal (ubi e collectionibus Musei Parisiensis ca. 1845 introducta dicitur a Trabut 11. cc., qui comm. flor. et fruct. a. 1895), dein translata in Hort. Panormitanum! (v. viv. a. 1875 sub nom. *S. surinamensis* Poir.) et in Hort. Sidneyanum I (flor. et fruct. comm. J. H. Maiden a. 1901 sub nom. ?*S. surinamensis* Poir.).

5. ***S. ooeaipus* Radlk.** Sapindaceae nov. in H. Lecomte, Notul. syst. 1.10. (1910) **302; Lecomte, Fl. Ind.-Chin. I. (1912) 1041.** — **Arbor mediocris; rami teretes, glabrat,** lenticelloso-striati, subfusci; folia abrupte pinnata, 4—5-juga, longe petiolata, petiolo supra piano, subtus convexo lenticelloso, rhachi teretiuscula superne leviter bisulcata glabra; foliola subopposita, inferiora ovata basi rotundata, superiora majora elliptica, inaequilatera (latere exteriore angustiore vix brevior), basi subacuta petioulis brevibus supra sulcatis insidentia, omnia apice subacuta, margine integerrima et quodammodo undulata, e chartaceo subcoriacea, nervis lateralibus oblique patulis subtus magis quam supra prominentibus nervoque mediano aurantiacis, reticulato-venosa, utrinque glabra, nitidula, fusco-viridia, glandulis microscopicis foveolis conchiformibus lateraliter insertis iisque incumbentibus rarioribus adspersa; panícula (fructifera tantum visa) in ramuli basi foliata terminalis, pauciramosa, ramis pulverulentopuberulis; flores — non visi — quantum e disco sub fructu relicto concludi potest regulares; fructus subdrupaceus, breviter pedicellatus, abortu monococcus, cocci magni ex ellipsoideo elongate obovoidei, loculis duobus abortivis in gibbum prominentem

coalitis planum commissurale parvum anguste ovale obtegentibus prope basin appendiculati, fusco-spargiceo, glabri, nitidi, crustacei, pericarpio sat crasso saponinifero, endocarpio pergamento laevi alutaceo basi dense ceterum laxe pilis crispatis gilvte induto; semen e cocci basi erectum, elongate obovoideum, glabrum, testa ossea crassa nitida nigra, intus plica embryonis radiculam excipiente instructa, extus lineis impressis plicae respondentibus aliisque subparallelis exsculpta et prope basin leviter scrobiculata, hilo breviter ovali. (Embryo non visus.)

Arbor 7—8-metralis. Rami 5—6 mm crassi. Folia petiolo 10 cm longo adjecto ad 40 cm longa; foliola inferiora cum petiolulo 5 mm longo ca. 12 cm longa, 5,5 cm lata, superiora 16 cm longa, 6 cm lata. Panicula 14 cm longa. Fructus cocci 3—3,5 cm longi, 2,2 cm lati, 1,8 cm crassi. Semen 2,4 cm longum, 1,7 cm latum, 1,5 cm crassum, hilo 2,5 mm longo. — Affinis *Sapindo mukorossi* Gaertn., fructus seminisque forma et magnitudine diversa.

In Tonkin: Balansa n. 3430! (forfts du mont Bavi, m. Nov. 1887, fruct.; Hb. Drake).

6. *S. vitiensis* A. Gray in Wilkes Explor. Exped. XV, Bot. I. (1854) 251!; Walp. Ann. IV. (1857) 378; Seem. PI. Vit. in Bonpl. IX. (1861) 254, coll. n. 661; id. Account of a Mission to the Vitian Isl., App. III, List of Vit. PI. (1862) 434 et Fl. Vitiens: IL (1865) 47; Radlk. in Sitzungsber. bayer. Akad. VIII. (1878) 265, 319, 321 et in Rechinger, Bot.-zool. Ergebnisse v. d. Samoa-Ins. etc. in Denkschr. Wiener Ak. LXXXV. (1910) 305 (fcoors. impr. 131); Drake del Castillo, 111. Fl. Ins. Mañs Pacif. Fasc. VI. (1890) 143. — Vulgo Maota in Upolu t. Rechinger (an recte?, anne ex confusione cum *Dysoxylo maota* Reinecke?). — Arbor sat alta; rami teretes, striati, glabri, lenticelloso-verruculosi, cortice cinereo; folia 3—4-juga, summave 2-juga, rhachi tereti bisulcata, foliola ovato-vel lineari-lanceolata, parum inaequilatera, acuta vel sensim curvato-acuminata, subfalcata, in petiolulos longiusculos contracta vel superiora attenuata, membranacea, nervis lateralibus subtilibus oblique patulis utrinque prominulis, subtilissime reticulato-venosa, glabra, supra nitidula, subtus opaca, viridula, cellulis epidermidis paginae superioris sat amplis convexis, glandulis crebris (foveolis longioribus impressis) ornata; panicula terminalis, ampla, ramis divaricatis rhachique adpresse flavescenti-pubescentibus sat dense cymulas sessilibus gerentibus; alabastra subglobosa, brevissime pedicellata; sepala 5, late ovata, petaloidea, margine glanduloso-ciliolata, extus basi adpresse puberula; petala 5, lanceolata, ciliolata, extus cum ungue usque ad mediam laminam villosiuscula, intus supra unguem squamulis binis (si mavis lobulis baseos inflexis) villosissimis instructa; discus regularis, glaucer; stamina 8, filamenta infra medium villosa, antherae breviter ellipticae, glabrae; germen trigono-ovatum, 3-loculare, glabrum, in stylum brevem rectiusculum attenuatum; fructus abortu 2—1-coccus, cocci mediocres, divaricati, longiuscule obovoidei, lateraliter compressiusculi, basi in stipitem brevem oblique producti, superne subcarinati et supra planum commissurale late lanceolatum (in fructu 1-cocco declive) ± apiculati, sicci rubro-fusci, nitidi, tenuius crustacei, endocarpio chartaceo; semen obovoideum.

Arbor 30—40-pedalis. Rami 3—4 mm crassi. Folia petiolo 3—8 cm longo adjecto 20—30 cm longa; foliola majora ca. 14 cm et ultra longa, 3,5—4 cm lata, plerumque breviora angustioraque, petioluli 4—6 mm longi. Panicula 25—30 cm longa. Alabastra diametro ca. 2,5 mm. Fructus 1,5 cm altus, cocci 1,8 cm longi, 1,2 cm lati.

In insulis Vitiensibus et Samoensibus: Rich et Brackenridge in Capt. Wilkes Expl. Exped. 1838—1842! (in ins. Viti Levu ad flum. Rewa et in ins. Ovalau, common on the leeward coasts, A. Gray l. c.; flor.; Hb. Kew., Paris.); Seemann n. 66! (in ins. Moturiki, m. Jul. 1860, fruct.; in ins. Vanua Levu, Makuata coast, m. Dec. 1860, fruct.; Hb. Kew., Berol., Vindob., DC, Boiss.); K. et L. Rechinger n. 22! (in ins. Samoensi Upolu, frequens in silva primaeva versus oram, m. Jul. 1905, fruct.), n. 5681 (Upolu, prope Matootiia, m. Jun. 1905, folium tantum, c. nom. vulg.: Maota).

7. **S. ballon** Radlk. Sap. Holl.-Ind. (1877-1878) 7, 20, 67 (77, 90, 218) et in

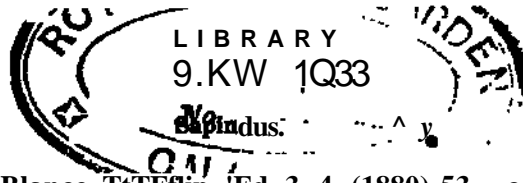
Sitzungsber. bayer. Akad. VIII. (1878) 265, 317, 396. - S. sp. Teysm. et Binn. Gat. Hort. Bogor. (1866) 215 »Balie« (2900)1; Boerl. Handleid. Fl. Nederl. Ind. 1.1. (1890) 273. — Arbor?; rami teretes, striati, juveniles sordide puberuli, mox glabrati, cortice fusco-cinereo lenticelloso-punctato; folia 2—4-juga, rhachi tereti bisulcata glabra, foliola alterna vel opposita, elliptico- vel oblongo-lanceolata, parum inaequilatera, apice ipso obtuso saepius retuso, in petiolulos perbreves sensim vel inferiora abruptius attenuata, chartacea vel subcoriacea, nervis lateralibus remotiusculis irregulariter oblique ascendentibus pallidis utrinque prominulis, arcte reticulato-venosa, glabra, supra nitidula, subtus opaca, viridia, sicca pallescentia, subtus glandulis cuneato-clavatis sat crebris (foveolis margine pachydennicis incumbentibus) ornata; paniculae ad ramorum apices axillares, longiramosae, in inflorescentiam maximam foliis triplo longiorem subterminalem congestae, ramis thyrsoides divaricatis rhachique sufferrugineo-velutinis sat laxe dichasia stipitata gerentibus; flores — (non visi); fructus brevissime pedicellatus e germine 3-loculari abortu 2- vel plerumque 1-coccus, coccis perparvis divaricatis obovoideis opacis brunneis, pericarpio tenuissimo papyraceo sicco friabili, endocarpio membranaceo e cellulis leptodermicis elongatis exstructo; semen cocco conforme.

Kami 6—8 mm crassi. Folia petiolo 3—4 cm longo adjecto ca. 20 cm longa; foliola 8—10 cm longa, 3,5—4 cm lata, petioluli plerumque 1—2 mm, rarius ad 4 mm longi. Paniculae plus quam 30 cm longae, inflorescentia composita 40—50 cm longa, rhachi ca. 3 mm crassa, dichasiorum stipites ca. 2 mm longi. Fructus cocci ca. 1 cm longi, diametris reliquis 8 mm.

In insula sundana Bali: Teysmann! (prope Boeileleng, fruct.; Hb. Bogor. n.2752I; Hb. Rheno-Traj.I). - Gulta in Hort. Bogor.I (a. 1881 comm. sub n. 10, steril.).

Sect. II, Dasysapindus Radlk.

8. **S. trifoliatus** L. Spec. Pl. Ed. 1. (1753) 367 n. 2, c. syn.))*Poerinsij* Rheede, Hort. Malab. IV. 43 1.19« (nequaquam serius adjecto, nee hie potius *Conghas* Herm., quae *Schleichera trijuga* Willd., intelligens, uti Trimen 1. infra cit. profert), Ed. 2. (1762) 526 n. 2 c. eod. syn., Syst. Nat. Ed. 12. 2. (1767) 278 n. 2 excl. cit. »Fl. Zeyl. n. 603 « ad *Schleicheram trijugam* W. recens., Syst. Veg. Ed. 13. (cur. Murray, 1774) 315 n. 2 excl. ead. cit.; Crantz, Inst. rei herb. II. (1766) 435 n. 2 c. syn. *Poerinsii*, ut supra; N. L. Burm. Fl. Ind. (1768) 91 c. eod. syn., excl. vero syn. *Saponaria arbor* etc. P. Herm. Hort. Lugd.-Bat. Gat. 536, P. Herm. Mus. Zeyl. 69, Jo. Burm. Thes. Zeyl. 209, Kiggel. Hort. Beaum. 37, omnibus ad *Schleich. trij.* recens.; Houttuyn, Linn's Pfl.-Syst. I. (1777) 502 excl. iisd. syn., t. III f. 1 (cf. infra nom. vulg.); Persoon, Syst. Veg. (Linn. S. V. Ed. 15, 1797) 407 n. 3 c. syn. *Sap. laurifolius* Vahl, excl. vero cit. »EL zeyl. 603«; Pritz. Ic. (1866) 984; Hassk. Hort. Malab. Rheedeani Clav. locupletiss. (1867) 32 excl. syn. Burm. ad *Schleich. trij.* recens. et delend. indicat. »*Saponariae similis* Rumph. Amb. II, 135 « quo loco ad finem descriptionis *Sapindi rarak* solummodo comparationis causa a Rumphio citatur *Poerinsij* Hort. Malab.; Hiern in Hook, f. Fl. Brit. Ind. I. (1875) 682; Radlk. in Al. Braun, Vortrag iib. Pflanzenreste in altagypt. Gräbern (April 1871) veröff. in Zeitschr. f. Ethnologie IX. (1877) 307, in Sitzungsber. bayer. Akad. VIII. (1878) 265, 319, 321, in Engl. u. Prantl, Nat. Pflanzenfam. III. 5. (1895) 315 et in Palacky, Gat. Pl. Madag.V. (1907) 51; Balfour, Coll. from Rodriguez in Phil. Trans. Roy. Soc. Vol. 168. (1879) 335; Talbot, Trees Bombay (1894) 59 (ex Gooke); Woodrow, Fl. of a hill... of the Deccan in Report Bot. Surv. Ind. (1897) 21 et Fl. West. Ind. ibid. (1898) 16; J. J. Wood, PL Chutia Nagpur in Records Bot. Surv. Ind. II. Nr. 1. (1902) 92 c. nom. vulg. Phalanda (sub quo nom. vero p. 60 *Hernigyrosa canescens* Thw., i. e. *Lepisanthes tetraphyUa* Radlk., indicator); Greshoff, De Pl ___ ad pise, capiend. adhib. II, in Meded. Plantent. XXIX. (1900) 38 (et 35 »£. emorg.*). 190; Prain, Veget. Distr. Hughli-Howrah etc. in Records Bot. Surv. Ind. III. 2. (1905) 190. — non Turczan. in Bull. Mosc. XXXVI. 1. (1863) 586, coll. Schlim n. 133!, quae *BiUia columbiana* Tr. et PL (cf. Radlk. in Sitzungsber. bayer. Akad. IX. [1879] 580); F. Villar (non »Linn.« nee



»Turcz.«) Noviss. App. ad Blanco, TtIFflip: Ed. 3, 4. (1880) 53, »coll. Guming*n. 1720«, potius n. 12?0, quae planta a Turcz. post *Sap. trifol.* suum 1. c. (1863) 586 sub n. incorrecto 1720 commemoratur et, quod F.-Villar praetervidisse videtur, *Schmideliae* sp. dicitur (cfr. *Allophyl. quinatus* R.). — *Poerinsij* s. *Vereoeopoeiongi* Rheede, Hort. Malab. IV. (1683, sphalm. 1673) 43 1.19 (perperam a Poir. in Lam. Enc. Suppl. IV. 447 ad *Sapind. spinos.* L. recens.). — *Saponaria arbor Indica* Horti Malab. IV. 44, die Seepnooten, fructus *Poerinsii* P. Ammannus Hort. Bosian. (1686) 31 (sphalm. 32). — *Prunifera fructu racemoso parvo, nucleo saponario* Rajus, Hist. PL II. (1688) lib. 27, cap. 14, p. 1548 n. 1 c. syn. Rheed.; G. Gommelin, Fl. Malab. s. Ht. Malab. Gatal. (1696) 22,4, planta 1 et Ed. in Fol. (1696) 56, columna 2, planta 6 (c. indicat. »v. *Saponaria Arbor**). — *Saponaria arbor trifolia indica*, non »P. Herm. Gat. 536«, G. Gommelin, Hort. Malab. Gatal. (1696) 237, planta 8 et Ed. in Fol. (1696) 60, columna 1, planta 8, quoad *Poerinsii* etc. Rheede c. syn. *Prunifera* etc. Raj., excl. syn. Herm. omnibus ad *Schleich. trij.* recensendis. — *Rite* Forskal, Mat. med. ex of fie. pharm. Kahirae desc, in App. ad ej. Descr. animal, (ed. Niebuhr 1775) 151 n. 38, cf. Radlk. in Sitzungsber. bayer. Akad. VIII. (1878) 403; Rouyer, Notice sur les médicamens usuels des Egyptiens in Descr. de l'Egypte, Etat moderne I. (1809) 230 n. 69. — *Sapindus laurifolius* Vahl, Symb. bot. III. (1794) 54 n. 3 c. syn. *S. trifoliat.* L. (nomen »incongruum« — immo »absurdum« dictum a Trimen 1. infra c. — a Vahl mutatum; attamen folia floribus vicina saepius foliola 3 tantum exhibent, ut jam Hamilton animadvertit in Mem. Werner. Soc. VI. [1832]330—331); Willd. Sp. PL II. 1. (1799) 469 excl. cit. »Fl. zeyl. 603«; Poir. in Lam. Enc. VI. (1804) 664 excl. ead. cit. ; Pers. Synops. I. (1805) 445; Roxb. Hort. Bengal. (1814) 29 et Fl. Ind. II. (1832) 278; Smith in Rees, Cycl. XXXI. (1815); Moon, Gat. Geylon PL (1824) 32; DG. Prodr. I. (1824) 608; Spreng. Syst. II. (1825) 250; Gamb. in Mem. Mus. d'Hist. nat. XVIII. (1829) 26; Don, Gen. Syst. I. (1831) 666; Hamilt. in Mem. Werner. Soc. VI. (1832) 330, 331 quoad *Poerinsii* Rheede, excl. vero Rarak Rumph. (cfr. *Sap. rarak*); Wight et Arn. Prodr. FL Penins. Ind. or. I. (1834) 111; Spach, Hist. nat. Végét., Phanérog. III. (1834) 55; Hamilt. Comment. Hort. Malab. in Transact. Linn. Soc. XVII. (1837) 174 quoad cit. Willd. ut supra; Royle, III. Bot. Himal. Mount. I. (1839) 137; Graham, Gat. Bomb. PL (1839) 29; Walp. Rep. I. (1842) 416; Voigt, Hort. suburb. Galtcutt. (1845) 93; BL Rumph. III. (1847) 95; Wall. Gat. (1847) n. 80381; Turczan. in Bull. Mosc. XXXI. 1. (1858) 402, coll. Metz n.3551; Thwaites, Enum. PL Zeylan. (1858) 55, coll. n. 2545!; Hassk. Hort. Malab. dav. nov. in Flora XLIV. (1861) 485, XLV. (1862) 76; Dalz. et Gibs. Bomb. Fl. (1861) 34; Gat. Kew. Hb. Griff, etc. (1865) 9 n. 1006/2; Teysm. et Binn. Gat. Hort. Bog. (1866) 215, quoad stirp. Ind. of.I, quoad stirp. jav. vero ad *Hebeoeum ferrugineum* Radlk.I recens.; Gat. Kew. Hb. Wight (1869—1870) 7 n. 537! (in plerisque Hb., in nonnullis vero *Lepisanthes tetraphylla* Radlk. vel *L. trichocarpa* Radlk.); Beddome, Fl. sylv. (1869-1873) Anal. Gen. LXXIII, ex Hiern; Brandis, Forest Fl. (1874) 106; Greshoff, De PI—ad pise, capiend. adhib. in Meded. Plantent. X. (1893) 42; Trimen, Gatal. in Journ. Geyl. Branch R. As. Soc. IX. (1885) 20 et Hand-Book Fl. Geylon I. (1893) 306, delenda obs.: Planta, quam Linn, nomine »absurdo« — cf. supra sub Vahl — *S. trifoliat.* designavit, est *Conghas* Herm. (de qua re cfr. *Schleichera trijuga*); Gooke, FL Pres. Bombay (1902) 266 c. var. *emarginatus*; Duthie, Fl. Upper Gangetic Plain 1.1. (1903) 180, c. syn. *S. emarginatus* Vahl; Brandis, Indian Trees (1906) 191 f/86, c. syn. *S. trifoliat.* L., *S. emarginatus* Vahl; — non Hb. Balbis ed. DG. 1. c. in syn. *S. inaequalis* DG.; non Brunner, cfr. *Aphonia senegalensis*; non Hamilton, cfr. *S. rarak*; non Zollinger, nee Teysm. et Binn. Gat. c. indie. »Java«, cfr. *Hebeoeum ferrugineum*. — *Sapindus emarginatus* Vahl 1. c. (1794) 54 n. 4, coll. Kdnigl (cf. Radlk. in Sitzungsber. bayer. Akad. VIII. [1878] 397); Willd., Poir., Pers., Roxb., Sm., Moon, DC., Spr.II.cc.; Ainslie, Mat. med. II. (1826) 318; Gamb., Don II. cc.; Piddington, Index Ind. PL (1832) 79; Wight et Arn. 1. c. »Hb. Wight (Gat. autogr. 1833) n. 385 «!, incl. *S. abstergenti* Roxb. Ic. ined. 1.1235, excl. vero • choc confuso *S. deterg.* Roxb. (i. e. \$. *mu korossi*); Hamilt. I.e. (1837) 175, excl. syn.

Pluk. p. 47 pi. 2 c. ic. 1.14 f. 6, ad *Schleicheram trijugam* recens.; Bojer, Hort. Maurit. (1837) 551; Royle, Graham 11. cc; Wight, 111. Ind. Bot. I. (1840) 141 t. 51; Walp. 1. c. (1842) 415 ad calc. *Schmideliae* loco *Sapindi*, sphalm. »*S. marginatus* Vahl«; Grah., Voigt, Bl. 11. cc; Wall. I.e. n. 80391; Thw. 1. c, coll. n. 11511; Dalz. et Gibs., Teysm. et Binn. 11. cc; Anderson, Cat. Hort. Calcut. (1865) 9; Edgeworth in Journ. Linn. Soc. IX. (1867) 311; Cat. Kew. Hb. Wight 1. c. n. 5381 5391; Drury, Useful Pl. Ind. Ed. 2. (1873) 385, em.; Bedd. 1. c. 1.154 ex Hiern; Brandis 1. c; Baker, Fl. Maurit. (1877) 59; Greshoff 1. c (1893), Trimen 11. cc; Palacky, Cat. Pl. Madag. V. (1907) 51; - non Tenore, Cat. Hort. Neapol. (1845) 64 et Pasquale, Cat. (Napoli 1867) 92, ad *S. mukorossil* recens., cf. Radlk. 1. c (1878) 317, 396; non Naudin, Manuel de l'Acclimateur (1887) 487, cfr. *S. mukorossi* sub syn. *S. utilis*. — ? *S. angulatus* Poir. in Lam. Enc VI. (1804) 665 ex fruct. descr., cf. Radlk. in Sitzungsber. bayer. Akad. VIII. (1878) 316, 394; DC, Spr., Camb., Don 11. cc. — *S. mauritanus* (»H. P.«, i. e. Hort. Paris., ut videtur) Broussonet, Elench. Pl. Hort. Monspelien. (1804) 51, si recte ad hunc locum ducitur specim., ut videtur, cult., a Pavon nomine »*Sap. mauritian.*« insignitum, in Hb. Boiss. servat. — *S. Ryteh* Delile, Fl. Aegypt. 111. in Descr. de PEgypte, Hist. nat. II. (1813) 81 (Fructus et semina ex officinis Kahirae) n. IV (cf. Radlk. in Sitzungsber. bayer. Akad. VIII. [1878] 402); Rouillère in Bull. Pharm. II. 411 ex seq.; Lèman in Nouv. Diet. d'Hist. nat. appl. aux Arts etc. Ed. 2. XXIX. (1819) 573; »?« Corinaldi in Memorie Valdarnesi I. (1835) 75 in annot. ad »*S. mukorossi*«, cf. infra. — ? *S. Saponaria* c nom. vulg. Reetah Piddington, Index Ind. Pl. (1832) 79, cf. nom. vulg. — *S. acutus* (non Wall. Cat. 8096, quae *Engelhardtia* sp. ex Hiern) Roxb. Ic ined. 1.1965 ap. Wight et Arn. Prodr. (1834) 111. — *S. abstergens* Roxb. Ic ined. 1.1235 ap. Wight et Arn. 1. c, ubi perperam syn. habetur *S. detergentis* Roxb. (i. e. *S. mukorossi*); specim. authent. vidi in Hb. Deless. (ut indicavi in Sitzungsber. bayer. Akad. VIII. [1878] 393). — *S. mukorossi* (non »Gaertn.«) Corinaldi in Memorie Valdarnesi I. (1835) 75 1.1 f. 6, 71 (fructus, quos vidi a Corinaldi e pharmacia Kairae advectos et a. 1847 donatos in Mus. Florent., cf. Radlk. 1. supra cit. »Zeitschr. f. Ethnol. IX. [1877] 308« et Sitzungsber. bayer. Akad. VII. [1878] 403). - *S. aromaticus* (sphalm.) Endl. Enchirid. (1841) 562. - *S. marginatus* (»Vahl«, loco *S. emarg.* V.) Walp. Rep. I. (1842), cf. supra; (»Willd.«, loco *S. emarg.* V.) Cat. Kew. Hb. Griff., etc (1865) 9 n. 1006/31; (»Bl.«, loco *S. emarg.* V.) Teysm. et Binn. Cat. Hort. Bogor. (1866) 2151, excl. patriae indie »Java«. — *S. mollis* Bl. Rumph. III. (1847) 981 c syn. sequ. et patriae indie. »Ind. or.«; Walp. Ann. II. (1851 — 1852) 211. — *Dimocarpus Litchi* Hb. Heyne ed. BL 1. c (1847), syn. antecedentis — Vulgo: Poerinsii (in textu Poerinsij, in tab. Pürinsji) s. Vercoepoe-longi Malabaris t. Rheede 1. c (1683), Ourinti et Damitassi Brahmanis, Sabao dos Canarins Lusitanis, Seepnoten Belgis t. eod.; Zeepboom van Koromandel t. Houttuyn in Nat. Hist. II. 2. (1774) 315 t. 8 f. 1 et Bl. 1. c. (1847); Seepbessen (fruct.) iisd. t. Greshoff 1. c (1893); Soapnutt tree Anglis t. Drury 1. c (187[^]); Soapnut tree of South. India (Duthie I.e.); Bois savon (Balf. 1. c); Koelloewalla Zeylonens. t. Koenig in Hb. Lugd.-Bat. (Kaellaewalla legitur ap. Bl. I.e. 1847); Koo-muttighenzaloo Telingasice t. Ainslie 1. c (1826); Konkoodoo Teling. t. Roxb. 1. c. (1832), Kunkoodoo t. Pidd. I.e. (1832), Kunhoodoo-chettoo Teling. t. Wight 1. c. (1840), Kunkudu-Kaja (fruct.) Teling. et Konkre-Kaja t. Bl. (1847); Kunkudu Tel., Arabala, Antawala Kan., Ritha Hind. t. Brandis 1. c (1906); Manipongou t. Poir. (1804); Manay poongung Kai Tamul. t. Ainslie (1826); Neykoddan Tamul. t. Trimen (1893); Phenila Sanskrit. (= spuma) t. Ainslie (1826) s. Phoenila t. Pidd. (1832); Penela Singal. t. Trimen (1893) et Panalai Tamul. t. eod.; Penella-gass (gass s. ghas = arbor) Zeylonens. t. Thw. (1858) s. Gas-penela (i. e. arbor spumae) t. Moon (1824); Kaha-penela Singal. t. Trimen (1893); Phalanda t. Wood 1. c. (1902; cf. supra); Ponnanga Tamul. t. Drury (1873), Ponnangaja (fruct.) Malabar, t. Bl. (1847); Poewandie Malabar, t. Houttuyn, Natuurl. Hist. (1774, Ed. germ. I. [1777] 504, t. 8 f. 1 »sec. ic. ab Jo. Bum. servat.«) et Bl. (1847) s. Poovandie

Tamul. t. Drury (1873)s. Pūvanti Tamul. t. Trim. 1. c. (1885)sub *S. emarg.*; Poewandicottay (cottay = nux) t. Ainslie (1826); Poowandie-cottay-Marum (Marum = arbor) Tamul. t. Wight (1840); Nurre-mara Ganarens. t. Metz in Hb. Webb et Deless.; Rtta fide Boorhani Qatiu Lexic. persic. (ed. Th. Roebuck, Calcutta [1818] 423) et Rata fide Lex. pers. »Haft Gulzum s. Heft Kulzum (The seven seas)« nominati (aut. Rege terrae Oude, Hyder Padischah, Lucknow 1822) III. 38 ex Jos. Müller linguar. orient, prof, in litt. ad me a. 1871; Rite t. Forsk. 1. c. (1775), Ryteh arab. t. Delile 1. c. (1813), Rite (fructus, Schweinfurth, Arabische Pflanzennamen [1812] 41); Ritah t. Ainslie 1. c. (1826) aliisque; Ritha Hindice t. Hamilt. 1. c. (1837) s. Reetah Pidd. 1. c. (1832); Retteh t. Abu Mansur Mowafik, Liber fundamentor. Pharmakol. ed. R. Seligman II. (Vindob. 1833) 17; Rhete t. Graham 1. c. (1839); Bura-reetha (Bura = magnus) Bengal, t. Roxb. (1814) s. Burra-reetha t. Wight (1840) et Buro-ritha t. Voigt (1845) s. Buro-reetha t. Drury (1873); Bor ritha t. Prain 1. c. (1905); Rishta (= laesus) Sanskrit, t. Ainslie (1826); Arishta (= illaesus) t. eod.; Aratavala Ganarens. t. Drury (1873); Bindakē hindē persice t. Ainslie (1826), potius Bundugi hind! (= nux Avellana indica) fid. Boorhani Qatiu ex Jos. Miill. in litt. (cf. Radlk. 1. supra cit. »Zeitschr. f. Ethnol. IX. [1877] 307«); Finduk-i-hindi Arabis et Persis ap. Schaer, Arzneipfl. als Fischgifte, seors. expr. e Festgabe d. deutsch. Apotheker-Vereins (Strassb. 1897) 32, annot.; Bunduki hindi et Huresi sini ap. Seligman 1. c. — Arbor pulchra, sat alta, crassa; rami teretes, striati, juveniles molliter sufferrugineo-pubescentes, mox glabrati, cortice fusco-griseo lenticelloso-punctato; folia 2—3-juga (interdum 1[^]-juga), rhachi tereti striata sufferrugineo-tomentella dein glabrescente; foliola alterna vel opposita, nunc (in forma 2. *emarginato*) elliptico-oblonga vel obovata, obtusa plerumque emarginata, basi ± obtusa petiolulis crassis insidentia, subcoriacea, nervis lateralibus sat approximatis patulis subtus prominentibus, subtus mollia, nunc (in forma 1. *genuino*) elliptico-lanceolata, ± acuminata, basi subacuta petiolulis insidentia, chartacea, nervis lateralibus approximatis oblique erectis, subtus glabriuscula, omnia arctiuscule reticulato-venosa, supra glabra nitidula, subtus opaca, flavescenti- vel canescenti-viridia, glandulis capitatis crebris foveolis incumbentibus ornata; panicula terminalis, conferte ramosa, saepius corymbiformis, ramis thyrsoideis rhachique tomento brevi viridi-flavo indutis, sat dense dichasia stipitata gerentibus; alabastra majuscula, ovalia, breviter pedicellata; flores magni robusti; sepala 5, coriacea, elliptica, 2 exteriora angustiora, margine glanduloso-ciliolata, extus adpresse viridescenti-tomentella; petala 5, anguste lanceolata, longiuscule unguiculata, extus margineque dense villosa, intus glabra, supra unguem marginis lobulis binis minimis albide villosis quodammodo bisquamulata; discus regularis, pilosus; stamina 8, exserta, filamenta complanata, villosa, antherae ellipticae, apiculatae, glabrae; germen trigono-subcordatum, 3-loculare, ochraceo-hirtellum, in stylum breviusculum curvatum glabrum terminatum; fructus 3- vel abortu 2—1-coccus, mediocris, coccis subtrigono-globosis plerumque sat carinatis hirtello-pilosis denique praeter marginem commissuralem ± glabratis opacis atrofusis, piano commissurali magno obovato-rhombeo transversim costato-striato; semen subglobosum.

Arbor 30-pedalis, ligno flavescenti duro (t. Rheede). Rami 5—7 mm crassi. Folia petiolo 3—6 cm longo adjecto 15—25 cmjonga, rarius petiolo ad 10 cm longo adjecto ad 35 cm longa; foliola superiora (in f. 2. *emarginato*) 8—11 cm longa, 3—5 cm lata, inferiora fere dimidio minora, (in f. 1. *genuino*) 11—18 cm longa, 4—7 cm lata, petioluli 5—6 mm longi (in cultis foliola maxima 21 cm longa, 9—10 cm lata). Panicula 12—20 cm longa, 12—15 cm lata; dichasiorum stipites 2 mm longi. Alabastra 5 mm longa, 4 mm lata. Fructus 2 cm altus, cocci 1,6 cm lati et crassi.

Formae 2 discernendae sunt, altera in alteram vario modo transeuntes supra jam indicatae:

F.I. *genuinus* Radlk. (*S. laurifolius* Vahl, *S. acutus* Roxb.): Foliola elliptico-lanceolata, ± acuminata, glabriuscula.

F. 2. *emarginatus* (Vahl) Radlk. (*S. emarginatus* Vahl, *S. abstergens* Roxb., *S. moUis* Bl.): Foliola elliptica, obtusa, emarginata, subtus mollia.

In Zeylania et Indiae peninsula occidentali (indigena), in Bengala (cultura et indigena?), in insulis Mascarensibus et in Madagascaria (introduc-ta) nee non in Africae tropicae ora orientali (cultura): In Zeylania: König! (c. nom. vulg. Koeloewalla, forma 2., Hb. Lugd.-Bat.; id. collector c. indicat. »Ind. ori a Vahl nominatur sub f. 1., in Hb. Schumach. servata!); Walker n. 93! (a. 1835, f. 1. glabritie transiens in f. 2., fruct.; Hb. Deless. ex Hb. Graham); id. sine n.! (f. 2., flor.; Hb. Webb ex ?Hb. Gardner); Thwaites n. 1151! (hot, drier parts of the island, f. 1. foliol. glabrat. acced. ad f. 2., fl. et fr. adject.; Hb. varia), n. 2545! (southern and central parts of the island up to an elevation of 3000 feet, f. 2. foliol. subtus mollibus transiens in f. 1., flor.; Hb. varia); Trimen (moist low country, I.e. sub *SAaurif.* forests of the dry region, sub *S. emarginato*); — in Coromandelia: Soc. unit. Fratr.! (Tranquebar a. 1775, f. 1., fl. et fr.; Mus. Brit.); Klein n. 281! (f. 1., fl.; Hb. Schreber, nunc Monac), n. 285! (a. 1798, f. 1., fl.; Hb. Willd. n. 7744), n. 3221 (a. 1798, f. 1., fl.; Hb. Schreb., nunc Monac), n. 764! (f. 1. foliol. tenuiorib. acced. ad f. 2., steril.; Hb. Willd. n. 7744), sine n.! (f. 1., fl.; Hb. Schum., nunc Havn.); Heyne! (f. 2. pubescentia transiens in f. 1., *Dimocarpus Litchi* Heyne ex Hb. Roth, a Bl. inscript. *Sap. moUis* BL; Hb. Lugd.-Bat.); id. = Wallich Gat. n. 8039B! (*S. emarginatus*, Hb. Heyne); Commerson! (c. nom. vulg. Manipongou, circ. 1768, f. 1., fl., Hb. Deless., adject. foliol. duob. ad *Lepisanthes tetraphyllam* Radlk. recensendis; hue quoque pertinere videtur Hb. Juss. n. 11385!, excl. specim. altero foliolis glabris ad *Lepisanthes tetraphyllam* recensendo); Sonnerat! (circ. 1774, f. 1., fl., ex Mus. Paris, a. 1821 comm. c. Hb. Kunth, nunc Berol.); A. Meebold n. 11255! (Madura, Badami, f. 1., m. Sept. 1910, fl.; Hb. Berol.), n. 13561! (Madura, Bodinaikonut, m. Dec. 1910, fl.; id. Hb., f. 1.), n. 13781! (Madura, Bodimettu Ghat, alt. 3000 ped., m. Dec. 1910, alab., f. 1.; id. Hb.); Perrottet n. 85! (Pondichry a. 1835, f. 1., fl.; Hb. Deless., Boiss., Vindob.); — in montibus Gircars septentrionalibus: Drury! c; — in Malabar: Rheede (I.e. cum ic. f. 2.); Wight, Distrib. Kew. n. 5371 part. (part. *Lepisanthes tetraphylla* Radlk. in Hb. Berol., Vindob. etc.; Gannanore m. Febr. 1852, f. 2., fl.; Hb. Havn.); — in Madras: Wight, Distrib. Kew. n. 538! (prope Goimbatore, m. Oct. 1847 et 1848, f. 1. et 2., fl.; Hb. varia), n. 539! (f. 1., fl. et fr.; Hb. Berol.); Wight Hb. propr. n. 385! (f. 1., sed parum pubesc. fruct.; Hb. var.); Wallich Gat. n. 8039G! D!; Drury; Brandis! (Sicharicata, m. Nov. 1881, f. 1., alab.; Hb. DC. ex Hb. Gale), id.! (Pulney Hills, alt. 4000 ped., a. 1882, f. 2., fruct.; ibid.); - in Nilgheri et Kurg: Hooker f. et Thomson Hb. Ind. or.! (f. 1., partim foliol. subtus ± glabratis acced. ad f. 2., flor.; Hb. var.); — in Canara: Billanger n. 53! (a. 1825—1826, f. 1., fl.; Hb. Webb.), n. 54! (f. 1., foliol. subglabris transiens in f. 2.; ibid); Metz ed. Hohenack. n. 355! (prope urbem Mangalor, a. 1849, f. 2., flor.; Hb. var.); Ritchie n. 1000 (Kála naddi, t. Gooke 1. c.); Talbot (indigenous on the Ghâts of N. Canara in evergreen forests, t. Gooke 1. c.); Woodrow 1. c. (Londa, Ainshi, N. Ganara, Oct.—Nov.); Bhiva (Londa, t. Cooke 1. c.); — in Mysore: Drury I.e.; — in Deccan: Hügel n. 1421! (Ahmednugur, circ. 1831—1836, f. 1., steril.; Hb. Vindob.); Graham 1. c. 1839 (rather scarce in the Deccan); Woodrow 1. c. (on the western verge of the Deccan); — in Goncan: Graham 1. c; Stocks in Hook. f. et Thorns. Hb. Ind. or.! (f. 2., partim foliol. subtus pubesc. acced. ad f. 1., flor.; Hb. varia); Dalzell (t. Gooke 1. c.); — in Matheran: H. M. Birdwood (Rambág t. Gooke 1. c.); — in Bombay: Polydore Roux! (a. 1835, f. 1., foliol. subtus mollibus acced. ad f. 2., flor.; Hb. DC.); T. S. Ralph! (f. 1., sed foliol. pubesc., flor.; Hb. Deless.); id.! (f. 2., foliol. acutis transiens in f. 1., fruct.; Hb. Florent. ex Hb. van Heurck); — in Guzerat: Graham 1. c; — in India centrali: Schlagintweitl (Bandelkand, Rima to Sohagi, 40 miles South of Allahabad, m. Febr. 1856, f. 1., steril.; Hb. Monac.); Edgeworth (Banda, *S. emarginatus*, planted, rare, 1. c. 1867); — in Mahratta australi: Ritchie,

n. 1000 (Ramghât, t. Gooke 1. c); -* in Oudh: T. Anderson n. 6391 (Luknow Distr., Planit. Ganget. sup., alt. 600 ped., m. Mart. 1858, f. 1., fr. jun.; in planit. Ganget. sup. ex Duthie 1. c. (forests near Todgarhin in Merwâra, Bandelkband); — in Nepalia: Wallich Gat. n. 8039FI; — in Bengala (cultâ?): Roxburgh 1. c. 1832 (f. 1. in Bengala florens, m. Oct., fruct. m. Apr., f. 2. flor. Dec, fr. Apr.), cf. infra specim. culta in Hort. Calcutt.); Voigt 1. c; Hamilton = Wallich Gat. n. 8039A! (*S. emarg.* e Behar et Goolapur, Hb. Hamilt.); id. (ad Magadhae pagos, l.e. [1837] 175, i. e. ad Patna in Distr. Behar; in Gicata ibid. p. 176, i. e. in Distr. Gaya, ad meridiem urbis Patna); Griffith, Gat. Kew. n. 1006/3! (sphalm. *S. marginal.* Willd., f.l., flpr.; Hb. Berol. etc.); Wood 1. c. 1902 (Hazaribagh district, village Ghatra 1500-2000 feet, planted); Prain 1. c. 1905 (planted near villages); — in ins. Mauritius: Bouton! (cultâ; Hb. Kew.); Burke! (f.l., flor.; Hb. Deless.); — in ins. Rodriguez: Bouton!; J. B. Balfour! (on the shore a little east of Venus Point, Transit of Venus Exped., Aug.—Dec. 1874, f.l.; Hb. Kew.); — in Madagascar: Bromfield! (f.l., flor.; Hb. Endl., nunc Vindob.); Meller! (inter Tamatave et Antananarivo, m. Jul.—Aug. 1862, f.l.; Hb. Kew.); id.?! (Andovorant, m. Jul. 1862, f.l.; Hb. Kew.); — in Africae tropicae ora orientali: Holtz n. 21021 (in Bagamojoculta, m. Maj. 1910, fl.; Hb. Berol.)

Gulta in Hort. Calcuttensi: Roxb. 1. c. 1813 (f. 1., introducta a Sir Royds a. 1800, flor. Oct.—Nov., f. 2., introd. a Buchanan[-Hamilton] a. 1800, flor. Dec, fruct. Apr.); id.! (*Sapindus*, spec. uncertain, Calcutta 1809, f.l., fl. et fr. jun.; Hb. Smith, Hb. Webb ex Hb. Labill.); id.1 (*Sap. laurifolius*, Calcutta 1809, f. 2., flor.; Hb. Smith); id.! (*Sap. abstergens*, f. 1., flor.; Hb. Deless.); id.! (*S. laurifolius*, f. 2., flor.; Hb. Mart., Hb. Webb ex Hb. Labill.); Wallich Gat. 8038A! (*S. laurifolius*, Hb. Hamilton e Hort. Calc. ut et Wight et Arn. 1. c. referunt; f. 1., flor); id. 8038B! (Hort. Gale, f. 2.; flor.; Hb. DC., Webb etc.); id. 8039EI (*S. emarginatus*, Hort. Calc, f. 1. flor.); id.?! (*S. laurif.*, f. 2., flor.; Hb. Monac); Gaudichaud n. 304! (Voy. sur la Bonite 1836—1837; comm. ex Hb. Wallich, f. 2., foliolis acutis transiens in f. 1., flor; Hb. Paris., Deless.); KamphOvener n. 1571! (Galathea-Exped. 1845—1847, comm. ex Hb. Wallich, f. 1., flor.; Hb. Havn.); Htigel n. 23001 2317! 2375! (f.l., partim foliolor. junior, pubescentia acced. ad f. 2., steril.; Hb. Vindob.); — in Hort. Serampore: Wallich(?)I (f. 2, flor.; Hv. Havn.); — in Hort. Saharampore: —1 (a Leman a. 1845 comm. c Hb. Boiss. f. 2., flor.); — in Hort. Bogor.: Teysmann et Binnendijk! (*S. laurifolius* l.e. 1866, f. 2., flor.; a. 1868 comm. c Hassk. et ab hoc c Hb. Berol.); iid.1 (*S. margin.* Bl. 1. c. 1866; comm. ex Hb. Bog. c. Hb. Monac. a J. van Romburgh m. Aug. 1895 c. indicat.: III. 1. 39, *Sap. margin.* BL, leg. Speltie; f. 1., pubescentia transiens in f. 2., steril.); Hort. Bog. XV J, B XXVII. 2! (e Calcutta introd., fl. et fr., sub nom. *Sap. marginat.* Bl., a. 1922 comm. c. Hb. Monac, f. 1.); — in Hort. mauritanico: Bojer! (a. 1833, f.l., fl. et fr. juv.; Hb. Monac, DC.); id. II. 15! (a. 1840, f.l., fl.; Hb. Vindob.); — in Hort. borbonico: Richard! (*Sap. indiea*, cf. sequ., f.l., folia tan turn; Hb. Franquev.); — in Hort. Parisiensi: —! (*Sap. indiea* Juss., Aug. 1781; f.l., folium; HJ>. Reichenbach, nunc Vindob.); — in Horto Gels: —! (folium intermedium inter f. 1. et 2., sub nom. erroneo ab A. L. Juss. adscripto; Hb. Deless. ex Hb. Ventenat); — in Hort. Monspelienis? (Parisiensi?): —! (*Sap. mauritiana*. scrips. Pavon, cf. supra lit.; f.l, folium; Hb. Pavon., dein Boiss.).

9. **S. papuanus** Radlk., sp. nov. — Arbor; rami teretes, glabri, cortice subcinereolaevi; folia abrupte pinnata, 2-juga, petiolo rhachique teretiusculis glabris; foliola petiolulata, ex ovali vel oblongo lanceolata, utrinque acuta, integerrima, membranaceo-chartacea, nervis lateralibus obliquis tenuibus nee supra nee subtus prominentibus, supra glabra, laevia, feubtus arcte subtiliter reticulata et glandulis minus gracilibus brevibus crassiusculis transversim multiseptatis foveolis conchiformibus incumbentibus laxè adspersa, pallide viridia, impunctata, cellulis secretoriis nullis, diachymatis (praesertim staurenychymatis) cellulis crystallonim concretionibus globosis farctis, epidermide non mucigera, ilia paginae superioris sparsim cellulis parvis saepius

geminatis crystallorum concreciones gerentibus instructa, crystallis parieti superficiali tenuissimae (nee ut in reliquis cellulis incrassatae) applicitis; panicula terminalis, laxius ramosa, cano-tomentella, rhachi apice ramulisque thyrsoides dichasia in cincinnos abeuntia breviter stipitata gerentibus; alabastra mediocria, subgloboso-ovoidea, longiuscule pedicellata, cano-pubescentia; flores mediocres; sepala 5, imbricata, subcoriacea, puberula, exteriora 2 mi nor a ovata, interiora oblonga margine petaloidea intus glabriuscula; petala 5, ovata, sat unguiculata, extus basi pilosula, intus supra unguem villosum lobulis inflexis dense albide villosis bisquamulata; discus regularis, margine albide tomentosus, circa staminum germinisque insertiones puberulus; stamina 8, breviter exserta, filamentis praeter apicem albo-villosis, antheris ellipsoideis glabris; germen (floris <\$) rudimentarium, sessile, ovoideo-trigonum, profunde sulcatum (quasi 3-coccum, coccis lateraliter vix connexis), dense albido-tomentosum, apice stylo per brevi glabro obsitum; fructus — (non suppetebant).

Ramuli florigeri 2,5—3 mm crassi. Folia petiolo 3 cm longo adjecto 14 cm longa; foliola cum petiolulis 3—5 mm longis ad 10 cm longa, 3,5 cm lata. Panicula 18 cm longa, 9 cm lata. Alabastra diametro 2,5 mm. Pedicelli 3 mm longi.

In Novae-Guineae meridionalis territorio Papua: Rev. H. Lister Turner sine n.! (Rigo district, a. 1925?, fl.; Queensland-Herb., comm. C. T. White).

Obs. Species affinis, ut videtur, *S. trifoliata* L., qui vero in omni parte robustior.

Sect. III. Sapindastrum Radlk.

10. *S. oahuensis* Hillebrand, Fl. Hawaiens. exsicc. (1869)! et Fl. Hawaiian Isl. (1888) 85, c. var. j8. »foliis breviter petiolatis etc.r, Radlk. in Sitzungsber. bayer. Akad. VIII. (1878) 259, 265, 319, 321 et praesertim 401, XX. (1890) 233 et in Engl. u. Prantl, Nat. Pflanzenfam. III. 5. (1895) 315; Drake del*Castillo, III. Fl. Ins. Maris Pacif. (1890) 142; J. F. Rock, Indig. Trees Hawaiian Isl. (1913) 273. — *Celastrinea?* nov. gen. Wawra in Flora LVI. (1873) 141 n. 2282! »ex Hb. Hillebr.« - *Diploglottis* sp.? Wawra 1. c. in annot. p. 142. — Vulgo: A'ulu et Ka'ulu in Oahu t. Hillebr.; Lonomea in ins. Kauai t. Rock, Hawaiian Pl. Nam. in Bot. Bull. Hawaii Board Agric. and For. Nr. 2 VI. (1913) 10 et 1. supra c. — Arbor mediocris cortice albido lenticelloso; rami teretes, striati, juveniles pube sufferruginea induti, mox glabrati, cortice pallido lenticelloso-punctato; folia simplicia, plerumque longiuscule petiolata, (petiolo supra complanato sufferrugineo-pubescenti mox glabrato), ovata, acuta vel apice ipso obtuso interdum mucronulato, basi rotundata vel subtruncata in petiolum inaequaliter protracta, chartacea vel subcoriacea, nervis lateralibus remotiusculis patentibus praesertim subtus prominentibus pallidis, laxius reticulato-venosa, glabra, supra fuscescentia nitidula, subtus pallida opaca, glandulis inaequalibus, aliis gracilibus, aliis robustioribus, foy[^]colis incumbentibus adpersa; paniculae ad ramulorum apices axillares aut singulae majores, aut paucae minores in inflorescentiam subterminalem sat amplam congestae, fulvo-tomentellae, ramis thyrsoides divaricatis sat laxe dichasia breviter stipitata gerentibus; alabastra subglobosa, basi fulvo-tomentella, brevissime pedicellata; flores majusculi, robusti; sepala 5, coriacea, suborbicularia, margine petaloideo glanduloso-ciliolata, extus basi adpresse fulvo-tomentella; petala 5, sepala superantia, ovato-lanceolata, breviter unguiculata, extus praeter apicem ipsum nee non margine adpresse flavescenti-villosa, intus glabra, supra unguem squamulis binis basi connatis villosissimis aucta; discus regularis, pentagonus, glaber; stamina 8, filamenta filiformia, inferne villosa, antherae ellipticae, glabrae; germen trigono-ovatum, 3-loculare, glabrum, stylo brevi rectiusculo terminatum; fructus abortu 2 — 1-coccus, glaber, coccis divaricatis oblongis lateraliter compressiusculis subcarinatis, piano commissurali angusto lanceolato, pericarpio coriaceo, endocarpio toto stipposo-villoso denique ± decalvato; semen ellipticum, compressum.

Arbor 20—30-pedalis. Rami 4—5 mm crassi. Folia petiolo 4-6 cm longo adjecto 16—22 cm longa, 6—7 cm lata, rarius petiolo 8 cm longo adjecto ad 26 cm longa,

11cm lata. Paniculae circ. 15—30 cm longae, ramis 4—7 cm longis, dichasiorum stipites 1,5 mm longi. Alabastra diametro ad 4 mm. Fructus 1,6 cm alti, cocci 2,8 cm longi, 1,2 cm lati.

In insula Hawaiiensi Oahu, in vallibus Makaha et Makaleha tractus Kaala, rarissime in montium tractu principali (Kalihi et Wailupe), insuper in valle Niu, nee non in insula Kauai; in Oahu: Rich et Brackenridge in Capt. Wilkes Explor. Exped. 1838—18421 (Kaala Mounts, fruct.; ex Hb. Gray mec. comm., in Bot. Wilkes Exped. a Gray omissa); Wawra n. 2282! a Hillebr. lect. et comm. (Erdumseglung S. M. Freg. Donau, 1868-1871, flor.; Hb. Vindob.); Hillebrand, Fl. Hawaiens. exsicc. sine n., a. 18671 (Kalihi, fol.; ex Hb. Hillebr. in Hb. Berol.); id. a. 18691 (Oahu, fl. et fr. semimat.; ex eod. Hb. ibid.); Johnl (Wailupe, m. Sept. 1870, fr. semimat.; ex eod. Hb. ibid.); Lydgatel (valley of Niu, m. Sept. 1872, flor.; partim »var. j3«, cf. lit.; ex eod. Hb. ibid.); Jos. F. Rock n. 86421 (Niu valley, alt. 900 ped., m. Aug. 1909, alabastr.; comm. Rock.); — in ins. Kauai ad Makaweli et Waimea, alt. 1000 ped., ex Rock 1. c. 1913.

Sect. IV. Dittelasma (Hook.f.) Radlk.

11. *S. rarak* DC. Prodr. I. (1824) 6081; Spreng. Syst. II. (1825) 251; Bl. Bijdr. Fl. Nederl. Ind. (1825) 228; Gamb. in Mém. Mus. d'Hist. nat. XVIII. (1829) 26; Don, Gen. Syst. I. (1831) 666; Henschel, Glav. Rumph. Hb. Amboin. (1833) 149; Wight et Am. Prodr. Fl. Penins. Ind. or. I. (1834) 111 in obs., excl. syn.)>*S. longifol.* Roxb.«, i. e. *Euphorianthus longifolius* Radlk.; Spach, Hist. nat. Végét., Phanérog. III. (1834) 56; Hassk. Gat. Ht. Bogor. alter (1844) 224, excl. tab. 43 in cit. Rumph., Aurantiaceam illustr.; Bl. Rumph. III. (1847) 93 1.167; Walp. Ann. II. (1851-1852) 211; Miq. Fl. Ind. Bat. I. 2. (1859) 551, excl. inter locos natales indicat. »ins. Philip p.«, et »?«Suppl. I. (18.60) 198; Kurz, Vegetat. Bangka in Natuurk. Tijdschr. Nederl. Ind. XXVII. (1864) 194 (seors. impr. 54) et Pegu Report (1875) App. A, 38 n. 291, App. B, 40; Teysm. et Binn. Gat. Hort. Bogor. (1866) 215; Hassk. Neuer Schlüssel zu Rumph's Hb. Amboin. (1866) 35, syn. »*S. Saponaria* L.« part, excl., cf. infra; Radlk. Sap. Holl.-Ind. (1877-1878) 6, 20, 67 (76, 90, 218), in Sitzungsber. bayer. Akad. VIII. (1878) 252, 258, 266, 319, 321, 402, IX. (1879) 520 n. 180, XX. (1890) 233, in Engl. u. Prantl, Nat. Pflanzenfam. (1895) 315, et in Hallier, Elbert's Sunda-Exp. in Meded. Herb. Leiden Nr. 22. (1914) 13; Greshoff, De Pl. ad pisces capiend. adhib. in Meded. Plantent. X. (1893) 41, 172 et XXIX. (1900) 38, 190; Koord. et Val. Bijdr. Booms. IX in Meded. Plantent. LXI. (1903) 150; Brandis, Indian Trees (1906) 191; Backer, Fl. Batav. I. (1907) 338; Koord.-Schum. Syst. Verz. I. Java (1912) Sapind. p. 3, coll. 33908/?! etc.; Koord. Exk.-Fl. Java II. (1912) 537 et Atlas Baumart. I. 2. (1913) t. 89, coll. 1469401 etc.; Merrill, Interpr. Rumph. Hb. Amb. (1917) 337, quoad syn. t>*Saponaria*«, cf. infr, — non Merrill, Review etc. (1905) 34 quoad »£. *Saponaria* Blanco«, dein (in Merrill, Spec. Blanc. 1918) ad *Guioam pleuropteridem* R. relatum, potius? ad *Erioglossum rubiginosum* Bl. recensendum, quod cfr. — *Saponaria* s. *Rarak* Rumph. Hb. Amboin. II. (1741) cap. 51, p. 134. — *S. Saponaria* Linn. (non Sp. Pl. I. [1753], nee Syst. X. [1759]) Sp. Pl. Ed. 2. (1762) 526 part., quoad syn. t*Saponaria* Rumph. Amb. II. 134«; Bum. N. L., Fl. Ind. (1768) 91 part., ut in antec; Aublet, Pl. Guian. I. (1775) 395 part., ut ap. Linn.; Lour. Fl. Gochinch. I. (1790) 238, Ed. 2. (cur. WiUd. 1793) I. 293, excl. cit. Tournef. Inst. p. 659 t. 440; Horsfield in Verhand. Batav. Genootsch. VII. (1814) Nr. 7; Ainslie, Mat. med. II. (1826) 319 part., quoad »*Rarak*«; — non Blanco, Fl. Filip. (1837) 288, cfr. *Erioglossum rubiginos.* Bl. - ?*S. pinnatus* Ph. Miller, Diction. E&J. VIII. (1768) n. 3 (cf. Radlk. 1. c. [1878] 259, annot.). - *Electra* sp. (non alior.) Noronha, Relat. PL Javanens. in Verhand. Batav. Genootsch. V. (1790) 2 et 2^{de} druk (1827) 65 (nom. tantum c. nom. jav. »R*krakl). - *S. polyphyllus* Roxb. Hort. Beng. (1814) 291 (»Pegu; F. Carey 1810«; a Kurz quoque loco infra sub *Dittelasma* cit., 1875, hue recensit.; vidi specim. florig. ex Hort.

Acc. no. B184

Galcutt., nom. »**S. poly ph.*« insignit., foliolis latiorib. ut in Wall n. 8042 B — v. infra *S. deter gens*. Wall. — insigne, ex Hb. Wall., resp. Galcutt., a Kamphövener in Exped. Galatheae a. 1845-1847 sub n. 1570 in Hb. Havn. transl.); Voigt, Hort. suburb. Galcutt. (1845) 94; Hiern in Hook. f. Fl. Brit. Ind. I. (1875) 685 (inter sp. dub.). - *S. indicus* (non Poir.) Reinwardt in Bl. Catal. Hort. Bogor. (1823) 64 (»Jarak«); Pasquale, Hort. Neapol. (1867) 92!, cf. Radlk. l.e. (1878) 318, 397; Linden, Gat.(1874) 44! (vidi specim. in Hort. Rheno-Traj. cultum in Hb. Rheno-Traj.). — *S. laurifolius*, non »Vahl«, Hamilt. Comment. Rumph. Hb. Amboin. in Mem. Werner. Soc. VI. (1832) 330, 331, quoad Rarak Rumph., excl. vero Poerinsii Rheede, i, e. *S. trifoliat* L. - (?)*S. longifoliu8* (non »Vahl«) Bojer, Hort. Maurit. (1837) 55(1), cf. Radlk. in Sitzungsber. bayer. Akad. VIII. (1878) 318, 398. - (?) *S. maduriensis* Perrottet ed. Duchesne in Repert. PL utiles (1846) 194, cf. Radlk. in Sitzungsber. bayer. Akad. VIII. (1878) 318, 400 et in Sap. Holl.-Ind. (1878) 67 (218). - *S. angustifolius* Bl. Rumph. III. (1847) 99 »cultu, Hb. van Royendl, cf. Radlk. in Sitzungsber. bayer. Akad. VIII. (1878) 316, 395; Walp. Ann. II. (1851-1852) 211; - non Wall. ed. Voigt). c. (1845) 94, e Khasia, ab Hiern l. c. inter sp. dub. enum. (cf. sp. dub.). — *S. detergens*, non »Roxb.« (cfr. *S. mukorossi*), Wall.Gat. (1847) n. 8042A! ex Hb. Hamilt. et B! ex Hort. Galcutt., specim. simillimum illi sub *S. polyph.* supra indicato »Kamphövener n. 15.70«; Gat. Kew. Hb. Griff, etc. (1865) 9 n. 1006/4!, certe quoad specim. c. Hb. Paris, comm. (cf. Radlk. l. c. [1878] 396) florig. ex Hort. Gale. (?), simillimum antecedent*. - *S. fuscatus* Herb. Hamilt. in Wall. Gat. (1847) n. 8042 A! - *S. sp.* Thwaites "coll. (1857-1858) n. 3509! — *Dittelasmasp.* Hook. f. in Benth. et Hook. f. Gen. Pl. 1.1. (1862) 395; Koorders, Plantkund. Woordenb. (1894) 31, - non Vidal, Synops. (1883) 95, 349, 372, 374, cfr. *Erioglossum rubiginosum*. — *Cupania oblongifolia* (non Mart.) Turcz. in Bull. Mosc. XXXVI. 1. (1863) 587, coll. Zollinger it. sec. n. 3648/2!, cf. Radlk. Sap. Holl.-Ind. (1877) 20 (90), et in Sitzungsber. bayer. Akad. VIII. (1878) 259 annot., IX. (1978) 520 n. 180; Walp. Ann. VII. 4. (1869) 626. - *Dittelasma rarak* Hiern in Hook. f. Fl. Brit. Ind. I. (1875) 672!; Kurz in Journ. As. Soc. Beng. XLIV. 2. (1875) 184, et in Forest Fl. Brit. Burma I. (1877) 297; Baker, Fl. Maurit. et Seychell. (1877) 571; Boerlage, Handleid. Fl. Nederl. Ind. I. (1890) 259; Trimen, Gatal. in Journ. Geyl. Branch R. As. Soc. IX. (1885) 18 et Hand-Book Fl. Geylon I. (1893) 300; King, Mater, etc. in Journ. As. Soc. Beng. LXV. 2. (1896) 4241; H. Lecomte, Fl. Ind.-Chin. I. (1912) 1018; — non F.-Villar (1880), cfr. *Erioglossum rubiginosum*. — *Pancovia* sp., non Willd., BaiU. Hist. Pl. V. (1874) 359 et 414. - Vulgo: Rarak Javanis t. Rumph. 1. c. (ut *Otophora fruticosa* quoque t. Bl.), v. Jarak v. Larak s. Ldrdk t. Bl. 1. c; Lërfik v. Lërak t. Koorders, Plantkund. Woordenb. (1894) 31, etiam Klërëk et Wërak javanice, iUrëk malaice t. Koord. et Val. 1. c. (1903) 152, Pohon Rerek t. Backer 1. c. (1907), Kelerek, Bhungkana lerek et Buwah sabun t. Koord. 1. c. (1912); Räk-räk t. Noronha 1. c; Rarak-boom Amboiransib. t. Fr. Valentyn, Oud en nieuw Oost-Indien III. (1726) 194; Ostindische Zeepboom Houttuyn, Natuurl. Hist. II. 2. (1774) 314 (ed. germ. I. [1777] 499) c. ic. fruct. t. VIII, A (Ostind. Seifenbaum); Penela t. Trimen (cfr. *S. trifoliat.*); Tandikir in Sumatrae ora occid. fid. Enc. Nederl. Ind. II. (1899) 404 (sub Lerak), cf. O. May, Ghem.-pharm. Untersuch. d. Friichte v. *Sap. Rarak* (Diss., Strassb. 1905) 11; Lamoerañ malaice in Sumatrae or. prov. Palembang ex Heyne, Nuttige Plant. Nederl. Ind. III. (1917) 149; Gay bdn hdn in Gochinch. t. Lour.-l.e. (nomen t. Bon a *Sap. mukorossi* auditum); fructus audiunt Zeep-korrels belgice t. Rumph. 1. c, indische Zeepbessen t. Greshoff 1. c; Boa-Sabon malaice t. Rumph. 1. c, boa larak vel boa langit aut boa tsaboun t. Bl. 1. c, boea sabon et boea langit t. Greshoff 1. c, boewa-saboen, boewa-langh'it t. Filet, Woordenb. Ed. II. (1888) 65, 66. — Vix hue et Alakaak vel Gogo, Philippensium t. Noronha, cf. Bl. 1. c. (1847) 93 (ubi *Adenantha Gogo* Blanco citatur), Vidal Revis. (1886) 119 (cui Gogo = *Entada scandens* Benth.) et E. H. Gane, Note on Gogo, a Philippine Island Drug (tnincus *Entadae scandentis* Benth., saponino foetus) in American Druggist

and Pharmaceutical Record, 1898 (excerpt, in Bot. Centralbl., Beihefte IX. [1900] 378); vix quoque Guisian s. Guisihan et Duca ap. Blanco a F.-Villar et Vidal 1l. cc. hue recensita, cfr. *Erioglossum rubiginosum* Bl. — Arbor magna, trunco non adeo crasso tereti, cortice arete adhaerente tenaci glabro laevi ochraceo (BL); rami teretes, striati, juveniles tomento pulverulento flavo-fuscescente induti, dein glabrescentes, cortice flavescente vel rubiginoso; folia 7—12-juga, rhachi tereti saepius rufescente leviter bisulcata glabrata; foliola opposita vel alterna, gracilia, anguste oblonga subaequilatera vel ovato-lanceolata inaequilatera interdum subfalcata, acuta, immo acutissima, interdum acuminata, rarius obtusiuscula, basi subacuta petiolulis plerumque longiusculis insidentia, membranacea vel chartacea, nervo mediano subrubente, nervis lateralibus numerosis approximatis subtilibus patentibus vix prominulis, subtiliter reticulato-venosa, supra glabra nitida, subtus glabriuscula vel rarius puberula opaca, saturate viridia, glandulis stipitato-clavatis (crebris foveolis incumbentibus) adpersa; panicula terminalis, sat ampla, folia vix superans, ramosissima, multiflora, rhachi ramisque divaricatis thjrsoideis sulcato-striatis fulvo-tomentosis dense cymulas (dichasia vel polychasia) stipitatas gerentibus; alabastra majuscula, ovalia, pilis fulvis adpresse sericeo-tomentosa, breviter pedicellata; flores sat magni, symmetrici; sepala 5, subcoriacea, 2 exteriora (lateralia 1. et 2.) minora, ovalia, 2 interiora (3. et 5.) majora, oblonga, superius (4.) mediocre ellipticum, omnia extus adpresse fulvo-sericeo-tomentosa, margine glanduloso-ciliolata; petala 4, sepalis paullo longiora, lanceolata, extus dense adpresse fulvo-pilosa, intus secundum marginem dense pilosa, supra unguem brevem squama magna tenui breviter biloba lobis margineque villosissima aucta; discus 1-lateralis, semilunaris, glaber; stamina 8, subexserta, filamenta filiiformia, praeter apices ipsos dense setuloso-hirsuta, antherae parvae, ovaes, glabrae; germen trigono-globosum, 3(—4)-loculare, glabrum, in stylum brevem rectiusculum terminatum; fructus plerumque abortu 1-coccus, cocci magni, globosi, ± carinati, glabri, aurantiaci, sicci atrati, nitidi, piano commissurali obovato mediocri laevi vel interdum, minus conspicue oblique costato-striato, pericarpio crassiore.

Arbor 50—60-pedalis. Rami 5—8 mm crassi. Folia petiolo 5—10 cm longo adjecto 25—40 cm longa; foliola 7—12 cm longa, 1,5—3 cm lata, rarius latiora, petiolulis plerumque 4—5 mm longis. Panicula 15—30 cm longa, rhachi circ. 4 mm crassa, cymularum stipites 1,5—2 mm longi. Alabastra 4 mm longa, 3 mm lata. Fructus cocci diametro circ. 2,5 cm.

In Burma, Malacca, Gochinchina, Laos, Formosa et in Archipelagi indici insulis Java, Bangka et Lombok (forsan et in Madura) indigena, introducta in Amboina, (vix in Philippinis), praeterea introducta in India, Zeylaniam et insulis Mascarensibus et Seychellarum: In Burma et Malacca: a Roxburgh, resp. F. Carey, a. 1810 e Pegu introducta in Hort. Galcutt.! (cf. supra *S. polyphyU.* Roxb. et infra specim. culta); Griffith! (Malacca, Hb. Kew. n. 1008); Maingay n. 434! (Hb. Kew., Lugd.-Bat.); Parish (Tenasserim, Moulmein district t. Kurz 1. c. 1875); Kurz (rather rare in the tropical forests of the Pegu Yomah, in the Gyo Gyo valley, Kambala Toung 1. c. 1877); J. G. Prager! (Fl. of Upper Burma, Koni, m. Maj. 1888, c. fr. juv.; ex Hb. Galcutt. comm. c. Hb. DC); — in Gochinchina: Loureiro (agrestis cultusquel. c); — in Laos: Thorel (Kemmarath, ex H. Lee. 1. c); id. n. 2444! (Exp&d. du Mékong, a. 1866-1868; steril.; Hb. Berol., comm. ex Hb. Paris.); — in Formosa; Warburg n. 10266! (Sildcap, Wald v. Kaukan, m. Febr. 1888, steril.; Hb. Berol.); — in Archipelago indico: in Java: Rumphius (sponte in planis silvis 1. c); Lahaye! (a. 1791—1797; Hb. Prodr., folium tantum, specimen originarium, de quo DG. 1. c: Folium unicum habeo in Java a cl. Lahaye lectum); Leschenault! (circ. 1804; Hb. Paris.); Lect. ignot. n. 156! (Semarang, folium, Hb. Deless.); Horsfield! (Hb. Kew.); Hoffmannsegg! (flor.; Hb. Berol.); Blume! (flor. et fr. adjecti, ex Hb. Bl. comm. c. Hb. Berol.; fol. et fruct. in Hb. Monac); Kollmann! (flor.; Hb. Boiy.); Zollinger it. secund. n. 3648/2! (flor.; Hb. DG., Boiss., Berol., Turcz. *Cupania oblongifolia* Turcz.

I.e.); de Vriese et Teijsmann! (fruct.; Hb. Lugd.-Bat.); Koorders! (in prov. Banjumas!, Kedu, Semarang!, Madiun!, Kediril, Probolinggo!, Besuki!, altit. 500—1500 m, a. 1888—1900, fl. et fr.; comm. ex Hb. Bogor.); in Bangka: Kurz (op den Menoembing 1. c. 1864); Lindgreen (in de bosschen om Muntok, Kurz ibid.); in Madura: Perrottet (si recte hue ducitur *S. maduriens.* Perr.); in Lombok: Elbert n. 1727! (Rindjani-Vulkangebirge, Ostseite, Pussuk-Berg, alt. 1450—1650 m, m. Jun. 1909, steril.); in Amboina: Valentyn et Rumphius (introducenda e Java 11. cc. 1726, 1741); — in Philippinis vix re vera obvia est: errore, ut videtur, indicatur a Noronha sub nom. Gogo (cf. supra nom. vulg. c. nota Blumei etc.), dein (duce Noronha?) a Miq. I.e. 1859, denique a F.-Villar (1880) et Vidal (1883) quoad *Sap. Saponaria* Blanco et *Sap. Guisian* Blanco, qui verisimillime *Erioglossum rubiginosum* Bl., quod conferendum; nulla in herbariis exstant specimina e Philippinis; — in India et Zeylania, probabiliter introducta t. Thwaites, Trimen, Hiern: Hamilton, i. e. Wallich Gat. 8042A! (Hb. Hamilton e mont. Morang, in Nepal orient.); Thwaites n. 3509! (Ceylon an indigena?; from a native garden, ex Trimen 1. c; flor.; Hb. var.); Trimen (ibid., arbores paucae ad Palagma, Uva, verisimiliter introductae, 1. c); — in ins. Mauritius, culta et forsitan subsponsanea, cf. infra specim. culta; — in insulis Seychellarum, introducta t. Hiern et Baker: Home n. 410! (Mahé, west coast on the shore, m. Sept. 1875, fruct. juv.; Hb. Kew.), id. n. 447! (Seychelles 1874, steril.; Hb. Kew.).

Culta in Hort. Calcutt.! (e Pegu introd. t. Roxb. 1. c. 1814; speciminibus supra sub *S. polyph.* Roxb. et *S. deterg.*, non Roxb., Wall, jam indicatis i. e. Kamphövener n. 1570!, Wall. Cat. n. 8042 B! et Griff, n. 1006/4! accedit specim. florig. illis simillimum ex Hort. Calc. c. Lindley comm. et a. 1835 in Hb. DC. translatum!); in Hort. Bogor.; *S. indicus* Reinw. 1. c. 1823; Hb. Bog. n. 14529! (flor.); in Java: Warburg n. 4512!. (Djok dja, culta, m. Jan. 1887, steril.; Hb. Berol.); in Hort. Mauritiano: Bory! (circ. 1801 — 1802, fruct.; Hb. Del. ess.); id.?! (fruct., ex Hb. Paris, comm. a. 1820 c. Kunth, Hb. Berol.); L. Cl. Richard! (steril.; Hb. Deless.); id.?, Hb. Willd. n. 7748! (fol. tantum, specimini antecedent simillimum, a Willd. inscriptum »*Sapindus* ex antillis«, quod certe erroneum, nisi hortus quidam Antillarum intelligendus est); in Hort. Lugd.-Bat.: *S. angustifol.* Bl.! 1. c. 1847 (folia tantum in Hb. v. Royen, nunc Lugd.-Bat.); in Hort. Lindeniano et Ultra-Trajectino: *S. indicus* Lind. 1. c. 1874 (folia; Hb. Rhenotraj.); in Hort. Neapol.: *S. indicus* Pasq.! 1. c. 1867 (vidi vivam).

12. *S. Delavayi* (Franchet) Radlk. in Sitzungsber. bayer. Akad. XX. (1890) 233 annot. et in Engl. u. Prantl, Nat. Pflanzenfam. III. 5. (1895) 315. — *Pancovia Delavayi* Franchet, Pl. Yunnanens. in Bull. Soc. bot. France XXXIII. (1886) 461, coll. Delavay n. 734!; id. Pl. Delavayanae II. (1889) 141; Greshoff in Meded. Planjent. XXIX. (1900) 38. — (?) *Zollingeria* sp. Franchet ex Pierre in Bull. Soc. Linn. Paris Nr. 80 (Nov. 1886) 634, coll. Delavay (sphalm. Delavez). — Vulgo: Tie-ouasse-tze-chou incol. t. Franch. 1. c; Yunnan-zeepnoten Gresh. 1. c. — Arbor excelsa; rami teretes, sulcati, flavescenti-puberuli, denique glabrescentes, cortice cinerascete; folia 4—7-juga, rhachi tereti striata puberula; foliola opposita vel alterna, ovata, acuta vel breviter acuminata, basi (praesertim inferiora) inaequilatera (latere interiore longiore et latiore) petiolulis longiusculis pubescentibus insidentia, membranaceo-chartacea, nervis lateralibus sat approximatis oblique patulis praesertim subtus prominulis, arctiuscule subtiliter reticulato-venosa, supra praeter nervum medianum puberulum glabriuscula canescenti-viridia, subtus laxe puberula pallidiora, glandulis clavatis foveolis incumbentibus ornata; panicula terminalis, pyramidalis, gracilior, ramis brevioribus divaricatis rhachique dense flavescenti-pubescentibus sat laxe cymulas per breviter stipitatas gerentibus; alabastra subglobosa, glabriuscula, longiuscule pedicellata, pedicellis filiformibus; flores sat magni, symmetrici, albi; sepala 5, subpetaloidea, 2 exteriora (lateralia 1. et 2.) minora, ovalia, 2 inferiora (3. et 5.) majora, oblonga, superius (4.) mediocre ellipticum, omnia extus basi puberula, margine glanduloso-ciliolata; petala

4, sepala subduplo superantia, anguste lanceolata, glabriuscula, margine ciliolata, intus basi squama angusta laminam dimidiam subaequante villosissima apice biloba, lobis dorso minutim cristatis, aucta; discus 1-lateralis, semilunaris, glaber; stamina 8, petala aequantia, filamenta filiformia, praeter apices ipsos villosa, antherae parvae, late ellipticae, glabrae; germen obcordato-trilobatum, 3-loculare, glabrum, in stylum brevem terminatum; fructus abortu plerumque 1-coccus, coccis globosis glabris.

Arbor circ. 10 m alta, trunco circ. 0,5 m crasso (t. Schneider in sched. n. 1104). Rami circ. 3 mm crassi. Folia petiolo 6—7 cm longo adjecto 25—32 cm longa; foliola 6—9 cm longa, 2,5—3,5 cm lata, petiolulis 4—8 mm longis. Panicula circ. 14 cm longa, ramis 2—4 cm longis, rhachi ad 2 mm crassa; cymularum stipites vix 1 mm longi. Alabastra diametro ad 3 mm, pedicelli 2 mm longi. Fructus cocci diametro 15—18 mm (t. Franchet l. c. 1889, ubi fructus ad lavanda lintea t. Delavay servire dicuntur).

In Ghinae prov. Yun-nan: Delavay n. 7341 (in silvis ad Tapin-tze, m. Maj. 1884, flor.; ex Hb. Pierre comm. m. Mart. 1891, sine fructu); E. E. Maire n. 1980! (in vicinitate Yun-nan-sen, a. 1906, fl.; Hb. Berol., ut et seqq.); G. Bonati, Plantes de Chine (Yunnan) n. 7183, sêrie B! (vallon à Test de Tong Tchouan, leg. Maire m. Maj. 1910, fl.); ead. coll. n. 7203, sêrie B! (rochers de Ma hong, alt. 3000 m, leg. Maire, m. Maj. 1910, fr. juv.); Pater Simbon Ten n. 154! (circa Pe Yen Tsin in Yunnan bor.-occid.); Cam. Schneider n. 1104! (Szechuan austr., Chien ch'ang, prope Hohsi, alt. circ. 1500 m, m. Maj. 1914, fl.), n. 1438! (Szechuan austr., in valle prope Tatiasko, reg. Kuapie, alt. circ. 2300 m, m. Maj. 1914, fl.); Handel-Mazzetti n. 1256! (ead. prov., prope urbem Ning yiien, m. Apr. 1914, fl.; Hb. Vindob., ut et seqq.); id. n. 6322! (prov. Yunnan, infra oppidum Beyendjing, alt. 1700—1900 m, m. Maj. 1915, fl.); id. n. 10109! (ead. prov., ad orientem urbis Yiinnanfu, alt. 1550—1800 m, m. Jun. 1917, fl.); id. n. 13006! (ead. prov., prope urbem Yungbai, alt. 2050 m, m. Oct. 1916, fr.).

13. *S. tomentosus* Kurz in Journ. As. Soc. Beng. XLIV. 2. (1875) 185, 186, 204!; Radlk. in Serj. Suppl. (1886) 49 annot., in Sitzungsber. bayer. Akad. XX. (1890) 233 annot., et in Engl. u. Prantl, Nat. Pflanzenfam. III. 5. (1895) 315. — *Pancovia tomentosa* Kurz, Forest Fl. Brit. Burma I. (1877) 296. — Arbor?; rami teretes, sulcato-striati, flavescenti-pubescentes, cortice pallido lenticelloso-punctato; folia 3—5-juga, rhachi tereti bisulcata laxe flavescenti-tomentosa; foliola opposita vel alterna, oblique ovato-oblonga, acuta vel obtusiuscula, basi rotundata vel interdum (in inferioribus) subcordata petiolulis longiusculis crassioribus tomentosus insidentia, subchartacea, nervis lateralibus sat approximatis oblique patentibus praesertim subtus prominentibus pallidis, arctiuscule subtiliter reticulato-venosa, supra praeter nervos glabra, subtus tomento brevi molli induta, opaca, pallide viridia, glandulis stipitato-clavatis crebris foveolis incumbentibus ornata, cellulis epidermidis paginae superioris valde convexas; panicula terminalis, breviter tomentosa (Kurz); flores sat magni, symmetrici, ut in antecedent; fructus plerumque abortu 1-coccus, coccis subglobosis a dorso subcompressis basi ultra insertionem conspicue productis conspicue carinatis, piano commissurali (inde subcentrali) obovato parvo laevi.

Rami circ. 8 mm crassi. Folia petiolo circ. 12 cm longo adjecto ad 45 cm longa, foliola 12—16 cm longa, 5—6,5 cm lata, petiolulis 8—10 mm longis. Panicula plus quam 20 cm longa (fragmentaria tantum visa). Fructus 2,6 cm altus, cocci 2,5 cm lati, 1,8 cm crassi, piano commissurali 8 mm longo, 7 mm lato.

In Burma et in Ghinae prov. Yunnan: In Burma: J. Anderson! (Ava, Khakhyen Hills, Mynela, m. Maj., flor.; Hb. Gale; cf. Kurz ll. cc); — in Yunnan: Henry n. 10819! (fruct.; Hb. Berol.); Cam. Schneider n. 2643! (in **reg.** Tengytieh, alt. circ. 1800 m, m. Oct. 1914, fr.; Hb. Berol.).

Accedit species mihi ignota:

14. *S. Cavaleriel* L6veillè, Fl. Kouy-Tchéou in Bull. Gèogr. Bot. XXV. (1914-1915) 383.

In China: Kweitschou.

Species dubiae vel excludendae.

1. *S. anamensis* Pierre, Fl. forest. Cochinch. (1894) t. 317 in synonym. = *Pavieasia anamensis* Pierre.
2. *S. angustifolius* Wall. ed. Voigt, Hort. suburb. Calcut. (1845) 94: »Khassya Hills; introduced 1829.« — Omnino ignota!
3. *S. guineensis* Don (1831). — vix = *Aphania senegalensis* Radlk. [ex Hook, f.]?? = *Deinbollia pinnata* Schum. et Thonn.?, cf. Radlk. in Sitzungsber. bayer. Akad. VIII. (1878) 358.
4. »*S. latifolius*?« R. Schomb. Report Bot. Gard. (Adelaide 1879) 19 = ?*laurifolius* (sphalm.) Bl.? ex Hort. Bog. com.? et inde *Hebecoccus ferrugineus* Radlk.? = ?? forma *S. utilis* Trab.
5. *S. ?siamensis* Radlk. in Kew Bull. (1912) 265 = *Lepisanthes siamensis* Radlk.

Species ex ordine exclusae.

(Gf. Radlk. in Sitzungsber. bayer. Akad. VIII. [1878] 298—305).

1. *S. acutus* Wall. Gat. 8096, non Roxb. (1847) = *Engelhardtia* sp. (t. Hiern).
2. *S. fruticosus caudice et ramis spinosissimis* etc. P. Browne, Hist. Jam. (1756) 207 t. 20 f. 2 = *Fagara spinosa* (L.) Kr. et Urb.
3.)>*S. (Electra) Galeottii* Gray« Urbina, Catal. Pl. Mexic. (1897) 45, Pringle n.4896 = *Coreopsis Galeottii* Hems], in Biol. Gentr.-Amer. Bot. II. (1881—1882) 195 c. syn. *Electra Galeottii* A. Gray, Pl. Wright. Texan. I. (1852) 110, coll. Galeotti n. 2086, inde *Electra* DC. = *Coreopsis* ab Urbina confusa cum *Electra* Noronh. = *Sapindus*. — »*S. Galeotti* Gray« Rose in Contrib. U. S. Nat. Herb. V. 4. (1899) 236 inter plantas saponis vice adhibitae = *Coreopsis Galeottii* Hemsl. c. f. anteced.
4. *S. glabrescens* W. Hook, et Am. (1841) = *Guarea fulva* Tr. et Pl.)3. *mexicanan* a C. DC.!, cf. Radlk. in Sitzungsber. bayer. Akad. IX. (1879) 576.
5. *S. lepidotus* Wall. Gat. n. 8036 (1847) = *Aglaiia Wallichii* Hiern.
6. *S. microcarpus* Wight et Arn. Prodr. I. (1834) 112, Gat. n. 554. = *Meliosma Arnottiana* Walp.
7. *S. multijugus* Wall. Cat. n. 8099 (1847) = (?)*Chisocheton paniculatus* Hiern:
8. *S. simplicifolius* Don (1831) = ?*Sorindeia juglandifolia* Planch. (Oliv. Fl. trop. Afr. I. 440; Engler, Monogr. Anacard. p. 302).
9. *S. spinosus* L. Sp. Pl. Ed. 2. (1762) 526 = *Fagara spinosa* (L.) Kr. et Urb.
10. *S. surinamensis* Poir. in Lam. Enc. VI. (1804) 665, coll. Surian n. 827, Hb. Juss. 11387 = *Picraena excelsa* Lindl.!: cf. Radlk. in Sitzungsber. bayer. Akad. VIII. (1878) 365.
11. *S. travancorensis* Wall. Gat. n. 8047 (1847) = *Canarium commune* L. (t. Hiern)!
12. *S. trifolius*, non L., Turczan. in Bull. Mosc. XXXVI. 1. (1863) 586, coll. Schlim n. 133 = *Billia columbiana* Planch, et Lindl.!: cf. Radlk. in Sitzungsber. bayer. Akad. IX. (1879) 580.
13. *S. sp.?* Haigilipp [vulgo?] arbre de Kordofan ex Bernardin, Classif. de 40 savons v6g6taux (1875) 10 (*Hcorce* et fruits usites comme savon«) = quid? [*Balanites aegyptiaca* ?].
14. *S. sp. nov.* »aff. *S. attenuato* Wall.«, Diels Fl. Central China in Engler's Bot. Jahrb. XXIX. 2. (1900) 450, coll. A. v. Rosthorn n. 364 = *Engelhardtia* sp.!
15. *S. sp.* Hughes, Nat. Hist. Barbados (1750) 149 = *Gouania domingensis* L.?: cf. Radlk. in Sitzungsber. bayer. Akad. VIII. (1878) 373 et Monogr. Paull. (1896) 340.
16. *S. sp.* Miq. in sched., coll. Hostm. et Kappler n. 604a ed. Hohenack. (1844) = *Tapirira guianensis* Aubl.
17. *S. sp.?* Moritzi (1846), coll. Zollinger n. 1314 = *Dialium* sp. (?)!
18. *S.?* PL mexicanae Purpusianae n. 6285! [det. Brandegee?], Vera Cruz, Baños del Carrizal, B. Aug. 1912, sterile (Hb. Berol.) = *Picrasma* sp. (nov.?).

18. *Deinbollia* Schumach. et Thonn.

Deinbollia Schumach. et Thonn. Beskr. Guin. Pl. in K. Danske Vid. Selsk. Afhandl. IV. (1829) 16 n. 157 (seors. impr. 242, a. 1827 ex Hiern in Gat. Welw. Pl. 169); Guillem. in Férussac Bull. Sc. nat. et Géol. XXIV. (1831) 323; Meissner, Gen. PL (1836-1843) 78 (56, inter *Terebinthac.* Trib. VI. *Connarac.* Addend. 346 inter *Sapindac.*); Endl. Gen. (1836—1840) Suppl. I. 1424 n. 5638/1 (*DeinboeUia*«, *Sapindacear.* generib. penitus dubiis adjecta), Suppl. II. (1842) 85 (inter genera anomala) et Suppl. IV. Pars III. (1847) 79 (inter gen. penit. dub.); Benth. et Hook, f. Gen. I. 1. (1862) 405 n. 45, charact. emendand.; Baker in Oliv. Fl. trop. Afr. I. (1868) 431; Baillon, Hut. PL V. (1874) 307 n. 10 emendand.; Radlk. in Sitzungsber. bayer. Akad. VIII. (1878) 247 etc., 369, XX. (1890) 233, 283, et in Engl. u. Prantl, Nat. Pflanzenfam. III. 5. (1895) 315. — *Prostea* Gamb. in Diet, class. d'Hist. nat. XV. (Mai 1829) 244 (sub *Schmidelia*) et in Mem. Mus. d'Hist. nat. XVIII. (1829, seors. impr. 1831 ex Pritz. Thes. Ed. 2 sub Monogr. 440) 25 1.1 f. C (perperam *Pometiae* Forst. synonym. habetur in Ind. Kew. III. [1894] 603 et 630, cfr. *D. pinnata*); Don, Gen. Syst. I. (1831) 655 et 664; Spreng. Gen. II. (1831) Addend. 795; Meissner, Gen. (1836-1843) 53 (38); Endl. Gen. (1836—1840) 1069 n.5608 (patria sphalmate »Guiana« dicta, loco »Guinea«), Suppl. IV. Pars III. (1847) 78. — *Ornitrophe* sp., *Schmidelia* sp., *TaJLisia?* sp., *Pomeiia* sp., *Sapindus* sp., *Rhus* sp., *Hippobromus* sp., *Simaba* sp., *Hemigyrosa* sp. aut. var., cf. lit. spec.

Flores spurie polygami, regulares, inter majores. Sepala 5, orbicularia, valde concava, late imbricata, coriacea, basi incrassata, exteriora 2 minora, omnia nunc glabra, nunc tomento sericeo chryseo vel fusco induta, turn vero interioribus plerumque (*D. molliuscula* et *Hierniana* exceptis), rarius exterioribus quoque, ante marginem ciliatum zona glabra petaloidea cinctis, intus glabra, denique decidua. Petala 5, erecta sepala superantia, elliptico- vel oblongo-spathulata, in unguem latum subaequilongum (in alabastro vera brevissimum) attenuata, margine pilis complanatis noduloso-asperis dense albo-villosa, extus medio dorso vel basi tantum vel omnino non pilosa, intus glabra et supra unguem squama bervi lata ± profunde biloba raro integra deflexa **albo-villosa aucta. Discus completus, crateriformis, margine elevato tenui acuto aequali vel subsinuato stamina arete amplectente et in fasciculum colligente, glaber, vix unquam** (cf. *D. borbonica* forma *trichogyra*) extus pilosus. Stamina 12—30, rarius 8—10 (*D. laurifolia* et *maxima*), circa pistillum vel pistilli rudimentum intra discum inserta, jam in alabastro erecta, petala paullulum superantia, subexserta (floris \$ breviora); filamenta filiformia, supra basin, (intra discum sitam) albo-villosa; antherae ovato-oblongae vel subuliformes, erectae, introrsae, dorso supra basin excisam affixae; pollinis granula trigono-placentiformia, triporosa. Germen (floris £ rudimentarium) profunde obcordato-2—3-coccum, 2—3-loculare, hirsuto-tomentosum vel pilis setaceis singulis adpersum vel omnino glabrum; stylus inter coccus insertus, subulatus vel filiformis, longitudine petalorum, saepius spiraliter tortus, sulcis stigmatosis suturalibus ad tertiam inferiorem partem decurrentibus notatus; gemmulae in loculis singulae, campylotropae, apatropae, adscendentes, micropyle extus infera. Fructus deorsum 2—3- vel abortu 1-coccus, coriaceo-baccatus, coccis obovoideis vel subglobosis, basi cohaerentibus vel deorsum productis quasi medio affixis (coccis abortivis appendiculatis), denique a carpophoro perbrevis styli residuis coronato solutis, nunc hirsutis denique glabratis, nunc glabris, pericarpio granuloso-carnoso, came mucoso-pulposa {saepius eduli), extus coriaceo, endocarpio tenuissimo laevi glabro cum saecocarpium parte interiore ab exteriori denique soluto semini arctissime adhaerente immo adiiato arillum mentiente (ab auctoribus revera pro arillo descripto). Semen cocco conforme, testa in aliis (cf. sp. 1—3 et 24) subossea, nigra, strato cellularum exteriori staurenchymatico, ad basin cavitatem exsiccatione ortam (ut in Sapindo) fovens, in aliis (*D. insignia*, *laurifolia*, *obovata*) crassiuscule coriacea nigro-fusca, in* aliis tenuiter coriacea vel membranacea (*D. pinnata*, *calophylla*, *unguiculata*) pallide subfusca

parenchymatica cellulis sclerenchymaticis immixtis — (specierum reliquarum non visa). Embryo curvatus, notorrhizus; cotyledones crassae, plano-convexae, transversim superpositae, interior interdum transversim conduplicata ab exteriori curvata oblecta, nunc carnosae, albidae, oleo, aleuro et amylo parco (*D. ohlongifolia*) vel sat copioso (*D. xanthocarpa*) foetae. nunc induratae, fusco-olivaceae (*D. pinnata*), amyli granulis parvis farctae; radícula brevis, dorsalis, cum cotyledonum petiolis plica testae basilari excepta.

Arbores vel frutices erecti, subramosi, glabri vel ramulis petiolis thyrsisque suffernigineo-tomentellis. Folia sparsa, abrupte pinnata, 2—oo-juga, petiolata, in 1 tantum specie (*D. marginata*) sessilia, exstipulata; foliola subopposita vel alterna, breviter petiolulata vel subsessilia, oblonga vel sublancoolata cuneatave, interdum large elliptica, inferiora minora, acutiuscula vel acuminata, integerrima, penninervia, subchartacea, glabra vel subtus pilis setaceis adpersa, nec non utrinque glandulis in epidermidis foveolas subcylindricas ± immersis ornata, in nonnullis pallide viridia vel livescentia, crystallorum concretionibus persita, cellulis secretoriis destituta, epidermide in plerisque mucigera (non mucigera in *D. Elliotii*, *nyikensi*, *Hierniana*, *in&igni*, *adusta*, *kilimandscharica*, *obovata*). Thyrsi axillares, interdum ± supraaxillares vel terminales eramosi vel ramis paucis pluribusve interdum iterum ramosis in paniculas sat amplas conversi, rhachi ramisque sufferrugineo-tomentosis glabrisve laxius densiusve dichasia nunc stipitata nunc subsessilia pluriflora (floribus subglomeratis) gerentibus; bractea bracteolaeque parvae, subulatae, tomentosae vel puberulae; pedicelli breves, articulati. Alabastra globosa, tomento sericeo chryseo vel fusco-brunneo interdum minuto induta vel subglabra, magnitudine nunc piperis nunc cannabis nunc sinapis grana aequantia. Flores expansi 3—8 mm longi, albi. Fructus cocci magnitudine cerasorum minorum; specierum complurium edules, aurantiaci vel rubri.

Species 34 + 4 mihi ignotae per Africam tropicam et australem insulasque adjacentes dispersae, pleraeque imperfecte cognitae.

Genus fructu coccato baccato et seminis exarillati testa saepius subossea arete affine generi *Sapindus*, cujus in Africa vicarium viget, sed saponino destitutum.

Conspectus specierum.

- A. Flores majores (aperti longitudine 5 mm superantes, alabastra piperis grana aequantia vel superantia).
- a. Alabastra vestita (sepala interiora tantum ante marginem ciliatum glabra ibique petaloidea rarius tota pilosa, cf. *D. molliuscula*).
 - aa. Alabastra adpresse pallide subargenteo- vel chryseo-tomentosa; folia subsessilia, rhachi marginata, circ. 8-juga; foliola oblonga, subsessilia (sp. nyasana). 1. *D. marginata*.
 - bb. Alabastra chryseo- vel fulvo-sericeo-tomentosa; folia insigniter petiolata.
 - a. Fructus cocci obovoidei (hirsuti, denique glabrati); seminis testa subossea, extus staurenychymatica.
 - aa. Foliorum rhachis nuda.
 1. Foliola ovalia vel oblonga, utrinque obtusa vel subacuta, subsessilia (sp. capensis-mozambicensis). 2. *D. oblongifolia*.
 2. Foliola late elliptica vel suboblonga, utrinque obtusa vel subacuta, subtus plerumque purpurascens-subfusca, petiolulis incrassatis suffulta (sp. borb.-zanzib.-somalensis) 3. *D. borbonica*.
 - fifi. Foliorum rhachis marginata; foliola ex oblongo subcuneata, basi inaequali obtusa petiolulis

- perbrevibus insidentia (sp. mozambicensi-zambesiaca). 4. *D. xanthocarpa*.
- p. Fructus cocci globosi (sericeo-tomentosi, denique glabrati).
- aa. Foliola elliptica vel oblonga, subtus ad nervos pilis setaceis laxè adpersa; seminis testa tenuiter coriacea, pallide subfusca (sp. guineensis). 5. *D. pinnata*.
- PP. Foliola ovato-oblonga, acuta, subtus ad nervos dense (inter nervos laxè) flavide setoso-pilosa, epidermide non mucigera (sp. guineensis) 6. *D. Elliotii*.
- yy. Foliola lanceolato-oblonga, subtus (praesertim ad nervos) laxè pilosula, nervis lateralibus elongatis erect is insignia, epidermide non mucigera (sp. Afr. britann. centr.). 7. *D. nyikensis*.
- y. Fructus cocci ex ovoideo subglobosi (lanato-tomentosi); sepala exteriora et interiora tota pilosa; foliola late oblonga, subtus molliuscula (sp. Afr. trop. or.). 8. *D. molliuscula*.
- cc. Alabastra adpresse fusco-tomentosa; folia manifeste petiolata.
- a. Foliola aequilatera.
- aa. Foliola oblonga, basi angustata, conspicue petiolulata, pallide viridia, epidermide non mucigera (sp. angolensis). 9. *D. Hierniana*.
- PP. Foliola oblonga, utrinque subacuta, petiolulata, livescenti-viridia, epidermide sparsim mucigera (sp. congoensis). 10. *D. Laurentii*.
- yy. Foliola ex oblongo cuneata, subsessilia, saturate viridia (sp. guineensis). 11. *D. Uptophylla*.
- p. Foliola inaequilatera (latere exteriorè angustiore), basi oblique obtusa, laxè clathrato- et reticulato-venosa, fusco-viridia (sp. guineensis). 12. *D. reticulata*.
- b. Alabastra semitecta (sepala exteriora quoque ante marginem cilia turn glabra ibique petaloidea).
- aa. Flores maximi, sepala praeter marginem pube minuta adpressa viridescenti-chrysea induta; foliola (circ. 13) ampla oblongo-elliptica, livida, epidermide non mucigera; testa seminis coriacea, crassiuscula, nigro-fusca (sp. guineensis). 13. *D. insignia*.
- bb. Flores mediocres; sepala infra medium dorsum (vix ultra) pube adpressa brunnea adpersa.
- a. Foliola folii 5—8-jugi mediocria, ex oblongo subcuneata, cuspidata, sicca subfusca (sp. angolensis) 14. *D. cuspidota*.
- p. Foliola folii 4—5-jugi larga, elliptica, sicca livescentia, epidermide non mucigera (sp. usambarensis) 15. *D. adusta*.
- c. Alabastra glabra (sepala vix ima basi laxè puberula, ciliolata).
- aa. Flores permagni; foliola lanceolato-oblonga, chartacea, subsessilia, obliquenervia, subflavide viridia, epidermide non mucigera (sp. kamerunensis). . . . 16. *D. maerantha*.
- bb. Flores magnitudine mediocri.
- a. Foliolorum nervi procurvi.

- act. Foliola late oblonga, chartacea, conspicue petiolulata, livescentia, utrinque reticulato-venosa (sp. guineensis). 17. *D. grandifolia*.
- pp. Foliola ex oblongo lanceolata, chartacea, sat petiolulata, saturate (lutescenti-)viridia, supra laevia, nitidula, subtus reticulato-venosa (sp. liberica). 18. *D. polyplus*.
- yy. Foliola elliptico-oblonga, submembranacea, pallide viridia, breviter petiolulata, epidermide non mucigera (sp. kilimandscharica) 19. *D. kilimandscharica*.
- p. Foliolorum nervi patentes (recti vel partim quodammodo recurvati); foliola elliptica vel oblonga et subcuneata, acuminata, sat petiolulata (sp. congoensis).....20. *D. patent* *inerv* *is*.
- B. Flores minores (aperti vix 5 mm longi, alabastra cannabis grana aequantia).**
- a. Alabastra pube brevi appressa cana vestita; folia multi (12—18)-juga, foliola oblonga, acuminata (sp. kamerunensis). 21. *D. pycnophylla*.
- b. Alabastra basi (ut et pedicelli) densiuscule, ceterum laxe hispidule cano-puberula.
- aa. Folia 4—6-juga, longe petiolata, petiolo basi incrassato; foliola majora, inferiora ovata, superiora late oblonga, 3-plo longiora quam latiora (sp. kamerunensis). 22. *Z. maxima*.
- bb. Folia 4-juga, longe petiolata; foliola larga, elliptica, superiora quoque vix duplo longiora quam latiora; fructus cocci globosi; testa seminis membranacea, pallide, subfusca (sp. liberiensis). 23. *Z. calophylla*.
- c. Alabastra glabra (sepala vix vel ne, vix pilis singulis adspersa).
- aa. Foliola majora (ad 20 cm longa), membranacea, supra fusco-viridia, subtus pallide subfusca, epidermide valde mucigera.
- a. Foliola folii 3-jugi oblonga, in acumen praelongum attenuata (sp. kamerunensis). 24. *D. macrourea*.
- fi. Foliola folii 4-jugi ex obovato cuneata, in acumen longiusculum protracta (sp. kamerunensis) . 25. *D. dasybotrys*.
- bb. Foliola sat magna (10 cm et ultra longa).
- a. Foliola chartacea.
- aa. Foliola folii 5—6-jugi oblongo-lanceolata, superiora subcuneata, acuminata (sp. guineensis) . 26. *D. cuneifolia*.
- PP. Foliola folii 3-jugi elliptica vel superiora ex elliptico cuneata, acuminata, nervis lateralibus utrinque circ, 5 distantibus procurvis; seminis testa membranacea, tenuissima, pallide subfusca (sp. guineensis). 27. *D. unguiculata*.
- yy. Foliola circ. 9, inferiora alterna, oblongo-lanceolata, superiora ex obovato-oblongo sensim longe cuneata, acuminata, nervis lateralibus utrinque circ. 4 remotis oblique erectis (sp. guineensis). 28. *D. stenobotrys*.

- /? Folia 4—5-juga, foliola coriacea (subtus prominenter reticulato-venosa) lanceolata; inflorescentiae abbreviatae densiflorae (sp. guineensis)... 29. *D. brachybotrys*.
- cc. Foliola parva (8 cm vix excedentia).
- a. Folia 5—7-juga, foliola ovalia vel oblonga, acuta vel subacuminata; fructus 3-coccus, coccis ellipsoideis parce setulosis dein glabratis; seminis testa coriacea, crassiuscula, nigro-fusca (sp. congoensis) 30. *Z. laurifoli**.
- fi. Folia 2—5-juga, foliola obovata vel suboblonga, abrupte acuminata, epidermide non mucigera; fructus 2—3-coccus, coccis obovoideis glabratis; seminis testa coriacea, crassiuscula, nigro-fusca, extus breviter staurenychymatica (sp. congoensis). . . . 31. *D. obovata*.
- G. Flores minimi (aperti vix 3 mm longi, alabastra sinapis grana vix aequantia, subglabra).
- a. Folia 7-juga, foliola parva, ex obovato oblonga, acuta vel subacuminata (sp. madagascariensis). 32. *D. neglecta*.
- b. Folia 2—4-juga, foliola majuscula (ad 14 cm longa) anguste oblonga, obtusiuscula; seminis testa subossea, nigra, extus staurenychymatica (sp. madagascariensis). 33. *D. Pervillei*.
- Hue forsitan inserenda tertia species madagascariensis, cujus tamen flores ignoti sunt, foliis 3—5-jugis, foliolis mediocribus (4—7 cm longis) oblongis, utrinque acutis, margine inaequaliter revolutis indeque subsinuatis, seminis testa Crustacea 34. *D. revoluta*.

Accedunt species mihi non satis notae:

- Ugandensis (*D. pinnatae* affinis?) 35. *D. fulvo-tomentella*.
- Congoensis 36. *D. Pynaertii*.
- Mihi ignotae (ex Ind. Kew. Suppl. VI.) 37. *D. Claessensii*.
D. Giorgii.
D. variabilis.

1. *D. marginata* Radlk. spec. nov. — Arbor mediocris; rami teretes, striati, juveniles sufferrugineo-tomentelli, mox glabrati, lenticelloso-punctati; folia 8-juga, subsessilia, foliolis infimis parvis ima rhacheos basi insertis stipulas aemulantibus, rhachi marginata glabriuscula; foliola oblonga, utrinque subacuta, subsessilia, chartacea, nervis lateralibus obliquis ante marginem anastomosantibus utrinque prominulis, glabra nee nisi subtus in nervis pilis adpersa, opaca, pallide viridia, glandulis microscopicis tumidis parum immersis ornata, epidermide mucigera; paniculae sat amplae, folia subaequant, rhachi ramisque thyrsoides sufferrugineo-tomentellis basi laxius apice densius dichasia breviter stipitata pauciflora gerentibus; alabastra globosa, sericeo-tomentosa; flores majores, breviter pedicellati; sepala 5, exteriora chryseo-tomentosa, interiora argenteo-sericea margine petaloideo praeter ciliis glabra; petala 5, dense albide ciliata, dorso* infra medium ad lineam medianam pilis adpersa, intus supra unguem brevem squama emarginata vel biloba dense ciliata aucta; discus generis; stamina 15—20, villosa; germen 3-coccum, dense hirsutum.

Arbor 30 ped. alta. Rami circ. 5 mm crassi. Folia circ. 30 cm longa; foliola circ. 8 cm longa, 2,5 cm lata, infima parva (2 cm longa, 1 cm lata). Paniculae ad 25 cm longae. Alabastra diametro 5 mm.

In Africa tropica orientali: Sharpe n. 10! (Nyasaland, Zomba, a. 1901, fl.; Hb. Kew.).

2. *D. oblongifolia* (E. Mey.) Radlk. in Sitzungsber. bayer. Akad. VIII. (1878) 299 n. 17, 301 n. 48, 302 n. 67, 362, 369; Schinz (et Junod), Beitr. Afr. Fl. (Neue Folge XII)

in Mém. Hb. Boiss. X. (1900) 48, coll. Junodl — *Rhus oblongifolia* E. Meyer in coll. Drège (circ. 1835) et in Gatal. (Febr. 1838, Apr. 1840) ex W.-Arn. 1. infra c. 148!; Drège, Zwei pflanzengeogr. Docum. in Flora XXVI. 2. (1843), Beigabe p. 156 sub n. 16, p. 159 sub n. 34, p. 216 (inter *Rhus* sp. excl. omissa in Engl. Monogr. Anacard. 1883). — *Sapindus lachnocarpa* Hochst. et *Simaba lachnocarpa* Hochst. in coll. Krauss (1839?) ex Hochst. ipso 1. seq. — *Sapindus capensis* (non Sond., cfr. *Smelophyllum*) Hochst. in Flora XXVI. 1. (1843) 80, coll. Drège! c. syn. Mey. supra indie, et coll. Krauss n. 113! c. syn. Hochst. antecedentib. excl. vero syn. *Pap pea capensis* Eckl. et Zeyh., et in Bot. Zeit. II. (1844) 851, ubi recte excluditur syn. *Pap p. cap.* E. et Z., perperam vero rejiciuntur, quae W.-Arn. protulerat 1. infra c; Walp. Rep. V. (1845 — 1846) 363 excl. eod. syn. — *Prostea* sp. W.-Arn. in Hook. f. Journ. III. (1841) 150 n. 4. — *Prostea oblongifolia* Presl, Bot. Bemerk. in Abh. k. Böhm. Ges. Wiss. Folge V, Bd. III. (1845) 470 (seors. impr. 1844, 40); Walp. Ann. I. (1848 — 1849) 134. — *Hippobromus oblongifolius* Drège, Vergleichen etc. in Linnaea XIX. (1847) 614. — *Sapindus oblongifolius* Sond. in Harv. et Sond. Fl. capens. I. (1859—1860) 240. — Arbor; rami teretes, striati, juveniles sufferrugineo-tomentelli, dein glabrescentes, lenticelloso-punctati; folia 5—7-juga, rhachi teretiuscula utrinque linea elevata notata -glabriuscula, foliola ovalia vel oblonga, utrinque obtusa vel subacuta, subsessilia, chartacea, nervis lateralibus approximatis patentibus subtus prominentibus, glabra, nitidula, pallide viridia, epidermide mucigera; paniculae terminatae vel axillares, sat amplae, fulvo-aurantiaco-tomentellae, rhachi ramisque thyrsoides basi laxius apice densius dichasia subsessilia multifibra subglomeruliformia gerentibus; alabastra globosa, chryseo-sericeo-tomentella; flores inter majores, subsessiles; sepala 5, extus sericeo-tomentella, interiora margine petaloideo (praeter ciliis) glabra; petala 5, pilis longis albis dense ciliata, intus supra unguem squama biloba supra disci marginem deflexa dense villosa aucta; discus generis; stamina 15 — 20, lanoso-villosa; germen 3-loculare, dense hirsutum; fructus 3- vel abortu 2—1-coccus, coccis obovoideis oblique ascendentibus flavescenti-hirsutis denique glabratis; semen obovoideum, testa subossea atrofusca, extus staureñchymatica; embryo notorrhizus, cotyledones crassae, exterior interiorem transverse conduplicatam obtogens, oleo, aleuro et amylo parco foetae.

Rami circ. 1 m crassi. Folia petiolo circ. 6 cm longo adjecto 25—35 cm-longa; foliola 8—12 cm longa, ad 3 cm lata. Paniculae 20—30 cm longae. Alabastra diametro 5 mm. Flores albi (t. Wood). Fructus cocci (sicci) 1,4 cm longi, 9 mm lati.

In Africa austro-orientali a Natal ad oram Mosambicensem (si recte hue ducitur specimen Schlechterianum vix ad *D. xanthocarpam* recensendum): Drège! (a: Omsamculo in dumetosis et silvaticis ad fluminis ostium, m. Mart.; b: Port Natal in silvis, m. Apr., flor.; Hb. Berol., Vindob., Paris.); id. n. 4107! (Hb. E. Meyer, nunc Berol., c. nom. »*Rhus oblongifolia** ab E. Mey. script.); Krauss n. 113! (Natal; fruct.; Hb. Kew., Mus. Brit.); Wood n. 578! (Durban, alt. 150 ped., a. 1884; Hb. DC); O. Kuntze! (Durban, m. Mart. 1894; Hb. Berol.); H. Rudatis n. 1654! (Natal, Distr. Durban, Winkle Spruit, Dünenhfigel, alt. 25 m, m. Apr. 1912, fl.; Hb. Monac); Junod n. 271 (Delagoa Bay a. 1890, flor.; Hb. Schinz); R. Schlechter! (in ora Mosambicensi "prope Beira, m. Apr. 1895., flor.; Hb. Berol.).

3. **D. borbonlea** Scheffer, Obs. phytogr. (Bogor, Jul. 1868) 17! et in Natuurk. Tijdschr. Nederl. Ind. XXXI. (1870) 17, relat. ab Hassk. in Flora LII. (1869) 306 (seors. impr. 7); Radlk. in Sitzungsber. bayer. Akad. VIII. (1878) 369—370 (c. f. *glabrata* et *trichogyra*) excl. (uti p. 305 n. 123) syn. *tSapindus* sp., Bourbon« Teysm. et Binn. Gat. Hort. Bogor. (1866) 215 (qui fide specim. a. 1881 ex Hb. Bog. comm. *Otophora fruticosa* BL); Engl. Veg. v. Usambara (1894) 36; Warburg in Engl. Pflanzenwelt Ostaf. B. VII. (Essbare Frrttchte 1895) 207 (f. *glabrata*); Taubert ibid. G (Pflanzenverzeichnis 1895) 250 (f. *glabrata* et *minor*); Radlk. in Engl. u. Prantl, Nat. Pflanzenfam. HI. 5. (1895) 298; E. Werth, Bliithenbiol. Fragm. aus Ostaf. in Verh. Bot. Ver. Prov. Brandenb. XLII. (1901) 259 (planta ornithophila dicitur); Alluud, Coll. bot. Voyage au Kenya

(1911-1912) in Bull. Mus. d'Hist. nat. (1913) 529. - Vulgo: Mbakabaka t. Warb. et Taub. Il. cc.'s. Mbuakabuaka t. Hoist in sched.; Mtati in lingua kymanyema t. Busse in sched. — Arbuscula erecta, ad apicem tantum foliifera (t. Scheffer), vel arbor parva; rami teretes, vix striati, juveniles sufferrugineo-tomentelli, mox glabrescentes, lenticelloso-punctati; folia 4—8-juga, rhachi teretiuscula nunc tomentella, nunc (forma *glabrata*) glabra, foliola late elliptica vel suboblonga, utrinque obtusa vel subacuta, petiolulis brevibus incrassatis suffulta, chartacea, nervis lateralibus oblique ascendentibus subtus prominentibus, nunc, praesertim subtus, pilis sat densis ochraceo-ferrugineis molliter pubescentia, nunc (f. *glabrata*) glabriuscula, supra pallide viridia, subtus plerumque purpurascenti-subfusca, epidermide mucigera; paniculae axillares vel terminates, sat longae, sufferrugineo-tomentellae, praesertim basi ramosae, rhachi ramisque thyrsoides sat dense dichasia sessilia 5—7-flora subglomeruliformia gerentibus; alabastra globosa, sufferrugineo-vel viridiflavo-sericea; flores inter majores, subsessiles; sepala ut in praecedenti, petala 5, oblonga, dense ciliata, extus basi pubescentia, intus supra unguem squama lata subbiloba ciliata aucta; discus glaber vel (f. *trichogyra*) extus tomentosus; stamina ad 15, villosa; germen 3-loculare, 3-coccum, tomentosum; fructus plerumque abortu 2—1-coccus, coccis obovoideis extus ochrascenti-hirto-tomentosis denique glabratis, cetera ut in praecedenti.

Arbuscula 5—7 pedes alta (Scheffer), interdum 7-metralis (Hoist). Rami ad 8 mm crassi. Folia petiolo 5—20 cm longo adjecto 20—50 cm longa; foliola (majora) cum petiolulis 3—4 mm longis 12—18 cm longa, 5—8 cm lata. Paniculae 20—45 cm longae. Alabastra diametro circ. 5 mm. Fructus cocci circ. 1,2 cm longi, 1 cm lati, edules.

Formas 4 discernere fas est:

F. 1. *genuina* Radlk.: Folia, praesertim subtus, molliter pubescentia.

F. 2. *glabrata* Radlk. 1. c. (1878): Folia pilis vix ullis adspersa, rhachi tantum nonnunquam pubescenti; fruticosa.

F. 3. *trichogyra* Radlk. 1. c. (1878): Discus tomento brevi cinctus.

F. 4. *minor* Radlk. in Herb. Berol. ed. Taubert 1. c. (1895); Foliola minora, rigide chartacea, insigniter reticulato-venosa; stirps litorea.

In insula Borbonica (forma 1.), in Comoris inque insula et ora Zanzibarica (f. 2. et 3.) usque ad terram Somalicam (f. 4.): Formal.: In ins. Borbonica t. Scheffer 1. c; culta in Hort. Bogor., comm. a Diard, t. Scheffer, Hb. Bogor. n. 14528! (alab.). — Forma 2.: Boivin n. 3358! (lies Comores, Mayotte, Chingoni, m. Jul. 1847, alab.; Hb. Paris.); id. sine n.l (Göte orientale d'Afrique, Zanzibar, m. Nov. 1848, fr. submat.; ibid., alab.; Hb. Paris.); de Baligny! (Zanzibar a. 1852; alab.; Hb. Paris.); Hildebrandt n. 1159! (Zanzibar, m. Jul.—Nov. 1873, flor.; Hb. Berol., Vindob.); Stuhlmann n. 4981 (Zanzibar, m. Nov. 1888, fruct.; Hb. Berol.), I. 717! (ibid., m. Aug. 1889, flor.; ex Mus. Hamburg, comm. c. Hb. Berol.), I. 739! (ibid., m. Oct. 1889, alab.; eod. Hb.), n. 8474! (Dar es Salam, m. Sept. 1894, alab.; Hb. Berol.), n. 8630a! (Usaramo, alt. 400 m, m. Oct. 1894, fruct.; Hb. Berol.), S. 37! (Sachsenwald bei Dar es Salam; Hb. Berol.); J. Buchanan n. 1181! (Nyasaland a. 1891, alab.; ex Hb. Kew. comm. c. Hb. Berol.); Hoist n. 2538! (Station Hosiya, Semtula Nyika, Magio Tal, m. Mart. 1893, flor.; Hb. Berol.), n. 38721 (Nyika Steppe bei Masinde, m. Sept. 1893; Hb. Berol.); Marseille n. 80! (Zanzibar, circ. 1899; Hb. Schinz); Busse n. 2981 (Wiesen im Buruma-Tale, m. Sept. 1900, flor. et fr. semimat.; Hb. Berol.); Engler n. 12501 (West-Usambara: Kwai, Gebirgsbaumsteppe, alt. 1800-2000 m, m. Oct. 1902, alab.), n. 1503! (West-Usambara, Nordabhang am FuBe des Gebirges im Ausgang des Tales unterhalb Mbalu, alt. 800 m, m. Oct. 1902, fruct. juv.); Loher! (Afr. orient. brit., Mombasa, m. Dec. 1910, fl.; Hb. Monac); Alluand n. 9 (Shimoni, au sud de Mombassa, m. Nov. 1911, 1. a). — Forma 3.: Boivin sine n.l (Zanzibar, m. Oct. 1847, flor.; Hb. Paris.). - Forma 4.: Hildebrandt n. 13251 (Flora Somalica; Strandhügel bei Barana, m. Mart. 1874, fruct.; Hb. Berol.).

4. **D. xanthocarpa** (Klotzsch) Radlk. in Sitzungsber. bayer. Akad. VIII. (1878) 247, 304 n. 104, 367, 369 et in Engl. u. Prantl, Nat. Pflanzenfam. III. 5. (1895) 298; Taubert in Engl. Pflanzenwelt Ostafri. G (Pflanzenverzeichnis, 1895) 250. — *Sap Indus xanthocarpa* Klotzsch in Peters Reise Mossamb. Bot. I. (1862) 1191; Bak. in Oliv. Fl. trop. Afr. I. (1868) 431!; Walp. Ann. VII. 4. (1869) 629. - Vulgo: Sikiribanda t. Peters 1. c; N⁵ talala t. Baker 1. c. — Frutex ramosus vel arbor magna; rami teretes, subtiliter Jenticelloso-punctati, glabrati, cinerascens; folia breviter petiolata 4—5-juga, rhachi marginata superne anguste alata sparsim puberula, foliola ex oblongo subcuneata, apice rotundata, immo submarginata, sensim angustata, basi oblique obtusata petiolulis perbrevibus insidentia, margine leviter undulata, infima plerumque perparva, ovalia. folii basi approximata, omnia membranaceo-chartacea, nervis lateralibus approximatis oblique patulis subtus prominulis, reti venarum parum conspicuo, glabriuscula, opaca, cano-viridia, epidermide mucigera; paniculae subterminales, pauciramosae, flavescenti-sufferrugineo-tomentosae, rhachi ramisque thyrsoides sat dense dichasia subsessilia gerentibus; alabastra globosa, e chryseo canescenti-tomentosa; flores inter majores, brevissime pedicellati; sepala 5, interiora margine petaloideo (praeter cilia) glabra; petala ut in *D. oblongifolia* discus generis; stamina 12 — 16, villosa; fructus 3- vel abortu 2 — 1-coccus, coccis obovoideis sparsim pilosis maturis subglabratis aureis; semen ut in antecedentibus; embryo ut in *D. oblongifolia*, sed cotyledones aluro, oleo et amylo copioso farctae.

Frutex 7 — 9 pedes altus. Rami 4 mm crassi. Folia petiolo 1 — 2 cm longo adjecto ad 30 cm longa, foliola superiora ad 8 cm longa, 2,5—3 cm lata, infima 1—2 cm longa, 7 — 10 mm lata. Paniculae 15 — 30 cm longae. Alabastra diametro circ. 5 mm. Fructus cocci 1,4 cm longi, 1 cm lati, flavidi, pericarpio seminibusque edulibus (t. Peters I.e.)

In ora Mosambicensi et secus flumina Zambesi et Shire usque ad lacum Nyassa: Peters! (Rios de Sena, m. Nov. 1845, fr.; Hb. Berol.); Kirk! (Zambesi, Lupata, m. Mart. 1857, flor.; Hb. Berol.); id.! (Zambesi inter Sena et Tette, a. 1858; Hb. Berol.); Meller! (Hb. Kew.).

5. **D. pinnata** (Poir.) Schumach. et Thonn. 1. in lit. gen. c. (1827, 1829)!; Guillem. 1. **ibid. c. (1831); Walp. Rep. V. (1845-1846) 371; Hook.f. et Benth. Fl. Nigrit. in** W. Hook. Niger Fl. (1849) 249, coll. Vogel!, c. syn. *Prostea pinn.* Gamb.; Baker in Oliv. Fl. trop. Afr. I. (1868) 432, char. emendand.!; Radlk. in Sitzungsber. bayer. Akad. VIII. (1878) 300 n. 44, p. 359, 369 et in Engl. u. Prantl, Nat. Pflanzenfam. III. 5. (1895) 316. — *Ornitrophe pinnata* Poir. in Lam. Enc. bot. VIII. (1808) 266 (»Hb. Desfont.«.). — *Schmidelia? pinnata* DC. Prodr. I. (1824) 611, adj. obs. »an potius *Talisia* sp.?«; Spreng. Syst. II. (1825) 223 excl. syn. »*Pometia* Forst.« et patriae indie. »Nov. Hebrid.« — *Talisia* sp.? DC. 1. c. — *Prostea pinnata* Gamb. in Mém. Mus. d'Hist. nat. XVIII. (1829) 25 et 39 l. 1 f. C (»e Guinea, comm. Vahl; Hb. Juss.! et Desfont.«.); Don, Gen. Syst. I. (1831) 665; Walp. Rep. I. (1842) 416. - ?*Sapindui guineensis* Don, Gen. Syst. I. (1831) 666; Walp. Rep. I. (1842) 417; cf. Radlk. in Sitzungsber. bayer. Akad. VIII. (1878) 300 n. 44 et p. 358, ubi hue potius quam (c. J. Hook, in W. Hook. Niger Fl. [1849] 249) ad *Aphaniam senegalensem* recensenda dicitur. — *Pometia pinnata* (non Forst.) Jacks. Ind. Kew. III. (1894) 630, sub *Prostea* (eodem errore captus ac Spreng., cf. supra). — Vulgo: Badimanopis, t. Schumach. et Thonn. — Frutex subramosus erectus vel arbor parva; rami teretes, striati, juveniles subtomentosi, denique glabrescentes, lenticelloso-punctati, cortice cinereo; folia 5 — 9-juga, longiuscule petiolata, rhachi tereti striata pubescenti, foliola elliptica vel oblonga, saepius breviter acuminata acumine ipso obtusiusculo^ basi ± rotundata vel subacuta petiolulis brevissimis insidentia, chartacea, nervis lateralibus oblique ascendentibus subtus prominentibus pilis setaceis laxè adspersis, reti venarum conspicue prominulo, supra glabra laeviuscula, laete viridia, epidermide mucigera; paniculae axillares vel terminales, saepius amplae, pyramidales, ferrugineo-tomentosae, rhachi sulcata ramisque thyrsoides dense dichasia multiflora breviter stipitata vel

sessilia gJomeruliformia gerentibus; alabastra globosa, e chryseo subspadiceo-tomentosa; flores inter majores, subsessiles; sepala 5, interiora margine petaloideo (praeter ciliis) glabra; petala 5, oblonga, ciliata, extus intusque pilis albidis subvillosa, intus supra unguem squama biloba lobis divergentibus deflexis dense villosis aucta; discus generis, petalorum pressione subpentagonus; stamina ad 20, patule pilosa; germen 2—3-loculare, 2—3-coccum, tomentosum; fructus plerumque abortu 2—1-coccus, coccis globosis sericeo-tomentosis denique glabratis aurantiacis cerasi minoris magnitudine; semen cocco conforme, testa tenuiter coriacea, pallide subfusca; embryo notorrhizus, cotyledones superpositae, siccae induratae, fusco-olivaceae, amyli eranalisis parvis farctae.

Frutex 5 —8-pedalis. Rami circ. 8 mm crassi. Folia petiolo 4—14 cm longo adjecto 20—35 cm longa; foliola (majora) 6—10 cm longa, 3—4 cm lata. Paniculae 20—60 cm longae. Alabastra diametro 5 mm. Fructus edules, attamen insipidi (t. Thonning), cocci diametro circ. 1,3 cm.

In Guinea superiore: Thonning! (flor. et fruct.; Hb. Havn.!, et a Vahl comm. in Hb. Juss. n. 11388!, in Hb. Webb, resp. Florent., ex Hb. Desfont.!, in Hb. DC. ex Hb. Puerari!); Vogel n. 89! (Guinea, fruct.; Hb. Kew.); Irving n. 129! (Niger country, flor.; Hb. Kew.); Barter n. 509! 1667! (ibid., Baikie's Niger Expedition a. 1858, flor.; Hb. Kew., Paris.); A. Millson! (Expedition to the interior of Yoruba, West-Africa, flor.; ex Hb. Kew. comm. c. Hb. Berol.); Rowland! (Interior Western Lagos, 1893, fl.; ex Hb. Kew. comm. c. Hb. Berol.); Warnecke n. 48! (Togo, prope Aflahu, m. Jan. 1900, fl. et fr.; Hb. Berol.).

Synonymum addendum ex Hutchinson and Dalziel, Fl. West Trop. Afr. I. 2. (1928) 503: *D. dahomensis* Ghev. Expl. Bot. Afr. occ. frang. I. (1920) 51 (nomen).

6. *D. Ellottii* Gilg in Engler's Bot. Jahrb. XXIV. 2. (1897) 295. — Frutex?; rami teretes, sulcato-striati, brunneo-pubescentes, denique glabrescentes, cortice subfusco; folia 8—9-juga, longe petiolata, petiolo rhachique teretibus sulcato-striatis sat dense pilis brunneis hirtis pubescentibus, foliola ovato-oblonga vel oblonga, acuta, brevissime petiolulata, chartacea, nervis lateralibus oblique ascendentibus subtus prominentibus flavescens, conspicue reticulato-venosa, supra glabra, subtus ad nervos dense (inter nervos laxa) flavide setoso-pilosa, laete viridia, epidermide non mucigera; thyrsi terminales, brunneo-hirsuto-tomentosi, dense dichasia 5 — 7-flora brevissime stipitata gerentes; alabastra globosa, e flavescens (basi) brunneo-tomentosa; flores inter majores, sessiles; sepala 5, interiora margine petaloideo (praeter ciliis) glabra; petala 5, oblonga, ciliata, utrinque laxa pilosa, intus supra unguem squama lata ± biloba ciliata subtusque villosa aucta; discus minus altus; stamina ad 20, praesertim superne adpresse pilosa; germen 2-loculare, 2-coccum, fulvo-hirsutum.

Rami 7 mm crassi. Folia petiolo 8 cm longo adjecto circ. 40 cm longa; foliola cum petiolulis 1—2 mm longis 9—12 cm longa, 3—4,5 cm lata. Thyrsi 7 cm et ultra longi. Alabastra diametro circ. 6 mm.

In Guinea superiore: Scott Elliot n. 5494! (Sierra Leone, Berria, m. Febr. 1892?, flor.; ex Hb. Kew. comm. c. Hb. Berol.).

7. *D. nyikensis* Baker in Kew Bull. Nr. 128-129 (Aug.-Sept. 1897) 2491 - Arbor erecta; rami lignosi, apice brunneo-pubescentes (t. Baker); folia 3—4-juga, petiolata, petiolo rhachique teretiusculis striatis pilis brunneis hirtis; foliola lanceolato-oblonga, obtusiuscula, brevissime petiolulata, subcoriacea, nervis lateralibus utrinque 3—5 tantum remotis elongatis erectis ante marginem anastomosantibus, reti venarum praesertim subtus prominulo, supra glabra, subtus (praesertim ad nervos) flavido-pilosula, sicca pallide viridia, epidermide non mucigera; paniculae terminales longiores, axillares breviores vel nullae, brunneo-tomentosae, dense dichasia pauciflora brevissime stipitata gerentes; alabastra globosa, flavescens-tomentosa; flores inter majores, brevissime pedicellati; sepala 5, interiora margine petaloideo (praeter ciliis) glabra; petala 5, dense villosa-ciliata, praeterea subglabra, intus supra unguem squama lata

integra ciliaia subtus villosa aucta; discus sat altus, margine pilosulus; stamina circ. 17 (ex Baker 8), pilosa; germen 3-loculare, flavidulo-tomentosum.

Folia petiolo 3 cm longo adjecto circ. 15 cm longa; foliola cum petiolulis circ. 2 mm longis 6 — 9 cm longa, 2,5 — 3 cm lata. Paniculae circ. 20 cm longae. Alabastra diametro 4—5 mm.

In Africa britannica centrali: Whyte! (Nyika plateau, alt. 6000—7000 ped., and between Kondowe and Karonga, North Nyasa-land, m. Jul. 1896, fl.).

8. *D. molliuscula* Hadlk. in *Wiss. Ergebn. Afr.-Exp.* 1907-1908 II. (1912) 477. - Arbuscula eramosa vel parce ramosa, trunco tereti, cortice subfusco minutim ochraceo-puberulo; folia pari-pinnata, 8—12-juga, longiuscule petiolulata, rhachi tereti striata apice supra leviter bisulcata subhirsuta; foliola late oblonga, subacuta, basi obtusa inaequilatera (latere exteriori angustiore) subsessilia vel infima petiolulis brevibus insidentia, integerrima, membranaceo-chartacea, nervis lateralibus utrinque circ. 12 obliquis subtus prominentibus, supra pilis brevibus rigidiusculis adpressis laxè adpersa; inde asperula, subtus pilis longioribus curvatis flexibilibus crebris molliuscula, utrinque opaca, fusco-viridia, epidermide interrupte valde mucigera; panicula terminalis, amplissima, multiramosa, ramis ramulos numerosos gerentibus thyrsos e dichasiis vel polychasiis compositos exhibentes vel superiores ad dichasia stipitata pluriflora in cincinnos abeuntia reductos, rhachi ramisque sulcatis chryseo-hirtellis; bractee* longiores lineari-subulatae bracteolaeque breviusculae tomentosae; alabastra globosa, tota tomento sericeo chryseo vestita; flores inter majores, albi, breviter pedicellati; sepala 5, interiora quoque tota sericea; petala 5 (— 6), oblongo-spathulata, dense ciliata, utrinque pilis albidis laxè adpersa, intus supra unguem squama biloba villosa aucta; discus generis glaber; stamina ad 20, pilosa; germen (floris <J rudimentarium) 2-, rarius 3-coccum, tomentosum; fructus (immaturi tantum visi) 2- vel abortu 1-cocci, coccis ex ovoideo subglobosis tomento lanoso e cano flavescenti indutis.

Arbuscula 1 — 2 m alta, trunco (ramove?) apice sub panicula 1 — 1,5 cm crasso. Folia petiolo 8—18 cm longo (4—8 mm crasso) adjecto 40 cm—1 m longa; foliola cum petiolulis 2—5 mm longis 14—28 cm longa, 5—10 cm lata. Panicula 60 cm longa. Alabastra diametro 5 mm. — *A. D. fulvo-tomentella* E. G. Baker, cujus flores tantum vidi, differre videtur sepalis interioribus quoque totis pilosis nee zona petaloidea glabra ante marginem ciliatum instructis, nee non petalis intus quoque pilis albidis adpersis floribusque paullo majoribus.

In Africa tropica orientali: J. Mildbraed n. 1961! (Albert-Edward-See, Westufer, m. Jan. 1908, fl. et fr. immat.; Hb. Berol.).

9. *D. Hierniana* Gilg in *Engler's Bot. Jahrb.* XXIV. 2. (1897) 295. — *D. cuneifolia*, non Bak., Hiern, *Gat. Afr. Pl. Welw.* I. (1896) 168, coll. n. 4524! - Vulgo: Muene muene t. Hiern, si recte hue ducitur Welw. n. 4525, mihi non vis. — Frutex?; rami teretes, striati, lenticelloso-punctati, cortice cirierascenti; folia 4-juga, petiolata, petiolo rhachique teretibus striatis glabris, foliola oblonga, longiuscule lateque apiculata, basi angustata petiolulis sat longis gracilibus insidentia, membranaceo-chartacea, nervis lateralibus oblique patulis subtus prominentibus, reti venarum subtus conspicue prominulo, glabra, opaca, pallide viridia, epidermide non mucigera; thyrsi axillares (?), sat elongati, parce fusco-tomentosi, basi laxè, superne densius dichasia conspicue stipitata multiflora gerentes; alabastra globosa, tomento adpresso nigro-fusco induta; flores inter majores, breviter pedicellati; sepala 5, interiora margine petaloideo laxius pilosa; petala 5, suborbicularia, ciliata, extus secus lineam medianam a basi ultra medium pilosa, intus supra unguem squama lata subbiloba albo-villosa aucta; discus generis, parum altus; stamina 18—20, adpresse pilosa; germinis rudimentum 2-loculare, hirsutum.

Kami circ. 5 mm crassi. Folia petiolo circ. 12 cm longo adjecto 40—50 cm longa; foliola cum petiolulis circ. 1 cm longis 18—22 cm longa, 6—7 cm lata. Thyrsi 18—20 cm longi. Dichasiorum stipites ad 5 mm longi. Alabastra diametro circ. 5 mm.

In Angola: Welwitsch n. 4524! (sphalm. 2524) (Golungo alto inter Sange et Menha-Lula. ad margines silvarum et palmetorum, m. Jul. 1855, flor., ex Hb. Kew. comm. c. Hb. Berol., e Mus. Lisbon, c. Hb. DC). — AW. Hiern hue quoque ducuntur ejusdem collectoris specimina n. 4525, 4527, 4528 et 4535?, mihi non visa; excludenda sunt n. 4529 et 4530, cfr. *D. obovata* et *D. laurifolia*.

10. **D. Laurentii** De Wildem. Mission Laurent (1905) 144, 145 et Fl. du Bas- et du Moyen-Congo in Ann. Mus. Congo, Bot. sér. 5. III. 1. (1909) 111 et 112, coll. Pynaert; Th. et H. Durand, Syll. Fl. Congol. (1909) 111, coll. Laurent. — Arbor parva; folia 5—6-juga, glabra, petiolo rhachique subteretibus; foliola subalterna, intermedia major'a, oblonga, utrinque subacuta, petiolulata, integerrima, nervis lateralibus utrinque ad 12 oblique procurvis praesertim subtus prominentibus, chartacea, opaca, livescenti-viridia, glandulis parvis parum immersis rarioribus ornata, epidermide sparsim mucigera; paniculae amplae, axillares, multiramosae, rhachi ramisque brunneo-tomentosis, dichasia 3—7-flora gerentibus; alabastra globosa, tomento brunneo-fusco induta; flores majores, pedicellati; sepala 5, interiora margine petaloideo (praeter ciliis) glabra; petala 5, breviter ovata, unguiculata, dorso infra medium pilosula, ciliata, intus squama brevi subbiloba albo-villosa aucta; discus generis; stamina (floris $\$$) ad 15, dense villosa; germen 2-loculare, sufferrugineo-hirsutum.

Folia petiolo 13 cm longo adjecto ad 52 cm longa; foliola cum petiolulis 6—8 mm longis 8—19 cm longa, 4—6 cm lata. Paniculae ad 40 cm longae, ramis 20 cm longis. Alabastra diametro circ. 5 mm; pedicelli 2—6 mm longi.

In Africa tropica occidentali: E. et M. Laurent! (Congo: Busa, m. Jan. 1904; Hb. Bruxell.); L. Pynaert n. 815 (entre Lulonga et Goquilhatville, m. Dec. 1906, t. De Wildem. 1. c. p. III, n. 805 [sphalm.?] p. 112).

11. **D. leptophylla** Gilg in Schlechter, Westafr. Kautschukexp. (1900) 298 sine descr.! — Frutex?; rami teretes, striati, lenticelloso-punctati, cortice cinerascens; folia 3—4-juga, longe petiolata, petiolo rhachique teretiusculis leviter striatis laxiuscule fusco-hirtellis, foliola ex obovato-oblongo insigniter cuneata, breviter acuminata, subsessilia vel breviter petiolulata, membranacea, nervis lateralibus sat remotis oblique ascendentibus subtus prominulis utrinque pilis brunneis hirtis pubescentibus, reti venarum sat laxo utrinque vix prominulo, praeter nervos glabra, opaca, saturate viridia, epidermide mucigera; thyrsi terminates, breves, fusco-tomentosi, sat dense dichasia sessilia gerentes; alabastra globosa, tomento adpresso nigro-fusco induta; flores inter majores, vix pedicellati; sepala 5, interiora margine petaloideo (praeter ciliis) glabra; petala 5, oblonga, ciliata, extus secus lineam medianam a basi ultra medium dense pilosa, intus supra unguem squama biloba albo-villosa aucta; discus generis; stamina 18—19, dense pilosa; rudimentum germinis 3-loculare, 3-coccum, albido-pilosum.

Rami circ. 4 mm crassi. Folia petiolo 5—14 cm longo adjecto 22—35 cm longa; foliola cum petiolulis 1—3 mm longis 12—14 cm longa, 3—4 cm lata. Thyrsus 4 cm longus. Alabastra diametro circ. 5 mm.

In Guinea superiore: R. Schlechter n. 13026! (Yoruba inter Ibadan et Abeokuta, in collibus graminosis, m. Mart. 1899, flor.; Hb. Berol.).

12. **D. reticulata** Gilg msc. in Hb. Berol. — Vulgo: Engung. — Arbor parva; (rami non suppetebant;) folia 9-juga, longiuscule petiolata, petiolo rhachique teretiusculis striatis fusco-puberulis; foliola oblonga, inaequilatera, latere exteriori tota longitudine angustiore, apice subacuta, basi oblique obtusa petiolulis brevibus insidentia, membranaceo-chartacea, nervis lateralibus approximatis utrinque 16—20 obliquis margine anastomosantibus subtus prominulis nervoque mediano pilosulis, laxe clathrato et reticulato-venosa, supra praeter nervum medianum puberulum glabra, nitidula, fusco-viridia, epidermide valde mucigera; paniculae laterales, sat amplae, fusco-puberulae, ramulis multis thyrsoides sat dense dichasia subsessilia pluriflora vel basi polychasia gerentibus; alabastra globosa tomento adpresso nigro-fusco induta; flores

mediocres, viriduli, breviter pedicellati; sepala 5, interior a margine petaloideo (praeter ciliis) glabra; petala 5, ovato-spathulata, oiliata, dorso socus lineam medianam pilosa, inlus supra unguem squama biloba albo-villosa aucta; discus generis; stamina 18, pilosa; rudimentum germinis densissime albido-villosum.

Folia petiolo 10 cm longo adjecto 60 cm longa; folia cum petiolulis 2 mm longis 15 cm longa, 4,5 cm lata. Paniculae ad 40 cm longae. Alabastra diametro 3 mm.

Ad Guineae hispanicae confines: G. Tessmann B n. 37! (Nkolentangan, Ateu, alt. 450 m, m. Dec. 1907, fl.; Hb. Berol.).

- 13. *D. insignis* Hook. f. in W. Hook. Niger Fl. (1849) 249; Walp. Ann. II. (1851-1852) 224; Baker in Oliv. Fl. trop. Afr. I. (1868) 431 (coll. Vogel! Mann! Smith!) excl. syn. *D. grandifolia* Hook, f. (coll. Vogel!, Cape Palmas); Hadlk. in Sitzungsber. bayer. Akad. VIII. (1878) 304 n. 105, p 368, 369 (coll. Smith!) excl. syn. 2). *grandif.* Hook, f.; »?« Oliv. PL Kilimanjaro Exped. in Trans. Linn. Soc. ser. 2. II. (1887) 331; Durand et Schinz, Etudes Fl. Congo I. (1896) 97, excl. excludend., coll. Smith; Th. et H. Durand, Syll. Fl. Congol. (1909) 111, coll. Smith; — non Pierre in Bull. Soc. Linn. Paris Nr. 158 (Apr. 1896) 1250 (coll. Klaine n. 280!), cfr. *D. maxima*. — *Sapindus* sp. Rob. Brown in Tuckey, Narrat. Exped. Congo (1818) Append., Observ. on the Herb. coll. by Chr. Smith, p.427 (transl. v. reimpr. in Oken, Isis[1818] 1856 etc., in R. Brown's Vermischt. Schrift. ed. Nees v. Esenb. I. [1825] 188 et in R. Brown, Misc. Works ed. J. Bennett I. [1866] 107, coll. Smith!). — Arbuscula (eramosa?) trunco subarborescente, apice comosa; folia magna, 6—7-juga, longe petiolata, petiolo rhachique teretibus subtiliter striatis glabris, foliola subopposita, ampla, oblongo-elliptica, breviter acuminata, acumine ipso obtusiusculo, brevissime petiolulata, chartacea, nervis lateralibus oblique patentibus subtus prominentibus, reti venarum sat arto prominulo, glabra, e viridi livescentia, epidermide non mucigera; paniculae amplae, infra foliorum comam e trunco erumpentes, sufferrugineo-tomentellae, glabrescentes, rhachi subangulosa ramisque thyrsoides sat laxae dichasia longiuscule stipitata gerentibus; alabastra globosa, pube minuta adpressa viridescenti-chrysea induta; flores maximi, breviter pedicellati; sepala 5, semitecta, 2 exteriora margine petaloideo (praeter ciliis) glabro angustiore, interiora latiora; petala 5, oblonga, ciliolata, extus ungue pilosa, intus supra unguem squama biloba margine subtusque chryseo-villosa aucta; discus generis, margine membranaceo sublobato; stamina 20—24, chryseo-villosa; germen 3—2-loculare, 3—2-coccum; fructus abortu 2 — 1-coccus, coccis subglobosis deorsum productis inde quasi ad medium insertis subochraceo-tomentellis denique i glabratis; semen cocco conforme, testa coriacea crassiuscula, nigro-fusca.

Arbuscula orgyalis, trunco 2-pollicari (Hooker, I.e.). Folia 2-pedalia; foliola 8—10 pollices longa, 3—4 pollices lata (Hooker, I.e.). Paniculae ad 30cm longae; dichasiorum stipites 8—12 mm longi. Alabastra diametro circ. 7 mm; pedicelli 1—3 mm longi. Fructus cocci (sicci) diametro circ. 2 cm.

In Guinea superiore et inferiore: Vogel! (Fernando Po; Hb. Kew.); G. Mann n. 591! (Fernando Po., a. 1861, flor.; ex Hb. Kew. comm. c. Hb. Berol. et Vindob.); Christ. Smith! (Congo, a. 1816, fruct.; Hb. Kew.).—Non nisi dubitanter a D. Oliver hue recensetur: Johnston (Kilimanjaro, alt. 5000 ped., a. 1884; Hb. Kew.).

14. *D. cuspidate* Radlk. spec. nov. — Frutex?; rami teretes, leviter striati, lenticelloso-punctati, juveniles sufferrugineo-tomentelli, denique glabrescentes, cortice subfusco; folia 5—7-juga, longe petiolata, petiolo rhachique leviter sulcato-striatis breviter fusco-hirtellis, foliola oblonga, saepius subcuneata, cuspidato-acuminata, breviter petiolulata, chartacea, nervis lateralibus oblique ascendentibus subtus prominentibus pilis singulis adpersis, reti venarum subtus prominulo, glabra, opaca, subtus nitidula, obscure viridia, fuscescentia, epidermide mucigera; paniculae axillares vel terminates, sat amplae, pube ferruginea tomentellae, rhachi ramisque thyrsoides sat laxae dichasia stipitata gerentibus; alabastra globosa, semitecta; flores inter majores, breviter pedicellati; sepala 5, 2 exteriora extus infra medium dorsum, interiora secus lineam medianam

a basi ad medium pube adpressa brunnea adpersa, omnia ciliata; petala 5, oblonga, longe ciliata, utrinque glabra, intus squama biloba longe ciliata aucta; discus generis; stamina 15 — 16, dense albo-pilosa, antherae breviusculae; germinis rudimentum 2-loculare, 2-cocum, pilis singulis obsitum.

Hami circ. 5 mm crassi. Folia petiolo circ. 12 cm longo adjecto 35 — 45 cm longa; foliola superiora cum petiolulis circ. 3 mm longis 12 — 15 cm longa, 4,5—5 cm lata; inferiora minora. Paniculae ad 40 cm longae; dichasiorum stipites 3—7 mm longi. Alabastra diametro circ. 5 mm; pedicelli ad 2 mm longi.

In Congo: A. Dewèvre n. 450! (a. 1895-1896; Hb. Bruxell.).

15. **D. adusta** Radlk. spec. nov. — Vulgo: Msindangullue t. Albers in scheda. — Arbor alta; rami teretes, substriati, pube brevissima laxe fusco-hirtelli, denique glabrescentes, lenticelloso-punctati, cortice subfusco; folia 4—5 (?)-juga (f ragmen turn), petiolata, petiolo rhachique teretibus subtiliter striatis glabratis, foliola larga elliptica, breviter petiolulata, petiolulis sat crassis, chartacea, nervis lateralibus sat remotis oblique ascendentibus subtus valde prominentibus, reti venarum conspicuo, glaberrima, pallide viridia, sicca livescentia, epidermide non mucigera; paniculae axillares, ad summos ramulos confertae, rhachi ramisque longis thyrsoideis sat laxe dichasia sessilibus fusco-hirtellis; alabastra globosa, basi tantum puberula; flores inter majores, breviter pedicellati; sepala 5, semipetaloidea, exteriora infra medium, interiora secus lineam medianam basi pube adpressa brunnea adpersa, omnia ciliata; petala 5, elliptico-lanceolata, ciliata, extus ad unguis latera albide pilosa, intus supra unguem squama profunde bifida albo-villosa aucta; discus generis; stamina 12—13, pilis longis teneris dense obsita; germinis rudimentum 3-loculare, pilosum.

Rami circ. 1 cm crassi. Folia petiolo 11 cm longo adjecto 50—60 cm longa; foliola cum petiolulis ad 5 mm longis 15—20 cm longa, 8—10 cm lata. Paniculae 20—40 cm longae. Alabastra diametro circ. 5 mm. Flores albi (Albers in scheda).

In Usambara: Albers n. 107! (Kwai, in silvis, alt. 1400 m, m. Dec. 1899, flor.; Hb. Berol.).

16. **D. macrantha** Radlk. spec. nov. — Arbor parva, cortice subfusco lenticelloso-magni-punctato; folia magna, petiolo crasso; foliola alterna, lanceolato-oblonga, acuminata, basi subacuta, paullulum inaequalia, subsessilia, chartacea, nervis superioribus obliquis inferioribus procurvis, laxiuscule reticulata, glabra, nitidula, subflavide viridia, epidermide non mucigera; panicula magna, terminalis, rubro-fusca, glabra, ramis robustis basi laxius apice dense dichasia stipitata multiflora gerentibus, pedicellis brevibus bracteisque deltoideis laxe puberulis; alabastra globosa, glabra; flores permagni; sepala 5, basi coriacea, margine petaloidea, vix ciliolata, glabra vel dorso sub lente minutissime laxe puberula; petala 5, ovata, ciliata, extus ima basi sericea, intus supra unguem latum brevem squama biloba margine subtusque albo-villosa cucullato-deflexa aucta; discus generis; stamina 27—29, filamentis albide sericeo-villosis, antheris subuliformibus glabris; germinis rudimentum (floris c?) 5—6-loculare, glabrum.

Folia 1 m longa; foliola cum petiolulis 2 mm longis 20—22 cm longa, 6—7 cm lata (acumine 1,5 cm longo). Panicula 40 cm longa, ramis inferioribus 20—30 cm longis, superioribus brevioribus. Alabastra diametro 6—7 mm, sepalis exterioribus orbicularibus diametro 6 mm, interioribus ellipticis 8 mm longis 6 mm latis; pedicelli vix 2 mm longi, infra medium articulati.

In Kamerun: Büsgen n. 29! (Johann-Albrechtshöhe, Kumba, in s'iva primaeva, alt. 250 m, m. Nov. 1908, alab.; Hb. Berol.).

17. **D. grandifolia** Hook. f. in W. Hook. Niger Fl. (1849) 249; Walp. Ann. II. (1851-1852) 224. - *D. ins ignis* Hook. f. apud Baker 1. sub *D. ins. c.* et ap. Radlk. 1. ibid. c. quoad syn. »*Z.* *grandif.* Hook. f.« — Arbor vel frutex magnus; rami teretes, substriati, subtiliter lenticelloso-punctati, glabrati, cortice cinerascens; folia magna, 8-juga, longe petiolata, petiolo rhachique teretibus leviter striatis sordide pulverulento-puberulis denique glabratis, foliola alterna vel subopposita, inferiora late oblonga,

brevissime acuminata, acumine obtuso, superiora oblongo-lanceolata, acumine sub-acuto, omnia conspicue petiolulata, chartacea, nervis lateralibus procurvis subtus prominentibus, reti venarum utrinque prominulo, glabra, e glauco-viridi livescentia, epidermide mucigera; paniculae supra-axillares, sordide pulverulento-tomentellae, rhachi ramisque thyrsoides dense dichasia subsessilia glomeruliformia gerentibus; alabastra globosa, glabra; flores inter majores, breviter pedicellati; sepala 5, subpetaloidea, ciliolata, glabra; petala 5, elliptico-lanceolata, ciliata, extus ad unguem laxe puberula, intus supra unguem squama biloba margine subtusque albo-villosa aucta; discus generis; stamina 14—17, breviuscule pilosa; germen et germinis rudimentum (floris <J) 2-loculare, dense pilosum; fructus didymus, subbaccatus, citrinus (ex Vogel ap. Hookerf., I.e.).

Arbor 8-pedalis (Hooker, l. c.). Rami circ. 1 cm crassi. Folia petiolo 12—20 cm longo adjecto 60 cm et ultra longa; foliola cum petiolulis ad 1 cm longis 13—28 cm longa, 5—8 cm lata. Paniculae 15—30 cm longae. Alabastra diametro 5 mm subaequantia; pedicelli 1,5—2 mm longi, ad tertiam inferiorem partem articulati.

In Guinea superiore: Vogel! (Cape Palmas, sine flor. et fruct., cf. Hook. f. I.e.; Hb. Kew.); Scott Elliot n. 5008! 5594! (Sierra Leone, prope Gubaraya, m. Febr. 1892?, flor.*; ex Hb. Kew. comm. c. Hb. Berol.); Al. Whyte! (Liberia, basin of the Sinoe River, m. Mart.—April. 1904, flor.; ibid, prope Kakatown, a Monrovia septentrionem versus, flor., comm. ex Hb. Kew.; cf. Stapf in H. Johnston, Liberia II. [1906] 591).

Syonymum addendum ex Hutchinson and Dalziel, Fl. Trop. West Afr. I. 2. (1928) 503: *D. indeniensis* Chev. Vég. ut. Afr. trop. fran\$. V. (1909J) 235.

18. **D. polypus** Stapf, Gontrib. Fl. Liberia in Journ. Linn. Soc. XXXVII. (1905) 91! — Foliola ex oblongo lanceolata, sensim acute acuminata, basi acutata, sat petiolulata, chartacea, nervis lateralibus (utrinque 7—9) ex obliquo procurvis retique venarum subtus prominentibus, glabra, supra laevia, nitidula, (sicca) saturate (lutescenti-) viridia, subtus pallidiora opaca, epidermide (parum) mucigera; paniculae sufferrugineo-pulverulento-puberulae, rhachi stricta ramisque divaricatis thyrsoides dense dichasia breviter stipitata glomeruliformia multiflora gerentibus; alabastra globosa, glabra; flores inter majores, pedicellati; sepala 5, subpetaloidea, ciliolata, glabra nee nisi imo dorso pulverulento-puberula; petala 5, ovato-lanceolata, in unguem attenuata, ciliata, extus basi pilosiuscula, intus supra unguem squama biloba villosa aucta; discus generis; stamina (10—)13, albo-pilosa; germen et germinis rudimentum (floris <J) 2-loculare, pubescens.

Foliola cum petiolulis circ. 0,5 cm longis ad 20 cm longa, ad 7 cm lata (acumine 1,3 cm longo). Paniculae 18 cm et ultra longae, ramis ad 10 cm longis. Alabastra diametro circ. 4 mm; pedicelli circ. 2 mm longi, medio articulati.

In Liberia: Al. Whyte! (Sinoe River basin; Kakatown a Monrovia septentrionem versus, a. 1904; comm. ex Hb. Kew.); cf. Stapf in H. Johnston, Liberia II. (1906) 591.

19. **D. kilimandseharica** Taubert in Engl. Pflanzenwelt Ostaf. G (Pflanzenverzeichnis 1895) 250! — Arbor; rami teretes, striati, lenticelloso-punctati, juveniles sufferrugineo-tomentelli, mox glabrescentes; folia magna, 5—6-juga, petiolata, petiolo rhachique teretibus mox glabratis, foliola subopposita, elliptico-oblonga, brevissime acuminata, acumine ipso obtuso, interdum subcuneata, breviter petiolulata, submembranacea, nervis lateralibus sat approximatis procurvis retique venarum subtus prominentibus, glaberrima, pallide viridia, epidermide non mucigera; paniculae terminatae, sat amplae, foliis breviores, sufferrugineo-tomentellae, rhachi ramisque thyrsoides sat dense dichasia subsessilia gerentibus; alabastra globosa, glabra; flores inter majores, sat pedicellati; sepala 5, subpetaloidea, ciliolata, glabra, exteriora Vix[^] basi puberula; petala 5, elliptico-lanceolata, angustius unguiculata, ciliata, extus a basi* ad medium laxe pilosa, intus supra unguem squama biloba albo-villosa aucta; discus generis; stamina 15—16, albo-lanosa nee non antherae dorso apiceque pilosae; germen

3-loculare, 3-coccum, coccis subglobosis pilis singulis subsetaceis adpersis, stylo basi piloso.

Rami 1 cm crassi. Folia petiolo 8—17 cm longo adjecto 30—60 cm longa; foliola cum petiolulis circ. 3 mm longis 16—22 cm longa, 6—9 cm lata. Paniculae ad 40 cm longae. Alabastra diametro circ. 5 mm; pedicelli 2—4 mm longi, medio vel prope basin articulati. Flores albi, monoici (t. Volkens).

In Africae tropicae ditone Kilimandscharica et Usambarica: Volkens n. 14711 (Kilimandscharo, bei Mareale's Boma, im Marangu zerstreut, m. Dec. 1893. flor.; Hb. Berol.); Scheffler n. 37! (Usambara, Derema, flor.; Hb. Berol.).

20. **D. patentinervis** Radlk. spec. nov. — Frutex?; rami teretes, striati, eleganter lenticelloso-punctati, glabri, cortice-cinerascenti; folia 3—6-juga, petiolata, petiolo rhachique teretiusculis subtiliter striatis laxiuscule breviter hirtellis, foliola subopposita, elliptica vel ex oblongo subcuneata, breviter cuspidato-acuminata, basi nunc obtusa nunc subacuta, sat petiolulata, chartacea, nervis lateralibus sat approximatis patentibus rectis vel hinc illinc subrecurvis ante marginem arcuato-anastomosantibus retique venarum subtus prominentibus, glabra, opaca, saturate viridia, epidermide mucigera; paniculae axillares, sufferrugineo-hirtellae, rhachi ramisque thyrsoides sat dense dichasia sessilia gerentibus; alabastra globosa, glabra; flores inter majores, pedicellati; sepala 5, subpetaloidea, ciliata, glabra; petala 5, elliptico-lanceolata, ciliata, utrinque glabra, intus supra unguem squama biloba albo-villosa aucta; discus generis; stamina 15, alba-pilosa; germen 2-loculare, 2-coccum, coccis globosis glabris, stylo inter coccos glaberrimo.

Rami circ. 6 mm crassi. Folia petiolo 8—11 cm longo adjecto 25—40 cm longa; foliola cum petiolulis circ. 5 mm longis 10—12 cm longa, 3,5—4,5 cm lata. Paniculae circ. 20 cm longae. Alabastra diametro 5 mm subaequantia; pedicelli 1—3 mm longi.

In Congo: A. Dewèvre n. 2141 (a. 1895-1896; Hb. Bruxell.).

21. **D. pycnophylla** Gilg in sched. coll. Zenker n. 2374! (1901). — Arbor sat alta; rami teretes, striati, laxiuscule hirtello-puberuli, mox glabrescentes, lenticelloso-punctati, cortice cinerascenti; folia accrescentim multi-(12—18)-juga, petiolata, petiolo rhachique teretibus subtiliter striatis pilis singulis adpersis, foliola oblonga, acuminata, basi obtusa petiolulis brevissimis insidentia, membranaceo-chartacea, nervis lateralibus sat approximatis oblique patulis subtus prominentibus, laxiuscule reticulato-venosa, praeter nervos subtus laxe hirtellos glabra, saturate viridia, epidermide mucigera; paniculae magnae, sordide hirtopuberulae, rhachi ramisque iterum ramosis divaricatis thyrsoides sat dense dichasia subsessilia glomeruliformiagerentibus; alabastra globosa, cano-puberula; flores inter minores, vix pedicellati; sepala 5, excepto margine extimo pube adpressa cana vestita, exteriora subcoriacea; petala 5, late elliptico-lanceolata, ciliata, extus a basi ad medium secus lineam medianam alba-pilosa, intus supra unguem squama alta angusta biloba albo-villosa aucta; discus generis; stamina circ. 14, dense breviter pilosa; germen 2-loculare, 2-coccum, coccis globosis glabriusculis, stylo inter coccos glaberrimo.

Arbor 8—12 m alta; rami circ. 1 cm crassi. Folia petiolo 6—12 cm longo adjecto 55—80 cm longa; foliola inferiora 6 cm longa, 2,5 cm lata, superiora 12—18 cm longa circ. 4 cm lata. Paniculae 20—40 cm longae. Alabastra diametro circ. 2 mm. Flores virenti-albi.

In Kamerun: Zenker n. 23741 (Bipinde; in silva primaeva, alt. 400 m, m. Maj. 1901, flor.; Hb. Berol.), n. 2590! (ibid., a. 1903), n. 2911! (ibid., a. 1904), n. 3304! (ibid., a. 1907, fr. juv.).

22. **D. maxima** Gilg in Engler, Pflanzenwelt Afrik. III. 2. (1921) 272 (nomen). - Hue forsitan recensenda *D. insignia*, non Hook, f., Pierre in Bull. Soc. Linn. Paris Nr. 158 (Apr. 1896) 1250, coll. Klaine n. 2801 excl. quae dicuntur de arillo et de *Blighia sapida*, quae ap. Hooker (1. sub *D. insigni* c.) *DeinboUiam* sequitur, a Pierre errore pro synonymo habita. — Arbor parva; rami teretes, striati, dense lenticelloso-punctati, glabrati, cortice cinereo-subfusco; folia 4—6-juga, magna, longe petiolata, petiolo basi incrassato

rhachique teretibus leviter striatis glabris, foliola alterna, inferiora ovata, superiora late oblonga, 3-plo longiora quam latiora, omnia acuminata, basi obtusa petiolulis brevibus insidentia, chartacea, nervis lateralibus sat remotis oblique adscendentibus retique venarum laxo subtus prominentibus, glabra, fuscescentia, epidermide mucigera; thyrsi supra cicatrices foliorum delapsorum e trunco ramisque erumpentes, nunc simplices elongati, nunc infra medium ramis aucti, laxe hispiduli, interrupte dichasia subsessilia glomeruliformia gerentes; alabastra globosa, basi ut et pedicelli brevissimi densiuscule ceterum laxe hispidule cano-puberula; flores inter minores; sepala 5, cano-puberula, ciliata; petala 5, ex obovato in unguem contracta, incurvato-ciliata, extus basi pilis singulis adspersa, intus supra unguem squama biloba, lobis altioribus tota longitudine contiguis, albo-villosa aucta; discus generis; stamina 9—10, brevia, albo-villosa; germinis rudimentum 2-loculare, albo-pilosum.

Arbor 4—5 m alta. Rami 12 mm crassi. Folia petiolo 10—22 cm longo adjecto 50—65 cm longa; foliola superiora 18—24 cm longa, 6—8 cm lata, inferiora 12—14 cm longa, 6 cm lata. Thyrsi 10—30 cm longi. Alabastra diametro circ. 2 mm. Flores flavescenti-albi (t. Zenker).

In Guinea superiore: Afzelius! (Sierra Leone, circ. 1796; Hb. Berol.); Zenker n. 1275! (Kamcrun, Bipinde in silva primaeva, a. 1896, flor.; Hb. Berol., Monac. etc.), n. 1726! (ibid., alt. 100 m, m. Jan. 1897, flor.; Hb. Berol.). - Hue forsitan et Klaine*) n. 280! (Libreville, a. 1896, folium in Hb. Pierre servat., cui accedit specimen alabastra grens, m. Maj. 1898 lectum).

23. **D. calophylla** Gilg**) msc. in Herb. Berol.! — Frutex; rami teretes, striati, lenticelloso-punctati, glabri, cortice e cinereo subfusco; folia 4-juga, magna, longe petiolata, petiolo rhachique teretibus leviter striatis glabris; foliola larga, elliptica, inucronata vel breviter acuminata, superiora quoque vix duplo longiora quam latiora, conspicue petiolulata, chartacea, nervis lateralibus remotis arcuato-adscendentibus retique venarum laxo subtus prominentibus, glabra, fuscescentia, epidermide mucigera; thyrsi axillares, glabrati, dense dichasia subsessilia glomeruliformia gerentes; flores secundum partes sub fructu relictas minores; sepala 5, praeter basin puberulam glabra, cilia tate; discus generis; fructus 2-locularis, 2-coccus vel abortu plerumque 1-coccus, coccis globosis granuloso-carnosis glabris aurantiacis, maculis pallidioribus; semen globosum, testa membranacea, pallide subfusca; embryo notorrhizus, cotyledones crassae, superpositae, amyli granulis parvis farctae.

Rami 1 cm crassi. Folia petiolo circ. 20 cm longo adjecto 90 cm longa; foliola **majora (superiora) cum petiolulis ultra 1 cm longis 25 cm longa, 12 cm lata. Thyrsi circ. 20 cm longi. Fructus t. collectore in fruticis parte inferiore edules, coccis diametro circ. 1,5 cm.**

In Liberia: M. Dinklage n. 1887! (Gran Bassa, Fishtown, alt. 5 m, m. Maj. 1898, fruct.; Hb. Berol.).

24. **D. maeroura** Gilg msc. in Hb. Berol. (1913) sine descr. — Vulgo: Nkolumbembe. — Suffrutex; rami teretes, glabri; folia 3-juga, longius petiolata, petiolo rhachique supra leviter 2-sulcatis, glabris; foliola opposita, oblonga, apice in acumen praelongum attenuata, basi subacuta in petiolulos conspicuos angustata, membranacea, nervis obliquis ante marginem anastomosantibus, glabra, nitidula, supra fusco-viridia, subtus pallide subfusca, epidermide valde mucigera; thyrsi axillares et terminales, petiolis paullo breviores, basi ramulo aucti, laxe dichasia stipitata pluriflora apice conferta gerentes; alabastra parva, globosa, glabriuscula nee nisi basi ut et pedicelli

*) Fr. Pellegrin (Fl. du Mayombe, in Mém. Soc. Linn. Normandie XXVI. 2. [1924] 73) specimina sequentia sub *Deinbollia maxima* Gilg profert: Tchibanga, XI. 1915 (Le Testu n. 2123), Sindara, XI. 1918 (Le Testu n. 2301).

**) *D. calophylla* Gilg pro synonymo *D. polypus* Stapf habita ex Hutchinson and Dalziel, Fl. West Trop. Air. I. 2. (1928) 503.

breves infra medium articulati minutissime puberula; sepala 5, orbicularia, concava; petala 5, rotundata, hyalina, longius ciliata, intus squama biloba tenera aucta; discus generis; stamina 12—15, filamentis sericeo-pilosis; germinis (floris <J) rudimentum 2-lobum, pilis teneris obsitum.

Kami circ. 4 mm crassi. Folia petiolo 8—11 cm longo adjecto 40 cm longa; foliola superiora cum acumine 3,5 cm longo 21 cm longa, 6,5 cm lata, inferiora minora. Thyrsi 6 cm longi. Alabastra diametro 2,5 mm.

In Kamerun: Mildbraed n. 6198! (in distr. Kribi-Kampo, inter Ebolowa et Kampo, leg. A. Schultze, m. Jul. 1911, alab.; Hb. Berol.).

25. **D. dasybotrys** Gilg msc. in Hb. Berol. sine descr. (1913). — *D. brachybotrys* Gilg (sphalm.) in Mildbraed, Wissensch. Ergebn. Deutschl. Zentr.-Afr.-Exped. 1910—1911 II. (1922) 96. — Frutex comoso-foliosus; rami teretes, apice subflexuosi, lenticellis albidis punctati, glabri; folia 4—5-juga, longe petiolata, petiolo viridi stria to, rhachi superne bisulcata submarginata; foliola (8—9) subalterna, exobovato cuneata, in acumen longiusculum protracta, petiolulata, membranaceo-chartacea, nervis procurvis, glabra, supra aeruginoso-viridia, subtus pallide subfusca, epidermide valde mucigera; thyrsi ad apices ramorum axillares vel subterminales, bini-terni congesti, petiolis triplo-quadruplo breviores, glomerulato-densiflori; alabastra parva, globosa, glabriuscula; sepala 5, exteriora 2 orbicularia basi tantum laxe puberula, interiora ovalia glabra vix ciliolata; petala 5, sepala vix excedentia, obovata, in unguem latum angustata, hyalina, longius ciliata, intus supra unguem squama biloba ciliata aucta; discus generis; stamina 10—13, filamentis sericeo-pilosis; germinis (floris <J) rudimentum 2-lobum, subglabrum.

Rami 4—6 mm crassi. Folia petiolo 10—12 cm longo adjecto 45 cm longa; foliola 18—20 cm longa, 6—8 cm lata. Thyrsi 2—4 cm longi. Alabastra diametro 2,5 mm.

In Kamerun: Mildbraed n. 5908! (in distr. Kribi prope Fenda, alt. 200 m, m. Jul. 1911, fl.; Hb. Berol.).

26. **D. cuneifolia** Baker in Oliv. Fl. trop. Afr. I. (1868) 432!; Radlk. in Sitzungsber. bayer. Akad. VIII. (1878) 369; - non Hiern, Cat. Afr. PL Welw. I. (1896) 168, coll. n. 4524 (cfr. *D. Hierniana*). — Frutex vel (si recte hue ducitur Dinklage n. 1485) arbuscula comosa, suberosa; rami teretes, striati, lenticelloso-punctati, glabri, cortice cinerascens; folia 5—6-juga, sat petiolata, petiolo rhachique teretibus subtiliter striatis glabris, foliola alterna vel superiora subopposita, oblongo-lanceolata, acute acuminata, basi subacuta petiolulis perbrevibus insidentia, superiora subcuneata, **chartacea, nervis lateralibus procurvis retique venarum subtus prominulis, glabra**, supra laeviuscula, fuscescentia, epidermide mucigera; thyrsi axillares, nunc simplices, nunc infra medium ramo uno alterove brevi aucti, sordide pulverulento-puberuli, mox glabrati, sat dense dichasia subsessilia glomeruliformia gerentes; alabastra globosa, glabriuscula; flores minores, vix pedicellati, sepala 5, extus perlaxe pilis adpressis brevibus adpersa; petala 5, obovata, incurvato-ciliata, ungue extus laxe piloso, intus supra unguem squama lata biloba albo-villosa aucta; discus generis; stamina circ. 17, dense albo-pilosa; rudimentum germinis 2—3-loculare, pilosum; fructus t. Dinklage in trunco obvii, globosi, rubri.

Arbuscula 3—4 m alta. Rami 6 mm crassi. Folia petiolo 8—16 cm longo adjecto 40—55 cm longa; foliola cum petiolulis ad 5 mm longis 12—18 cm longa, 3,5—5 cm lata. Thyrsi 15—25 cm longi. Alabastra diametro circ. 2,5 mm.

In Guinea superiore: Afzelius! (Sierra Leone, circ. 1796; Hb. Berol.); Barterl (Sierra Leone; Hb. Kew.); Mann n. 831! (banks of the Bagroo river, a. 1861; Hb. Kew.); M. Dinklage n. 1485! (Kamerun, in silva ad Batanga, m. Aug. 1892, fruct.; ex Mus. Hamburg, comm. c. Hb. Berol.).

27. **D. unguiculata** Gilg in Engler's Bot. Jahrb. XXIV. 2. (1897) 2961 - Frutex?; rami teretes, striati, laxe lenticelloso-punctati, glabri, nitiduli, cortice cinerascens; folia 3-juga, longius petiolata, petiolo rhachique teretibus striatis glabris, foliola

elliptica vel superiora ex elliptico cuneata, acuminata, acumine ipso obtusiusculo, subsessilia, chartacea, nervis lateralibus sat remotis procurvis supra prominulis retique venarum subtus prominentibus, glabra, nitidula, fuscescentia, epidermide mucigera; thyrsi axillares, breviores, petiolos paullo superantes, supra medium sat dense dichasia subsessilia glomeruliformia gerentes; alabastra globosa, glabriuscula; flores inter minores, brevissime pedicellati; sepala 5, extus perlaxe pilis adpressis brevibus adpersa; petala 5, obovata, parce ciliata, extus glabra, intus supra unguem conspicuum squama biloba albo-ciliata aucta; discus generis; stamina 16, dense albo-pilosa; germen 2—3-loculare; fructus abortu plerumque 1-coccus, coccis globosis granuloso-carnosis glabris; semen globosum, testa membranacea, tenuissima, pallide subfusca.

Rami circ. 4 mm crassi. Folia petiolo 8—11 cm longo adjecto 25 — 34 cm longa; foliola superiora 11—18 cm longa, 4,5 — 6 cm lata. Thyrsi 10—13 cm longi. Alabastra diametro circ. 2,5 mm. Fructus cocci diametro 1,2 cm. — An re vera a *D. cuneifolia* Bak. diversa?

In Guinea superiore: Afzelius! (Sierra Leone circ. 1796, fl. et fr.; Hb. Berol.).

28. **D. stenobotrys** Gilg in Engler's Bot. Jahrb. XXIV. 2. (1897) 297! — Frutex?; rami teretes, striati, dense lenticelloso-punctati, nitiduli, glabri, cortice cinerascens; folia 4—5-juga, sat petiolata, petiolo rhachique teretibus striatis glabris, foliola inferiora alterna, oblongo-lanceolata, superiora ex obovato-oblongo sensim longe cuneata, omnia longiuscule acuminata acumine ipso obtusiusculo, breviter petiolulata, membranaceo-chartacea, nervis lateralibus remotis oblique ascendentibus retique venarum subtus prominulis, glabra, glauco-viridia, epidermide mucigera; thyrsi axillares, breves, tenues, parce pilosiusculi, laxiuscule dichasia sessilia pauciflora gerentes; alabastra globosa, glabriuscula; flores inter minores, sessiles; sepala 5, extus perlaxe pilis adpressis brevibus adpersa, latissime imbricata; petala 5, late obovata, laxe ciliata, extus glabra, intus supra unguem squama parva pilosiuscula aucta; discus generis; stamina 10—16, brevia, pilosiuscula; germinis rudimentum 2-loculare, laxe pilosum.

Rami circ. 4 mm crassi. Folia petiolo circ. 9 cm longo adjecto 40—50 cm longa; foliola superiora cum petiolulis circ. 5 mm longis 16—18 cm longa, 4—5 cm lata. Thyrsi 4—6 cm longi. Alabastra diametro circ. 2 mm.

In Guinea superiore: Scott Elliot n. 54751 (Sierra Leone, alab.; ex Hb. Kew. **comm. c. Hb. Berol.**).

29. **D. brachybotrys** Gilg in Engler's Bot. Jahrb. XXIV. 2. (1897) 295, coll. Afzelius! — Frutex?; rami teretes, leviter striati, laxiuscule lenticelloso-punctati, glabri, cortice nigricanti-cinereo; folia 4-juga, sat petiolata, petiolo rhachique teretibus striatis glaberimis, foliola lanceolata vel suboblonga, subacuminata, breviter petiolulata, coriacea, nervis lateralibus procurvis praesertim subtus prominentibus, subtus insigniter reticulato-venosa, glabra, fuscescentia, epidermide mucigera; thyrsi supraaxillares, abbreviati, crassi, glabri, a basi densissime dichasia sessilia contigua glomeruliformia gerentes; alabastra globosa, glabriuscula; flores inter minores, vix pedicellati; sepala 5, omnia coriacea, margine petaloidea, exteriora perlaxe pilis adpressis brevibus adpersa, reliqua glabra, breviter ciliata; petala 5, late obovata, ciliata, extus basi pilosiuscula, intus supra unguem squama subbiloba albo-villosa aucta; discus generis; stamina 17—20, brevia, superne dense pilosa; germinis rudimentum 2- vel 3-loculare, laxe pilosum.

Rami circ. 8 mm crassi. Folia petiolo 7—10 mm longo adjecto 25—35 cm longa; foliola cum petiolulis ad 4 mm longis 8—12 cm longa, 2,5—3,5 cm lata. Thyrsi 2—4 cm longi. Alabastra diametro circ. 3 mm.

In Guinea superiore: Afzelius! (Sierra Leone, circ. 1796, flor.; Hb. Berol.).

30. **D. laurifolia** Baker in Oliv. Fl. trop. Afr. I. (1868) 432 (coll. Smith!) excl. specim. ad *D. obovat.* vecens.; Radlk. in Sitzungsber. bayer. Akad. VIII. (1878) 304 n. 106, p. 367—369. — *Sapindus* sp. R. Brown 11. sub. *D. insign.* cc. (1818 etc.)! — *Deinbollia* sp. Hiern, Cat. Afr. Pl. Welw. I. (1896) 169 in obs. ad *D. cuneif.*, coll. n. 45301

— Arbor (Baker) vel frutex arborescens (Hiern); rami graciles, teretes, striati, lenticellis seriatis albo-punctati, glabri, cortice cinerascete nitidulo; folia 5 —7-juga, petiolata, petiolo rhachique teretibus striatis brevissime hirto-puberulis, foliola opposita vel subopposita, parva, ovalia vel oblonga, breviter acuminata, acumine obtuso, basi obtusa vel subacuta petiolulis perbrevibus insidentia, margine undulata, chartacea, nervis lateralibus sat approximatis patulis retique venarum praesertim subtus prominulis, glabra, flavescenti-viridia, epidermide mucigera; paniculae terminales, mediocres, sufferrugineo-puberulae, rhachi ramisque divergentibus thyrsoides dense dichasia subsessilia glomeruliformia gerentibus; alabastra globosa, glabra; flores minores, breviter pedicellati; sepala 5, aequalia, breviter ciliata, glabra; petala 5, obovata, ciliata, extus ima basi pilosiuscula, intus supra unguem squama biloba albo-villosa aucta; discus generis; stamina 8 — 16, brevia, dense pilosa; germen 3-loculare, 3-cocccum, stylo crasso glaberrimo; fructus 3-coccus, coccis ellipsoideis parce setulosis dein glabratis; semen ellipsoideum, testa coriacea, crassiuscula, nigro-fusca; embryo notorrhizus, cotyledones superpositae, crassae, amyli granulis majoribus farctae.

Frutex arborescens, 3—5 ped. altus (Hiern). Rami circ. 6 mm crassi. Folia petiolo 3 — 12 cm longo adjecto 20—32 cm longa; foliola 4—10 cm longa, 1,5—3 cm lata. Paniculae ultra 20 cm longae. Alabastra diametro circ. 3 mm. Fructus cocci (submaturi) 12 mm longi, 8 mm lati.

In Guinea inferiore: Ghr. Smith! (Congo, a. 1816, flor; Hb. Kew., Havn.); Welwitsch n. 4530! (Angola, Golungo alto, alt. 1000—2500 ped., ad flumen Guango, ad Ambaca road et prope Sange, m. Oct. 1855, flor. et fr. juv.; Hb. Kew., DC, Berol.); Bastian! (Bomma ad flum. Congo, m. Sept. 1873, flor; Hb. Berol.); John Gossweiler n. 1491! (Angola, district of Loanda, ab Universitate Coimbra comm. c. Hb. Kew. a. 1905 et c. Hb. Berol. a. 1907).

31. **D. obovata** Radlk. in Sitzungsber. bayer. Akad. VIII. (1878) 304 n. 7, p. 367-369. — *Sapindus* sp. R. Brown II. sub *D. insign.* cc. (1818 etc)!. — *D. laurifolia* Bak. in Oliv. Fl. trop. Afr. I. (1868) 432 part. (coll. Smith!). — *D.* sp. Hiern, Cat. Afr. Pl. Welw. I. (1896) 169 in obs. ad *D. cuneif.*, coll. n. 4529! - Frutex; rami teretes, striati, lenticellis albidis laxè punctati, glabri, cortice subfusco, folia 2—5-juga, longe petiolata, petiolo rhachique teretibus striatis glabratis, foliola opposita vel inferiora alterna, obovata vel suboblonga, abrupte acuminata, basi cuneata petiolulis conspicuis insidentia, membranaceo-chartacea, nervis lateralibus sat approximatis patulis retique venarum subtus prominulis, glabra, supra laevia, laete viridia, epidermide non mucigera; paniculae terminales, mediocres, sufferrugineo-puberulae, rhachi ramisque thyrsoides sat dense dichasia vel polychasia substipitata gerentibus; alabastra globosa, glabriuscula; flores secundum partes sub fructu relictas minores, sessiles; sepala 5, vix ima basi pilis singulis adspersa; discus generis; fructus 2(—3)-locularis, 2(—3)-coccus, coccis obovoideis pilis singulis adspersis mox glabratis; semen obovoideum, testa coriacea, crassiuscula, nigro-fusca, extus perbreviter staurenchy matica; embryo notorrhizus, cotyledones superpositae, amylo farctae.

Frutex 4—7 ped. altus (Hiern). Rami circ. 5 mm crassi. Folia petiolo 9—12 cm longo adjecto 20—30 cm longa; foliola cum petiolulis 4—6 mm longis 6—10 cm longa, 3—4 cm lata. Paniculae ultra 10 cm longae. Fructus cocci 12 mm longi, 10 mm lati.

In Guinea inferiore: Chr. Smith! (Congo, a. 1816, fruct. submat.; Hb. Havn.); Welwitsch n. 4529! (Angola, Golungo alto, in montibus ad Queta, m. Aug. 1856, flor.; Hb. Kew., DC).

32. **D. neglecta** Radlk. in Sitzungsber. bayer. Akad. VIII. (1878) 368, 369 et in Palacky, Cat. Pl. Madag. V. (1907) 52. - Frutex?; folia 7-juga, petiolata, foliola superiora opposita, inferiora subalterna, parva, ex obovato oblonga, apice acuta vel subacuminata, basi in petiolulos breves cuneato-attenuata, membranacea, nervis lateralibus oblique ascendentibus retique venarum subtus vix prominulis, utrinque laeviuscula, glabra, obscure viridia, epidermide mucigera; thyrsi sordide adpresso-

hirtelli, dense dichasia sessilia pauciflora gerentes; alabastra globosa, vix ima basi puberula; flores minimi, breviter pedicellati; sepala 5, exteriora basi puberula, ciliolata; petala 5, late ovata vel elliptica, glabra, ciliata, supra unguem brevem squama lata breviter biloba deflexa villosa aucta; discus generis; stamina 8—10, superne villosa; germinis rudimentum 2-loculare, apice villosum.

Foliola 4 cm longa, 12 mm lata. Alabastra diametro 2,5 mm.

In Madagascaria: Commerson! (Hb. Juss. n. 11414).

33. **D. Pervillei** (Blume) Hadlk. Sap. Holl.-Ind. (1877) 40 (110) annot., in Ber. 50., Versamml. d. Naturf. z. München (1877) 209, in Sitzungsber. bayer. Akad. VIII. (1878) 275, 369, IX. (1879) 534 n. 446, in Engl. u. Prantl, Nat. Pflanzenfam. III. 5. (1895) 316 et in Palack?, Gat. Pl. Madag. V. (1907) 52. - *Hemigyrosa? Pervillei* Blume, Humph. III. (1847) 166, coll. Pervillé n. 676!; Walp. Ann. II. (1851-1852) 212. - Arbor altissima (Hildebrandt in scheda); rami teretes, striati, lenticelloso-punctati, juveniles sufferrugineo-pubescentes dein glabrati, cortice fuscescenti; folia 2—4-juga, sat petiolata, petiolo rhachique teretibus vix striatis glabris, foliola majuscula, subopposita, anguste oblonga, obtusiuscula, basi subacuta petiolulis brevibus insidentia, chartacea, nervis lateralibus subtilibus patulis retique venarum utrinque vix prominulis, glabra, opaca, supra obscure viridia, subtus subfusca, epidermide mucigera; thyrsi ad apices ramulorum axillares, graciles, elongati, folia subaequant, sufferrugineo-hirto-puberuli, sat dense dichasia vel polychasia breviter stipitata gerentes; alabastra globosa, vix pilis singulis brevibus adspersa; flores minimi, brevissime pedicellati; sepala 5, ciliata, glabriuscula; petala 5, obovata, ciliata, extus glabra, intus squama parva albo-villosa aucta; discus generis; stamina 12—13, superne pilosa; germen 2-loculare; fructus 2- vel abortu 1-coccus, coccis globosis granuloso-carnosis glabris; semen globosum, testa subossea, nigra, extus staurenychymatica, embryo notorrhizus, cotyledones superpositae, aleuro et oleo foetae.

Rami 4—5 mm crassi. Folia petiolo 4—6 cm longo adjecto 18—22 cm longa; foliola superiora 10—14 cm longa, 2—3 cm lata. Thyrsi 15—22 cm longi. Alabastra diametro vix 1,5 mm. Fructus cocci diametro 1,4 cm.

In Madagascaria: Perville n. 676! 679! (in terra occid. Am bongo*), m. Febr. 1841, alab.; Hb. Paris., Lugd.-Bat., Berol., Boiss.); Hildebrandt n. 3032! (in parte septentr.-occid., Mojanga ad 15°43' L. merid., m. Jun. 1879, fruct.; Hb. Berol., Monac, DC, Boiss., Kew.).

34. **D. revoluta** Radlk. — Arbor?; rami teretes subfusci, superne epidermide soluta subargentei; folia approximata, 3—5-juga, glaberrima, petiolo elongato semitereti basi incrassato, rhachi supra linea elevata notata; foliola mediocria, ovali-oblonga, acuta vel obtusata, in petiolulum attenuata, margine inaequaliter revoluta indeque subsinuata undulataque, rigide chartacea, nervis lateralibus utrinque 6 distantibus patentibus subtus prominulis, opaca, supra obscure viridia, subtus pallida, epidermide mucigera; paniculae ad apicem ramorum axillares vel subterminales, foliis breviores; flores non suppetebant; fructus (an semper?) 1-coccus, coccis 2 abortivis basi notatus, cocco obovoideo granuloso-carnoso ruguloso glabro rubro-fusco; semen subglobosum, testa Crustacea.

Rami 8 mm crassi. Folia petiolo 6—7 cm longo adjecto 12—16 cm longa; foliola cum petiolulis 3—5 mm longis 4—7 cm longa, ad 2,5 cm lata. Paniculae ad 10 cm longae. Fructus cocci (sicci) 2 cm longi, 1,5 cm lati.

In Madagascaria: Scott Elliot n. 2436! (prope Fort Dauphin; Hb. Kew.).

Species mihi non satis notae.

35. **D. fulvo-tomentella** E. G. Baker, Bot. Anglo-German Uganda Boundary Commiss. in Journ. Linn. Soc. XXXVII. (1905) 137.

*) Errore »Amboina« legitur in Ind. Kewens. sub *Hemigyrosa*.

»Arbor 10-pedalis, foliis magnis circ. 7-jugis, foliolis amplis oppositis vel suboppositis coriaceis, petiolulo crasso brevi tenuiter puberulo, oblongis, penninerviis, nervis lateralibus utrinque saepissime 11 — 13, prope marginem arcuatis et inter se conjunctis, supra impressis, fere glabris, subtus reticulatis et pubescentibus, ad apicem attenuatis apice ipso obtusis, basi rotundatis; paniculae ramulis praecipue inferne ± elongatis, tenuiter fulvo-tomentellis; floribus masculis albis; sepalis concavis imbricatis, dorso rufo-pubescentibus margine subscariosis [resp. interioribus margine petaloideo eoque praeter ciliis glabro instructis]; petalis unguiculatis, ovatis ± albo-hirtis, [intus glabris], ad basin squamula magna tomentosa instructis; staminibus circ. 18—20, petalis aequilongis, filamentis pubescentibus, disco manifeste conspicuo.«

»Folia 50—60 cm longa. Foliola 16—24,5 cm longa, 7—9 cm lata. Sepala 4—5 mm longa. Petala ± 6 mm longa, ± 4 mm lata. Filamenta ± 5 mm longa.«

•Species *D. insigni* Hook. f. valde affinis.«

Africa orient.: ^Island of Wema, Victoria Nyanza, fl. March 1904, \$ only; A. G. Bagshawe n. 592.«

Quantum e floribus solis c. Hb. Berol. communicatis concludere posso valde affinis *D. pinnatae* Schumach. et Thonn. et forsitan cum hac conjungenda, etsi robustior, ut videtur.

36. **D. Pynaertii** E. De Wildeman, Fl. du Bas- et du Moyen-Gongo in Ann. Mus. Congo, Bot. sér. 5. III. 1. (1909) 111.

»Frutex; folia paripinnata (e textu in lingua gallica), rhachi glabra vel subvelutina 50 cm longa; foliola utrinque 5—7, alterna vel subopposita, petiolulo circ. 3 mm longo, lamina oblonga, plus minus cuneata et breviter acuminata, 7,5—18,5 cm longa, 5—8,3 cm lata, glabra, integra, nervis lateralibus utrinque 11—15; inflorescentiae ramosae, circ. 50 cm longae, ramis 12 cm longis, rhachi breviter brunneo-tomentosa, cymulas ± approximatas 3—5-floras gerente; flores pedicellati, pedicellis circ. 2 mm longis, tomentosis, bracteatis; sepala orbicularia, extus velutina, margine ciliata, 4 mm longa; petala albida, sepalis paullo longiora, margine intusque basi longe ciliata, ceterum glabra; stamina velutina pilis albidis.« (De Wildeman; mijji non visa.)

Congo, inter Lisala et Bumba, in insulis limosis: L. Pynaert n. 55, m. maj. 1905, fl.; Hb. Bruxellense.

Obs. »Ab affini *D. Laurentii* primo aspectu differt florum indumento pallidior, griseo (nee ferrugineo, ut in *D. Laurentii*), nee non pedicellis et floribus minoribus.« (De Wildeman.)

37. **D. Claessensli** De Wild, in Fedde, Repert. spec. nov. XIII. Nr. 24/26 (m. Jul. 1914) 378.

» Arbor; ramis cortice griseo, foliis paripinnatis 2—3-jugis, rachide usque 14 cm longa, glabra, foliolis oppositis vel suboppositis, breviter petiolulatis, petiolulo incrassato usque 5 mm longo, lamina ovato-elliptica vel oblongo-lanceolata, basi et apice ± cuneata, 9—18 cm circ. longa et 3—6 cm lata, supra et infra glabra, margine integra, nervis lateralibus I [primi ordinis] utrinque circ. 12; inflorescentiis axillaribus vel terminalibus, ± ramosis usque 16 cm longis, rachide brevi et supra velutino-brunnea; floribus cymosis, cymis 2—5-floris ± approximatis, pedicellis circ. 1—2 mm longis basi articulatis, glabris et basi bracteolatis, bracteolis ciliatis; sepalis imbricatis suborbicularibus, glabris vel subvelutinis, margine ciliatis, circ. 2 mm longis, petalis sepalis subaequilongis, basi velutinis, margine ciliatis; filamentis staminum glabris sed basi velutinis, circ. 2 mm longis, antheris circ. 1 mm longis; disco, ovario et stylo glabro.«

»In Congo belgico: Kindu, 1910 (J. Claessens n. 527); Likimi, 1913 (De Giorgi, n. 148).« Herb. Bruxellense. Specim. non vidi.

Species mihi ignotae.

D. Giorgi De Wild, in Bull. Jard. bot. Bruxelles IV. (1914) 374. — »Arbor; foliis imparipinnatis, rachide breviter et sparse velutina, subcylindrica, in sicco plus minus longitudinaliter sulcata, ultra 20 cm longa, foliolis ultra 4-jugis, oppositis vel suboppositis, petiolulatis, petiolulo 2—3 mm longo, lamina obovato-oblonga, basi in-

aequilaterali et cuneata, apice subobtusum-acuminata, 13—22 cm longa et 5—7,3 cm lata, supra et infra glabra, margine integra, nervis lateralibus primi ordinis utrinque circ. 12, infra prominentibus; inflorescentiis ramosis usque 30 cm longis, ramis plus minus elongatis, rhachide breviter brunneo-tomentosa, demum glabra; floribus cymosis cymis breviter pedunculatis, pedicellis basi bracteolatis, basi articulatis, circ. 1 mm longis sicco velutino-griseis; sepalis plus minus orbicularibus extus velutinis, margine velutinis, circ. 2 mm longis et 1,7 mm latis, petalis brevibus, glabris sed margine dense ciliatis; staminum filamentis velutinis, ovario velutino».

»In Congo belgico: Yambata, mars 1914 (S. De Giorgi n. 1766. — Nom. vern.: Mombia. — Arbre du plateau forestier dont les indigènes emploient des lanières d'écorce en guise de courroie).«

»Obs. Nous croyons devoir attirer l'attention sur le caractère tire^l du limbe foliaire: inéquilatéral à la base. Les échantillons récoltés par M. De Giorgi ne sont pas en pleine floraison, les fleurs sont à peine ouvertes. Nous ne possédons pas une feuille complète, de sorte qu'il ne nous est pas possible de déterminer le nombre de folioles qu'elle possède, ni la dimension qu'elle peut atteindre.«

D. variabilis De Wild, in Bull. bot. Bruxelles IV. (1914) 374. - »Arbor; ramis juvenilibus breviter et dense velutino-brunneis; foliis paripinnatis, circ. 8-jugis, rhachide velutina ultra 40 cm longa, foliolis oppositis vel suboppositis, breviter petiolulatis, petiolulo plus minus incrassato, velutino, usque 5 mm longo, lamina elliptica, obovata vel obovato-oblonga, basi rotundata, subcordata vel plus minus cuneata, plus minus inaequilaterali, apice cuneata vel plus minus abrupte acuminata, 7 — 25 cm longa et 3—8,5 cm lata, nervis lateralibus primi ordinis utrinque circ. 14, infra prominentibus., glabra vel supra sparse pubescente, infra plus minus dense velutino-tomentosa; inflorescentiis axillaribus, rhachide ultra 35 cm longa, plus minus brunneo-tomentosa, ramosa, ramis oppositis vel alternantibus, paniculatis, usque 15 cm latis, ramis basi bracteolatis, bracteis linearibus veluti no-ciliatis; floribus breviter petiolulatis, petiolulo circ. 3 mm longo, brunneo-tomentoso; sepalis orbicularibus, imbricatis, circ. 3 mm longis, extus velutinis, intus sparse velutinis; petalis circ. 4 mm longis margine ciliatis, dorso sparse velutinis; filamentis staminum circ. 1 mm longis, dense velutinis antheris subaequilongis; ovario dense velutino, pilis brunneis; stylo basi velutino usque 4 mm longo.«

»In Congo belgico: Yambata, Janvier 1914 (De Giorgi n. 1637. — Nom. vern.: Mosusu [Budja], Bossosan [Libati]), et tevrier 1914 (De Giorgi n. 1724. — Nom. vern.: Limbangi, Ebojo. — Arbre du plateau forestier, dont le tronc sert à fabriquer des pirogues); environs de Likimi, 20 février 1910 (L. Malchair n. 130. — Nom. vern.: Modede); Janvier 1913 (De Giorgi n. 100. — Arbuste des plaines herbeuses. — Nom. vern.: Tuba); mars 1910 (L. Malchair n. 202. — Nom. vern.: Dongo. — Bois de construction); Lukolela, 6 juillet 1906 (L. Pynaert n. 190).«

»Obs. Nous réunissons sous ce même nom une série d'échantillons qui, à première vue, semblent assez différents les uns des autres surtout par la forme et la dimension des folioles, mais les caractères des inflorescences, la villosité de la face intérieure des feuilles semblent relativement constants. Par son aspect général cette espèce se rapproche du *D. Pynaertii*. La villosité de la face inférieure suffit pour faire distinguer facilement le *D. variabilis*.

Species e genere exclusa.

Deinbollia ramiflora Taubert in Engler, Pflanzenwelt Ostafrik. C (1895) 250 = *Camptolepis ramiflora* Radlk.

Species ex ordine exclusa.

Deinbollia albida Gilg in schedis coll. Zenker n. 4944; Engler, Pflanzenwelt Afrikas III. 2. (1921) 272 = Meliaceae: *Carapa* sp.

19. *Hornea* Bak.

Hornea Bak. Fl. Maurit. (1877) 59; Radlk. in Sitzungber. Bayer. Akad. VIII (1878) 271, 281 (sphalm. *Hornea*), XX. (1890) 233-235, 283 et in Engl. u. Prantl, Nat. Pflanzenfam. III. 5. (1895) 316. — *Tkouinia?* sp. Boj., cf. lit. spec.

Flores spurie poly gami, regulares, sat magni (alabastra tantum visa). Sepala 5, orbicularia, quam maxime concava, late imbricata, coriacea, extus dense fulvo-sericeo-tomentosa, intus glabra, duo exteriora paullo minora. Petala 5, sepalis conformia, extus dense flavido-sericea, intus glabra, supra unguem perbrevev squama brevi lata emarginata deflexa dorso bicorniculata subtus pilosa aucta. Discus regularis, breviter cupuliformis, subpentagonus, intus praesertim ad angulos tomentosus. Stamina 18—24, intra discum circa pistilium aequilongum inserta, erecta; filamenta breviter filiformia, basi pilosula; antherae quam filamenta (in alab.) duplo longiores, oblongae, basi excisae, supra excisuram dorso affixae, introrsae, glabrae; pollinis granula trigoaplacentiformia, triporosa. Germen 2-loculare, a lateribus loculorum (ante sepal. 2.) medianorum compressum, dense pilosum; stylus germine dimidio brevior, a dorso loculorum compressus, margine sulco suturali stigmatoso versus apicem obtusum evanescente exaratus, subglaber; gemmulae in loculis solitariae, supra basin anguli centralis ad tuberculum axis affixae, erectae, apotropae, campylotropae. Fructus late obverse deltoideus, samaroideus, bilocularis, loculis sat amplis semiobcordatis a lateribus compressis dorso in alam oblique adscendentem loculum ipsum latitudine subaequantem apice rigide coriaceam productis denique solutis, totus sufferrugineo-velutinus, endocarpio sclerenchymatico laxo pilosulo. Semen globosum, nigrum.

Arbor vel frutex, ramis teretibus striatis, lenticellis bilabiatis punctatis, adpresse fulvo-tomentellis, dein glabratis, cortice pallido cellulis mucigeris nee non sclerenchymaticis coacervatis (adjectis crystallophoris) persito. Folia paripinnata, 2-juga, breviter petiolata, petiolis supra complanatis glabratis, exstipulata; foliola elliptico-oblonga, obtusa vel emarginata, basi inaequaliter subacuta (latere interiore brevior et angustior), petiolulis crassis brevibus suffulta, coriacea, nervis lateralibus oblique patentibus praesertim subtus prominentibus, arete reticulato-venosa (venis per totum diachyma transmissis, cellulis crystallophoris praesertim ad latera crebris adjectis), glabra, vix pilis singulis adspersa, supra nitida, subtus opaca, flavescenti-viridula, epidermide non mucigera paginae superioris e cellulis subsexangularibus pachydermicis exstructa, paginae inferioris hic illic crystallula singula vel plerumque concreta in cellulis saepius geminatis gerente, glandulis microscopicis clavatis ut in Sapindi speciebus foveolis conchiformibus lateraliter insertis et incumbentibus (praesertim subtus) crebris adspersa, pneumatenchymate sat lacunoso. Panicula terminalis, corymbiformis, ampla, adjectis minoribus axillaribus, ramis thyrsoides angulosis sulcatis dense fulvo-sericeo-tomentellis dichasia et polychasia stipitata pluriflora gerentibus; bractee bracteolaeque subulatae, dense velutinae. Alabastra globosa, breviter pedicellata, pedicellis basi articulatis.

Species 1, in insula Mauritius endemica*

Genus floris indole et praesertim androceo polymero maxime affine generi antecedenti *DeinboUia*, fructu alato accedens ad eisdem tribus genus *Atalaya*, glandulis epidermidis microscopicis

- omnino congruum cum eisdem tribus genere *Sapindus*.

H. mauritiana (Boj.) Bak. 1. c; Radlk. in Engl. u. Pr. 1. c. — *Thouinia? mauritiana* Boj. Hort. Maurit. (1837) 56, sine descr. - Vulgo: Arbre à l'huile t. Boj. 1. c. - Character ut supra.

Rami 6—8 mm crassi. Folia petiolo 3—4 cm longo adjecto circ. 20 cm longa; foliola cum petiolulis 6—8 mm longis 10—14 cm longa, 4—6 cm lata. Inflorescentia 15—18 cm longa, superne 10—12 cm lata; rami thyrsoides 10—12 cm longi; dichasiorum stipites 8—12 mm longi; bractee circ. 4 mm longae. Alabastra diametro circ. 4 mm. Fructus circ. 2 cm altus, apice 5 cm latus, loculis singulis ipsis apice circ. 12 mm latis, infra medium circ. 6 mm crassis.

In insula Mauritius: Martin! (circ. 1788, flor.; Hb. Del ess., DC); Bojerl (in the forests of Flacq, near Pierre-font, fruct.; Hb. Kew.).

Trib. IV. Aphanieae Radlk.

Aphanieae Radlk. in Durand, Ind. Gen. (1887) 74, in Sitzungsber. bayer. Akad. XX. (1890) 217, 235, 283 et in Engl. u. Prantl, Nat. Pflanzenfam. III. 5. (1895) 317, cf. et Rangschikking der *Sapindaceae* volgens Radlkofer in Boerlage, Handleid. Fl. Nederl. India I. (1890) 284. — *Sapindearum* pars DC. Prodr. I. (1824) 608, *Sap. seneg.* Poir. i. e. *Aphania seneg.* R. (*Sap. rubiginosus* Roxb. et *S. fraxinifolius* DC, i. e. *Eriogl. rub.* R.). — *Sapindearum* genus Gamb. in Mém. du Mus. XVIII. (1829) 27 (*Erioglossum* incl. *Moulinsia*) et generis pars p. 26 (*Sap. Senegal.* Poir., *S. rubig.* Roxb.) et gen. non satis not. p. 37 (*Aphania* BL); Spach, Hist. nat. vég. Phanérog. III. (1834) 40, pariter; *Sapindearum* genera Meissn. Gen. (1837) 52 (*Aphania*, *Erioglossum* incl. *Moulinsia*), Comment, p. 37; Endl. Gen. (1840) 1070, pariter; Suppl. IV. 3. (1847) 78; Lindl. Veget. Kingd. Ed. 3. (1853) 385, pariter. — *Allophyllearum* genus et *Sapindearum* genus et generis pars Bl. Rumph. 111.(1847) 118 (*Eriogl. c.* syn. *Moulinsia*), p. 92 (97, 98 *Aphania* sub *Sapindo*), p. 103 (*Didymococcus* in *Aphanieae* Sectio). — *Sapindearum* genus et generis pars Benth. et Hook. f. Gen. I. 1. (1862) 396 (*Eriogl. c.* syn. *Moulinsia*), 404 (*Aphania* et *Didymococcus* sub *Sapindo*). — *Sapindearum* et *Pancoviarum* pars Baill. Hist. Plant. V. (1874) 348 (*Aphania* et *Didymococcus* sub *Sapindo*), 359 (*Erioglossum* sub *Pancovia*).

20. Erioglossum Biome.

Erioglossum Blume, Bijdr. Fl. Nederl. Ind. V. (1825) 229; Camb. in Mém. Mus. d'Hist. nat. XVIII. (1829) 27; Don, Gen. Syst. I. (1831) 655 et 666; Spach, Hist. nat. Végét., Phanérog. III. (1834) 57 excl. sp. Senegal, coll. Perrott. et Leprieur (cfr. *Pancovia bij.*); Meissner, Gen. Pl. (1836-1843) 52 (37) excl. *E. caulifl.* Guill. et Perr. (cfr. *Pancovia bij.*); Endl. Gen. (1836-1840) 1070 n. 5611 et Suppl. IV. Pars III. (1847) 78; Blume, Rumph. III. (1847) 118 1.166 excl. *E. cuneifol.* (cfr. *Sapindus rarak*); Miq. Fl. Ind. Bat. I. 2. (1859) 573; Benth. et Hook, f. Gen. I. 1. (1862) 396 excl. cit. Guill. et Perr. (cfr. *Pancovia bij.*); Benth. Fl. austral. I. (1863) 454; Baker in Oliv. Fl. trop. Afr. I. (1868) 420 quoad charact. generis spec. asiat. spectans, excl. vero specie afr. descripta (quae *Pancovia bij.*); Hiern in Hook. f. Fl. Brit. Ind. I. (1875) 672 excl. sp. Senegal, (cfr. *Pancovia bij.*); Vidal, Sinops. (1883) 95 excl. sp. afric. (cfr. *Pancovia bij.*), 349, 366, Atlas p. XXII, t. 35 fig. H; Radlk. in Sitzungsber. bayer. Akad. XX. (1890) 236, 283 et in Engl. u. Prantl, Nat. Pflanzenfam. III. 5. (1895) 317; Boerlage, Handleid. Fl. Nederl. Ind. I. (1890) 259 excl. sp. Senegal, (quae *Pancovia bijuga* Willd.); King, Materials Fl. Malayan Penins. in Journ. As. Soc. Beng. LXV. 2. (1896) 424 excl. sp. afric. (quae *Pancovia bij.*) et 1 asiat.? (nom. non indicat.); Koord. et Valet. Bijdr. Booms. IX. in Meded. Plantent. LXI. (1903) 153. - *Vitenia* (>*Uitenia*<) Noronha, Relat. PL Javanens. in Verhand. Batav. Genootsch. V. (1790) 4 et 2^{de} druck (1827) 67 (nom. tantum c. nom. jav. »Kilayu«); Hassk. in Tijdschr. Natuurl. Geschied. en Physiol. XI. (1844) 216. — *Moulinsia*, non BL, cfr. *Pancovia*, nee Rafinesque, quae *Aristida*, Camb. in Mem* Mus. d'Hist. nat. XVIII. (1829) 10, 27 t. 21, excl. fructul sec. specim. *Aryterae litoralis* descripto; Don, Gen. Syst. I. (1831) 655 et 666; Meissner, Gen. Pl. (1836-1843) 52 (37); Endl. Gen. PL (1836—1840) 1070 n. 5613 et Suppl. IV. Pars III. (1847) 78; Walpers, Rep. I. (1842) 418. — *Sapindus* sp., *Vitenia* sp., *Pancovia* sp., *Dittelasma* sp. autor. varior., cf. lit. spec.

Flores spurie polygami, ♂ et ♀ (5 mentientes) saepius in eadem inflorescentia, oblique symmetrici, mediocres; alabastra subglobosa, canescenti-sericeo-tomentella, magnitudine cannabis grana aequantia. Sepala 5, suborbicularia, concava, imbricata, 2 exteriora minora, coriacea, extus praeter marginem petaloideum sericeo-tomentella, ciliolata, intus glabra. Petala 4 (infimi sede inter sepalum 3. et 5. vacua), ex obovato spathulata, unguiculata, sepalis duplo longiora, extus ima basi cum ungue villosa, intus squama cucullata retusa villosissime barbata summo dorso crista breviter stipitata lata obcordato-biloba vel quasi semilunari (lobis retrorsum contiguos quasi infundibulum

dorso fissum exhibente) villosa instructa aucta. Discus unilateral, semilunaris, supra insertiones petalorum in laminam elevatam angulosam (si mavis in glandulas connatas commissuris angulum exhibentibus) productus, glaber. Stamina 8, circa pistillum ad Moris marginem inferiorem rejectum inserta, filamenta parum complanata, pilis longis villosa, antherae ellipticae, obtusae, introrsae, dorso supra basin emarginatam affixae, connectivo dorso latiore atro-purpureo glabro; pollinis granula trigono-placentiformia, 3-porosa. Germen (floris <\$ rudimentarium) obcordato-tricoccum, villosum, stylo filiformi inter coccus inserto sursum (i. e. versus floris partem superiorem sepalum 4. ferentem) curvato, stigmatate subtridentato; gemmulae erectae, basi affixae, oblique ascendentes, apotropae, campylotropae. Fructus drupaceus, deorsum coccato-lobatus, tricoccus vel abortu 2—1-coccus, coccis obovato-oblongis, ima basi connatis, oblique erectis, sarcocarpio tenui succulento, putamine chartaceo-crustaceo, fibris sclerenchymaticis longis cruciatim intertextis exs true turn. Semen erectum cocco conforme, testa membranacea; embryo rectiusculus; cotyledones crassae, amylierae, verticaliter juxtapositae, altera dorsali altera ventrali; radícula basilaris, punctiformis.

Arbor sat magna vel frutex ramulis junioribus innovationibusque velutino-tomentosis. Folia sparsa, abrupte pinnata, 2—8-juga, petiolata, exstipulata; foliola subopposita, breviter petiolulata, deorsum decrescentia, suboblonga, obtusa, subacuta vel acuminata, integerrima, pilis sufferrugineis subtus plerumque molliter pubescentia, sero glabrescentia, nervis praesertim subtus prominentibus curvato-adscendentibus ante marginem anastomosantibus, epidermide non mucigera, utrinque glandulis microscopicis capitatis stipitatis capitulo multicellulari singulis vel binis-quaternis plerumque pilis approximatis creberrimis ornata, cellulis secretoriis persita, secus nervos praesertim subtus utriculis laticiferis instructa, crystallis (praeter nervis et venis adjecta) nullis. Thyrsi in paniculas amplas ramosas congesti vel fasciculati, terminales, omnibus partibus bracteis bracteolisque subulatis inclusis tomento velutino induti, dense cymulas sessiles gerentes. Flores petalis albis. Fructus edulis.

. Species 1, per Asiam tropicam usque ad Australiae ohm late divulgata.

Genus petalorum et disci conformatione *Paullinieu* quodammodo similis, foliorum indole vero diversissimum, fructus fabrica generi *AUophylus* et praesertim generi *Aphonia* accedens et huic ulteriori embryonis et foliorum indole certe maxime affine, quasi *Aphaniae* sectio floribus symmetricis (ut ex. gr. inter *Sapindeas Pseudatalaya*, *Loxothouinidium*, *Dittelasma* in generibus *Atalaya*, *Thouinidium* et *Sapindus*, inter *Lepieantheas Anomoanthes* et *Anomorhiza* in genere *Lepuanthes*), attamen ob fructus formam, endocarpium structuram et glandularum microscopicarum figuram et positionem genus proprium habendum.

B. rubiginosum (Roxb.) Blume, Rumph. III. (1847) 118 in obs. (perperam ab *E.eduli* Blume distinctum habitum); Brandis, Forest Fl. (1874) 108 et Indian Trees (1906) 192; Kurz in Journ. As. Soc. Beng. XLIV. 2. (1875) 184 et Veg. Nicob. Isl. ibid. XLV. 2. (1876) 125; Radlk. Sap. Holl.-Ind. (1877-1878) 16, 54, 95 (86, 124, 246), in Sitzungber. bayer. Akad. VIII. (1878) 248 etc. (v. indie.) et tab. I p. 298 etc. n. 4, 12, 29, 30, 34, 45, 52, 65, 72, 78, 81, 82, in Warburg, Beitr. pap. Fl. in Engler's Bot. Jahrb. XIII. (1891) 365, in Engl. u. Prantl, Nat. Pflanzenfam. III. 5. (1895) 517, in Perkins Fragm. Fl. Philipp. I. (1904) 60, in Hallier, Elbert's Sunda-Exp. in Meded. Herb. Leiden Nr. 22 (1914) 14, in Johs. Schmidt, Fl. Koh Chang in Bot. Tidsskr. XXXII. 2. (1915) 315, et Sap. Papuas. in Engler's Bot. Jahrb. LVI. (1920) 266; O. Kuntze, Revis. Gen. I. (1891) 143 c. var. *>obtu8ifoliolum** Merrill, Review etc. (1905) 34 c. syn. *Sapindus edulis* Bl., Blanco, v. infra, Fl. Lamao Forest, in Philipp. Journ. Sc. I. (1906) 87, et ibid. III. Nr. 2 (1908) 79, Enum. Philipp. Fl. pi. II. (1923) 498; Graib, Contr. Fl. Siam. (1915?) 46, Fl. Siam. enum. I. (1926) 325. - *Vitenia stilaginea* NoroAha msc. cum tab. 78 ined. in Bibl. Juss. (cf. Gamb. 1. c. [1829] 10 et supra lit. gen.). — *Sapindus rubiginosus* Roxb. PI. Goromand. I. (1795) 44 t. 62! (specim. in Hb. Wall. n. 8041E), Hort. Bengal. (1814) 29 et Fl. Ind. II. (1832) 282; Willd. Sp. PI. II. 1. (1799) 469; Poir. in Lam. Enc. VI. (1804) 665; Pers. Synops. I. (1805) 445; Smith in Rees Cyclop. XXXI. (1815) n. 6; Jack, **Malayan**

Miscell. I. (1820) 11, reimpr. in Hook. Bot. Misc. I. (1830) 280 et in Calcutta Journ. Nat. Hist. IV. (1844) 184; DC. Prodr. I. (1824) 608; Spreng. Syst. II. (1825) 251; Camb. in Mém. Mus. d'Hist. nat. XVIII. (1829) 26; Wight, Cat. (autogr., 1833) 22 n. 367; Wight et Am. Prodr. Fl. Penins. Ind. or. I. (1834) 112; Spach, Hist. Végét., Phanér. III. (1834) 55; Spanoghe, Cat. PL Timor, in W. Hook. Compan. Bot. Mag. I. (1835) 345; Hoyle, Ill. Bot. Himal. Mount. I. (1839) 138; Graham, Cat. Bomb. PL (1839) 29; Walp. Hep. I. (1842) 416; Voigt, Hort. suburb. Calcutt. (1845) 94; Moritzi, Verz. d. v. Zolling. ges. Pfl. (1845-1846) 22, coll. n. 562!; Wall. Cat. (1847) n.8041 (A-1)! (E, Hb. Iloxb.I); Griff. Not. (posth. Pap.) IV. (1854) 548; Dalz. et Gibs. Bomb. Fl. (1861) Suppl. 14; Anderson, Cat. Hort. Calcutt. (1865) 9; Teysm. et Binn. Cat. Hort. Bogor. (1866) 214; Beddome, Fl. silv. (1869-1873) Anal. Gen. LXXIII. (ex Hiern); Kurz, Rep. Pegu Forests (1875) App. et p. 38 n. 290, B p. 40. — *Sapindus edulis*, non Ait. (i. e. *Litchi chinensis*), nee Spach (i. e. *Talisia esculenta*), Bl. Cat. Hort. Bog. (1823) 64 et annot. 11; Blanco, Fl. Filip. Ed. 2 (1845) 201, Ed. 3. II. (1878) 12 (»spec. nov.«). — *Sapindus fraxinifolius* DC. Prodr. I. (1824) 608!; Spanoghe, Cat. PL Timor, in W. Hook. Compan. Bot. Mag. I. (1835) 345; — non Hb. Mus. Par. ed. Bl. (i. e. *Lepisanthes pollens*). — *Erioglossum edule* Blume, Bijdrag. V. (1825) 229; Camb. I.e. (1829) 27; Don, I. c. I. (1831) 666; Spach I. c. (1834) 57; Walp. Rep. I. (1842) 417; Blume, Rumph. III. (1847) 119 t. 166, c. var. *fi. subcorymbosum*, *y. album*, *d. fraxinifolium*, omnibus vix ullius momenti; Walp. Ann. II. (1851-1852) 211; Miq. I. c. (1859) 574, c. var./S »Timor« et Suppl. I. (1860) 199; Ben.th. Fl. Austral. I. (1863) 454; Cat. Kew. Hb. Griff, etc. (1865) 9 n. 981!; Cat. Hb. Wight (1869-1870) 7 n. 536; Teysm. et Binn. Cat. Hort. Bogor. (1866) 215; Kurz, Rep. Veget. Andam. I si. (Reprint, 1870) 34!; Van Eeden, Houtsort. (1872) 270 n. 290; Hiern in Hook. f. FL Brit. Ind. I. (1875) 672; F.-Villar, Noviss. App. in Blanco FL Filip. Ed. 3. IV. (1880) 51; Ferd. Müller, Censur (1882) 24 et Ed. II. (1889) 41 excl. syn. **Pancovia* part.«; Vidal, Sinops. (1883) Atlas p. XXII, t. 35 fig. H, Phanerog. Cuming. (1885) 28, 40, 104, coll. n. 952! 1206!, Revis. (1886) 94, coll. n. 716! 717! et Cat. Herb. (1892) 52 acced. n. 2507, 2516 etc.; Hemsl. Bot. Voy. Challeng. I. P. III. (1885) 134 (Timor Laut); Oliver in Rep. Forbes' Exped. Timor Laut in Journ. Linn. Soc. XXI. (1886) 373; Prain, Little Andaman and the Nicobars (»Batti Malv«) in Proceed. As. Soc. Beng. Dec. (1891) 168; id. Veget. Coco Group, in Journ. As. Soc. Beng. LX. 2. (1891) 308; id. Fl. Narcondam etc. ibid. LXII. 2. (1893) 69; Ridley in Trans. Linn. Soc. 2. ser. III. (1893) 288 et FL Singap. in Journ. Straits Branch Roy. As. Soc. Nr. 33 (1900) 66, Fl. Malay Penins. I. (1922) 491 Fig. 49; Gammie, Bot. Tour in Lakhimpur District, Assam, in Records Bot. Surv. Ind. I. Nr. 5 (1895) 79; King, Mater, etc. (1896) 425; Woodrow, FL West. Ind. in Report Bot. Surv. Ind. (1898) 16; Cooke, FL Pres. Bombay (1902) 262; Duthie, FL Upper Gangetic Plain I. 1. (1903) 179; Koord. et Val. 1. c. (1903) 154 n. 29073/81 etc.; Koorders in Natuurk. Tijdschr. Nederl.-Indie LXIII. (1904) 46, coll. Btisgen n. 53, 60; Williams, PL du Siam in Bull. Herb. Boiss. 2. sér. V. Nr. 3 (Mars 1905) 221 (58); Prain, Veget. Distr. Hughli-Howrah etc. in Records Bot. Surv. Ind. III. 2. (Febr. 1905) 190; Backer, FL Batav. I. (1907) 340; H. Lecomte, Fl. Ind.-Chin. I. (1912) 1019; Koord.-Schum. Syst. Verz. I. Java (1912) Sapind. 5, coll. 7390/8 etc., II. Nord-Sum. (1910) 5, coll. 10563/8; Koord. Exk.-Fl. Java II. (1912) 337 et Atlas Baumart. I. 2. (1913) t. 88, coll. 29389/8! etc.; Merrill, Spec. Blanc. (1918) 238, coll. n. 320, 1042, quoad *Sap.edul.* Blanco, cf. supra; (Rendle) Forbes N.-Guin. PL in Journ. Bot. LXI. (1923) Suppl. 11, coll. n. 579. — *Moulinsia cupanioides* Camb. 1. c. (1829) 27, 40 t. 2 part.!, excl. fructu (»loculicido-trivalvi« dicto), f. 5, 6, sec. specim. *Aryterae litoralis* (in Hb. Paris, a Camb. ipso nom. »Moul. cup.« inscriptum!) descripto et (praeter fig. 4) delineato (cf. Radlk. in Sitzungsber. bayer. Akad. VIII. [1878] 351); Don, I.e. (1831) 667; Decaisne, Hb. Timor. Descr. in Nouv. Ann. Mus. III. (1834) 443 (seors. impr. p. 115); Meissner, 1. c. Comment, p. 37; Spanoghe, Prodr. Fl. Timor, in Linnaea XV. (1841) 180 c. syn. *Sap. rubig.* Roxb., *S. fraxinif.* DC. et *E. edule* BL, a Sp. optime hue allatis; Walp. Rep. I.

(1842) 418. - *Moulinsia rubiginosa* Don 1. c. (1831) 667; A. Gray, Wilkes Expl. Exped. XV, Bot. I. (1854) 250. - *Sapindus alternifolius* Hb. Hamilt. ed. Wight et Arn. Prodr. etc. (1834) 112 in syn. *Sap. rubig.* Roxb.; Wall. Cat. (1847) n. 8041D! — *Sapindus longifolius* (non Vahl, cfr. *Euphoria Longana* Lam.) Hb. Hamilt. ed. Wight et Arn. ibid.; Wall. ibid. n. 80461 — ?*Sapindus Saponaria*, non L., Blanco Fl. Filip. (1837) 288, ex descr. flop, et fruct., vix, uti F.-Villar, Vidal et Merrill 1l. infra cc. existimaverunt, *Sapindum rarak* DC. (*Dittelasma rarak* Hook, f.) indicante, cf. Radlk. in Sitzungsber. bayer. Akad. VIII. (1878) 303 n. 81, p. 363, vix quoque, uti Merrill nuperrime 1. infra c. putavit, ad *Guioam pleuropteridem* Radlk. spectante. — *VUenia edulis* Steud. Nomencl. Ed. 2. II. (1841) 776; Hassk. Cat. Hort. Bogor. (1844) 224; Filet, Hort. Weltevred. (1855) 136. - *Vitenia?* sp. Hassk. 1. c. (1844) 224. - ?*Sapindus Guisian* Blanco, Fl. Filip. ed. 2. (1845) 201, ed. 3. II. (1878) 11, perperam »sp. nova« dicta, potius nomen novum, planta eadem ac *Sap. Saponaria* Blanco, ed. 1, cf. supra. — *Sapindus edulis* Blanco ibid. (1845) 201, (1878) 12, cf. supra post *S.edul.* Bl. (1823). — ?*Erioglossum cuneifolium* Blume, Rumph. III. (1847) 118 in obs. c. syn. *Sap. Sapon.* Blanco, cf. supra. — *Sapindus azogia* Hb. Hamilt. ed. Wall, in Cat. (1847) n. 8041C! — *Sapindus montanus* (non Bl.) Wall. 1. c. n. 8041C! — *Erioglossum* sp. Teysm. et Binn. Cat. Hort. Bogor. (1866) 215; Koorders, Plantk. Woordenb. (1894) 31. — *Sapindaeea* Teysm. et Binn. 1. c. (1866) 3921 c. indie. »Siam, vulgo Mahoeat, (73)«. — *Pancovia* sp. Baill. in Adans. IX. (1870) 229. - *Pancovia edulis* Baill. Hist. Pl. V. (1874) 359 f. 375, 376 (quae revertenda), 377. — *Pancovia rubiginosa* (aut. inexacte »Baill.« dicto) Ferd. Müller, Fragm. IX. (1875) 100, emend, quae Bailloni sensu de genere potius quam de specie dicuntur; Kurz, Forest Fl. Brit. Burma I. (1877) 296. — *Sapindus Saponaria* (non Linn. Sp.), Linn. Hb. ed. Hi em 1. c. (1875) 673 et 685, ubi recte hue recensetur, partiml (specim. sine loco etc., a L. ipso nom. **S. Sapon.*« inscriptum; cf. Radlk. 1. c. [1878] 364). — *Sapindus pinnatus* Roxb. Ic. ined. n. 89 ex Hiern 1. c. p. 672 et 685. — ?*Dittelasma rarak*, non Hook. f. resp. Hiern, F.-Villar in Blanco, Fl. Filip. Ed. 3. IV. (1880) Noviss. Append, p. 51 quoad syn. *Sap. Sapon.* Blanco, *Sap. Guisian* Blanco, *Erioglossumcuneifol*BL et nom. vulg. Duca (specimen, ut dicitur, in ins. Panay vivum visum). — ?*Dittelasma* (sp.) Vidal Sinops. (1883) 349 c. syn. *Sap. Guisian* Blanco, 372 c. nom. vulg. Duca, p. 374 c. nom. vulg. Guisian. — ?*Sapindus rarak*, non DC, Merrill Review etc. (1905) 34 c. iisd. syn. Blancoanis (adjecta nota, nullum adesse in herbariis *Sapindi rarak* specimen e Philippinis). — ?*Guioa pleuropteris*, non Radlk., Merrill Spec. Blanc. (1918) 241, quoad *Sap. Saponar.* Blanco, cfr. supra, et *Sap. Guisian* Blanco, cfr. supra. — Vulgo: Klaju jav. t. Koorders 1. c. 1894, Kilâyii t. Nor. 1. c. 1790, Kilalayu s. Kilaleyo t. Bl. 1. c. 1847, adjecta sub var. /} voce gedeh, i. e. magna (ex Hassk. = Kiparoi gedeh, an recte?, cfr. *Lepisanthes*), et sub var. y bodas, i. e. alba, apud Hassk. 1. c. 1844 (quoad formam typicam?) etiam hiedung, i. e. nigrum, Kietjileyjouw t. Bl. 1. c, Katilaju t. Koord. 1. c, Tilajoe sundaice, ex Heyne, Nuttige Plant. Nederl. Ind. III. (1917) 151, Laleyo malaice t. Filet in Hort. Weltevred. 1855, Kalalaiju t. Filet in Woordenb. 1876 et 1888; etiam Kalaju t. Koord. et Val. 1. c. (1903) et Tilaju sundaice; Pohon Kilaju mal. Batav. t. Koord. 1. c. (1912); Wangan, Wangsan sund. t. Koord. 1l. cc. (1912, 1913); Kalit layu Jackl. c. (1820); Kajoe latteh in Timor t. Teysmann in sched. sub n. 10772; Toebisira in lingua Mandeheling t. Filet in Hort. Weltevred. 1855; Mertajam t. Ridley 1. c. 1890; Hseik-Khyae Andam. t. Kurz. 1. c. 1870, Seik che s. tseik chf in Pegu t. eod. 1. c. 1875, Tseik-chay in Burma t. eod. 1. c. 1877, Ahaya Nicobar. t. eod. 1. c. 4876; Petal Nicobar. t. Jelinek, vix recte ex Kurz 1. c. 1876 in annot.; Thitni (ut et aliae arbores ligno rubro insignes) in Burma t. Brandis 1. c. 1874; Ischy-rashy (Ishee-rashee) Telingasice t. Roxb. 1. c. 1795 (1832); Ma Huet Siamensib. t. Zimmermann in sched., Mahoeat iisd. fid. Teysm. et Binn. Cat. p. 392 (*Sapindaeea* 731); Nh6n rúng s. Nh6n lam annamice t. Pierre in sched.; Aukchinsa in Upper Burma t. Brandis l.e. 1906; Calamayo in lingua Tagalog t. Vidal l.e. (1883) 366, Malasaguin

puti in prow Tayabas ins. Luzon t. eod. I.e. (1886); Malacacão Tagal. (ut et *Lepidopetalum*) t. Merrill, Diet. (1904) 147, et Calayo Tagal. t. eod. I.e. (1906); ?Guisihan s. Guisian Tagal. t. Blanco 1. c. sub *Sapind. Guisian* (quod nomen a Blanco 1. c. sub *Euphoria annulari*= ? *Arytera litoralis* Bl. quoque et sub *Euphoria didyma* = ? *Litchi philippinensis* Radlk. indicatur, praeterea scriptum »Guicijan« sub specie *Ormosiae* Sophorearum quoque in Hb. Manil. »Aherns collector n. 447, prov. Rizal, a. 1904«); Duca in lingua Visayan t. Blanco sub *Sap. Guisian* 1. c. et F.-Villar 1. c. (1880) sub *Eriogl. edul.* — Arbor parva (Ridley) vel sat magna vel f rut ex nunc ramosissimus, nuic suberamosus foliorum coma inflorescentiaque terminatus; rami teretes petiolique striati ut et innovationes tomento sufferrugineo velutini, dein glabrescentes, rubrofusci. Folia 2—8-juga; foliola subopposita vel alterna, elliptico-oblonga, obtusa, subacuta vel acuminata, basi oblique obtusa (latere exteriori angustiore) petioulis brevibus incrassatis insidentia, vel praesertim superiora angustiora basi subcuneata, membranaceo-chartacea, nervis lateralibus subtus (supra minus) prominentibus, supra glabra nee nisi in nervis tomento velutino sufferrugineo induta, glauco-livida, opaca vel subnitidula, subtus sufferrugineo-subvelutina, saepius glabrescentia, inde nitidula, cellulis secretoriis secusque nervos utriculis laticiferis instructa, utrinque, praesertim subtus, glandulis capitatis plerumque aut singulis aut binis usque quaternis pilis confinis creberrimis ornata; thyrsi in paniculas amplas terminales congesti, omnibus partibus sufferrugineo-velutini, dense cymulas (dichasia in cincinnos desinentia) subsessiles gerentes; alabastra subglobosa; flores mediocres, breviter pedicellati; sepala 5, extus flavescenti- vel cinereo-sericea; petala 4, extus ima basi cum ungue albide villosa, intus squama longa villosissima albide barbata crista villosa instructa aucta; discus semilunaris, glaber; stamina 8, filamenta villosa, antherae ellipticae; germen obcordato-tricocum, pube viridescente-cana villosa indutum; fructus drupaceus, laxe pilosulus, olivaceus (Blume), rubescenti-luteus vel e rubro fusco-purpureus (Merrill), sarcocarpio tenui succulento eduli; cetera ut supra.

Arbor 5—10 m alta vel frutex 3—5-metralis, ligno tenaci durabili utili, centrali chocoladino. Rami 0,5 — 1 cm crassi. Folia petiolo 8—20 cm longo adjecto 30—60 cm longa; foliola superiora 10—25 cm longa, 3—6 cm lata, inferiora minora, latiora 6—12 cm longa, 3—7 cm lata. Panicula 20—40 cm longa; thyrsi 10—25 cm longi. Bracteae bracteolaeque parvae, subulatae. Pedicelli 1 — 2 mm longi, infra medium articulati. Alabastra diametro circ. 4 mm. Petala alba. Fructus cocci sicci 12—14 mm longi, 5—6 mm lati.

In Asia tropica ab Indiae peninsula occidentali usque ad Cochinchinam (et ?Chinam), in archipelago indico usque ad Philippinas et insulas Key, nee non in Australia septentrionali-occidentali et in Nova Guinea. In omnibus collectionibus, e quibus hie praesertim mihi visae et numeris insignitae enumerantur, adjectis quibusdam locis et collectionibus ab auctoribus indicatis: In India (interdum culta): Roxburgh! (in Coromandelia; *Sapindus rubiginosus* adjecta indicatione: A native of the mountainous parts of the Gircars, 1l. cc; n. 89 in Hb. Martius, fl. et fruct. adject.; Hb. Kew. ex Hb. Forsyth; Hb. Willd, n. 7746, fl.; Wallich, Cat. n. 8041E, Hb. Roxb.); id.! (cultu in Ht. bot. Ind. or., fl.; Hb. Deless.); Koenig! (fl.; Hb. Vahl, nunc Havn.); Rottler! (fl.; Hb. Puerari, nunc DC; Hb. Kew.); Macé! (Coromandelia, fl.; ex Hb. Paris, a. 1820 comm. c. Hb. Kunth, nunc Berol.); Perrottet n. 84! et sine n.! (PondichGry m. Mart. 1836, fl.; Hb. Deless. et ex hoc comm. c. Hb. Berol.; Hb. Boiss., Vind.); id. n. 162! (Nilgerries, fl. et fr. immat.; Hb. Franquev., Boiss., Vind.); Wallich, Cat. n. 8041 A! (Herb. Madras), n. 8041B! (Herb. Wight); Graham (Girgaum woods, Bombay, rare, 1. c. 1839); Dalzell et Gibson (in the woods of Girgaum, but certainly planted, I.e. 1861); Woodrow (Girgaum, Bombay, planted, 1. c. 1898); Cooke (Girgaum woods, certainly not indigenous, 1. c. 1902); Brandis (probably in Oudh and the Central Provinces; native of Eastern Bengal, Burma, the hills of the Circars, 1. c. 1874); Duthie (Kheri district N. Oudh, 1. c. 1903);

Hamilton! (= Wallich, Cat. n. 8041C *Sapindus azogia* Hb. Ham. e Basti, 1810 et *Sapindus monatanus* e mont. Morang, in Nepal orient., 1813); Hooker f. et Thomson Hb. Ind. or.! (Sikkim, altit. 1000 ped., ttegio trop., fol. leg. J. Hook.; Hb. Kew., Berol., Vind.); id.! (Silhet, culta?, m. Jun. 1850, fl. et fruct.; leg. J. Hook, et J. Th. Hb. Kew., Berol.); Wallich, Cat. n. 8041 G! (fl.; Silhet); Simons! (Assam, fl.; ex Hb. Calcutt. comm. c. Hb. Monac); Colonel Jenkins! (Assam, fl.; Hb. Kew, Monac); Hamilton! (= Wallich, Cat. n. 8046 *Sapindus longifolius* Hb. Hamilton, e Goalpara, Assam); Gammie (Assam, Lakhimpur district, Mokum forest, 1. c. 1895); Hamilton (= Wallich, Cat. n. 8041D *Sapindus alter nifolius*, Gongachora, Ranjamatty — on the eastern frontiers of Bengal, Wight et Arn. 1. c. p. 112); Prain (District Hughli-Howrah and the 24 Pergunnahs, village-shrubberies and about tanks, not very general, but usually as if wild, 1. c. 1905); King's Collector n. 414! (Chittagong Hill Tracts a. 1886, fl.; Hb. DC); — in Burma, peninsula malaica et insulis adjacentibus: Me Lelland! (Pegu, m. Febr. 1854, fr.; Hb. Kew.); Wallich, Cat. n. 8041J! (montes Proglia et Amherst, a.1827, alabastr.; Hb. DC, Webb, Martius); Falconer! (Amherst; Hb. Monac. ex Hb. Calcutt.); Shaik Mokim n. 213! (Tavoy, m. Dec. 1900, fl.; Hb. DC); Griffith n. 633! (Mergui, a. 1834; Hb. Kew.); id.! (Malacca, a. 1845, fl. et fr. juv.; Hb. Martius); Hb. Griffith, Heifer etc., Distrib. Kew. n. 981! (Burma, Tenasserim etc., Ava, m. Mart. 1837, fl.; Hb. Kew., Paris., Berol., Vind., Monac, Havn., Boiss., DC.); G. Gallatly n. 511! (Tenasserim, alt. 4000 ped., m. Mart. 1877, fl. et fr.; Hb. Berol., DC); collector non indicatus (Ridley?) n. 15088! (in peninsulae malaicae prov. Siamensi Kedah, m. Febr. 1910, fl.; Hb. Berol.); Gaudichaud, Voy. de la Bonite, n. 18! (Malacca, m. Febr. 1837, fl.; Hb. Del ess.); Iwan! (attaché k l'ambassade du Roi en Chine; Malacca, fr.; Hb. Deless. a. 1846); Derry n. 340! (State of Malacca; Hb. DC); Maingay n. 435! (Malacca, fl.; Hb. Kew., Berol., Lugd.-Bat.); Didrichsen n. 4436! (Galathea-Exped. a. 1845-1847; Singapore, fl.; Hb. Havn.); Hullet n. 3321* (Singapore, Pulu Ubin, m. Nov. 1884, fl.; Hb. Kew.); id. n. 8471 (ibid. m. Mart. 1885, fl.; Hb. Kew.); Meyer = Schlesischer bot. Tauschverein n. 298! 800! (Singapore, in. Apr. et Aug. 1896, fl.; Hb. Berol.); Ridley n. 10148! (Singapore, Tanglin, a. 1899, fl.; Hb. Calcutt.); id. (common, especially near town, Government Hill, Pulu Ubin, 1. c. 1900; Pekan, Renchong, I.e. 1893); Prain (Coco Group, both islands, on ridges, common, 1. c. [1891] 308); id. (Marcondam, common, Barren Island, I.e. 1893); Kurz! (South Andaman, fl., Hb. Kew., DC; Jungles around Port Blair, I.e. 1870); King's Collector n. 3! (Andamans, a. 1884, fr.; Hb. DC, Berol.); id. n. 3! (South Andaman, Bindraban-Hill Jungle, m. Mart. 1895, fl.; Hb. Monac. ex Hb. Calcutt.); R. L. Heinig n. 444! (South Andaman, m. Mart. 1901, fl.; Hb. Berol., Monac. ex Hb. Calcutt.); Jelinek n. 153! (= Exped. Novara 179, a. 1857—1859; ins. Nicobaricae, Nankowry t. Kurz 1. c. 1876, fl. et fr.; Hb. Vind.); Kurz n. 25943! (ins. Nicobaricae, m. Febr. 1875, fl.; Hb. Kew.; common in the tropical forests of Kamorta and Katchall); King's Collector n. 570! (ins. Nicobaricae, a. 1884, fl.; Hb. Berol., DC); Prain (in insula Nicobarica Batti Malv, m. Nov. 1890, 1. c. [1891] 168); Kamphovener n. 2748! (Galathea-Exp. 1845—1847, in ins. Nicobarica Sambelong, fl.; Hb. Havn.); Didrichsen n. 2910! (ibid., fl.; Hb. Havn.); W. Jack! (Pulo Penang, a. 1819; Hb. Webb); Wallich, Cat. n. 8041H! (ibid.; Hb. Webb, DC, Martius etc.); Phillips! (ibid.; Hb. Soc. Hort. Lond. 1824); — in Siam, Cochinchina, Annam, Tonkin (et? China): Teysmann! (Siam, Sapindacea n. 73 c. nom. vulg. Mahoeat, 1. c. [1866] 392, fide specim. ex Hb. Bogor. Nr. III. E 18, a. 1895 comm.); Zimmermann n. 102! (Bangkok, ad Sam Sen, a. 1899, fl.; Hb. Berol., Monac); Johs. Schmidt n. 6! 104! 789! (in insula Koh Chang, a. 1899—1901, m. Dec—Jan. alab., m. Febr. fruct.; Herb. Berol.; loci accuratiores sunt: Lejn Nyob, n. 6; Koh Chang: Kong Munsl, n. 104; Klong Majum, n. 789; cf. Johs. Schmidt I.e. [1915] sub Radlk.); Luang Vanpruk n. 148! (Siam, Phre, alt. 120—180 m, fl.; Hb. Kew.); D.J. Collins n. 82! (Siam austr., Sriracha, m. Jan. 1913, fl.; id. Hb.); Kerr n.2401! (Siam, Sop Ngao, MS Nan, alt. 210 m, m.

Febr. 1912, fl.; id. Hb.); Warburg n. 51301 (Cochinchina, in silva prope Barria, m. Apr. 1887, fr.; Hb. Berol.); Lefèvre n. 60! 147! (prope Saigon, m. Jan. 1865, fl.; Hb. Paris.); Baudouin! (Cochinchina, a. 1866; Hb. Paris.); Pierre n. 321! (ad Saigon Austro-Cochinchinae, m. Mart. 1867, fr. semimat.), n. 439! (ad Ghiao schan Austro-Cochinchinae, m. Febr. 1877, fl.), n. 439b! (leg. Harmand n. 122, in montibus Shung treng, m. Dec. 1875, f.); C. B. Robinson n. 1190! (Annam, Nha-trang and vicinity, m. Mart. 1911, fr.), n. 1383! (ibid., m. Mart. 1911, fl.; comm. ex Hb. Manil.); Balansa n. 1490! (Tonkin, m. Febr. 1886, fl.; Hb. Drake); Iwan! (Chine — an recte? cf. supra sub Malacca; fr. juv.; Hb. Richard, dein Franquev.); — in archipelago indico et quidem in ins. Sumatra: Teysmann! (Hb. Kew.); Forbes n. 1838! (a. 1881 — 1882, fr. juven.; Hb. Berol.); Koorders n. 10563)3 (Nord-Sumatra, bei Balokan auf Pulu Weh, im Regenwalde, m. Febr. 1890, Koord.-Schum. 1. c. 1910); — in Bangka: Teysmann, Hb. Bogor. n. 14457! (fl.; comm. Scheffer), n. 14551! (fr.; comm. ab eod.); — in ins. Anambas: Baume n. 325! (a. 1832; Hb. Paris.); — in Borneo: Korthals! (folia, ex Hb. Lugd.-Bat. comm. c. Hb. Monac, Havn., DC, Martius c. fl.); M. J. Motley n. 285! (Bangarmassing, a. 1857 — 1858); Beccari n. 3091 (Ragiato di Sarawak, Kutcin, m. Nov. 1867, fl.; Hb. Florent., DC); M. Fraser n. 108! 265! (North Borneo, Rudah, m. Jan., Apr. 1885, fl.; Hb. Kew.); Governor Creagh (Tjorth Borneo, m. Apr. 1894, flor.; Hb. Kew.); — in Java: Blume! (In provinces Javae occidentalibus in fruticetis, tam locis humilioribus, quam montanis, fere semper florens, raro autem fructus maturos ferens, quibus et indigenae, et simiae aliaque animalia cupide vescuntur; var. *J. subcorymb.* in agro Preangerano circa Tjikao, var. *y. alba* circa Bataviam et in alluviis humilioribus provinciae Bantam frequens, var. *d. fraxinifol.* in montanis Timor, nee non in Java orientali, 1. c. 1847; Hb. Lugd.-Bat.); Waitz n. 1! (fl., Hb. Lugd.-Bat.); Horsfield, Sapind. n. 110! (Hb. Kew.); Labillardière! (circ. 1794, fl.; Hb. Webb); Perrottet! (circ. 1823, fl.; Hb. DC); Zollinger n. 562! (im Kampong Munjul, Land Tikoya, m. Aug. 1842, alab.; Hb. Franquev., DC, Boiss. etc.); Lobb! (Hb. Kew.); Teysmann et Binn. (in monte Salak, 1. c. 1866); Ploem n. 79! (Tijkalong, flor.; Hb. Berol.); Hasskarl?, Hb. Bogor. n. 14532! (fl.; comm. Scheffer); Edeling, Hb. Bogor. n. 14420! (Batavia; fl.; comm. Scheffer); Hillebrand! (Hb. Berol.); Warburg n. 2468! (Buitenzorg, m. Oct. 1868, steril.; Hb. Berol.); Koorders n. 29073)3! etc. (in prow Bantam, Batavia!, Preanger!, Tegal, Pekalongan!, Banjumas!, Semarang!, Surakarta, Djapara!, Rembang, Madiun!, Kediri!, Besuki!, usque ad altit. 600, rarius 1000—1200 m; Koord. et Val. 1. c. [1903] 155; partim comm. ex Herb. Bogoriens.); Biisgen n. 53, 60 (prope Tudir, prov. Rembang, in Java centrali, a. 1902—1903, Koord. l.e. 1904) — in Celebes insulisque adjacentibus: Warburg n. 16688! (Slid-Celebes, Tjamba, m. Dec. 1887, fr.; Hb. Berol.); Labillardière! (Fretum Buton, circ. 1793, fr.; Hb. Paris., Deless.; Hb. Webb, fl.); Elbert n. 26041 (Sud-Ost-Celebes, Insel Buton, Bau-Bau, alt. 0—75 m, m. Sept. 1909, alab.), n. 2769! (ebendort, Passar Wadjo, alt. 0—100 m, m. Sept. 1909, fl.), n. 3014! (Landschaft Rumbia, Std, Liano, alt. 25—150 m, m. Sept. 1909, alab.), n. 3022! (ebendort, Landschaft Lankapa, Putbi, 125—645 m, m. Sept. 1909, fl.), n. 3070! (ebendort, Ost Dooleh, alt. 50—300 m, m. Sept. 1909, alab.), n. 3246! (Insel Kabae*na, Nord, Padangoma, alt. 0—10 m, m. Oct. 1909, fr.), n. 3360! (ebendort, Ost, Landschaft Balo, Eempuhu, alt. 0—200 m, m. Oct. 1909, fl. et fr.), n. 34341 (leg. C. Griindler; ebendort, Sangia-Wita-Gebirge, alt. 150-300 m, m. Oct. 1909, fr.); - in Sumbawa: Elbert n. 3690! (Sultanat Bima, Kologebirge, Westseite, alt. 300-375 m, m. Dec. 1909, steril.); — in ins. Timor: Riedle! (Voy. du capit. Baudin, a. 1802, fl.; specim. origin. *Moulinisiae cupanioides* Camb. in Hb. Paris., et ex hoc comm. c. Hb. Deless. et Hb. Kunth, nunc Berol., nee non c. Hb. DC, specim. orig. *Sap. fraxinif.* DC); Bennett n. 44! (fl. et fr. immat.; Hb. Berol.); Spanoghe! (fr. immat.; Hb. Lugd.-Bat. et ex hoc comm. c. Hb. Berol., fl. et fr.); Teysmann, Hb. Bogor. n. 10772! (fr.; comm. Scheffer; c. Hb. Florent. comm. Beccari; Hb. Kew.); — in ins. Timor-Laut: H. O. Forbes n. 3398!

(Hb. Kew.; hue spectat Oliver Report Forbes' Exp. I.e. 1886 et verosim. Hemsley Challeng. Voy. 1885); — in Moluccis: Labillardière! (He de Bourou, fr.; Hb. Labill., dein Webb); — in insulis Key: Beccari it. sec. n. 30! (Kei Ketil a Tual, m. Aug. 1873, fl.; Hb. Florent.); Moseley! (Little Kei Island; Ghalleng.-Exp., m. Sept. 1874; Hb. Kew.); Warburg! (bei Dula 1. c. 1891); - in insulis Philippinis, et quidem in Luzon: Haenke! (Manila?, fr. juv.; Hb. Prag.); Barthe (Manila, a. 1857; Hb. Paris.); Blanco (en Marigondon, 1. c. sub *Sap.eduL*); Vidal n. 2507 (ex ipso in Gat. Herb.); Elmer n. 5669! (prov. La Union, Bauang, m. Febr. 1904, fr.; Hb. DC.); Gurran n. 6346! (prov. Bataan, m. Mart. 1907, fl.; comm. ex Hb. Maftil, ut et seqq. mihi visa, ubi aliud indicatum non est), n. 19295! (prov. Pampanga, m. Mart. 1910, fl.); Gurran et M. L. Merritt n. 7734! (prov. Batangas, fl.); Ahem n. 135! 215! (prov. Camarines Sur, Pasacao, a. 1902, fl. et fr.; Hb. Berol.); Vidal n. 716! (prov. Tayabas, Unison; Hb. Kew.), n. 717! (ead. prov., Quinayangan; Hb. Kew.); Merrill n. 2445! (prov. Tayabas, Malicboi, m. Apr. 1903, fl. et fr.; Hb. Berol.); Gurran n. 10365! (ead. prov., m. Apr. 1908, fl. et fr.); Guming n. 9521 1206! (prov. Albay, ex Vidal Revis.; fl.; Hb. varia); — in ins. Mindoro: Merrill n. 2208! (Pola, m. Maj. 1903, fl.; Hb. Berol.); — in ins. Sibuyan: Elmer n. 12299! (prov. Gapiz, Magellanes, Mount Giting-Giting, m. Apr. 1910, fl., specimen robustum; comm. Elmer); — in ins. Masbate: W. W. Clark n. 9941 (on slopes at 110 m, m. Maj.—Jun. 1904, fr.); — in ins. Panay: F.-Villar (in monte Gatu-gan oppidi Igaras — si re vera hue pertinet ejus »*Eriogl. edule* Bl.«), Vidal n. 2466 (prov. Ilo-Ilo Norte, ex ipso in Gat. Herb.); — in ins. Mindanao: Rich et Brackenridge in Wilkes Expl.-Exp. (Galdera, ex A. Gray 1. c.); — in ins. Basilan: Vidal n. 2516 (Isabela de Basilan, ex ipso in Gat. Herb.); W. J. Hutchinson n. 4007! (m. Febr. 1906, alab.), n. 6102! (m. Jul. 1906, fr.); — in ins. Jol6: Vidal n. 2483 (Maibung, ex ipso in Gat. Herb.); — in ins. Palawan: F. W. Foxworthy n. 767! (m. Mart.—Apr. 1906, fl.); Elmer n. 12799 12917! 129261 (Puerto Princesa, Mount Pulgar, m. Mart.—Apr. 1911, fl.; comm. Elmer); Merrill n. 9545! (Mount Gapoas, m. Apr. 1913, fr.), n. 9487! (Lake Manguao, m. Apr. 1913, fr.; comm. ex Hb. Manil.); - in ins. Balabac: Vidal n. 24671 2479! (ex ipso in Gat. Herb.); L. Mangubat n. 407! (m. Mart.-Apr. 1906, fl.). — Merrill Spec. Blanc. (1918), coll. n. 320, 1042 (Taytay, Palawan, m. Maj. 1913, et prov. Batangas, Luzon, m. Apr. 1915); — in Australia boreali: A. Cunningham! (Brunswick Bay, N. W. coast, a. 1820, t. Benth. 1. c.; Hb. Kew.); id.! (York Sound etc., N. W. Australia; Hb. Kew.); — in Nova Guinea britannica: Forbes n. 579 (Mount Gawada, ex Rendle 1. c. sub *E. edule*). - Gulta in Ht. bot. Calcuttensi: Roxburgh! (fl.; Hb. Deless.); Wallich! (fl., a. 1819; Hb. Smith, Hb. Schumacher, nunc Havn., Hb. Puerari, nunc DC, Hb. Webb, Hb. Martius ex Hb. Lambert, Hb. Berol.; Hb. Hornemann, nunc Havn., fruct.); Wallich, Gat. n. 8041F1; Kamptivener n. 1572! (Galathea-Exp. 1845-1847; ex Hb. Wallich, fl. et fr.; Hb. Havn.); Pierre n. 4391 (fl., a. 1863); in Ht. bot. Seramporensi: Voigt! (fl.; Hb. Liebmann, nunc Havn.); in Ht. reg. Pondicheriensi: Perrottet? n. 420! (fl.; Hb. Deless.); in Ht. Bogoriensi: Hb. Bog. n. 14! (fl.), n. 14533! (fr. submat.; comm. Scheffer), n. III, E, 18! (a Teysm. e Siam allat., cf. supra), n. III, I, 9! et III, J, 9, a! (e Celebes in trod., fl.; a. 1922 comm. c. Hb. Monac); in insula borbonica: Collector ignotus! (fr.; a Guillemin a. 1837 comm. c. Hb. Kunth, nunc Berol.); in Ht. Siamensi: Warburg n. 50071 (Bangkok; Hb. Berol.).

21. Aphania Biome.

Aphania Blume, Bijdrag. Fl. Nederl. Ind. V. (1825) 236 char, emendand.; Camb. in Mém. Mus. d'Hist. nat. XVIII. (1829) 37; Don, Gen. Syst. I. (1831) 656 et 672; Meissner, Gen. (1836-1843) 52 (37); Endl. Gen. (1836-1840) 1070 n. 5615 et Suppl. IV, Pars III. (1847) 78; Walp. Rep. I. (1842) 420; Radlk. Sap. Holl.-Ind. (1877-1878) 6, 20, 68 (76, 90, 219), in Sitzungber. bayer. Akad. VIII. (1878) 238 etc., v. indie. XX. (1890) 236, 283 et in Engl. u. Prantl, Nat. Pflanzenfam. III. 5. (1895) 317; King,

Materials Fl. Malayan Penins. in Journ. As. Soc. Beng. LXV. 2. (1896) 425; Hiern, Cat. Welw. Pl. I. (1896) 169, excl. sp., cfr. *Pancovia turbinata* Koord. et Valet. Bijdr. Booms. IX in Meded. Plantent. LXI. (1903) 157. — *Didymococcus* Blume, Humph. III. (1847) 103 in obs. — *Sapindus* part. id. eod. 1. p. 92 in char, et obs.; Miq. Fl. Nederl. Ind. I. 2. (1859) 552; Benth. et Hook. f. Gen. I. 1. (1862) 404; Baill. Hist. Pl. V. (1874) 348; Kurz, Forest Fl. Brit. Burma I. (1877) 297; Boerlage, Handleid. Fl. Nederl. Ind. I. 1. (1890) 273. — *Sapindus* sp., *Scytalia* sp., *Euphoria* sp., *Nephelium* sp., *Ornitrophe* sp., *Schmidelia* sp., *Otophora* sp., aut. varior., cf. lit. specier.

Flores spurie polygami, (J et \$ (# mentientes) saepius in eadem inflorescentia, regulares vel interdum petalorum numero incompleto subsymmetrici, mediocres. Sepala 5, suborbicularia vel late obovata, concava, imbricata, 2 exteriora minora, membranacea, praeter marginem glanduloso-ciliolatum glabra, interdum cellulis secretoriis, etsi raris, instructa, denique decidua. Petala 5 vel (sede inter sepalum 3. et 5. vacua) 4, interdum (in eadem specie) 3 vel 2 tantum, ovalia, sepala subaequantia, perbrevis unguiculata, praeter marginem ciliolatum plerumque subglabra (in 1 tantum specie — *A. dasypetala* — dorso aureo-sericea), extus papillosa, intus supra basin utrinque auriculato-inflexa vel auriculis connatis squama brevi ovata emarginata vel recurvato-retusa margine hirsuta aucta, in 1 specie (*A. Boerlagei*) fasciculis pilorum tantum munita. Discus completus, subpatellaris, margine libero 5-crenatus vel 5-lobus, glaber, interdum ante Sepalum 3. et 5. paullulo angustior (nee vero, uti Pierre in *A. viridi* et *A. Philastreana* delineavit, re vera hippocrepiformis). Stamina 8—5, intra discum inserta, subexserta (floris §> breviora); filamenta filiformia, basi crassiora pilosa recurva apice erecta; antherae sagittato-ovatae, introrsae, obtusae vel apiculatae, dorso supra excisuram basalem affixae, glabrae vel pilis glandulosis tenerrimis adpersae, connectivo fusco, locellis pallidis; pollinis granula trigonoplacentiformia, 3-porosa vel (in *A. senegalensi*) subgloboso-ellipsoidea, 3-sulcata, sulcis medio 1-porosis, inter sulcos subtiliter punctata. Germen (floris <J rudimentarium) obcordatum, plerumque 2-coccum (coccis, ut videtur, ante sepalum 4. transversis vel, quod in siccis vix tuto discernendum, ante sepalum 2. medianis), 2-loculare, raro (in eadem specie) 3-coccum, 3-loculare, glabrum; stylus inter coccos breviusculus, apice 2—3-lobus, lobis dorsalibus intus stigmatosis erectis vel reflexis, marginibus interdum in striam stigmatosam suturalem decurrentibus (quasi lobis ipsis dedive suturalibus); gemmulae in Ioculis solitariae, supra basin anguli centralis affixae, adscendentes, campylotropae, apotropae, micropyle extus infera. Fructus drupaceus, coccato-lobatus, 2-, raro 3-, interdum abortu 1-coccus, perbrevis stipitatus, coccis ellipsoideis obovoideis vel subglobosis divaricatis, endocarpio crustaceo vel tenuiter chartaceo, e cellularum stratis duobus exstructo — cellulis strati exterioris sat profundis pachydermicis, strati interioris tenerioribus epithelialibus (immo saepe aegrius perspicendis), in *A. senegalensi* vero plerumque nee non in *A. nicobarica* et *A. Philastreana* sat pachydermicis — extus (praesertim in *A. senegalensi*) venarum reti ± arcto 'cellulisque sclerenchymaticis (in *A. nicobarica*) suffulto. Semina coccis conformia, testa tenui e tela spongiiformi exstructa, brunnea, hilo parvo suborbiculari, arillo nullo. Embryo rectiusculus; cotyledones crassae, altera dorsali, altera (saepius minbre) ventrali, amylo farctis; radícula basilaris, brevissima, papilliformis.

Frutices, interdum subscandentes, vel arbores mediocres, glabrae. Folia sparsa, abrupte et quidem plerumque pari-pinnata, 1—5-jtiga, rarius simplicia integra vel pinnatisecta et transeuntia in impari-pinnata, longiuscule vel interdum (jugo infimo praesertim in foliis superioribus subbasilari) perbrevis petiolata (*A. senegalensis*, *longipes*, *cuspidata*, *montana*), exstipulata; foliola plerumque opposita, petiolulata, ovalia vel oblonga, integerrima, subcoriacea, glabra, sicca plerumque livescentia, diachymate in plerisque (exceptis *A. sphaerococca*, *longipede*, *cuspidata*, *Boerlagei*, *paucijuga*, *dictyophylla*, *rubra* et *danura*) cellulis secretoriis etsi interdum raris (-4. *philippinensis*, *angustifolia*, *Loheri*, *macrophylla*) vel non semper obviis [*A. nicobarica*,

montana) instructo et crystallis (praeter nervis adjecta) singulis vel concretis persito, cellulis crystallophoris interdum crebrioribus in stratum subcontinuum staurenychymati proximum congestis (*A. longipes*, *Boerlagei*, *nicobarica*, *philippinensis*, *angustifolia*, *Loheri*, *montana*) et staurenychymate ipso in nonnullis (*A. longipes*, *philippinensis*, *angustifolia*, *montana*) concretionem in fere omni cellula fovendi, raro cellulis crystallophoris vix ullis (*A. paucijuga*, *microcarpa*, *viridis*, *Philastreana*, *dictyophylla*, quae omnes, praeter ultimam, staurenychymatis cellulis altioribus excellunt), epidermide duarum tantum specierum (sect. III.) mucigera, paginae inferioris stomata plerumque sat magna vestibulo lato, saepius hiante, gerente et interdum cuticula granuiata insigni (*A. philippinensis*), glandulis microscopicis clavatis basi leviter, rarius profundius (*A. paucijuga*, *dasyptala*) in epidermidis foveolas immersis, interdum geniculatis (*A. microcarpa*, *rubra*, *danura*) utrinque ornata. Inflorescentiae (thyrsi vel 4-angulatae) axillares vel in ramulis parvis terminates, densius laxiusve ramosae, cymulas (polychasia vel dichasia in cincinnos abeuntia) stipitatas vel sessiles interdum depauperatas et ad flores singulos reductas gerentes. Alabastra globosa, glabra, magnitudine cannabis grana aequantia. Flores expansi 6—8 mm lati, rubri vel albidi. Fructus cocci rubri, cerasorum vel pisorum magnitudine, nonnullarum edules (*A. senegalensis*, *A. rubra*).

Species 22, 1 Africae tropicae, reliquae Asiae tropicae continentalis et insularis nee non (4) Novae-Guineae incolae.

Genus fructu drupaceo coccato maxime affine generi *Erioglossum* quasi Erioglossi species flore regulari exhibens. Florum et pericarpium indole ad genus *Otophora* quoque accedit, quod vero fructu baccato integro, nee coccato, differt ut et foliorum spurie stipulatorum fabrica peculiari.

Conspectus specierum.

Sect. I. Pycnaphania Radlk. Sap. Holl.-Ind. (1877-1878) 69 (220), in Durand, Ind. Gen. (1887) 74 et in Engl. u. Prantl, Nat. Pflanzenfam. III. 5. (1895) 318: Endocarpium crassiusculum, cartilagineo-crustaceum; pollen subgloboso-ellipsoideum; foliorum epidermis non mucigera; species africanae.

Fructus cocci (longius breviusve) ellipsoideo-obovoidei {sp. guineensi-abyssinica). 1. *A. senegalensis*.

Sect. II. Euaphania Radlk. Il. cc: Endocarpium tenue, cartilagineo-chartaceum, rarius quodammodo incrassatum (in *A. nicobarica* et *A. Philastreana*)', pollen trigono-placentiforae; foliorum epidermis non mucigera; species asiatico-novoguineenses.

A. Folia pinnata.

a. Fructus cocci globosi (in sp. n. 3 fructus ignoti, in n. 5 dubii, in n. 7 juveniles tantum visi).

aa. Folia 4-6-juga, foliola breviter petiolulata, petiolulis totis incrassatis (sp. novoguineensis) 2. *A. sphaerococca*.

bb. Folia 3—4-juga, foliola longius petiolulata, petiolulis infra medium tantum incrassatis (sp. novoguineensis). 3. *A. longipes*.

cc. Folia 2-, rarius 1- vel 3-juga.

a. Foliola elliptico-oblonga, cuspidata (sp. novoguineensis). 4. *A. cuspidata*.

fl. Foliola elliptica, utrinque subacuta (larga); rami petiolique lenticellis crebris exasperati (sp. celebica?). 5.-4. *Boerlagei*.

y. Foliola superiora late, immo latissime lanceolata, inferiora subovata (sp. nicobarica). 6. *A. nicobarica*.

- dd. Folia 1-juga, foliola oblongo- vel lineari-lanceolata, inconspicue venosa (sp. zeylanico-indica) 1. *A. bifoliolata*. •
- b. Fructus cocci obovoidei (in *A. microcarpa* et *A. viridi* immaturi vel cocci germinis tantum visi, in *A. Loheri* non visi).
- aa. Cymulae stipitatae; petala 5; folia 1—2-juga, inferiora interdum simplicia (in *A. microcarpa*).
- a. Thyrsi singuli vel bini axillares; foliola oblongo-lanceolata, obtuse acuminata, laevigata (sp. malaccensis). 8. *A. paucijuga*.
- fi. Thyrsi in paniculas graciles subterminales congesti; foliola ex oblongo cuneata, obtusa vel subacuta, reticulato-venosa (sp. siamensis) 9. *A. microcarpa*.
- bb. Cymulae subsessiles, inferiores tantum stipitatae; petala 5; folia 2—4-juga (sp. philippinenses).
- a. Foliola elongate ovata, acuta. 10. *A. philippinensis*.
- fi. Foliola anguste lanceolata, in apicem acutissimum sensim angustata.
- aa. Folia plerumque 3-juga; foliola in petiolum basi incrassatos attenuata, livida, subtus obscuriora. 11. *A. angustifolia*.
- }}. Folia plerumque 2-juga; foliola basi acuta petiolulis brevibus incrassatis insidentia, flavescenti-viridia, subtus pallidiora 12. *A. Loheri*.
- cc. Cymulae sessiles; petala plerumque 4; folia 1-juga.
- a. Foliola oblonga, obtusa, triste viridia (sp. cochinchinensis). 13. *A. viridis*.
- fi. Foliola lineari-lanceolata, acutissima, laete viridia (sp. cochinchinensis). 14. *A. Philastreana*.
- c. Fructus cocci (majores) breviter ellipsoidei; folia plerumque 2-juga, interdum subsessilia, foliola oblongo-lanceolata (sp. javanico-sumatrana). 15. *A. montana*.
- d. Fructus (varietatis tantum cogniti) magni, pruniformes; folia 2-foliolata, foliola oblongo-lanceolata, patulinervia (sp. laotica). 16.-4. *Spirei*.
- B. Folia simplicia (sp. celebica). 11. *A. macrophylla*.
- C. Accedunt species 3 sedis in sect. II. ob fructus ignotos dubiae:
- a. Folia 3—4-juga; foliola mediocria, ovato-oblonga, reticulata, subtus rubescentia (sp. novoguineensis) . . . 18. *A. dictyophylla*.
- b. Folia 2-juga.
- aa. Foliola majuscula, ovato-lanceolata, flavescenti-viridia; petala dorso aureo-sericea (sp. borneensis) 19. *A. dasypetala*.
- bb. Foliola permagna, elliptica, livide viridia; thyrsi axillares, glomerato-fasciculati (sp. moluccana) . . 20.-4. *fascicularis*.
- Sect. III. *Didymococcus* (Blume) Radlk. 11. cc. (genus *Didymococcus* Blume, I.e.): Endocarpium tenue, cartilagineo-chartaceum; pollen trigono-placentiforme; foliorum epidermis mucigera (muco in aqua vix, melius in acido hydrochlorico diluto emolliente); sp. indico-malaicae et ? moluccanae.
- A. Folia 3—6-juga; foliola ovato-lanceolata, basi obtusa vel (superiora) subacuta, rarius attenuata; fructus cocci (majores) ellipsoidei, rubri, edules (sp. indica) 21. *A. rubra*.

- B. Folia simplicia, interdum pinnatisecta, basi angustata subcordata petiolis brevibus insidentia vel partim in petiolos longiores attenuata; fructus cocci (minores) breviter ellipsoidei, aurantiaci, minus succulenti (sp. indico-malaccensis et ? moluccana). 22. *A. danura*.

Sect. I. Pycnaphania Radlk.

1. **A. senegalensis** (Juss.) Radlk. Sap. Holl.-Ind. (1877-1878) 21, 69 (91, 220), in Sitzungber. bayer. Akad. VIII. (1878) 238, 241, 298 n. 1, 9, p. 301 n. 49, p. 303 n.-85, in Engl. u. Prantl, Nat. Pflanzenfam. III. 5. (1895) 318 et in Wiss. Ergebn. Afr.-Exp. 1907-1908, II. (1912) 478, coll. Mildbraed n. 21331; Hiern, Gat. Afr. PI. Welw. I. (1896) 169!, perperam excl. Poir. descr.; Schweinfurth, Samml. arab.-aethiop. Pfl. in Bull. Hb. Boiss. VII. 3. (1899) App. II, 338; Greshoff in Meded. Plantent. XXIX. (1900) 38; Gilg in Wiss. Ergebn. etc. (cf. supra), coll. Mildbraed n. 2145. — *Sapindus senegalensis* Juss. ed. Poir. in Lam. Enc. VI. (1804) 666!; DC. Prodr. I. (1824) 608; Gamb. in Mém. Mus. d'Hist. nat. XVIII. (1829) 26; Guillem. Perrott. et A. Rich. Fl. Senegamb. Tent. I. (1830-1833) 1171; Don, Gen. Syst. I. (1831) 666; Deless. Ic. sel. III. (1837) 22 t. 38; Schnizlein, Iconogr. IV. (1843-1870) t. 230 f. 3 (copia anteced.); Brunner, Bot. Ergebn. Reise Senegamb. in Flora XXIII. 2. (1840) Beibl. 1, p. 15 (seors. impr. p. III) 4 p. 51; Hook. f. in Hook. f. et Benth. Fl. Nigrit. in W. Hook. Niger Fl. (1849) 249 excl. syn. »*£. guineensis* Don«, quae forsan *Deinbollia pinnata*; Duchesne, PI. utiles (1846) 194 excl. syn. *Paullinia Senegal* Juss., *PaulL ovata* Schum. et quae dicuntur de usu ad lavationes; Baker in Oliv. Fl. trop. Afr. I. (1868) 430; Höhnelt, Ub. stockwerkart. Holzkörp. in Sitzungsber. Acad. Wien LXXXIX. 1. (1884) 43; Lanessan, PI. utiles (1886) 817 excl. quae dicuntur de usu saponis vice; — non Pritz. Ic. Ind. (1866) 984 quoad Durand, Voy. au Sên6g. t. 22, quae *Sapindus Saponaria*; Bernardin, Class. d. 40 Savons vëg. (1875) 10 c. nom. vulg. M'boul ad *Sapind. Saponar.* recensend. etc. — *Sapindus arborescens*, non »Aubl.«, Spreng. Syst. II. (1825) 250 part., solummodo quoad syn. »*Sap. Senegal.* Poir.« et indicat. »Africa Occident.« inter locos natales. — *Ornitropke thyrsoides* Schumacher et Thonn. Beskr. Guin. PI. in K. Danske Vid. Selsk. Afh. III. (1828) 205 (seors. impr. p. 185)1; Guillem. in Fërussac Bull. Scienc. nat. XXIII. (1830) 86; Hook. f. et Benth. Fl. Nigrit. in W. Hook. Nig. Fl. (1849) 249. — *Sapindus abyssinicus* Fresen. Beitr. Fl. Abyss, in Mus. Senckenberg. II. (1837) 277!; Walp. Rep. I. (1842) 417; A. Rich. Tent. Fl. Abyss. (1847) 103. — *Sapindus laurifolia* (non Vahl etc., cfr. *S. trifoliat.* L.) Brunner, Reise n. Senegamb. (1840) 202.—*Schmidelia thyrsoides* Baker in Oliv. Fl. trop. Afr. I. (1868) 423.—*Pancovia thyrsoiflora* Gilg in sched. PI. Kamerunens. Staudt n. 777! — *Sapindus Chariensis* Aug. Chevalier, PI. d. l'Oubangui et du Chari n. 7529 bis! (a. 1903, in sched.). — Vulgo: Kewer t. Poir. 1. c., Keller s. K6uer Nigritis t. Guill. etc. 1. c., Kesser »des Wolofst t. Perrott. in Hb. Fwmquev., Kehwerr Nigritis terrae Jolof s. Wolof t. Brunner 1. c. f. Durraa'ss (Acrur), Sullöch et Ssullokh (Hamasen), in lingua Tigrina t. Schweinf. 11. cc; Durraas (Ginda) in lingua Sahon, Schullo et Schiillo (Mensa), in lingua Tigré, Ssulluhh in lingua Sahon t. eod. ibid.; Clrise du S6n6gal et Laurier du S6n6gal Gallis t. Guill. etc. 1. c. — Frutex densus vel arbor mediocris ramosa, trunco tortuoso, cortice rugoso griseo; rami teretes petiolique striati, breviter fulvo-setulosi, mox glabrati; folia 1—2-juga, saepe (jugo inferiore basi valde approximato) breviter immo brevissime petiolata, foliola opposita, nunc obovata, nunc ex ovali vel oblongo sub-lanceolata, apice saepius in acumen perbreve obtusum vel emarginatum terminata, basi subacuta petiolulis brevibus crassis insidentia, e chartaceo subcoriacea, nervis lateralibus oblique patulis utrinque, praesertim subtus, prominentibus, reticulato-venosa, glabra, supra nitida, glauco-viridia, cellulis secretoriis raris, glandulis basi immersis ornata; panicula terminalis, ramosa, ramis thyrsoideis laxè cymulas stipitatas conferte multifloras (polychasia vel dichasia) gerentibus, rachi ramisque (ut et bractee

bracteolaeque et infra articulationem pedicelli) breviter fulvo-setulosis; alabastra subglobosa, glabriuscula, breviter pedicellata; flores mediocres, albi; sepala 5, glandulosociliata; petala 5(—3), late ovata, glabra, ciliolata, intus basi squama emarginata albide pilosa aucta; stamina 8(—6), filamentis basi villosiusculis rubellis, antheris glabris vel glandulis singulis adspersis; germen obcordato 2- rarius 3-coccum, stylo inter coccus filiformi subexserto apice sub-2-lobo; fructus 2- vel abortu 1-coccus, coccis divaricatis magnitudine cerasi obovoideo-ellipsoideis glabris atropurpureis, sarcocarpio succulento, endocarpio crustaceo e cellularum sinuatarum pachydermicarum stratis 2 (interiore interdum parum pachydermico) exstructo; cotyledones crassissimae, planoconvexae, saepe inaequales.

Arbor 20—30-pedalis. Rami 4—5 mm crassi. Folia petiolo plerumque 1—2 cm longo adjecto 12—16 cm longa; foliola 8—12 cm (rarius 25 cm) longa, 4—5(—8) cm lata. Panicula 15—20 cm longa, ramis thyrsoideis 2—12 cm longis, stipitibus cymularum circ. 2 mm longis. Alabastra diametro circ. 3 mm, pedicellis 2—3 mm longis. Fructus cocci (sicci) 18 mm longi, 12 mm lati et crassi, edules (saporis dulcis vinosi t. Guillem.). Semen amarum, venosum (t. Guillem. et Perrott., t. Brunner; cf. Lanessan, PL. util [1886] 817, ubi hujus plantae olim cum genere **Sapindus** confusae fructus perperam ad lavanda vestimenta apti dicuntur; semina perperam Saponino foeta dicuntur ab A.-T. de Rochebrune, Sur les Didierea, in Bull. Mus. d'Hist. nat. Nr. 5 [1895] 218).

In Africa tropica occidentali (a Senegambia ad Angolam) et orientali (in Abyssinia et terris vicinis): In Senegambia: Adanson = Hb. Juss. n. 11386! (Senegal, Gahouart, a. 1749—1754); Perrottet n. 1091 (in arenosis ad ripas fluminis Senegal et ubique in Senegambia usque ad fluvium Gasamance, m. Sept., Dec. fl., 1. c; Hb. Deless., Franquev., Webb, Boiss., Mart., Vindob., Monac, Florent.), n. 1411 (pays de Wallo et bords du fleuve du Sénégal, principalement à Richard-Tol, m. Mart. 1824, fl.; Hb. DC, Boiss.); Leprieur! (Dagana, a. 1825, fl.; Hb. Deless., Franquev., Berol.); Lelièvre! (Sénégal, environs de Richard-Tol, a. 1829; Hb. Kunth, nunc Berol.); Heudelot n. 513! (Senegambia, a. 1837, fl.; Hb. Webb); Brunner! (ad flumen Salum, a. 1838, fr.; Hb. Vindob., Taurin.); — in Guinea: Thonning n. 3421 et sine n.l (Quitta, fl.; Hb. Puerari, nunc DC, Hb. Schumacher, nunc Havn.); — in Togo: Warnecke n. 383! (prope Lome, a. 1900—1902, fl. et fr.; Hb. Berol., Monac); — in Kamerun: Staudt n. 7771 (Station Johann-Albrechtshöhe, Urwaldgebiet, Seeufer, m. Dec. 1896, fr.; Hb. Berol., Monac); — in Congo gallici territorio Oubanghi-Ghari, in terra populi Snoussi: Aug. Chevalier n. 7529 bisl (Ghari oriental, Mb616, m. Jan. 1903, fr. immat.; **Sapindus Chariensis** A. Chev.; Hb. DC), n. 73171 (Ghari oriental, galeries de la Gounda, m. Jan. 1903, fr. immat.; Hb. DC); — in Angola: Welwitsch n. 4532 (Libongo; abundant in wooded situations near the river Lifune, in the upper parts of the district, m. Sept. 1858, fl.; Hiern 1. c), n. 4533! (Icolo e Bengo; sparingly in wooded places at the river Zenza, near Camatumba, m. Sept. 1857, fl.; id. 1. c; Hb. DC), n. 4534! (Zenza do Golungo; at the margins of streams, in wooded depressions between Tanderuchique and Quicanda, at Quindiongo, m. Sept. 1857, fl.; id. 1. c; Hb. DC); — in Abyssinia: Ed. Riippell (an den Ufern der Flüsse in der Kulla, nördlich von Gondar, altit. 5000 ped., m. Jan. 1824?, fl.; Hb. Francofort.); Beccari n. 941 (Abissinia settentrionale, paese dei Bogos, Sciotel, falde dello Zedamba, m. Jun. 1870, fr.; Hb. Florent.); — in terra populi Mittu: Schweinfurth n. 2082! (am Roha bei Kudale, a. 1870, fr.; Hb. Berol.); — in colonia Eritrea: Schweinfurth n. 1253! 1727 (im oberen Lawa-Tal, unterhalb Geleb im Gebiete von Mensa, alt. 1500-1700 m, m. Apr. 1891, flor.; Hb. Berol., Monac), n. 488, 2185! (im grofien Tal von Ginda, alt. 950 m, a. 1891—1892), n. 18381 (Barasio im Tal Arrftt, alt. 1500 m, m. Maj. 1892), n. 1566! (im Tal Mogod, alt. 1400 m, a. 1892), n. 793! (im Tal unter der Spitze des Lalamba und am Fufie des Berges, bei Keren, alt. 1500—1700 m, m. Mart. 1891, fl.; Hb. Berol., Monac); — in regione Ruwenzorica:

J. Mildbraed n. 2133! (Albert-Edward-See: Karimi am Semliki, etwas feuchte Schlucht in der Akaziensteppe, m. Jan. 1908, flor.; Hb. Berol.); id. n. 2145 (Beni, bei Muera im Hochwald, m. Jan. 1908, fl., ex Gilg 1. c).

Gulta*) in Hort. bot. Monac, a. 1898!

Sect. II. Euaphania Radlk.

2. *A. sphaeroeocia* Radlk. Sap. Holl.-Ind. (1877) 7, 21 (77, 91), in Sitzungber. bayer. Akad. VIII. (1878) 238 (ubi sphalm. »Aru« loco N. Guin. legitur), in Engl. u. Prantl etc. (1895) 318, et Sap. Papuas. in Engler's Bot. Jahrb. LVI. (1920) 267., — Frutex?; folia 4—6-juga, breviter, interdum brevissime petiolata, foliola opposita, oblonga vel elongate oblonga, acuta vel subacuminata, basi subacuta petiolulis brevibus crassis insidentia, chartacea vel subcoriacea, nervis lateralibus patentibus remotis praesertim subtus prominentibus, reticulato-venosa, glabra, supra nitidula, pallide viridia, cellulis secretoriis nullis, glandulis basi immersis ornata; thyrsi singuli vel pauci fasciculatim congesti ad apices ramulorum laterales, elongati, interdum ramo uno alterove basilari aucti, laxe cymulas (polychasia vel dichasia) ut et rhachis sub lente pilis perbrevibus patentibus puberulas gerentes; alabastra subglobosa, glabra; sepala 5, glanduloso-ciliolata; petala 5, glabra, ciliolata, intus basi squama inflexa biloba glabriuscula aucta; stamina 5, filamentis glabriusculis, antheris glabris; fructus 2-coccus, coccis divaricatis globosis glabris atropurpureis, endocarpio tenui; cotyledones crassissimae, inaequales.

Folia petiolo circ. 4 cm longo adjecto circ. 40 cm longa; foliola media (longissima) circ. 20 cm longa, 5 cm lata, petiolulis circ. 5 mm longis. Thyrsi 20—30 cm longi. Alabastra diametro circ. 3 mm, pedicellis 3—4 mm longis infra medium articulatis. Fructus submaturi cocci diametro circ. 1 cm.

In Nova Guinea: Beccari n. 19'!, 19''I = 503 (Andai, a. 1872, fl.), n. 19'''I = 908 (Monte Arfak a Putat, m. Oct. 1872, fl. et fr.; Hb. Florent.).

3. *A. longipes* Radlk. Sap. Holl.-Ind. (1877—1878) 68 (219), in Sitzungsber. bayer. Akad. VIII. (1878) 239, et Sap. Papuas. in Engler's Bot. Jahrb. LVI. (1920) 267. - (?) *Sapindacea* incerta Scheffer, Enum. Pl. N.-Guin. in Ann. Jard. Buitenzorg I. (1876) 17, c. indicat.: »Nouvelle-Guinée, près de Dor6, Teysmann«. — Frutex?; rami teretes, subtiliter striati, lenticellis subnullis, cortice laevi atrato glabro; folia 3—4-juga, interdum (jugo infimo basi valde approximato) brevissime petiolata, petiolo basi incrassato striato, foliola inferiora ovata, obtusa, superiora elliptico-oblonga, subacuta, omnia in petiolulos elongatos (inde no men) infra medium tantum incrassatos contracta, chartacea, nervis lateralibus patentibus remotis praesertim subtus prominentibus, laxe reticulato-venosa, supra sublaevia, glabra, nitidula, pallescentia, cellulis secretoriis nullis, crystallorum concretionibus prope paginam superiorem creberrimis foeta, glandulis minutis tenuibus basi vix immersis praesertim subtus crebrioribus ornata; flores——?

Rami 4 mm crassi. Folia petiolo 0,5—5 cm longo adjecto circ. 30 cm longa; foliola inferiora 5—6 cm longa, 3,5—4,5 cm lata, superiora circ. 15 cm longa, 5—6 cm lata; petioluli 10—13 mm longi, pars incrassata 4—5 mm longa.

*) Accedit species africana, ab auctore (Radlkofer) non enumerata:

Aphania sllvatca A. Chev. Explor. bot. Afr. occid. franç. (1920) 152 nomen; Hutchinson and Dalziel, Fl. West Trop. Afr. I. 2. (1928) 502; Kew Bull. (1929) 26 (diagnosis); »affinis *A. senegalensis* Radlk., sed foliolis elongato-oblongis late acuminatis longe petiolatis differU.

•Arbor parva. Foliola 2-juga, elongato-oblonga, apice late acuminata, basi anguste cuneata, 12—20 cm longa, 3—8 cm lata, glabra, utrinque venuloso-reticulata, nervis lateralibus multe ramosis. Paniculae e basi ramosae, usque ad 18 cm longae, breviter pubescentes. Flores conferti; pedicelli medio articulati, pubescentes. Sepala orbicularia, ciliata. Stamina basi villosa. Ovarium didymum, glabrum, carpello uno arbortivo. Fructus late ellipsoideus, 1,3 cm longus, glaber.«

In Africa trop. occidentali: »Ivory Coast: Gavally Basin, Chevalier 20064 (type). — Gold Coast: Tano River, Sept., Chipp 345.«

In Nova Guinea: Teysmann, Hb. Bog. n. 78721 (Dore\ steril.; a Scheffer comm. ex Hb. Bogor.).

4. *A. cuspidata* (Blume) Radlk. Sap. Holl.-Ind. (1877—1878) 6, 21 (76, 91), in Sitzungsber bayer. Akad. VIII. (1878) 238, 299 n. 25, XX. (1890) 361, in D'Albertis, Nuova Guinea (1880) »Beccari Gatal. PL« p. 575 n. 36 (ed. angl. »New Guinea* II. [1880] 396, ex F Müll.), et Sap. Papuas. in Engler's Bot. Jahrb. LVI. (1920) 267; Ferd. Müll. Descript. Notes on Papuan Pl. VI. (1885) 6. — *Sapindus cuspidatus* Blume, Rumph. III. (1847) 98!; Walp. Ann. II. (1851-1852) 211; Miq. l. c. (1859) 552; Scheffer, Enim. Pl. N.-Guin. in Ann. Jard. Buitenz. I. (1876) 16; Ferd. v. Müll. l. c. II. (1876) 21. — Frutex ramosissimus; rami subflexuosi, teretes, striati, atrofusci, lenticellis pallidis crebris punctati, fusco-puberuli, mox glabrati; folia 2-, rarius 1-juga (interdum anomale simplicia), petiolo interdum perbrevis subtiliter striato puberulo; foliola subopposita, elliptico- vel lanceolato-oblonga, cuspidata, basi subacuta petiolulis brevibus valde incrassatis insidentia, chartacea, nervis lateralibus ± patentibus ± remotis subtus prominentibus, reticulato-venosa, supra sublaevia, glabra, nitidula, pallide viridia, cellulis secretoriis nullis, glandulis basi immersis rarioribus ornata; thyrsi ad ramulorum apices laterales vel terminales, singuli vel pauci fasciculati, elongati, basi ramo uno alterove (rarius 3—4) aucti, fusco-puberuli, dein glabrescentes, laxe cymulas (polychasia vel dichasia) breviter stipitatas gerentes; alabastra subglobosa, pedicellata; flores parvuli, albidi; sepala 5, glanduloso-ciliolata; petala 5, ovalia, ciliolata, intus basi squama minima pilosula aucta; stamina 5(—6), filamentis brevibus basi albide villosiusculis, antheris glabris; germinis rudimentum minutissimum, dimerum, obcordatum, glabrum; fructus 2-coccus, coccis divaricatis subglobosis glabris, endocarpio tenui.

Frutex squarrosus, 1—2 cm altus. Rami 3—5 mm crassi. Folia petiolo 0,5—8 (interdum 14) cm longo adjecto circ. 25 (interdum 50) cm longa; foliola 15—18 cm longa, circ. 5 cm lata (interdum 32 cm longa, 8,5 cm lata), petiolulis 5—8 mm longis. Thyrsi 15—55 cm longi. Alabastra diametro circ. 3 mm. Fructus submaturi cocci diametro circ. 9 mm.

In Nova Guinea et in insulis vicinis Waigiu et Aru: In N.-Guinea: Zippel! (in silvis litoralibus, Bl. I.e.; fl.; Hb. Lugd.-Bat.); D'Albertis! (Fly-River, a. 1877, fr.; Hb. Florent.); Gapt. Everill's Exped. I (Strickland-River, a. 1885, fr.; comm. Ferd. Müll.); Sir MacGregor! (in parte australi prope territorium Batavum, a. 1889, fr.; comm. Ferd. Müll.); Ledermann n. 7233! (Kaiserin Augusta FluB Exped., a. 1912: Lager 2, am Mai-Flufi, Sagosumfcwald am Ufer, alt. 30—50 m, m. Oct. 1912, fl.; Hb. Berol. ut et seqq.), n. 8811 = 8812al 88721 (ead. Exp.: Aprilflufi, Standlager, Alluvialwald auf dem Flufidamme, alt. 20 m, m. Sept. 1912, fl. et fr.), n. 12299a! 12319b! (ead. Exp.: Hugelager am Sepik, Alluvialwald, m. Jul. 1913, fr.); — in N.-Guinea batava septentrionali: Moszkowski n. 356! 4031 4041 (Bergwald Nauroni van Rees, alt. 50 m, m. Oct. 1910, fl.; Hb. Berol.); H. J. Lam n. 416! 417! 4181 (in reg. flum. Mamberamo, pr. Pionierbivak, Urwald bei Kali, alt. 60 m, m. Jan. 1920, fl. et fr., n. 417 anomale folium simplex sessile inter alia bijuga petiolata gerens; Hb. Rheno-Traject.); Th. Thomson n. 636! (ibid., m. Apr. 1914, fl.; specimen foliolis majoribus; id. Hb.); id. n. 847! (ibid., m. Sept. 1914, fr.; specimen foliolis rigidioribus, thyrso elongato; id. Herb.); R. F. Janowsky n. 971 (Geelvinkbai, ad fluv. Siriwo, m. Jul. 1912, fl.), n. 5531 (pr. Manokoeari, m. Nov. 1913, fl.; id. Hb.); — in Waigiu: Labillardiere! (circ. 1794, fl.; Hb. Webb ex Hb. Labill.); Ventenat! (vix dubie ibid.; Hb. Deless. ex Hb. Vent.); — in ins. Aru: Beccari n. 20! (Giabu-Lengan, m. Maj. 1873, flor.; Hb. Florent.).

5. *A. Boerlagei* Valet. Ic. Bogor. II. 4. (1906) 281 1.185. - *Lepiderema paucijuga* Boerl. msc. ed. Valet. l. c. p. 282. — Arbuscula; rami teretes, pallide subfusci, petiolique lenticellis punctiformibus creberrimis magis prominentibus exasperati, glabri; folia 2-juga, interdum foliolo quinto juxta rhacheos apicem inserto aucta vel 3-juga, petio-

lata; foliola subopposita, ex oblongo vel subovato elliptica, saepius larga, utrinque subacuta, rarius basi obtusiuscula, petiolulis longiusculis inferne valde incrassatis insidentia, chartacea vel subcoriacea, nervis lateralibus ± remotis patentibus ante marginem adscendentibus subtus prominentibus, supra sublaevia, subtus laxe reticulato-venosa, utrinque glabra, ± nitida, e viridi flavescens, cellulis secretoriis nullis, glandulis basi immersis ornata; paniculae axillares, elongatae, novellae dense fusco-pilosae, adultae pilis brevibus glandulisque subclavatis laxè adpersae (non vero, neque sepala, uti Valetón refert, lepidota), laxè cymulas breviter stipitatas gerentes; alabastra globosa, brevissime pedicellata; flores parvuli; sepala 5, glanduloso-ciliolata; petala 5, ovalia, intus basi fasciculis pilorum tantum ad marginem vix inflexum munita, perparce ciliolata; stamina 6, filamentis filiformibus ima basi parce pilosis, antheris tenerrime glanduloso-pilosis; germinis rudimentum minutissimum, dimerum, glabrum; fructus — mihi non suppetebant, nee auctori nisi speciminis a Teysmann in Celebes lecti, ex auctore »probabiliter« hue recensendi — abortu monococci, obovato-globosi, magni.

Rami 3—6 mm crassi. Folia petiolo 3,5—5,5 cm longo adjecto 20—40 cm longa; foliola cum petiolulis 5—15 mm longis 10—28 cm longa, 3,5—11 cm lata. Paniculae circ. 25 cm, interdum (t. Valet.) 50 cm longae. Alabastra diametro 2 mm vix superantia. Fructus cocci (t. Valet.) diametro 12—15 mm.

Gulta in Horto bot. Bogoriensi sub III, J, 43! (a. 1904); an e Celebes (Maros) introducta, ubi Teysmann legit specim. fructig., t. Valet. »probabiliter« hue recensendum.

6. *A. nicobarica* Radlk. in Fedde, Repert. XVIII. (1922) 332, et in Engl. u. Prantl, Nat. Pflanzenfam., Nachtr. III. (1907) 203 (nomen, c. syn. Kurz. seq.). — *Sapindus montanus*, non Bl., Kurz, Veget. Nicobar. Id. in Journ. As. Soc. Beng. XLV. 2. (1876) 125! - *A. montana*, non Bl., Radlk. Sap. Holl.-Ind. (1877-1878) 69 (220), quoad specim. *nicobarica*!; King, Mater, etc. (1896) 426, quoad specim. *nicobarica*, •King's collector* n. 527!, »Jelinek«!; Brandis, Indian Trees (1906) 192, verisimiliter hue recensenda ob indie. »Andamans and Nicobars*. — Vulgo: »Nuje« *Nicobaricis*, t. Kurz 1. c. — Frutex; rami teretes, striati, glabri, cortice griseo, lenticellis pallidis punctati; folia 2—3-juga, breviter petiolata, foliola opposita, superiora late elliptico-lanceolata, obtuse acuminata, basi subacuta petiolulis brevibus insidentia, inferiora minora, angustiora, subovata, chartacea, nervis lateralibus oblique patentibus remotiusculis praesertim subtus prominentibus, reticulato-venosa, supra sublaevia, nitida, subtus opaca, glabra, pallide viridia, cellulis secretoriis nunc obviis nunc nullis, crystallosum concretionibus prope paginam superiorem sat crebris, glandulis basi immersis ornata; paniculae axillares, singulae vel paucae fasciculatae, sufferrugineo-puberulae, rhachi glabrescente ramisque laxè cymulas sessilibus gerentibus; alabastra subglobosa, brevissime pedicellata; sepala 5, glanduloso-ciliata; petala 5, margine pectinato-ciliata, intus basi squamulis binis villosis aucta; stamina 7(—8), filamentis villosiusculis, antheris glandulis singulis adpersis; germinis rudimentum dimerum, obcordatum, glabrum; fructus 2-coccus, coccis divaricatis globosis glabris, endocarpio subcrustaceo.

Rami circ. 4 mm crassi. Folia petiolo 2—3 cm longo adjecto 15—30 cm longa; foliola superiora 12—18 cm longa, 5—8 cm lata, inferiora circ. 8 cm longa, circ. 3 cm lata, petiolulis circ. 5 mm longis. Panicula 10—20 cm longa. Alabastra diametro circ. 3 mm. Fructus cocci diametro circ. 13 mm.

In insulis *Nicobaricis*: Jelinek n. 141! (Exped. Novara, a. 1857-1859, Hb. Vindob. n. 182; Nankowry ex Kurz 1. a); Kurz n. 259481 (frequent in the tropical forests of Kamorta, entering the beach-forests, m. Febr. 1875, fruct.; Hb. Kew.); King's Collector n. 527! (a. 1884, flor.; ex Hb. Calc. comm. c. Hb. DC, specimen cellulis secretoriis nullis a reliquis reedens).

Obs. Affinis *Aphaniae euspidatae* (Bl.) Radlk., quae inter alia differt foliis elliptico-oblongis ensipidatis.

7. *A. bifoliolata* (Thwaites) Radlk. Sap. Holl.-Ind. (1877-78) 21 (91), et in Sitzungsber. bayer. Akad. VIII. (1878) 238, 299 n. 15; Brandis, Indian Trees (1906) 192. - *Nephelium bifoliolatum* Thwaites, Enum. Pl. Zeyl. (1858) 57!; Wai p. Ann. VII. (1869) 630 (sphalm. »*bifoliat.*«.) Beddome, Ic. Pl. Ind. or. (1874) 681. 289 (c. eod. sph.). — *Sapindus bifoliolatus* Hiern in Hook. f. Fl. Brit. Ind. I. (1875) 684; Trimen, Catal. in Journ. Ceyl. Branch R. As. Soc. IX. (1885) 20 et Hand-Book Fl. Ceyl. I. (1893) 307 (sphalm. »*bifoliat.*«.). — Arbor mediocris, ramosa; rami teretes, striati, cortice fusco, lenticellis pallidis exasperati, superne adpresse sufferrugineo-puberuli, mox glabrati; folia 1-juga, petiolo brevi striato glabrato; foliola opposita, oblongo- vel lineari-lanceolata, apice ipso plerumque obtuso, basi acuta interdum subcuneata petiolulis longioribus insidentia, chartacea vel subcoriacea, nervis lateralibus subtilibus, approximatis patentibus, dense subtiliter reticulato-venosa, supra sublaevia, glabra, nitida, subtus opaca, fuscescentia, cellulis secretoriis instructa, glandulis basi immersis ornata; paniculae axillares pleraeque ad ramorum apices confertae, sufferrugineo-puberulae, dein glabrescentes, ramis thyrsoideis sat dense cymulas (polychasia vel dichasia) breviter stipitatas gerentibus; alabastra subglobosa, pedicellata; sepala 5, duo exteriora dimidio minora, angustiora, glanduloso-ciliolata; petala 5 (— 6), elliptica, ciliolata, intus basi squama villosissima aucta; stamina 7 (— 6), filamentis filiformibus basi villosis, antheris pilis glandulosis teneris laxe adpersis, ceterum glabris; rudimentum germinis dimerum; fructus juvenilis (potius germen auctum) 2-coccus, glaber, coccis subglobosis, stylo longiusculo, stigmatibus insignis bilobo.

Arbor 20—30-pedalis. Rami 4 — 6 mm crassi. Folia petiolo 1,5 — 3 cm longo adjecto circ. 20 cm longa; foliola 12 — 18 cm longa, 3—5 cm lata, petiolulis 7 — 10 mm longis. Paniculae 10—20 cm longae. Alabastra diametro circ. 3 mm, pedicellis circ. 2 mm longis infra medium articulatis.

In Zeylania et Indiae provincia Madras: In Zeylania: Thwaites n. 1721! (Lower Badulla Road from Kandy, at no great elevation, m. Apr., fl.; Hb. varia); Trimen (Trincomalie; Uma-oja; Dambulla; Kalawewa; 1. c); — in Madras: Beddome n. 325! (Kolay Mally Hills in the Trichinopoly District, Hb. Kew.).

8. *A. paucijuga* (Hiern) Radlk. Sap. Holl.-Ind. (1877-1878) 68 (219) et in Sitzungsber. bayer. Akad. VIII. (1878) 239; King, Mater, etc. (1896) 425! - *Otophora paucijuga* Hiern in Hook. f. Fl. Brit. Ind. I. (1875) 680!; - non F.-Villar in Noviss. App. ad Blanco, Fl. Filip. Ed. 3. IV. (1880) 52, *dr. Otophora fruticosa*. — Vulgo: Toelang poetih in peninsula malaica, ex Heyne, Nutt. Plant. Nederl. Ind. III (1917) 151. — Arbor magna; rami juveniles cinereo-puberuli vel glabri (t. King); folia 1—2-juga, petiolo brevi striato, foliola opposita, oblongo-lanceolata, breviter subacuminata, acumine ipso obtuso, basi acuta petiolulis insidentia, subcoriacea, nervis lateralibus oblique patentibus remotiusculis supra vix conspicuis subtus prominulis, subtiliter reticulato-venosa, glabra, supra laevigata, nitida, viridula, subtus opaca, pallide subfusca, cellulis secretoriis instructa, glandulis profunde immersis ornata; thyrsi singuli vel bini axillares, graciles, flaccidi, adpresse flavescenti-puberuli, laxe cincinnos stipitatos gerentes; alabastra subglobosa, pedicellata; sepala 5, glanduloso-ciliolata, rubra; petala 5, extus basi pilosula, intus bisquamulata; stamina 7 (— 8), filamentis basi villosis, antheris latis glabris; germen obovato-didymum, compressum, 2-loculare, glabrum; fructus 2-coccus, coccis divaricatis obovoidicis glabris.

Arbor 60-pedalis. Folia petiolo 3 — 4 cm longo adjecto 14 — 22 cm longa; foliola 10—14 cm longa, 3—5 cm lata, petiolulis 5 — 7 mm longis. Thyrsi plerumque foliis longiores, usque 28 cm longi. Alabastra diametro circ. 3 mm. Fructus cocci circ. 9 mm longi.

In Malacca: Maingay n. 462! (Hb. Kew.).-Cf. Ridley, Fl. Malay Penins. I. (1922) 492.

9. *A. microcarpa* (Kurz) Radlk. Sap. Holl.Ind. (1877-1878) 21 (91) et in Sitzungsber. bayer. Akad. VIII. (1878) 238, 301 n. 59 (*Sapindus microcarpus* Kurz, coll. Teys-

mann!), p. 304 n. III et p. 370 (*Sap.* sp. Hiern, coll. Schomb.!); Williams in Bull. Herb. Boiss. 2. sér. V. (1905) 221 (58), coll. Schomb.!, Zimmermann!; Lecomte, Fl. Ind.-Chin. I. (1912) 1037, coll. Zimmermann! — *Sapindus microcarpus* Kurz in Journ. As. Soc. Beng. XLIV. 2. (1875) 186, 205, coll. Teysmann!, et Forest Fl. Brit. Burma 1. (1877) 297, ead. coll.!. - *Sapindus* sp. Hiern in Hook. Fl. Brit. Ind. I. (1875) 684 sub n. 7, coll. Schomb.! — *Aphania ocknoides* Pierre ins.! ed. Lecomte, Fl. Ind.-Chin. I. (1912) 1037 (coll. Pierre e »Cochinchina« et e »Siam«). — Frutex vel arbor; rami teretes, striati, cortice lenticelloso-punctato fusco dein cinerascete, juveniles parce hirsutuli; folia plerumque 1-juga, raro foliolo terminali adjecto trifoliolata, rarisgime 2-juga, inferiora interdum vel summa simplicia, petiolo brevi parce hirsuto glabrescente, foliola opposita, oblonga vel subcuneata, obtusiuscula vel subacuta, interdum subretusa, subsessilia, membranaceo-chartacea, nervis lateralibus subtilibus remotis patentibus subtus tantum prominulis, subtiliter reticulato-venosa, glabra, supra nitidula, subtus opaca, viridula, cellulis secretoriis instructa, glandulis basi immersis ornata; thyrsi singuli vel in paniculas parvas axillares vel terminales pubescentes mox glabratas graciles congesti, sat dense cymulas (polychasia vel dichasia in cincinnosabeuntia) stipitatas gerentes; alabastra subglobosa, longiuscule pedicellata; flores albidii; sepala 5, glanduloso-ciliolata, 2 exteriora dimidio minora, angusta; petala 5 (— 4), ciliolata, intus basi squama emarginata villosiuscula aucta; stamina 7, filamentis basi pilosis, antheris glabris; germen obovato-didymum, 2-loculare, glabrum; fructus 2-coccus, coccis (immaturis) parvis divaricatis obovoideis glabris, endocarpio tenui.

Rami 4—5 mm crassi. Folia petiolo 5—14 mm longo adjecto 8—14 cm longa; foliola 7 — 13 cm longa, 2,5 — 3,5 cm lata. Paniculae 7 — 12 cm longae. Alabastra diametro circ. 2,5 mm, pedicellis 2—4 mm longis infra medium articulatis.

In Siam et in Cochinchina: In Siam: Rob. Schomburgk n. 163! 221! (fl. et fr. juv.; Hb. Kew.); Teysmann! (prov. Kanbooree, fr. immaturi; Hb. Kurz n. 5989); Zimmermann n. 108! (Bangkok, fl., a. 1899; Hb. Berol., Monac); Pierre n. 7047, = Siam n. 137! (ad Muong-Pran sinus siamici, m. Oct. 1868, fl.; *A. ochnoid.* Pierre; comm. Lee); Kerr n. 2999! (Pak Ang, near Kumpeng, alt. 300 ped., m. Mart. 1913, fr.; Hb. Kew.); D.J. Collins n. 58! (Sriracha, m. Nov. 1913, fl.; comm. ex Hb. Kew.); — cf. Craib, Fl. Siam. enum. I. (1926) 325; — in Cochinchina: Pierre (Thivan, t. Lecomte 1. c. sub »*A. ochnoid.* Pierre«).

Culta in Hort. Bogor. sub. n. XV, J, B XXVII, 3! et n. XV, J, B XXVII, 3, a! (e Siam in trod., fl.; a. 1922 comm. c. Hb. Monac).

10. **A. philippinensis** Radlk. in J. Perkins, Fragm. Fl. Philipp. I. (1904) 60. - *Sapindus* sp. Vidal, Re vis. (1886) 96 n. 726! 727!, Cat. Herb. (1892) 54, iid. num. — Frutex; rami teretes, atro-fusci, dense lenticelloso-punctati, glabrati; folia 2—3-juga, longiuscule petiolata, petiolo basi tumido; foliola subopposita, oblonga, utrinque subacuta, vel inferiora ovato-lanceolata, petiolulis mediocribus basi incrassatis suffulta, chartacea, nervis lateralibus oblique patulis remotis ante marginem ± manifeste anastomosantibus subtus prominentibus, tenuiter reticulato-venosa, glabra, supra sublaevia nitida livescenti-viridia, subtus opaca, cellulis secretoriis raris instructa, crystallosum concretionibus prope paginam superiorem sat crebris, glandulis microscopicis basi paullum immersis raris ornata, epidermide paginae inferioris cuticula laevi vel **parum granulata instructa; paniculae spurie terminatae, sat amplae, pluriramosae vel abbreviatae pauciramosae, ramis thyrsoides sat dense cymulas subsessiles gerentibus, minutim puberulis; alabastra subglobosa, pedicellata; sepala 5, minutim glanduloso-ciliolata; petala 5, oblonga, ciliolata, intus basi bisquamulata; stamina 6, filamentis basi viuosum quam antherae glabrae vel glandulis singulis adpersae acutae brevioribus; germen glabrum; fructus 2- (rarius 3-) vel abortu 1-coccus, coccis drupaceis divaricatis obovoideis parvis glabris, endocarpio tenui.**

Rami circ. 4 mm crassi. Folia petiolo 5—9 cm longo adjecto circ. 40 cm longa; foliola 12—20 cm longa, 5,5—7,3 cm lata, petiolulis 5—15 mm longis. Panicula 10—

25 cm longa. Alabastra diametro circ. 2,5 mm. Pedicelli circ. 2 mm longi, basi articulati. Fructus cocci (sicci) circ. 9—12 mm, longi, 6—8 mm crassi, fusco-rubri.

In Archipelagi Suluensis insula Jol6 et in Philippinis: Warburg n. 149571 (ins. Jol6, m. Aug. 1888, flor; Hb. Berol.); G. P. Ahern n. 216! part. (part. *Mischocarpus triqueter* Radlk.; Luzon, prov. Camarines Sur, Pasacao, 1902, fl. et fr.; ex Hb. Manilensi comm. c. Hb. Berol.); hue quoque recensendae videntur: Vidal n. 7261 7271 (Luzon, prov. Tayabas, Unisan; Hb. Kew.); Loher n. 20561 (Luzon, prov. Pampanga, in monte Arayat, m. Febr. 1893, fr.; Hb. Kew., Monac); M. Ramos n. 13375! (Luzon, proV. Tayabas, Tagcauyan, m. Mart. 1911, fr.; comm. ex Hb. Manil.).

11. **A. angusttolia** Radlk. in A. D. E. Elmer, Leaflets of Philippine Bot. I. Art. 10 (1907) 209. — Arbor; rami teretes, e fusco cinerascens, lenticelloso-punctati, glabri; folia plerumque 3-juga, petiolo basi tumido lenticellis prominulis notato; foliola subopposita, anguste lanceolata, elongata, in apicem acutissimum sensim angustata, in petiolulos basi incrassatos attenuata, subcoriacea, nervis lateralibus remotiusculis patulis ante marginem adscendentibus et anastomosantibus subtus prominentibus, reticulato-venosa, glabra nee nisi subtus pilis perraris brevibus pachydermicis prope basin lateraliter affixis adpressis adpersa, livida, subtus obscuriora, utrinque subopaca, cellulis secretoriis raris instructa, crystallorum concretionibus prope paginam superiorem creberrimis, glandulis microscopicis basi immersis raris ornata; paniculae ad apices ramorum pluriramosae, ramis erectis thyrsoides, sat dense cymulas — inferiores stipitatas, superiores subsessiles — gerentibus, minutim puberulae; flores — (non visi); fructus 2- vel abortu monococcus, longius pedicellatus, coccis obovoideis glabris.

Rami circ. 4 mm crassi. Folia petiolo 3—5 cm longo adjecto circ. 25 cm longa; foliola cum petiolulis 5 — 8 mm longis 10—20 cm longa, 2,5 — 4 cm lata. Paniculae 12—20 cm longae. Pedicelli fructigeri ad 1 cm longi. Fructus cocci 12 mm longi, 9 mm crassi.

In Philippinarum insula Leyte: A. D. E. Elmer n. 7330! (Palo, m. Jan. 1906, fr.); Luzon, Samar (Merrill, Enum. Philipp. pi. II. [1923] 499).

12. **A. Loheri** Radlk. in Phil. Journ. Sc. VIII. 6. (1913) 452. - Arbor mediocris; rami teretes, e subfusco cinerascens, lenticelloso-punctati, glabri; folia plerumque 2-juga, raro 3-juga, petiolo basi tumido lenticellis asperiusculo; foliola subopposita, anguste lanceolata, elongata, apice sensim acutata, basi acuta petiolulis brevibus incrassatis insidentia, subcoriacea, nervis lateralibus numerosis oblique adscendentibus ante marginem anastomosantibus subtus prominentibus, reticulato-venosa, glabra, supra pallide viridia nitidula, subtus canescentia opaca, cellulis secretoriis raris instructa, crystallorum concretionibus prope paginam superiorem creberrimis, glandulis microscopicis vix immersis raris ornata; thyrsi singuli vel bini axillares, simplices vel rarius ramo prope basin aucti, sat dense cymulas (inferiores stipitatas, superiores subsessiles) gerentes, subglabri; alabastra globosa, pedicellata; sepala 5, parce glanduloso-ciliolata; petala 5, ovata, ciliolata, intus basi squamulis 2 pilosulis aucta; discus patellaris glaber; stamina 7, filamentis basi pilosis quam antherae glabrae acutae paullulo brevioribus; germinis rudimentum (fl. <J) dimerum, parce pilosulum; fructus — (non suppetebat).

Rami 3—5 mm crassi. Folia petiolo 2—4,5 cm longo adjecto 15—30 cm longa; foliola 10—20 cm longa, 2—5,5 cm lata, petiolulis 3—5 mm longis. Thyrsi 3—15 cm longi, stipite cymularum inferiorum ad 4 mm longo. Alabastra diametro 2,5 mm. Pedicelli 1,5—2 mm longi, basi articulati.

In Philippinarum insula Luzon: A. Loher n. 5874 (Montalban, prov. Rizal, m. Jul. 1905, fl.).

13. **A. vlridis** Pierre, Fl. forest. Cochinch. Fasc. 21 (1895) t. 329A; Lecomte, Fl. Ind.-Chine I. (1912) 1038 c. var. *bassacensis* H. Lee. — Arbor parva; rami **teretes**, striati, sufferrugineo-puberuli, mox glabra ti; folia 1-juga, breviter petiolata; foliolar oblonga vel lineari-oblonga, basi subacuta petiolulis brevibus insidentia, subcoriacea,

nervis lateralibus (intermediis adjectis) sat approximates patentibus praesertim subtus prominentibus, subtiliter reticulato-venosa, glabra, opaca, pallide viridia, cellulis secretoriis prope paginam superiorem instructa, glandulis basi immersis raris; panicula terminalis, ampla, ramosa, foliis longior, sufferrugineo-puberula, ramis thyridoideis sat dense cincinnos sessiles gerentibus; alabastra subglobosa, longiuscule pedicellata; sepala 5, glanduloso-ciliolata; petala 4, ciliolata, intus basi squama lata emarginata pilosula aucta; discus completus, sed inaequalis (cf. charact. generis); stamina 7, filamentis basi pilosulis, antheris glabris; germen obcordato-didymum, 2-loculare, glabrum.

Rami 3 mm crassi. Folia petiolo 1.5—2 cm longo adjecto 11—22 cm longa; foliola 10—20 cm longa, 3—6 cm lata, petiolulis circ. 3 mm longis. Panicula 20—30 cm longa, ramis 4—10 cm longis. Alabastra diametro circ. 3 mm. Pedicelli circ. 4 mm longi, basi articulati.

Var. *bassaoensis* Lecomte I.e.: Panicula foliis brevior.

In Cochinchina: Pierre n.41251 (prov. Bien-hoa ad Chiao-schan, m. Apr. 1877, fl.); — in Cambodia: Harmand (Khong); — in Laos inferiore: Harmand (bassin du Sê-moun); — in Siam (cf. Graib, Fl. Siam. enum. I. [1926] 326).

Var. *bassacensis*: In Laos: Harmand, Thorel (Bassac, ex Lecomte, I.e.).

14. **A. Philastreana** Pierre, Fl. forest. Gochinch. Fasc. 21 (1895) t. 329 B; Lecomte, Fl. Ind.-Chine I. (1912) 1038. — Arbor parva; rami nutantes, teretes, striati, cortice laevi atrofusco, superne fusco-puberuli; folia 1-juga, summa interdum simplicia, breviter petiolata, foliola lineari-lanceolata, sensim acute acuminata, brevissime petiolulata, chartacea, nervis lateralibus (intermediis adjectis) approximatis patentibus utrinque prominulis, subtiliter reticulato-venosa, glabra, nitidula, supra viridia, subtus pallide subfusca, cellulis secretoriis parum conspicuis, glandulis basi immersis praesertim subtus raris; thyrsi ad ramulorum apices axillares, elongati, flaccidi, parce fusco-puberuli, glabrescentes, laxe cincinnos sessiles gerentes; alabastra subglobosa, sat pedicellata; sepala 5, parce glanduloso-ciliolata; petala 4, ciliolata, intus basi squamula pilosula aucta; discus completus, sed inaequalis (cf. charact. generis); stamina 7, filamentis basi villosiusculis, antheris glabris; germinis rudimentum obcordato-didymum, glabrum; fructus 2-coccus, coccis divaricatis obovoideis glabris, endocarpio e chartaceo subcrustaceo.

Arbor 1—3-metralis. Rami circ. 3 mm crassi. Folia petiolo 2—10 mm longo adjecto 16—18 cm longa; foliola 12—17 cm (longissima 20 cm) longa, 2—3 cm lata, petiolulis 2—3 mm longis. Thyrsi 15—25 cm longi. Alabastra diametro circ. 2 mm; pedicelli 2—3 mm longi. Fructus cocci (sicci) circ. 9 mm longi, 7 mm lati et crassi.

In Gochinchina: Pierre n. 1293! (prov. Bien-hoa ad Tri-huyen, m. Jan. 1873, fl. et fr.).

15. **A. montana** Blume, Bijdr. (1825) 2361; Gamb. 1. c. (1829) 37; Don 1. c. (1831) 672; Walp. Rep. I. (1842) 420; Radlk. Sap. Holl.-Ind. (1877-1878) 6, 21, 69 (76, 91, 220) excl. specim. nicobaricis, quae *A. nicobarica*, in Sitzungsber. bayer. Akad. VIII. (1878) 238, 302 n. 63 et in Engl. u. Prantl 1. c. (1895) 318; ?King, Mater, etc. (1896) 426 excl. certe specim. nicob., quae *A. nicob.*; Koord. et Val. 1. c. (1903) 158, excl. indie. »ins. Nicob. et Andaman.«; ?Brandis, Indian Trees (1906) 192, verisimiliter ad *A. nicobaricam* recensenda; Koord.-Schum. Syst. Verz. I. Java (1912) Sapind. p. 18, coll. 118251! etc.; Koord. Exk.-Fl. Java II. (1912) 538 et Atlas Baumart. I..3. (1913) 1.132, coll. 7590/? etc. — *Sapindus montana* Blume, Rumph. III. (1847) 971; Miq. 1. c. I. 2. (1859) 552 et Suppl. I. (1860) 198,508, coll. Junghuhn!; - non Kurz, Veg. Nicobar. Isl. in Journ. As. Soc. Beng. XLV. 2. (1876) 125!, cfr. *A. nicobarica* - non Teysm. et Binn. Gat. Hort. Bogor. (1866) 215 fide specim. a. 1867 c. Hassk. comm. et in Hb. Hassk. l. Paris. et Berol. l. servat., cfr. *Hebecoccus ferrugineus*. — *Sapindus* sp. Zolling. Pl. Jav. n. 3466! - Vulgo: Wegil javanice (ut et *Mischocarpus sundaicus*) et Kilajoe goenung jav., i. e. *Erioglossum montium*, t. Koord. et Val. 1. c. — Arbor mediocris;

rami teretes, striati, cortice subfusco dein cinerascete pallide lenticelloso-punctato, glabri; folia 2(—3)-juga, petiolo sat longo vel in foliis superioribus jugo inferiore basi valde approximate perbrevis striato glabro, foliola oblongo-lanceolata, subacuminata, utrinque acuta, inferiora minora, petiolulis mediocribus, chartacea, nervis lateralibus oblique patentibus utrinque prominulis, praesertim subtus arete reticulato-venosa, glabra, pallide viridia, supra nitidula, subtus opaca, cellulis secretoriis nunc obviis nunc nullis, glandulis basi immersis ornata; paniculae axillares, sat amplae, ramis thyrsoideis dense cymulas (polychasia vel dichasia in cincinnos abeuntia) sessiles gerentibus sordide puberulis; alabastra subglobosa, pedicellata; sepala 5, glanduloso-ciliolata; petala 5, ciliolata, intus basi squama profunde biloba villosa aucta; stamina 5—6, filamentis basi albide villosis, antheris glabris (hie illic tantum pilis singulis glandulosis ornatis); germen obcordato-didymum, 2-loculare, glabrum; fructus 2-coccus, coccis divaricatis breviter ellipsoideis vel denique (in specim. Koordersianis) subglobosis glabris, endocarpio tenui.

Arbor 6—18 m alta (Koorders). Rami 4 — 5 mm crassi. Folia petiolo plerumque 1,5—10 cm longo adjecto 25 —40 cm longa; foliola 15—25 cm longa, 5—8 cm lata, petiolulis circ. 8 mm longis. Panicula 10—30 cm et ultra longa. Alabastra diametro circ. 2,5 mm. Pedicelli circ. 2 mm longi, basi articulati. Fructus cocci rubri (sicci) circ. 12 mm longi, 8 mm lati et crassi.

In Sumatra et Java: In Sumatra: Junghuhn! (Sumatra borealis in Angkole superiore, regio silvatica, altit. 1000—3000 ped., fr.; Hb. Rheno-Traject.); Beccari! (ad Ajer mantjoer, prov. Padang, Sumatra occidentalis, m. Aug. 1878, fr. semimat.; Hb. Florent.); — in Java: Blume! (in Javae occid. prov. Preanger, district. Tjanjor, ad montem Parang, m. Jun. fl.; Hb. Lugd.-Bat., Berol., Paris.); Hasskarl! (litora Sawarna; Hb. Lugd.-Bat.); Zollinger n. 3466! (fl.; Hb. DC, Turcz., Franquev., Webb, Boiss.); Koorders n. 11825)81 etc. (in prov. Preanger!, Tegal, Semarang!, Rembang!, Besukil, a. 1889—1899, fl. et fr.; comm. ex Hb. Bogor.). — (In insulis Andamanicis a King l. c. indicator, sed verisimiliter hie intelligenda est *Aphania nicobarica*, e. g. King's Collector n. 5271, in cujus scheda indicatio ^Andaman Islands« correcta est in »Nicobar Islands*.)

Gulta in Horto Bogoriensi: Hb. Bog. n. 144531 (fl.; a. 1878 mecum comm. ex Hb. Bog., nee non a. 1881 a cl. Treub sub n. 2 et 8).

16. **A. Spirei** Lecomte, Notul. syst. II. (1911) 54 et Fl. Ind.-Chine I. (1912) 1039 f. 130. — Arbor; rami juveniles striati, pube brevi rubra induti; folia bifoliolata, petiolo tereti; foliola majuscula, ovalia vel elliptica vel elliptico-oblonga, utrinque attenuata, subcoriacea, glabra, supra nitidula, subtus opaca, apice acuminata, acumine obtuso mucronato, nervis lateralibus parum curvatis, longius ante marginem anastomosantibus, petiolulis conspicuis infra medium incrassatis et transversim rugosis; pajiiculae axillares et terminates, folia non superantes, pedunculis angulosis, laxe puberulis, vix divergentibus, pedicellis articulatis ad 1,5 mm infra florum; flores <J majores: sepala 5, inaequalia, quincuncialiter imbricata, pubescentia, ciliata; petala 5, ovalia, subunguiculata, squamis supra unguem 2 pubescentibus; stamina 7, antheris ovalibus mucronatis, filamentis antheras aequantibus vel superantibus, infra medium pubescentibus; discus pentagonus, glaber; germen rudimentarium; flores 5 minores: calyx ut supra; petala parva, squama subnulla; stamina 7, filamentis brevibus pubescentibus; germen 2-loculare, stylo simplici, stigmatibus duplici; gemmulae in loculis solitariae.

Petiolus 2—3 cm longus; foliola ad 18 cm longa, 5 cm lata, petiolulis 6—7 mm longis. Petala 3—3,5 mm longa. Stamina 2—2,6 mm longa. (Omnia ex Lecomte, species mihi non visa.)

In Laos: Spire n. 1463 (Muong-yen).

Var. **mekongensis** Lecomte, l. c.: Folia brunnea, basi minus attenuata, nervis lateralibus magis patentibus et magis approximatis; fructus subcarnosus, purpureus, laevis, magnitudine Pruni (domesticae) fructum aequans, indehiscens, endocarpio mem-

branaceo; embryo rectus, cotyledonibus crassis, piano-convexis, radícula infera. (Ex Lecomte; specimen vidi sine fructu, foliolis 10—16 cm longis, 2,5—4,5 cm latis, glandulis basi paullulum immersis ornatis cellulisque secretoriis, etsi inanibus, instructis.)

In Laos: Thorel n. 3412! (Luang-prabang, m. Mart.—Apr. 1866—1868, fr. matur.).

17. **A. macrophylla** Radlk. in Fedde, Repert. XVIII. (1922) 332. — *Sapindae*. indet. Koord. Fl. Minahassae in Meded. Plantent. XIX. (1898) 407. — *Aphania danura* Radlk. in Koord.-Schumacher, Syst. Verz. Hb. Koorders III Celebes (1914) 75, coll. 18015/31 — Yulgo: »Ila-i-langko« in lingua Toeloer, f. Koord. — Frutex; rami teretes, obscure striati, glabri, cortice fusco lenticellis crebris parvis asperulo; folia simplicia, permagna, oblongo-lanceolata vel oblonga, basi cuneata vel obtusata, integerrima, petiolis brevibus crassis, chartacea vel subcoriacea, nervis lateralibus remotiusculis patulis ante marginem curvato-adscendentibus atque anastomosantibus subtus prominentibus, laxe reticulato-venosa, glabra, supra nitida, fuscescenti-livida, subtus opaca pallidiora, cellulis secretoriis parvis rarisque sub epidermide paginae superioris instructa, glandulis microscopicis parum immersis subtus perparce ornata, epidermide non mucigera; thyrsi axillares, laxiuscule cymulas sat stipitatas paucifloras gerentes, subglabri; sepala 5, vix ciliolata; petala — (non visa); discus tenuiter patellaris, margine elevatus crenatus, glaber; stamina 5, antheris glabris; germen divaricato-didymum, glabrum; stylus brevis, pilosulus, tumide 2-lobus, lobis dorsalibus.

Rami 4 mm crassi. Folia petiolo 0,6—2 cm longo adjecto 35—60 cm longa, 8—18 cm lata. Thyrsi circ. 12 cm longi; cymularum stipites 3 mm longi; pedicelli 1—1,5 mm longi.

In insulae Celebes provincia Minahassa: Koorders n.18015)8! (in silva primaeva ad »bivak Pingsan«, m. Jan. 1895, fl.).

Obs. Foliis simplicibus similis *Apkaniae danurae* Radlk., a qua differt disco tenuiter patellari. staminibus 5, stylo perbrevis, insuper foliorum magnitudine, cellulis secretoriis (etsi rariusculis) et epidermide non mucigera.

Sedis in sect. II. dubiae.

18. **A. dictyophylla** Radlk. Sap. Papuas. in Engler's Bot. Jahrb. LVI. (1920) 268. — *Cupaniopsis dictyophylla* Radlk. in Sitzungsber. bayer. Akad. XX. (1890) 359. — Frutex; rami teretes, glabri, cortice cinerascens; folia paripinnata, 3—4-juga; foliola opposita, ovato-oblonga, breviter obtuse acuminata, integerrima, basi rotundata, nonnunquam subacuta, petiolulis brevibus subconicis supra sulco exaratis insidentia, chartacea, nervis lateralibus oblique patulis ante marginem anastomosantibus subtilibus non nisi subtus prominulis, reti venarum arcto praesertim subtus prominulo, utrinque glabra nee nisi glandulis microscopicis teneris breviter clavatis adspersa, nitidula, supra viridula, subtus quodammodo rubescentia, impunctata, cellulis secretoriis nullis; thyrsi axillares, petiolos vix superantes, racemiformes, cymulas 2—3-floras subsessiles vel superne ad flores singulos reductas gerentes, bracteis bracteolisque minutissimis pilis minutis glandulisque capitatis adspersis; alabastra globosa; flores sat pedicellati, pedicellis basi articulatis; sepala 5, 2 exteriora minora ovata, interiora suborbicularia, glabra, rubro-fusca, margine pallidiora petaloidea glanduloso-ciliolata, cellulis resinigeris punctata; petala basi 2-squamulata, squamulis villosis; stamina 5, filamentis brevibus subulatis basi villosulis, antheris glabris cordato-ovatis introrsis, connectivo dorso dilatato; germen 2-loculare, glabrum; stylus brevis apice subbilobo sulco suturali stigmatoso utrinque notatus; fructus — (non suppetebat).

Rami 2,5 mm crassi. Folia petiolo 3—4 cm longo adjecto 12—16 cm longa; foliola cum petiolulis 3 mm longis 6—10 era longa, 2,3—3,5 cm lata. Thyrsi 3,5—5 cm longi. Alabastra diametro 1,5 mm.

In Nova Guinea britannica: W. Sayerl (base of Mount Obree, a. 1887, fl.; comm. Ferd. Mtiller).

Obs. Investigatio anatomica reiterata ad genus *Aphania* recensendam esse plantam docuit, in cujus sectione II ob fructum ignotum sedis dubiae restat.

19. **A. dasypetala** Radlk. in Fedde, Repert. XVIII. (1922) 333. - Vulgo: »Ilat« (t. collectore). — Frutex gracilis; rami teretes, glabri, cortice pallido, lenticelloso-punctato; folia 2-juga, rarius 3-juga, petiolo rhachin aequante, basi incrassato, glabro; foliola opposita, ovato-lanceolata, subacuminata, acumine brevi obtuso vel sat acuto, basi in petiolulos abruptius attenuata, margine subrevoluta, chartacea, nervis lateralibus patulis remotiusculis longius ante marginem anastomosantibus subtus prominentibus, praesertim supra laevia, utrinque glabra, nitida, pallide flavescenti-viridia, cellulis secretoriis in staurechymate sat crebris prope paginam inferiorem raris (folii exsiccati inahibus fungi cujusdam hyphis percursis) instructa, glandulis basi profunde immersis praesertim supra crebris ornata, inde sub lente elevato-punctulata; paniculae axillares, elongatae, folia aequantes, basi pauciramosae, flavescenti-pilosulae, laxe cincinnos breviter stipitatos 4—5-flores gerentes; flores mediocres, breviter pedicellati, purpurascens; sepala 5, suborbicularia, concava, glanduloso-ciliolata, 2 exteriora dimidio breviora; petala 4 (5. sede inter sepalum 3. et 5. vacua), sepala subaequantia, ovalia, purpurea, dorso pilis aureis adpressis sericea, intus glabra et supra unguem brevissimum squama perbrevis pilosula aucta; stamina 6—7, filamentis brevibus villosiusculis, antheris pilis minutissimis laxe adpersis; germinis rudimentum parvum, obcordato-dicoccum, glabrum; fructus — (non suppetebat).

Rami 3 mm crassi. Folia petiolo 5 cm longo adjecto circ. 25 cm longa; foliola cum petiolulis 1 cm longis ad 18 cm (inferiora 14 cm) longa, ad 6,5 cm lata. Paniculae ad 30 cm longae. Alabastra diametro 2,5 mm.

In Borneo: Collector indigenus n. 7091 (prope Sarawak, m. Jul. 1911, fl.; comm. ex Hb. Manil.); Elmer n.20058! (prope Sandakan, prov. Myburgh, Borneo britannica septentr., m. Oct.-Dec. 1921, fl.; Hb. Univ. Calif.); Merrill, PL Elmer. (1929) 173.

Obs. Habitu accedens ad *A. philippinensem* et *A. Boerlagei*, a quibus, ut ab omnibus reliquis speciebus, differt petalis dorso pube (sericea aurea) indutis. Foliola excellunt glandulis crebris profunde immersis, qua re *A. paucijugam* appropinquant. Ob fructum ignotum sedis in sectione II. dubiae restat.

20. **A. fascicularis** Radlk. in Fedde, Repert. XVIII. (1922) 334. - Frutex?; rami teretes, e flavo-viridi fuscescentes, lenticellosi, glabri; folia 2(—3?)-juga, longe petiolata, petiolo rhachique aequilongis supra sulcatis, pallide stramineis laevibus; foliola opposita, elliptica, larga, crassiuscule petiolulata, chartacea, nervis lateralibus obliquis supra vix subtus sat prominentibus, glabra, laeviuscula, nitidula, livide viridia, impunctata, attamen cellulis secretoriis prope paginam inferiorem instructa, crystallorum concretionibus persita, glandulis microscopicis raris ornata; thyrsi breves, ad foliorum axilas glomerato-fasciculati, dichasia pluriflora vel apice ad flores singulos reducta gerentes, laxe puberuli; flores breviter pedicellati; sepala 5, glanduloso-ciliolata; petala 5, oblonga, ciliolata, intus supra unguem brevissimum squama biloba vel squamulis 2 apice retuso-inflexo ipsis subbilobis margine cano-hirsutulis aucta; discus margine elevatus, 5-sulcatus, glaber; stamina 7, brevia, praeter apicem dense villosa, antheris pilis glandulosis tenerrimis adpersis; germen obcordato-didymum, 2-loculare, apice ut et stylus brevis pilis singulis adpersum; fructus — (non suppetebat).

Rami 6 mm crassi. Folia petiolo 10 cm longo adjecto circ. 50 cm longa; foliola cum petiolulis 1,5 cm longis 32 cm longa, 14,5 cm lata. Thyrsi 3—4 cm longi; pedicelli circ. 2 mm longi, infra medium articulati. Alabastra diametro 2,5 mm.

In Moluccarum insula Batjan: Warburg n. 181681 (circ. 1887; Hb. Berol.).

Obs. Species ob fructum ignotum inter reliquas sectionis II. sedis dubiae.

Sect. III. **Didymooccus** Radlk.

21. **A. rubra** (Roxb.) Radlk. Sap. Holl.-Ind. (1877-1878) 21, 69 (91, 220), in Sitzungsber. bayer. Akad. VIII. (1878) 238,298 n. 10, p. 302 n. 77 et in Engl. u. Prantl, Nat. Pflanzenfam. III. 5. (1895) 318; Brandis, Indian Trees (1906) 192. - *Scytalia rubra* Roxb. Hort. Beng. (1814) 29, Fl. Ind. II. (1832) 272 (sphalm. *rubia*); Piddington, Index Ind. PL (1832) 80. - *Nephelium rubrum* Don, Gen. Syst. I. (1831) 671; **Wight**

Ic. I. (1838) t. 24, 25 (iconis Roxburghi ineditae reproductio); Voigt, Hort. suburb. Galcutt. (1845) 95; Walp. Rep. V. (1845-1846) 365, sphalm. »IV. *Rubia**. - *Euphoria rubra* Royle, 111. Bot. Himal. Mount. I. (1839) 138. — *Sapindus acuminatus* Wall. msc. ed. Royle 1. c. p. 139 part. i. e. quoad stirp. »e Bechiaco«l, cf. infra specim. enum. — *Sapindus attenuatus* Wall. Gat. (1847) n.8037!; Hiern in Hook.f. Fl. Brit. Ind. I. (1875) 684, excl. specim. 1-foliolatis (sub syn. [^]*Euphoria verticillata* Wall. Gat. 8052 D, E« intelligences), ad *A.danura* recens.; Gammie, Bot. Tour in the Lakhimur District, Assam, in Records Bot. Surv. Ind. I. Nr.5 (1895) 79; G.G.Lacaita, Pl. collect, in Sikkim 1913 in Journ. Linn. Soc. XLIII. Nr.293 (1916) 465, coll. n. 15762. - *Sapindaceae*''*?. Griff. Itin. Notes (1848) lib. II, 112, Notul. ad Pl. Asiat. IV. (1854) 551 et Ic. IV. (1854) t. 599 f. 2. — *Euphoria attenuate*, Planch, in Hook, f. et Thorns. Hb. Ind. or.; Gat. Kew. Hb. Griff, etc. (1865) 9 n. 1016! (excl. Hb. Berol., Paris, et ex parte Kew., ubi sub hoc n. *Schleichera trijuga*). — *Euphoria* sp. Gat. Kew. Hb. Griff, etc. (1865) 9 n. 10121 — *Sapindus ruber* Kurz, Forest Fl. Brit. Burma I. (1877) 298. — Vulgo: Koi-poorā Hindost. t. Roxb. 1. c. (1814); Lall Koe-pooia in Silhet t. Roxb. I.e. (1832). — Arbor sat magna vel frutex ramosus (interdum scandens, Hiern 1. c.); rami teretes, striati, glabri, pallide subfusci, lenticelloso-punctati; folia 3—6-juga, petiolo longo tereti glabro; foliola elongate ovato-lanceolata, sensim acutata, basi rotundata vel praesertim superiorum subcuneata petiolulis longiusculis totis vel infra medium tantum incrassatis insidentia, rarius (in forma *attenuata*) lineari-lanceolata basi attenuata, membranaceo-chartacea, nervis lateralibus remotiusculis curvato-adscendentibus, utrinque prominulis, reticulato-venosa, glabra, livescenti-viridia, supra nitida, subtus opaca, cellulis secretoriis nullis, epidermide mucigera, glandulis basi immersis ofnata; paniculae axillares vel sub terminates, amplae, iterum ramosae, ramis elongatis sat crebre ramulos thyrsoideos subaequilongos cymuligeros puberulos gerentibus, cymulis paucifloris sessilibus; alabastra subglobosa, breviter pedicellata; flores rubri; sepala 5, glanduloso-ciliolata, 2 exteriora multo minora, angusta; petala 4—5, ciliolata, intus basi squama lata glabriuscula aucta; stamina 8, filamenta perbrevia glabriuscula, antherae subglabrae, pilis brevissimis glandulisque interdum adpersae; germen obcordatum, 2—3-loculare, glabrum; fructus 2- vel abortu 1-coccus, coccis divaricatis ellipsoideis oliviformibus (t. Roxburgh) glabris atropurpureis, endocarpio chartaceo.

Frutex 5—8-pedalis (Glarke) vel arbor 70—80 pedes alta (t. Kingii collectore). Rami circ. 8—10 mm crassi. Folia petiolo 8—16 cm longo adjecto 30—60 cm longa; foliola 15—28 cm longa, 4—6 cm lata; petioluli 5—12 mm longi. Paniculae 20—50 cm longa, ramis 15—30 cm, ramulis 2—4 cm longis. Alabastra diametro 3,5—4 mm. Pedicelli 1—2 mm longi. Fructus (edulis t. Roxburgh — cui perperam »arillus« edulis —) cocci (sicci) 1,6 cm longi, 9 mm lati et crassi.

F.I. *attenuata*: Foliola oblongo- vel lineari-lanceolata, basi sensim attenuata vel cuneata, longius petiolulata, chartacea, insignius reticulata.

In Nepal; Sikkim, Bhotan, in Bengala orientali et Assam: In Nepal: Wallich (Becheaco, m. Dec. 1820, steril.; specimen in Hb. Wall, post 8035B *Sapind. acuminat.* Wall., i. e. *Sap. mukorossi* Gärtn., insertum c. indie. Sap. 13, a Royle 1. c. commemoratum; Hb. Soc. Linn.); — in Sikkim: Hooker f. in Hb. Ind. or. Hooker f. et Thomson 1 (Regio trop., altit. 2000—3000 ped., fl. et fr.; Hb. varia); Native collector Kari n. 624! 7141 1052! (alt. 1000—1200 ped., m. Mart, fl., m. Apr. fr.; Hb. Monac. ex Hb. Galcutt.); G.G.Lacaita n. 15762 (infra Badantam, alt. 2000ped., m. Maj. 1913) exipso 1. c.; - in Bhotan: Griffith (insilvis Dewangiri, altit. 1500 ped., a. 1837; 1. c. 1848); — in Bengala orientali et Assam: Roxburgh! (Silhet; Hb. Martius); Griffith, Distrib. Kew. 1012! (Mishmi, Khasia; Hb. Kew. etc.); Jenkins! (Assam; Hb. Kew., Rheno-Traj., Monac, DC); Masters! (Assam and Khasia Hills; Debrapur, m. Febr. 1845, fl.; ex Hb. Gale. comm. c. Hb. Monac, Rheno-Traj.); Keenan (Gachar, t. Hiern 1. c. 1875); G. B. Glarke n. 27243B! (Khasia, Mungpo, altit. 1500 ped., m.

Febr. 1885, fl.; Hb. DC), n. 37128D! (Assam, Gowhatty, altit. 500', m. Febr. 1885, fl.; Hb. Berol. ex Hb. Kew.), n. 37767 A! (altit. 3000 ped., m. Apr. 1885, fr.; Hb. Berol. ex Hb. Kew.), n. 43181B! (Assam, Goalpara, altit. 300 ped., m. Mart. 1886, fl. et fr. juv.; Hb. Berol. ex Hb. Kew.), n. 43181D! (ibid., altit. 350 ped.; Hb. Barbey); King's Collector! (Assam, m. Apr. 1893, fr.; Hb. DC. ex Hb. Gale); Gammie (Assam, Lakhimpur District, in Makúm, 1. c. 1895); Hookerf. et Thomson in Hb. Ind. or.! (Bengala or., regio trop., fl.; Hb. Berol., Vindob.); Lister! (Chittagong Hill Tracts, a. 1876, steril.; Hb. DC. ex Hb. Calc); Kurz (Forests of the Chittagong Hills, 1. c. 1877).

Culta in Horto Calcuttensi: Griffith, Distrib. Kew. n. 1016! part, (specim. ex Ht. Calc. in Hb. Kew., excl. coll. Heifer ad *Schleich. trijugam* recens. ut et specim. c. Hb. Paris, et Berol. comm.).

Forma *attenuate*: Wallich, Cat. n. 8037! (Silhet, f.); Hb. DC, Webb, Martius).

22. **A. danura** (Roxb.) Radlk. Sap. Hoil.Ind. (1877-1878) 21, 69 (91, 220), in Sitzungsber. bayer. Akad. VIII. (1878) 238, 299 n. 26, p. 304 n. 103 et in Engl. u. Prantl, Nat. Pflanzenfam. III. 5. (1895) 318; King, Mater, etc. (1896) 426; D. Prain, Fl. of the Sundribuns in Records Bot. Surv. Ind. II. Nr. 4 (1903) 295; Brandis, Indian Trees (1906) 191; Lecomte, Fl. Ind.-Chine 1.(1912)1036; — non in Koord.-Schum.Verz., cfr. *A. macrophylla* R. — *Seytalia danura* Roxb. Hort. Beng. (1814) 29, Fl. Ind. II. (1832) 274; Piddington, Index Ind. PI. (1832) 80; Hb. Hamilt. ed. Wall, in Cat. (1847) n. 8051 A! - *Seytalia verticillata* Roxb. 11. cc. (1814) 29, (1832) 273, Ic. ined. 1.1236 (ex ms. Roxb. Kewens.); Hb. Hamilt. ed. Wall. 1. c. n.8052B!; Hb. Wight ibid. n. 8052C. - *Euphoria verticillata* Lindl. in Bot. Regist. XIII. (1827) 1.1059; Wall. Cat. (1847) n. 8052! inch DI, El (specimina foliis partim in petiolos longiores attenuatis, inde ab Hiern exclusa et ad *A. rubram* recensita). — *Nephelium verticillatum* Don, Gen. Syst. I. (1831) 670; Voigt, Hort. suburb. Calcutt. (1845) 95; Walp. Rep. V. (1845-1846) 365; Teysm. et Binn. Cat. Hort. Bogor. (1866) 216. — *Nephelium danura* Don 1. c. p. 671; Walp. 1. c. p. 365. - *Sapindus danura* Voigt 1. c. (1845) 94; Hiern in Hook. Fl. Brit. Ind. I. (1875) 684; Kurz in Journ. As. Soc. Beng. XLIV. 2. (1875) 186, perperam excl. syn. *Seytalia vertic.* Roxb. et specim. Wallich 8052 D, E; Veget. Nicobar I si. ibid. XLV. 2. (1876) 125 et Forest Fl. Brit. Burma I. (1877) 298; Prain, Veget. Coco Group in Journ. As. Soc. Beng. LX. 2. (1891) 308; Schimp. Indomal. Strandfl. (1891) 111; Duthie, Fl. Upper Gangetic Plain I. 1. (1903) 181; Prain, Veget. Distr. Hughli-Howrah etc. in Records Bot. Surv. Ind. III. 2. (1905) 190. - *Euphoria danura* Wall. Cat. (1847) n. 80511 A, B, C, D; Planch, in Hook. f. et Thorns. Hb. Ind. or.; Cat. Kew. Hb. Griff, etc. (1869) 9 n. 1011! — *Didymococcus danura* Bl. Rumph. III. (1847) 103 in obs. — *Didymococcus verticillatus* Bl. ibid. — *Dimocarpus verticillata* Hb. Roxb. ed. Wall, in Cat. (1847) n. 8052 A. — *Sapindus verticillatus* Kurz, Pegu Report (1875) App. A p. 38, B p. 40. — Vulgo: Danoora Bengalice t. Roxb. 11. cc; Badonaet Nuncha Bengalensib. t. Prain 1. c. 1903. — Frutex sempervirens (t. Prain 1. c. 1903) vel arbor parva; rami stricti, teretes, striati, glabri, cortice subfusco pallide lenticelloso-punctato; folia simplicia, attamen interdum (in cultis) pinnatisecta (et e pinnatisectis transeuntia in pinnata rhachi petioloque ± alatis), saepius subverticillata, ex oblongo-lanceolato attenuata, interdum quodammodo panduriformia, acuminata, rarius obtusa, basi **obtusata immo subcordata petiolis brevibus crassis insidentia, rarius in petiolos elongatos plus minus decurrentia, chartacea, nervis lateralibus remotis curvato-adscendentibus praesertim subtus prominulis, reticulato-venosa, glabra, supra nitidula, fuscescenti-livida, cellulis secretoriis nullis, epidermide mucigera, glandulis basi immersis ornata; paniculae axillares vel subterminales, binae ternae fasciculatae, ramis ± brevibus thyrsoides sat dense cymulas substipitatas gerentibus parce subfusco-puberulis; alabastra subglobosa, breviter pedicellata; flores pallide rubescenti-flavidi (t. Hiern); sepala 5, 2 exteriora multo minora, glanduloso-ciliolata; petala 5, ciliolata, intus basi squama lata Integra vel biloba rufulo-villosa aucta; stamina (6—)8, filamentis**

basi pilosulis, antheris subglabris pilis brevissimis glandulisque interdum adpersis; germen obcordato-didymum, 2-loculare, glabrum; fructus 2-coccus, coccis oblique divaricatis breviter ellipsoideis, semina coffeae subaequantibus (t. Roxburgh) glabris aurantiacis minus succulentis.

Frutex vel arbor 6—10-pedalis. Rami 4—8 mm crassi. Folia petiolo 4—5 mm rarius usque 6 cm longo adjecto 20—40 cm longa, 5—10 cm lata. Paniculae 10—30 cm longae. Alabastra diametro circ. 3 mm. Pedicelli vix 1 mm longi. Fructus cocci (sicci) circ. 8 mm longi, 6 mm lati et crassi.

In Indiae orientalis parte boreali-occidentali (Rohilcund), in Bengala orientali et Assam, in Burma et Tenasserim, in Laos, in insulis Andamanicis et Nicobaricis: In Rohilcund t. Hiern 1. c. 1875; Duthie 1. c. 1903; — in Bengala et Assam: Wallich, Cat. n. 8051 A! (Hb. Hamilton e Dinhatti et Gongachora), n. 8051 C! (Silhet, fr.; Hb. DC, Mart., Webb), n. 8052 E! (ibid., fl., foils superne latoribus, inferioribus longius petiolatis; Hb. DC, Webb); Roxburgh (native of the Delta of the Ganges and of the parts to the east of it, 1. c. 1832, Ghittagong, F. Buchanan, a. 1797, l.e. 1814; *Scytalia verticillata* l.e. 1832 introducta dicitur in Hort. Calcutt. a. 1798 e Moluccis — an errore?); Griffith, Distrib. Kew. n. 1011! (East Bengal, fl.; Hb. Berol.); Hookerf. et Thomson in Hb. Ind. or.! (Bengal or., regio tropica; Hb. Berol., Vindob.); Voigt (Soonderbuns, 1. c. 1845); Prain (Sundribuns, eastern and northern forests, l.e. 1903; Western Sundribuns, village shrubberies south of Calcutta and Howrah, 1. c. 1905); King's Collector n. 2651 (Chittagong Hill Tracts, a. 1886 fl.; Hb. DC ex Hb. Calcutt.); Clarke n. 16911! (Burisal, Bengal, m. Febr. 1892 fl.; Hb. Berol.); - in Burma: Wallich, Cat. n. 8051 D! (Attaran River, foot of Pabong Hill, m. Jan. 1827, fl.; Hb. DC, Webb); Heifer n. 100! (Moulmein, m. Mart. 1837, fl.; un arbre svelte de la hauteur de 10—15 pieds, se trouvant dans les plaines sous l'eau pendant le monsoon; Hb. DC, Berol.); Heifer, Hb. Distrib. Kew. n. 10111 (cf. supra Griff.; Tenasserim and Andamans, fl. et fr. juv.; Hb. Monac, Vindob.); Falconer n. 369! (Tenasserim, Moulmein, fl.; Hb. Rheno-Traj. ex Hb. Calc); Kurz (tidal forests in Pegu et Tenasserim, 1. c. 1877); — in Laos inferiore: Thorel (Lakone, ex H. Lee. 1. c.); — in ins. Andamanicis et Nicobaricis: Kurz (frequent in the tidal forests of the Andamans 1. c. 1877); Prain (Great Coco, 1. c. 1891); Kurz (Nicobar Islands: Kondil, Garden collectors 1. c. 1876).

Culta in Horto Calcuttensi: Roxburgh! (*Scytalia verticillata* fl. et fr.; Hb. Martius); Wallich, Cat. n. 8051 A! (fl.), n. 8052 A! (Hb. Roxb.), B! (Hb. Hamilt.), C! (Hb. Wight), D! (Ht. Calc); id.! (in Hb. Schumacher, nunc Havn.; in Hb. Puerari, nunc DC; fl.); id. (?)! (ex Hb. Lambert in Hb. Martius; ex Hb. Banks? in Hb. Deless.); insuper ex Hb. Calc. comm. exstat in Hb. Monac., fl., et in Hb. Rheno-Traj. 1 specimen foliis simplicibus longius petiolatis alterumque foliis pinnatisectis; Griffith n. 1013! 10141, qui numeri in Cat. Kew. omisi sunt (foliis partim simplicibus, partim pinnatisectis; Hb. Kew.); Pierre n. 4088! (fl., a. 1863); — in Horto Bogoriensi: Teysmann et Binnendijk 1. c. 1866.

Obs. In particulis sat tenuibus, ut folii sicci sectionibus transversalibus obtinentur, quoad epidermidem in Alcohol sub microscopio investigatis pars mucipara membranarum ad basin eellularum hemisphaerica facile observatur; aqua non semper mutatur, certe vero adjecto acido hydrochlorico diluto, cujus ope in mucilaginem fluidam dissolvitur; eodem modo in *A. rubra* Radlk.

22. Thraulococcus Radlk.

Thraulococcus Radlk. Sap. Holl.-Ind. (1877) 22 (92), in Sitzungsber. bayer. Akad. XX. (1890) 236 283 et in Engl. u. Prantl, Nat. Pflanzenfam. III. 5. (1895) 318. - *Nephelium* sp., *Sapindus* sp. aut. var., cf. lit. spec.

Flores spurie polygami, (? et \$ (g mentientes) in eadem inflorescentia, regulares, mediocres. Alabastra subglobosa, adpresse puberula, magnitudine cannabis grana aequantia. Sepala 5, concava, suborbicularia vel late obovata, imbricata, 2 exteriora

minora, subchartacea, margine petaloideo ciliolato, dense, pilis brevibus adpressis flavescens puberula. Petala 5, ovalia, sepala \pm superantia, longiuscule late unguicufeta, praeter unguem extus puberulum et marginem ciliolatum subglabra, extus papillosa, intus supra unguem squama lata petalum dimidium subaequante biloba decurvata margine villose barbata aucta. Discus completus, subcupularis, 5-crenatus, glaber. Stamina 8, intra discum inserta; filamenta filiformia, paullulum complanata, erecta, superne pilosa; antherae sagittato-oblongae, obtusae, introrsae, glabrae, dorso supra excisuram basalem affixae; pollinis granula trigono-placentiformia, 3-porosa. Germen (floris \llcorner rudimentarium) trigono-ovatum, 3-sulcatum, 3-loculare, pilis adpressis hirsutum; stylus breviusculus, leviter 3-sulcatus, puberulus, apice 3-lobus, lobis dorsalibus erectis; gemmulae in loculis solitariae, supra basin anguli centralis affixae, patentis, campylotropae, apotropae, micropyle extus infera. Fructus corticoso-carnosus, siccus crustaceus fragilis, coccato-lobatus, 3- vel abortu 2—1-coccus, perbreviter stipitatus, coccis ellipsoideis oliviformibus horizontaliter patentibus ochraceo-tomentellis, sarcocarpio parte exteriori e cellulis crystallorum concreciones gerentibus aliisque sclerenchymaticis crebris exstructo, intus glaberrimis pallidis, strato intimo e cellulis parenchymaticis elongatis contexto. Semina coccis conformia, testa tenui e tela spongiiformi compressa exstructa atrofusca, hilo parvo suborbiculari, arillo nullo. Embryo curvatus; cotyledones crassae in diametro seminis (coccique horizontalis) longissimo superpositae, amylierae; radicula a medio dorso descendens, lata, complanata, plica testae subbasilari lata sat profunda excepta.

Frutices pauciramosi vel caule simplici. Folia sparsa, abrupte pinnata vel simplicia, longiuscule petiolata, exstipulata, foliolaque, ubi sunt, sat larga, oblonga, integerrima, chartacea, nervis lateralibus pallidis subtus prominentibus patentibus apice furcatis ante marginem anastomosantibus, laxius reticulato-venosa, glabra, pallide viridia, cellulis secretoriis nullis, diachymate crystallorum concrecionibus crebris persito, epidermide mucigera, glandulis microscopicis clavatis stipitatis basi in epidermidis foveolas profunde immersis utrinque sparsim obsita. Thyrsi supraaxillares vel subterminales, interdum basi ramo uno alterove aucti, foliis multo breviores, rhachi crassa sulcato-angulata vel tereti, sat dense cymulas sessiles gerentes, ochraceo-tomentelli, dein glabrescentes. Flores breviter pedicellati, expansi 5 mm longi, (sicci) cerini. Fructus cocci sicci (glabrati) viridescens, crustacei, fragiles.

Species 2, insulae Zeylaniae incolae, altera (t. Beddome) Indiae quoque continentalis.

Genus fructu coccato-lobato valde affine generi *Aphaniae*, attamen pericarpium et praesertim endocarpium structura nee non embryo insigniter curvato sat recedens.

Conspectus specierum.

- A. Folia pinnata 1. *Tk. erectus*.
 B. Folia simplicia 2. *Th. simplicifolius*.

1. **Th. erectus** (Thwaites) Radlk. 11. cc. (1877) 22 (92), (1895) 318 et in Sitzungsber. bayer. Akad. VIII. (1878) 300 n. 32; Brandis, Indian Trees (1906) 192. -*Nephelium erectum* Thwaites, Enum. Pl. Zeyl. (1858) 57!; Walp. Ann. VII. (1869) 630; Beddome, AnamaUay Pl. in Trans. Linn. Soc. XXV. (1866) 212. — *Sapindus erectus* Hiern in Hook. Fl. Brit. Ind. I. (1875) 683; Trimen, Gatal. in Journ. Ceyl. Branch R. As. Soc. IX. (1885) 20 et Hand-Book Fl. Geyl. I. (1893) 308. — Frutex erectus, non vel parce ramosus; rami teretes, striati, cortice cinerascens lenticelloso-punctato, glabri; folia 3—5-juga, longius petiolata, foliola alterna vel opposita, oblonga, acuminata, basi \pm acuta petiolulis longiusculis basi incrassatis insidentia, chartacea, nervis lateralibus oblique patentibus, subtiliter reticulato-venosa, glabra, supra nitidula, subtus opaca, viridija; thyrsi axillares vel subterminales, interdum basi ramo uno alterove instructis sparsim cincinnos sessiles gerentes, rhachi angulato-sulcata crassa, ochraceo-puberuli; alabastra subglobosa, breviter pedicellata; flores et fructus ut supra.

Frutex 6—10-pedalis. Rami 6—7 mm crassi. Folia petiolo circ. 12 cm longo adjecto circ. 50 cm longa; foliola 14—20 cm longa, 5—6 cm lata, petiolulis 8—10 mm longis. Thyrsi 7—20 cm longi, rhachi 2—3 mm crassa. Alabastra diametro 3—4 mm. Fructus cocci 2,2 cm longi, 1,3 cm lati et crassi.

In Zeylaniae prdvincia centrali, altit. 3000 pedum (t. Thwaites): Thwaites n. 11501 (flor. et fr.; Hb. var.); in Indiae peninsula occidentali in montibus AnamaUay* cum *Nephelio stipulaceo*, altit. 2000 ped., sed raro (t. Beddome 1. c; an recte?, specimen non vidi).

2. Th. Simplicifolius (Thwaites) Radlk. 1l. cc. (1877) 22 (92, (1895) 318 et, in Sitzungsber. bayer. Akad. VIII. (1878) 304 n. 96. — *Nephelium simplicifolium* Thwaites, Enum. Pl. Zeyl. (1858) 57! — *Sapindus Thwaitesii* Hiern in Hook. f. Fl. Brit. Ind. I. (1875) 683; Trimen, Gatal. in Journ. Geyl. Branch R. As. Soc. IX. (1885) 20 et Hand-Book Fl. Geyl. I. (1893) 308. — Frutex erectus, parce ramosus; rami teretes, striati, cortice cinerascete lenticelloso-verruculoso, glabri; folia simplicia, larga, oblonga, acuta vel acuminata, basi acuta in petiolos teretes striatos glabros basi incrassatos attenuata, chartacea, nervis lateralibus patentibus subtus valde prominentibus, reticulato-venosa, glabra, nitida, pallide viridia; thyrsi breves, subterminales, rhachi teretiuscula, sat dense cymuligeri, cymulis subsessilibus, ochraceo-puberuli, dein glabrescentes; flores et fructus (maxime juvenilis, potius germen auctum tantum visum) generis.

Frutex 6—10-pedalis. Rami 4—6 mm crassi. Folia petiolo 3—5 mm longo adjecto 25—40 cm longa, 6—11 cm lata. Thyrsi 6—10 cm longi. Alabastra diametro circ. 3 mm.

In Zeylaniae parte australi parum alta, raro (t. Thwaites): Thwaites n. 443t (flor. et fr. juven.; Hb. var.).

23. Hebecocens Radlk.

Hebecoccus Radlk. Sap. HoU.-Ind. (1877) 56 (126), in Sitzungsber. bayer. Akad. VIII. (1878) 246, XX. (1890) 236, 283 et in Engl. u. Prantl, Nat. Pflanzenfam. III. 5. (1895) 318; Boerlage, Handleid. Fl. Nederl. Ind. I. 1. (1890) 274; Koord. et Valet. Bijdr. Booms. IX. in Meded. Plantent. LXI. (1903) 160; Merrill, Enum. Philipp. pi. II. (1923) 499. — *Sapindus* sp. aut. var., cf. lit. spec.

Flores spurie polygami, # et \$ (g mentientes), ut videtur, in eadem inflorescentia, regulares, mediocres. Alabastra subglobosa, adpresse ochraceo-pubescentia, magnitudine cannabidis grana aequantia. Sepala 5, suborbicularia, subaequilonga, concava, late imbricata, subchartacea, extus dense pilis brevibus adpressis ochraceis pubescentia, margine glanduloso-ciliolata. Petala 5, sepala ± superantia, subspathulata, longiuscule unguiculata, lamina ciliolata extus papillosa basi adpresse puberula, intus supra unguem squama majuscula biloba lateribus quoque adnata flavescens-villosa supra marginem disci inflexa aucta, crystallorum concretionibus crebris, ut et sepala, persita. Discus regularis, cupularis, 5-angularis, glaber. Stamina 8, intra discum inserta, filamenta filiformia, subexserta, primum supra medium recurvata, apice extimo cum antheris erecta, dein rectiuscula, dense pilis sursum accrescentibus obsita; antherae sagittate* oblongae, obtusae, introrsae, dorso supra excisuram basalem affixae; pollinis granula trigono-placethiformia, triporosa. Germen (floris <J rudimentarium glabriusculum) 3-loculare, ± 3-coccato-lobatum, dense breviter tomentosum; stylus brevis, leviter 3-sulcatus, tomentosus, apice 3-lobus, lobis dorsalibus erectis; gemmulae in loculis solitariae, supra basin anguli centralis affixae, oblique adscendentes, campylotropae, apotropae, micropyle extrorsum infera. Fructus coriaceo-carnosus, 3- vel abortu 2—1-ocularis, deorsum 3—2-coccatus vel 1-coccus tumque styli reliquiis lateraliter apiculatus, coccis ex obovato subglobosis tertia inferiore parte connatis oblique erectis sicca reticulato-rugosis, extus pilis brevibus patentibus ochraceo-ferrugineis setuloso-tomentosis, intus glabriusculis, sarcocarpio e cellulis parenchymaticis leptodermicis exterioribus sparsim crystallorum concreciones gerentibus interioribus substantia quadam

tannino affini foetis exstructo, endocarpio tenui e cellulis leptodermicis elongatis contexto. Semina obovata, erecta, testa coriacea, arillo nullo. Embryo farinaceo-carnosus, nunc curvatus, cotyledonibus superpositis, radícula descendente, mine rectiusculus, cotyledonibus lateraliter juxtapositis, radícula papilliformi.

Arbores nunc mediocres, nunc sat altae. Folia sparsa, abrupte pinnata, 3— oo-juga, longiuscule petiolata, exstipulata; foliola opposita vel alterna, ex ovato vel elliptico vel oblongo lanceolata, petiolulata, integerrima, chartacea, pinnatinervia, arctiuscule reticulato-venosa, glabra, nunc flavo- nunc olivaceo-viridia vel subaeruginosa, cellulis secretoriis nullis, inde impunctata, diachymate crystallorum concretionibus crebris persito, epidermide mucigera, glandulis microscopicis breviter stipitatis fere totis immersis supra subtusque ornata, insuper aliis depresso verruciformibus in paginae inferioris foveolis largioribus margine callosis nidulantibus hie illic notata. Paniculae terminatae largae axillaresque minores, rhachi ramisque thyrsoideis angulato-sulcatis ferrugineo-tomentellis sat dense dichasia multiflora in cincinnos abeuntia stipitata gerentibus; bractee bracteolaeque parvae, subulatae tomentellae. Flores breviter pedicellarii, pedicellis basi articulatis, expansi 4 mm alti et lati. Fructus cocci cerasorum vel prunorum magnitudine.

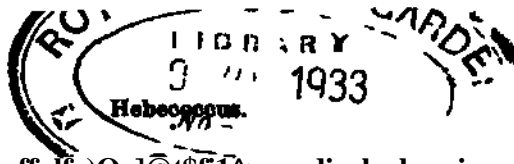
Species 3, quarum 1 malaica, 2 philippinenses.

Genus habitu ad genus *Lepisanthes* accedens, attamen fructu deorsum ultra medium coccato-lobato antecedentibus *Aphaniearum* generibus maxime affine, pericarpio coriaceo tomentoso et glandulis foliorum verruciformibus distinctum.

Conspectus specierum.

- A. Folia 2 —3-juga, foliola elliptico-lanceolata, aequilatera, flavo-viridia (sp. malaica) 1. *H. ferrugineus*.
 B. Folia 6—8-juga, foliola oblongo-lanceolata, inaequilatera, aeruginoso-viridia (sp. philippinensis) 2. *H. inaequalis*.
 G. Folia 8—10-juga, foliola elongate ovato-lanceolata, inaequilatera, conduplicata et falcatis recurvata, olivaceo-viridia (sp. philippinensis) 3. *H. falcatus*.

1. **H. ferrugineus** Radlk. 11. cc. (1877) 22, 56, 68 (92, 126, 219), (1878) 301 n. 50, p. 302 n. 64, p. 362, (1890) 236, (1895) 318; Koord. et Val. 1. c. p. 162; Koord.-Schum. Syst. Verz. I. Java (1912) Sapind. p. 6, coll. 7303)9! etc.; Koord. Exk.-Fl. Java II. (1912) 538 et Atlas Baumart. I. 3. (1913) 1.134, coll. 23482)3! — *Sapindus laurifolius*, non Vahl etc., Zollinger, Pl. Jav. n. 34591 (1847—1848 collect., in Hb. Franquev. etc. servat.); Teysm. et Binn. Cat. Hort. Bogor. (1866) 215, certe quoad patriae indicat. »Java« et quoad specim. fructig. ex Hb. Bog. a. 1878 sub n. 14555! mecum communicat. — *Sapindus* sp. Zollinger, Pl. Jav. n. 34591 in schedis nonnullis (cf. anteced.). — *Sapindus montanus*, non Bl., Teysm. et Binn. 1. c, certe quoad specim. florig. a. 1867 c. Hassk. communicata et in Hb. Hassk.I, Hb. Paris.! et Hb. Berol.I servata, nee non quoad specim. florig. ex Hb. Bog. a. 1878 sub n. 14337 mecum communicatum. — Vulgo: Kihoe sundaice (uti *Mischocarpus sundaicus* etc.) et ?Randa-Kawal jav., t. Koord. et Val. I.e. — Arbor sat alta; rami teretes, striati, glabrati, cortice pallido; folia 3- rarius 2-juga, petiolo tereti striato glabro, rhachi supra subtusque convexa; foliola subopposita, elliptico-lanceolata, aequilatera, acuta vel subacuminata, basi acuta petiolulis inferne incrassatis insidentia, membranaceo-chartacea, nervis lateralibus parum approximatis oblique patentibus praesertim subtus prominentibus, arctiuscule reticulato-venosa, glabra, nitidula, subflavo-viridia, impunctata, epidermide mucigera, glandulis microscopicis immersis clavatis aliisque verruciformibus (generis more) ornata; paniculae terminales sat amplae, ferrugineo-tomentellae; flores generis; fructus plerumque 2-coccus, coccis subglobosis, infra medium coalitis reticulato-rugosis tomento brevi setaceo ochraceo-ferrugineo indutis intus atro-fuscis glabriusculis; semen obovoideum, testa coriacea fusca; embryo curvatus, notorrhizus, cotyledone superiore inferiorem



minorem deflexam cucullatim ffulfa)Qg]@t\$fi1^> vadioula breyiuscula a medio dorso descendente plica testae excepta.

Arbor 30—70-pedalis (t. Kingii collectore). Rami 4—7 mm crassi. Folia petiolo 6—9 cm longo adjecto 20—32 cm longa; foliola cum petiolulis 5—9 mm longis 12—18 cm longa, 4—6 cm lata. Paniculae 15—35 cm longae, rhachis 3—5 mm crassa, ramis 6—15 cm longis; dlchasiouum stipites 4—8 mm longi. Alabastra diametro circ. 4 mm, pedicellis 2—3 (fructigeris 5) mm longis siccis sulcato-angulosis. Fructus cocci (sicci) diametro circ. 2 cm.

In Java et in peninsula malaica: In Java: Zollinger n. 34491 (in prov. Bantam, m. Febr. 1848, fl. et fr., sub nom. *Sapindus laurifolius* in Hb. Franquev.; praeterea c. indie. *Sapindus* in Hb. Paris., DC, Boiss., Webb, Turcz.); Forbes n. 11791 (Java australi-orientalis, prov. Preanger, alt. 530 ped., m. Apr. 1880, fruct.; Hb. Galtcutt., Berol.); Koorders n. 7303)01 7304)81 (in prov. Preanger, alt. 100 m, a. 1890, steril.), id. n. 23482/81 (in Javaeprient. prov. Pasuruan, alt. 250 m, a. 1890, fr.; comm. ex Hb. fiogor.); — in Malacca: King's Collector n. 74411 (Perak, alt. 300—500 ped., m. Mart. 1885, fr. immat.; comm. ex Hb. Galtcutt.).

Gulta in Hort. Bogor., a Zollinger allata: Hb. Bog. n. 143371 (florig. sub nom. **Sap. montanus* Bl.«; sub eodem nom. exstat a Teysmann a. 1867 florig. communicata in Hb. Hasskarll, Paris. 1 et Berol. I, a Beccari a. 1876 comm. in Hb. Florent., nee non sterilis sine n. ex Hb. Bogor. a. 1881 mec. comm. in Hb. Monac.), n. 144541 (sub nom. non edendo a. 1878 mec. comm., florig.), n. 145551 (m. Aug. 1863, fruct., sub nom. **Sap. launfol.* Vahl« a. 1878 mec. comm.), n. III, J, 581 (a. 1904 mec. comm., frue tig., a. 1907 et 1922 florig.), n. III, J, 58a! (e Java in trod., florig., sub nom. *Hebec. ferrug.* Radlk. a. 1922 comm. c. Hb. Monac); hue et specimen florig. sine ullo nom. servat. in Hb. Lugd.-Bat.; culta Bataviae in Ht. Praefecti: Hillebrandl (Hb. Berol.).

2. H. inaequalls Radlk. in Phil. Journ. Sc. VIII. 6. (1913) 453. — Vulgo: Ja-guliao in lingua Viscaya, t. Everett in sched. — Arbor mediocris; rami compressiusculi (subfasciati), sulcati, alutaceo-tomentelli, denique glabrati, cortice pallide griseo-subfusco; folia circ. 6-juga, petiolo tereti striato glabro, rhachi supra 2-sulcata; foliola subopposita vel superiora alterna, oblongo-lanceolata, ± inaequilatera (latere interiore latiore), apice sensim acutata, basi inaequaliter acuta petiolulis crassiusculis insidentia, chartacea, nervis lateralibus sat approximatis obliquis subtus prominulis, reti venarum vix perspicendo, glaberrima, supra laevia splendentia, subtus subopaca, aeruginoso-viridia, impunctata, epidermide mucigera, glandulis microscopicis immersis clavatis aliisque verruciformibus (generis more) ornata; paniculae sat amplae, rhachi 3-angulari ramisque sulcatis alutaceo-puberulis; flores generis; fructus juveniles anguloso-corrugati, pallide ochracei, stylo conico inter rugas immerso, insignes pericarpium parte exteriore aeruginoso-viridi interiore pallido, maturi — (non suppetebant).

Arbor 12 m alta, trunco 40 cm crasso. Rami ad 1,5 cm crassi. Folia petiolo ad 15 cm longo adjecto ad 40 cm longa; foliola cum petiolulis 5 mm vix excedentibus circ. 14 cm longa, 4 cm lata. Paniculae circ. 30 cm longae, rhachi 5 mm crassa, ramis 7—13 cm longis procurvis; dichasiouum stipites \$ mm longi.

In Philippinarum insula Gebu: H. D. Everett n. 6459 (in declivibus silvaticis, alt. 320 m, m. Febr. 1907, fl. et fr. juv.; commun. ex Hb. Manil.).

3. H. faleatus Radlk. in Phil. Journ. Sc. VIII. 6. (1913) 453. - Arbor mediocris; rami teretiusculi, sulcati, sordide alutaceo-tomentelli, basi glabrati, cortice griseo-subfusco albide maculato; folia 8—19-juga, jugis sursum decrescentibus, petiolo supra planiusculo, subtus convexo, striato, glabro, rhachi supra bisulcata et inter sulcos costa elevata notata, subtus sulcito-striata, striis puberulis; foliola subopposita, elongate ovato-lanceolata, inaequilatera (latere interiore latiore), saepius conduplicata et falcatim recurvata, apice acutata, basi oblique ovata in petiolulos longiusculos supra sulco exaratos contracta, subcoriaceo-chartacea, nervis lateralibus sat approximatis procurvis longius ante marginem anastomosantibus subtus prominentibus, reti venarum

supra vix, subtus sat conspicuo, glaberrima, supra laevia splendentia, subtus subopaca, olivaceo-viridia, impunctata, epidermide valde mucigera (muco aqua expanso particulas tarde deliquescentes indudente), glandulis microscopicis immersis clavatis aliisque verruciformibus (generis more) ornata; paniculae terminates amplissimae, iterum et iterum ramosae, rhachi ramisque 3-angularibus sulcatis cymulas (dichasia vel cincinnos) stipitatas gerentibus sordide alutaceo-tomentellis; flores generis; fructus abortu 1-locularis, 1-coccus, oblique globosus, styli reliquiis ad medium latus apiculatus, loculis abortivis infra stylum vix prominulis, reticulato-rugosus, tomento brevi setaceo ochraceo-sufferrugineo indutus, intus spadiceus glabriusculus pilis brevibus pachydermicis vix nisi ad seminis insertionem adpersus; loculorum abortivorum gemmula paullulum aucta funiculi margine superiore in membranulam extenuato (quasi arilli vestigio sub semine ipso evanido) cincta; semen obovoideum, testa tenuiter coriacea badia; embryo ovoideus vel subglobosus, cotyledonibus plano-convexis lateraliter oblique juxtapositis stomatophoris amyli geris crystallorum concretionibus persitis, radícula infra medium dorsum papilliformi, testae foveola excepta.

Arbor 12—13 m alta, trunco 40 cm crasso. Rami 1 cm crassi. Folia petiolo ad 12 cm longo adjecto ad 50 cm longa; foliola cum petiolulis 8—15 mm longis 12—16 cm longa, 4,5—5 cm lata. Paniculae 30—50 cm longae, ramis erectis. Alabastra diametro circ. 3 mm. Fructus (siccus) diametro 1,8 cm.

In Philippinarum insulis Leyte et Luzon: R. Rosenbluth n. 12631 (Leyte, in valleculis silvaticis, alt. 60 m, m. Mart. 1909, fr.; comm. ex Hb. Manil., ut et seq.); F. W. Darling n. 18689 (Luzon, prov. Tayabas, Guinayangan, alt. 30 m, m. Nov. 1909, fl.).

24. *Aphanococcus* Radlk.

Aphanococcus Radlk. in Durand, Ind. Gen. (seors. impr. 1887) 74, in Sitzungsber. bayer. Akad. XX. (1890) 236, 283 et in Engl. u. Prantl, Nat. Pflanzenfam. III. 5. (1895) 318; Boerlage, Handleid. Fl. Nederl. Ind. 1.1. (1890) 274 in obs. ad *Hebecocum*.

Flores non suppetebant nisi partes sub fructu relictæ: Sepala 5, ovata, concava, extus tomentella; discus regularis, annularis, glaber. Fructus e germine 3-loculari in dehisce ns, siccus corticoso-crustaceus, 1—2-coccus, coccis minus distinctis (inde nomen) subglobosis, adjectis 1—2 abortivis sat longis parum prominentibus, ad apicem loculorum abortivorum styli reliquiis breviter apiculatus, arete reticulato-rugulosus, pilis brevibus ferrugineo-tomentosus, pericarpio cellulis sclerenchymaticis coacervatis granulato, endocarpio tenui denique ± soluto papyraceo cerino e cellulis elongatis sat leptodermicis exstructo glabro. Semen basi insertum, erectum, ellipsoideum, a lateribus compressiusculum, testa tenui subcoriacea badia circa hilum prope basin lateralem crassiore obscuriore, arillo nullo. Embryo curvatus, notorrhizus; cotyledones crassae, oblique superpositae, amylo farctae nee non in cellulis superficiei approximatis crystallorum conglomerationes gerentes; radícula (fere ut in *Thraulococco*) brevis, lata, a hilo quodammodo remota, subdorsalis, plica testae levi excepta.

Arbor? Folia abrupte pinnata, glabra; foliola (in parte superiore, quae sola suppetebat, 5) alterna, oblonga, obtusa vel subacuminata, basi acuta petiolulis breviusculis infra medium tumide incrassatis insidentia, integerrima, subcoriacea, nervis lateralibus patulis medianoque subtus prominentibus, reticulato-venosa, glabra, sicca flavescenti- vel subtus glaucescenti-viridia, cellulis secretoriis nullis, diachymate crystallorum concretionibus crebris persito, epidermide non mucigera, glandulis microscopicis breviter stipitatis immersis supra subtusque ornata, insuper (ut in *Hebecocco*) aliis depresso verruciformibus in paginae inferioris foveolis largioribus margine callosis nidulantibus hie illic notata. Paniculae, ut videtur, terminates, maximae, rhachi ramisque divaricatis superne angulosis ferrugineo-tomentellis sat dense cincinnigeris; cincinni breviter stipitati, stipitibus pedicellos fructigeros subaequantibus; bractee bracteolaeque parvae, subulatae, adpresse pubescentes.

Species 1, celebica.

Genus fructu parum coccato quasi transitum ab *Aphanieis* ad *Lepisantheas* et quidem ad genus *Lepisanthes* ipsum exhibens, attamen glandulis foliorum singularibus verrucif ormicibus in nullo alio harum tribuum generi nisi in *Hebecocco* obviis generi huic maxime affine.

A. **celebicus** Radlk. 11. cc. — Foliola cum petiolulis vix 1-centimetralibus 26 cm longa, 7 cm lata. Paniculae 60 cm longae, 30 cm latae, pedicellis fructigeris 5-millimetralibus. Fructus cocci 2 cm alti, 1,7 cm lati et crassi, loculis abortivis 9 mm altis, pericarpio 1,5 mm crasso. Semen 1,5 cm longum, 9 mm latum, 1,3 cm crassum.

In insulae Celebes parte septentrionali: Riedel! (Gorontalo; a A. B. Meyer comm. c. Hb. Kew. a. 1875)..

24 a. Manongarivea choux.

Manongarivea Ghoux in Comptes rendus 1.182 (1926) 712 et in M6m. Acad. Malgache, IV. (1927) 34. (Gf. Ann. Mus. hist. nat. Marseille XXII. II. [1929] 35 t. 1.)

Flores regulares, spurio-polygami. Calyx 5-partitus, lobis imbricatis concavis rotundatis, marginibus ciliolatis glandulisque intermixtes adspersis. Petala 5, ovato-triangulara, obtusa, intus supra unguem brevissimum squama brevi fere transversa aucta, marginibus petalorum squamarumque pilosis. Discus parvus, margine parum undulatus. Stamina 8, filamenta brevia, basi pilosa. Germen 2-loculare, 2-lobum, lobis lateraliter coalitis, ad maturitatem sponte non secedentibus; stylus brevis, apice stigmatosus; ovula in loculis solitaria. Fructus saepius 1-coccus (vel dicoccus), globosus, crustaceus, indehiscens. Semen exarillatum; embryo fere rectus, radícula brevissima. — Frutex. Folia alterna, paripinnata; foliola opposita 1—2-juga, elliptica, lanceolata vel obovata, basi acuta, apice obtusa vel leviter acuminata, glabra, coriacea. Paniculae terminales vel subterminales, cymigeræ, subglabrae vel ferrugineo-pilosae.

Species unica in insula Madagascar indigena.

1. **M. Perrieri** Ghoux 1. c. p. 34. — Frutex 5—6 m altus. Petiolus 0,9—3,7 cm longus; foliola 5,7—9,4 cm longa, 1,4—3,7 cm lata, petiolulis 3—5 mm longis. Panicula 9—14 cm longa. Sepala 2—4,5 mm longa, 1,7—3 mm lata. Petala alba (vel rubra), 3—4 mmlonga, 1,7—2,2 mm lata. Filamenta 1,7—1,8 mm longa, antherae 1,5—2 mm longae. Fructus lobi 1,5—1,6 cm longi, 1,4 cm lati.

In insula Madagascar indigena: Perrier de la Bâthie n. 1744 (Ambongo, forfct de Kasiza sur les côtes du Tampoketsa et en terrain calcaire, m. Oct. 1904), n. 1812 (bois sablonneux — anciennes dunes — de Manongarivo, m. Oct. 1905).

Trib. V. Lepisantheae Radlk.

Lepisantheae Radlk. in Sitzungsber. bayer. Akad. VIII. (1878) 269, in Durand, Ind. Gen. (1887) 74 genere *Lychnodiscus* excl., in Sitzungsber. bayer. Akad. XX. (1890) 217, 238, 284 genere excl., et in Engl. u. Prantl, Nat. Pflanzenfam. III. 5. (1895) 218 (acced. gener. *Glossolepis* et *Radlkofera*, cf. ibid. Nachträge zu III. 5. [1897] 228), et Rangschikking der *Sapindaceae* volgens Radlkofer in Boerlage, Handleid. Fl. Nederl. Ind. I. (1890) 284. — *Sapindearum* pars DC. Prodr. I. (1824) 608 (*Sapindus tetrephyUus* Vahl, i. e. *Lepisanthes* t. Radlk.), 613 (*Cupania canescens* Pers., i. e. *Lepisanthes tetraphylla* Radlk.). — *Sapindearum* genus Camb. in M6m. d. Mus. XVIII. (1829) 25 (*Lepisanthes* Bl.) et generum partes 26 (*Sapindus tetrephyUus*), et 28 (*Cupania canescens*); Spach, Hist. nat. vég. Phanérog. III. (1834) 40 (*Lepisanthes*) et gener. pars. 59 (*Cup. canesc*); Meissn. Gen. (1837) 53 (*Lepisanthes*) et Comment. 38; Endl. Gen. (1840) 1070 (*Lepisanthes*) et gener. pars ibid. (*Erioglossum* Fl. Seneg. sub *Cupania*, i. e. *Pancovia*), Suppl. IV. 3. (1847) 78; Lindl. Veget. Kingd. Ed. 3. (1853) 385, pariter et gen. addita *Scorododendron*, *Hemigyrosa* part., *Otolepis* (id. c. seq.), *Otophora* Benth. et Hook. f. Gen. I. 1. (1862) 402, 403 (*Anomosanthes*, *Scorododendron*, *Lepisanthes*, *Chytranthus*), 405 (*Capura* = *Otophora*) et generum partes 395 (*Hemigyrosa* sp., i. e. *Lepis. tetraph.*), 396 (*Eriogl.* Fl. Seneg., i. e. *Pancovia*). — *Melicocearum* genera Blume, Rumphia III. (1847) 142 (*Otophora*), 149 (*Scorododendron*), 150

(*Lepisanthes*), 151 (*Anomosanthes*), *Cupaniearum* generis *Hemigyrosa* pars 165 (i. e. *Lepis. tetraph.* R.) et dubitanter ibid, prope *Hemigyrosam* 165 insert, genus *Moulinsia* BL, non Camb. (v. ibid. 119), i. e. *Pancovia* W. — *Sapindacearum* et *Pancoviarum* genera Baill. Hist. d. Plant. V.(1874) 400 (*Crossonephelis*), 401 (*Lepisanthes*), 402 (*Anomosanthes*), 414 (*Pancovia* quoad stirp. afric, *Chytranthus*), 415 (*Hemigyrosa* part., i. e. *Zepis. tetraph.* R.).

25. Bottegoa Chiovenda.

Bottegoa Chiovenda, Le collezioni botaniche della Missione Stefanini-Paoli nella Somalia italiana, Pubblicazioni del R. Istituto di Studi superiori, Firenze (1916) 58 c. f. 2 tab. 6 f. B.

Flores, quantum e partibus sub fructu relictis concludi potest, parvi, regulares, unisexuales, sepalis (4?) deciduis, petalis nullis (?), disco parum evoluto breviter stipitiformi, inter basin et marginem superiorem tumidulum prominulum cicatricibus staminum 6—8 punctiformibus notato, germine incomplete 2-loculari, gemmulis in loculis solitariis ad septi incompleti apicem insertis. Fructus indehiscens, samaroideus, majusculus, orbicularis, complanatus, circumcirciter latiuscule alatus, apice subexcisus, glaber, isabellinus, faciebus laevibus opacis ad marginem undulatum versus leviter sulcatis, bilocularis, pericarpio meduloso alisque membranaceis quam maxime fragilibus. Semina in loculis solitaria loculorum magnitudine, reniformia, compressa, ad medium affixa, exarillata, testa tenuiter membranacea, aurantiaca, rugulosa. Embryo curvatus, cotyledonibus lateralibus plano-convexis carnosus oleo et aleuro foetis, radícula tereti accumbente versus umbilicum adscendente.

Arbor vel frutex ramulis teretibus, internodiis brevibus cano-tomentellis, pilis tenuibus basi saepe curvata solidis, cortice cellulis resinigeris crebris persito. Folia sparsa, petiolata, exstipulata, ad ramulorum apices conferta, abrupte bipinnata, pinnis pinnulisque (foliolis) utrinque 4—6, praesertim superioribus oppositis; petiolus semiteres, basi crassiuscula supra concavus, cano-tomentellus, rhachis communis partialesque teretiusculae ± puberulae; foliola perparva, ex oblongo vel ovali inaequaliter cuneata, (latere exteriori angustiore), obtusa, integerrima, perbreviter petiolulata, membranacea, nervis lateralibus vix manifestis, glabra, sicca glauco-flavescentia, structura concentrica, utrinque stomatophora et staurenychymate praedita, pneumatenchymate per mediam partem extenso cellulas resinigeras sat crebras majusculas gerente, attamen impunctata, cellulis epidermidis paginae utriusque convexis non mucigeris. Inflorescentiae (fructigerae) ad ramulorum apices axillares, breves, fructus paucos, interdum singulos, gerentes, pedicellis supra basin articulatis.

Species 1, Somaliae incola.

Obs. Genus ob discum parum evolutum quodammodo anomalum, affinitatis dubiae.

B. insignis Ghiov. I.e.— Vulgo: Ghebūr. — Frutex 1,5-2,5 m altus (Ellenbeck). Ramuli 2—3,5 mm crassi, internodiis superioribus 0,5—1,5 cm longis, infimis longioribus. Folia petiolo 2—3,5 cm longo adjecto 6—8 cm longa, interjugis 5—8 mm (pinnarum vix 2 mm) longis; foliola 7—12 mm longa, 3—5,5 mm lata, petiolulis vix 0,5 mm longis. Fructus diametro 3—3,5 cm, loculi diametro communi circ. 1,5 cm, ala utrinque circ. 1 cm lata; pedicelli 5—6 mm longi. Semina 1 mm longa, 5,5 cm lata, 2,5 mm crassa.

In Africae orientalis terra Somali: Ellenbeck n. 1038! (Dagage-Go belle, m. Maj. 1900, fr.; Hb. Berol.); Paoli n. 923 (prope Aden Gab6ba, arbor communis, m. Oct. 1913, fr.; Hb. Florentin.).

26. Zollingeria Kurz.

Zollingeria Kurz in Journ. As. Soc. Beng. XLI. 4. (1872) 303, XLIV. 3. (1875) 182, Pegu Report (1875) App. B p. 39, Forest Fl. Brit. Burma I. (1877) 288; Hiern in Hook. f. Fl. Brit. Ind. I. (1875) 692; Ferd. Müll. Fragm. IX. (1875) 100, char, emendand. quoad numerum gemmularum, ut ap. Hiern et Kurz ips. (1877); Pierre in Bull. Soc. Linn. Paris. Nr. 80 (1886) 633, 634 excl. sp. 3., quae vix dubie *Pancovia*

Delavayi Franch., i. e. *Sapindus Delavayi*, qui conferendus, et Fl. forest. Gochinch. Fasc. 21 (1895) t. 325 A, char, emendand. quoad micropyles situm et cotyledonum formam in figuris 12 et 13; Radlk. in Sitzungsber. bayer. Akad. XX (1890) 239—240, 284, et in Engl. u. Prantl, Nat. Pflanzenfam. III. 5 (1895) 319; — non Schultz Bip., quae *Rhynchospermum* Gompositar.; non F.-Villar in Blanco, Fl. Filip. Ed. 3. IV. (1880) Noviss. App. p. 53, Vidal, Sinops. (1883) 100, 345, Atlas p. 22, t.35 f. C et Rolfe in Journ. Linn. Soc. XXI. (1884) 309, quae *Tristira* sp. — *Belingia* Pierre l. c. (1895).

Flores spurie polygami, ± (oblique) symmetrici, majusculi. Sepala 5, duo exteriora reliquis obovatis fere dimidio minora, suborbicularia, omnia concaviuscula, valde imbricata, margine petaloidea, extus intusque glabra, dense ciliolata. Petala 4 vel 5 (quintum rudimentarium), sepalis duplo longiora, oblongo-lanceolata, longiuscule unguiculata, extus infra medium cum ungue albido-villosa, ciliolata, intus supra unguem squama conspicua integra cucullatim inflexa utrinque densissime villosa aucta (*Z. macrocarpa*) vel coma pilorum tantum crispiorum deorsum versorum obsita (*Z. dongnaiensis*). Discus (ante sepalum 4. symmetria superius) unilateralis (*Z. maeroe.*) vel inaequalis tantum (*Z. dongnaiensis*), planiusculus, glabriusculus. Stamina 8, ad disci 1-lateralis marginem inferiorem vel intra discum circa pistillum vel pistilli rudimentum inserta, denique exserta; filamenta filiformia, carnosula, basi complanata, dilatata, apice attenuata, breviter albido-villosa; antherae parvae, ovaes, utrinque excisae, supra excisuram basalem dorso affixae, introrsae, glabrae, subpapillosae; pollinis granula trigono-placentiformia, triporosa. Germen lanceolatum, triquetrum, 3-loculare (loculo 1 inferiore), glabrum, in stylum brevissimum apice sulcis 3 suturalibus stigmatosis subtridentatum attenuatum; gemmulae in loculis solitariae, tuberculo axis ad medium loculum affixae, apotropae, campylotropae. Fructus samara trialata, elliptica, sat magna, basi rotundata, apice ± excisa, alis a basi ad apicem axis ope coadunatis semiellipticis chartaceo-pergameneis secus nervos oblique adscendentes subflabellatos crebre striatis et ± plicatis circa partem seminiferam ± bipartilibus, parte seminifera infra medium sita sublignosa abortu et septorum angustorum secessione 1-loculari, 1-sperma, non nisi maceratione, lit videtur, denique aperta. Semen oblongum, triquetrum angulis duobus in loculos aspermos intrusis, exarillatum, testa coriacea fusca pilosa. Embryo curvatus, notorrhizus; cotyledones transversim superpositae, inferiore brevior paullo latiore replicata, superiore secus medianam conduplicata marginibus expands, utraque dorso carinata, in petiolum angustum attenuata, carnosula, aleuro et oleo foeta; radícula cum cotyledonum petiolis a medio dorso descendens.

Arbores excelsae, trunco erecto crasso, cortice sat crasso asperulo cinereo dein fisso in angustas partes. Rami teretes, striati, juveniles sordide pubescentes, dein glabrescentes, cortice fusco primario et secundario cellulis secretoriis seriatis instructo. Folia abrupte pinnata, 3—8-juga, sat petiolata; foliola alterna, oblongo-lanceolata vel elliptica, chartacea, nunc glabra, nunc subtus pubescentia, supra nitidula, subtus opaca, fuscescentia, in 1 specie (*Z. maeroe.*) cellulis secretoriis et ad nervos utriculis seriatis instructa, epidermide parum mucigera, subtus glandulis microscopicis clavatis (in cellulis superioribus interdum — in *Z. dongnaiensi* — crystallorum concreciones parvas gerentibus) oblique insertis decurvatis ± crebris ornata. Paniculae axillares vel terminales, breviusculae, subnutantes, glabrae vel pubescentes, ramis thyrsoides cincinnos multifloros (fructigeros elongatos) gerentibus, bracteis bracteolisque minimis subulatis ciliolatis deciduis. Alabastra ovalia, sat pedicellata, pedicellis filiformibus ima basi articulatis.

Species 2, burmanico-cochinchinenses.

Genus in Lepisantheorum tribu ob fructus loculos, reap, lobos alatos particularis, ob fructum vero nec dehiscentem nec in coccus secedentem attamen insigniter lobatum et ob semen exarillatum vix ad aliam tribum recensendum. Floribus in 1 specie insigniter symmetricis, in altera subregularibus accedit ad genus *Lepisanthee*.

Conspectus specierum.

- A. Petala squama aucta; discus 1-lateralis; foliola oblongo-lanceolata; flores et fructus majores. 1. *Z. macrocarpa*.
 B. Petala esquamata; discus completus, inaequalis; foliola elliptica; flores et fructus minores. 2. *Z. dongnaiensis*.

1. **Z. macrocarpa** Kurz 1. c. (1872) 303, (1875) 190; Pegu Rep. (1875) App. A p. 37 n. 281, App. B p. 40, Forest Fl. (1877) 288; Hiern 1. c; Pierre 1. c. (1886) 634; Radlk. 1. c (1895) 319; Brandis, Indian Trees (1906) 188; - non F.-Vill. 1. c, Vidal 1. c, Rolfe 1. c, quae *Tristira triptera* Radlk. — Vulgo: Wak Ki ut pin t. Kurz in Pegu Rep. App. A p. 37; Wet-Kyot-pen t. eod. in Forest Fl. 1. c. — Arbor excelsa; rami juveniles pubescentes, mox glabrati; folia 3—4-juga, petiolo rhachique subangulatis glabriusculis, foliola alterna, lanceolata vel oblongo-lanceolata, breviter acuminata, basi subacuta petiolulis supra complanatis sulcatis incrassatis insidentia, tenuiter chartacea, nervis lateralibus approximatis strictis oblique erectis subtus prominentibus, laxe reticulato-venosa, glabriuscula; paniculae mox glabratae; flores sat pedicellati; sepala dense ciliolata; petala intus supra unguem squama conspicua integra cucullatim inflexa dorso interdum manifeste bicristata utrinque villosissima aucta; discus 1-lateralis, semilunaris; fructus late 3-alatus, basi retusus, apice angustius emarginatus.

Arbor ad 25 m alta. Rami ad 1 cm crassi. Folia petiolo circ. 6 cm longo adjecto circ. 30 cm longa; foliola cum petiolulis 4—10 mm longis 12—20 cm longa, 4—5 cm lata. Paniculae 10—15 cm longae. Alabastra circ. 3 mm longa, pedicellis circ. 3 mm longis (fructigeris elongatis 6 mm longis). Fructus 6 cm altus; alae 2 cm latae.

In Burma: Kurz n. 2055! (Prome Distr., flor. et fruct.).

2. **Z. dongnaiensis** Pierre 1. c. (1886) 634 (sphalm. *Douguaiensis*), (1895) t. 325A; Radlk. 1. c. (1895) 319; Lecomte, Fl. Ind.-Chine I. (1912) 1020 f. 126. — *Belingia dongnaiensis* Pierre olim ex ipso 1. c. (1895). — Vulgo: Cue moc Annamensib., Be leng in lingua Moi t. Pierre II. cc. — Arbor excelsa; rami pubescentes, denique glabrescentes; folia 3—7-juga, petiolo rhachique subangulatis pubescentibus, foliola alterna, oblongo-elliptica, obtusa vel subemarginata, basi inaequali (latere interiore brevior latioreque) petiolulis supra complanatis sulcatis tomento molli (ut et rhachis) indutis insidentia, chartacea, nervis lateralibus approximatis procurvis, supra glabra, subtus griseo-tomentosa; paniculae pubescentes; flores sat pedicellati; sepala dense ciliolata; petala squamae loco coma pilorum instructa; discus inaequalis; fructus angustius 3-alatus, basi rotundatus, apice late excisus.

Arbor 25—30 m alta. Rami circ. 7 mm crassi. Folia petiolo 3—8 cm longo adjecto 20—35 cm longa; foliola cum petiolulis 2—4 mm longis 9—12 cm longa, 4,5—6 cm lata. Paniculae circ. 18 cm longae. Alabastra circ. 2,5 mm longa, pedicellis circ. 3 mm longis (fructigeris ad 1 cm longis). Fructus circ. 4 cm altus; alae 1,2—1,4 cm latae.

In Cochinchina australi et in Siam: Pierre n. 1610! (in prov. Bien hoa ad montem Lu, m. Febr. 1877, steril.), n. 4120! (ad flumen Dongnai, m. Mart. 1877, flor. et fr.); Luang Vanpruk n. 132! (Siam, Pre, alt. 120-180 m, fl.; Hb. Kew.). — Gf. etiam W. G. Craib, Fl. Siam. enum. I. (1926) 326.

27. *Lepisanthes* Blume.

Lepisanthes Blume, Bijdrag. V. (1825) 237; Camb. in Mém. Mus. d'Hist. nat. XVIII. (1829) 25; Don, Gen. Syst. I. (1831) 655 et 665; Meissner, Gen. (1836-1843) 53 (38); Endl. Gen. (1836-1840) 1070 n. 5609 et Suppl. IV. Pars III. (1847) 78; Blume, Rumphia III. (1847) 150; Miq. Fl. Ind. Bat. I. 2. (1859) 562; Benth. et Hook. f. Gen. I. 1. (1862) 403 n. 38; Baill. Hist. V. (1874) 401 c. syn. *vScorododendron* Bl., excl. syn. *Sapindus fraxinifol.* DC. (i. e. *Erioglossum rubiginosum* Bl.) commutato c. altero a Bl. recte allato *i>Sap. frax.* Hb. Mus. Par. (cfr. *L. paUens*); Hiern in Hook. f. Fl. Brit. Ind. I. (1875) 679; Kurz, Forest Fl. Brit. Burma I. (1877) 290; Radlk. Sap. Holl.Ind. (1877-1878) 10, 11, 32-36, 86 (80, 81, 102-106, 237), in Sitzungsber.

bayer. Akad. VIII. (1878) 276-278, XX. (1890) 238-241, 284 et in Engl. u. Prantl, Nat. Pflanzenfam. III. 5. (1895) 319 f. 165; Vidal, Sinops. (1883) 97; Boerlage, Handlei d. Fl. Nederl. Ind. I. 1. (1890) 270; Pierre, Fl. forest. Gochinch. Fasc. 21 (1895) in textu ad tab. 327 emend.; King, Materials Fl. Malayan Penins. in Journ. As. Soc. Beng. LXV. 2. (1896) 427; Koord. et Valet. Bijdr. Booms. IX in Meded. Plantent. LXI. (1903) 164; Koord. Exk.-Fl. Java II. (1912) 535, 538; - non Zollinger coll. n. 3345, 3456, cfr. *Otophora fruticosa* et *O. alata*. — *Lepisanthus*, non alior., Reichenbach Handb. (1837) 285. - *Lepidanthes* Hassk. Gatal. Pl. Hort. Bog. (1844) 224. - *Scorododendron* Blume, Rumphia III. (1847) 149; Walp. Ann. II. (1851-1852) 211 (sphalm. *Scorodendron*); Miq. 1. c. 561; Benth. et Hook. f. 1. c. 403 n. 37 (sphalm. *Scorodendron*); Boerlage 1. c. 270; Pierre 1. c. — *Anomosanthes* Blume 1. c. 151 in obs.; Benth. at Hook. f. 1. c. 402 n. 36; Beddome, Fl. silv. (1896-1873) Anal. Gen. LXXII. (ex Hiern); Baill. 1. c. 402; Boerlage 1. c. 269; Pierre 1. c. — *Hemigyrosa* (non »B1.«, cfr. *Guioa*) Benth. et Hook. f. 1. c. 395 n. 11, caractere secund. *Cupania canesc.* Pers. a Bl. generi suo *Hemigyrosae* obiter adject am, i. e. *L. tetraphyll.* Radlk., descripto; Baill. I.e. 418 spec, excl.; Hiern I.e. 670; Kurz 1. c. 290; Vidal I.e. 94 part.; Boerlage 1.c.258 part.; Trimen, Hand-Book Fl. Geyl. I. (1893) 301; Cooke, Fl. Pres. Bombay (1902) 264. — *Ratonia* (non »DC.«) Koorders, Plantkund. Woordenb. (1894) 32 c. syn. *Anomosanthes* Bl. et *Lepisanthes* Bl. — *Sapindus* sp., *Molinaea* sp., *Cupania* sp., *Hemigyrosa* sp., *Millingtonia* sp., *Moulinsia* sp., *Erioglossum* sp., *Sapindacear.* sp. aut. var., cf. lit. spec.

Flores spurie polygami, <J et \$ (g mentientes) saepius in eadem inflorescentia, regulares (sect. I.) vel oblique symmetrici (sect. II.—IV.), inter majores. Sepala 5, concava, coriacea, basi incrassata, extus (praeter marginem) pube subsericea induta, intus glabra vel ima basi tantum sericea, imbricata, exteriora duo minora orbicularia, interiora plerumque late ovata vel elliptica, sphaeroideo-concava. Petala 5, vel in floribus symmetricis 4 (infimi sede inter sepalum 3. et 5. vacua), sepalis superantia, spathulata, lamina ovata vel oblonga in unguem subaequilongum (in alabastro vero brevissimum) complanatum attenuata, extus infra medium cum ungue sericeo-villosa, intus glabra et supra unguem squama brevi lata integra vel in squamulas duas fissa deflexa varie cristata vel nuda glabra vel subtus villosa aucta. Discus in floribus regularibus completus, patelliformis, margine elevato repando-pentagono, angulis inter petalorum insertiones obtusis interdum puberulis, ceterum glaber rarius hirtellus (*L. palawanica*) vel intus sericeus (*L. cuneata*), in floribus symmetricis nunc inaequalis, supra petalum deficiens angustatus vel interruptus, nunc omnino 1-lateralis, semilunaris, glaber vel tomentosus. Stamina plerumque (7—)8, rarius (8—)10 (*L. pollens*, *deficiens*, *latifolia*), rarissime 11—12 (*L. assamica*), intra discum inserta, petala paullulum superantia (floris \$ breviora); filamenta filiformia, ± complanata, inferne pilis brevioribus, superne longioribus erectis villosa; antherae oblongae vel ellipticae, introrsae, connectivo dorso dilatato nigro-fusco plerumque ad lineam medianam albide villosa; pollinis granula subglobosa, trisulca, triporosa. Oermen (floris <J rudimentarium) 2—3-gono-ellipsoideum, 2—3-sulcatum, 2—3-loculare, plerumque dense tomentosum, in stylum brevem tomentosum apice tumidum, integrum vel breviter 2—3-lobum in alabastro deflexum attenuatum; gemmulae in loculis solitariae, ellipsoideae, hilo infra vel (in sect. IV.) fere supra medium longitudinali ad medium angulum centralem affixae, interdum hilo orbiculari prope basin insertae (*L. schizolepis*, *tonkinensis*), micropyle infra medium dorsali, hilo saepius subopposita, vel ventrali, hilo proxima (sect. IV.). Friictus subdrupaceus, breviter ellipticus, longitudinaliter 2—3-sulcatus, inde obtuse 2—3-lobatus, 2-3-locularis, loculis tumidis, fructuum bilocularium subglobosis, interdum abortu partim evanidis, indehiscens, coriaceo-carnosus (*L. Listeri*, *burmanica*, *mekongensis*) vel sderenchymate interjecto plerumque corticosus, interdum processibus parvis verrucoso- vel muricato-appendiculatus (*L. trichocarpus*, *longifolius*), tomento brevi hirto e cano flavescenti vel rufulo indutus, intus pilis setaceis hirsutus vel glaber (*L. Listeri*, *cuneatus*, *schizolepis*, *burmanica*), rarius utrinque glaber (*L.*

mekongensis, *L. ? palawanica*), pericarpio plerumque cellulis secretoriis substantia saponino affini (*L. montana*, *heterolepis*, *Listeri*, *tetraphyUa* interdum, *longifolia*, *Scortechinii*, *latifolia*, quodammodo et *mekongensis*) vel resinosa eademque saepius duplicem luminis diffractionem efficiente (*L. tetraphyUa* interdum, *Kunstleri*, *burmanica*) foetis instructo, rarius cellulis secretoriis destituto (*L. cuneata*, *schizolepis*, *tonkinensis*, *trichocarpa*, *granulata*, *L. ? palawanica*). Semina elliptica, lateraliter compressa vel tumida, exarillata, testa tenuiter coriacea vel subcrustacea e cellulis complanatis exstructa, brunnea, glabra, rarissime (*L. latifolia*) rufo-villosa, saepius endocarpio (a mesocarpio soluto) arctissime adhaerente obducta. Embryo parum curvatus; cotyledones crassae, nunc transversim vel oblique superpositae, inferiore minore, nunc (interdum in eodem fructu, cfr. *L. Scortechinii*) lateraliter sibi invicem appositae, amylo et tannino farctae, siccae duriusculae; radícula perbrevis, papilliformis, nunc lateralis, dorsalis vel (in sect. IV.) ventralis, nunc basilaris, rarius conica subbasilaris (*L. Listeri*).

Arbores vel frutices glabri vel ramulis junioribus tomentosis. Folia sparsa, abrupte pinnata, 2— oo-juga, petiolata vel (in *L. andamanica*) foliolis infimis ima basi insertis sessilia, exstipulata; foliola opposita vel alterna, breviter petiolulata, suboblunga, integerrima, deorsum decrescentia, chartaceo-membranacea, nervis lateralibus arcuato-adscendentibus ante marginem anastomosantibus subtus prominentibus, glabra, rarius subtus pilis subulatis (*L. viridis*, *acuminata*, *macrocarpa*, *eriolepis*, *schizolepis*, *membranifolia*) vel curvatis (*L. heterolepis*, *Listeri*, *tonkinensis*, *Scortechinii*) raro eleganter hamatis (*L. hirtella*) subhirtella, glandulis microscopicis robustioribus clavato-capitatis basi arete septatis (nunc raris — cfr. *L. Browniana*, *pollens*, *deficiens* — vel vix ullis — *L. andamanica* —, nunc creberrimis — *L. schizolepis* —, interdum geminatis — *L. trichocarpa*, *burmanica*, *longifolia*, *hirtella*, *mekongensis* —) plerumque (exceptis *L. montana*, *sessiflora*, *heterolepidi*, *angustifolia*, *acuminata*, *palawanica*) in epidermidis foveolas saepius cylindricas ± profunde vel fere totis (*L. eriolepis*, *schizolepis*, *hirtella*, *mekongensis*, *celebica*) immersis utrinque ornata, saepius utrinque livescentia vel subtus pallide rubescenti-subfusca; epidermide non mucigera, paginae inferioris in nonnullis (*X. petiolaris*, *Browniana*, *cuneata*, *pallens*) sparsim crystallorum concreciones parvas et interdum quidem plurimas earum in cellulis geminatis (*L. viridis*, *acutissima*, *paUens*, *andamanica*, *deficiens*, *lamponga*) gerente, in 1 tantum specie (*L. palawanica*) paginae utriusque (ut et diachymate) crystalli singula fovente, paginae utriusque vel superioris membranarum superficialibus in nonnullis margine (*L. cuneata*, *tonkinensis*, *palawanica*, *Scortechinii*) vel totis (*L. tetraphyUa*, *trichocarpa*) punctatis, in aliis (*L. montana*, *paUens*, *Kunstleri*, *burmanica*, *deficiens*, *hirtella*) paginae inferioris circa stomata sat magna intus nodulo centrali notatis, diachymate hypodermatis forma in 1 tantum specie (*L. andamanica*), cellulis secretoriis in 3 speciebus (*L. Listeri*, *lamponga*, *mekongensis*) instructo, in 1 specie (*L. tetraphyUa*) fere toto staurenchymatico, crystallorum concrecionibus plerumque crebris immo prope paginam superiorem (*L. montana*, *heterolepis*, *acuminata*, *paUens*, *latifolia*, *celebica*) vel inferiorem (*L. assamica* et *tetraphyUa*) in stratum fere continuum consociatis (et in pluribus circa venas quoque) persito, crystalli singulis (praeter ilia in speciebus nonnullis venas cingentia) paucis tantum (in *Z. schizolepide*, *pallenti*, *mekongensi*), in 1 tantum specie (*L. hirtella*) crebris adjectis, in alia [*L. basicardia*] fere solis, in tertia (*L. palawanica*) omnino solis obviis; petiolus basi incrassatus rhachisque teretiuscula, striata, glabra vel puberula, rarius tomentella (*L. eriolepis*). Thyrsi axillares vel supraaxillares, raro in rajpis vetustioribus laterales, singuli vel saepius pauci fasciculati, rarius in paniculas congesti (*L. eriolepis*, *schizolepis*, *burmanica*, *andamanica*, *palawanica*), nunc longiores, nunc brevissimi, sat dense cincinnigeri, cincinnique (sessiles vel stipitati) pedicellique (articulati) ut et bractee bracteolaeque (subulatae) tomento brevi denso induti. Alabastra globosa vel ovoidea, canescenti-sericea vel rufescenti-tomentella, magnitudine nunc Gannabis nunc Piperis nigri grana aequantia. Flores expansi 3—6 mm longi et lati, albi. Fructus magnitudine nucem moschatam, rarius nucem Juglandis aequantes.

Species 36(—38) ab India orientali usque ad Cochinchinam et per insulas asiaticas usque ad Philippinas et Novam Guineam dispersae.

Genus fructus fabrica quasi intermedium inter *Aphanieas* et reliquas *Lepisantheas*, attamen ad has superiores arctius accedens loculis tota altitudine connatis nec coccorum modo vel basi vel medio tantum cohaerentibus.

Conspectus specierum.

Sect. I. *Eulepisanthes* Radlk. Sap. Holl.-Ind. (1877-1878) 34

(104), in Durand, Ind. Gen. (1887) 75 et in Engl. u. Prantl, Nat. Pflanzenfam. III. 5. (1895) 320: Discus regularis subcupularis, repando-pentagonus; petala 5, squamis singulis vel in binas fissis (*L. assamica*, *Browniana*, *schizolepis*) ecristatis vel breviter cristatis aucta; radícula dorsalis vel basilaris; cotyledones oblique superpositae vel lateraliter juxtapositae.

A. Germen 3-loculare; flores mediocres vel sat magni (in *L. assamica*); discus glaber vel (in *L. angustifolia*) ad angulos tantum pilosus; folia 3—5(—7)-juga.

a. Alabastra globosa vel (in *L. petiolaris* et *sessiflora*) ellipsoidea, albido-sericea vel flavescenti-tomentosa, breviter pedicellata vel subsessilia.

aa. Petalorum squama integra, ecristata.

a. Alabastra globosa, cano-sericea, breviter pedicellata; fructus intus hirsutulus (sp. malaccensi-javanica). 1. *L. montana*.

fi. Alabastra ellipsoidea, ut et thyrsorum rhachis flavescenti-tomentosa, subsessilia (sp. borneensis) 2. *L. petiolaris*.

bb. Petalorum squama integra, dorso 2—3-tuberculata.

a. Flores subsessiles; petalorum squama bituberculata; foliola oblonga, submembranacea (sp. javanica). 3. *L. sessiflora*.

p. Flores pedicellati; foliola subcoriacea.

aa. Petalorum squama dorso retusa, 2-corniculata vel 3-tuberculata; fructus intus hirsutus; foliola oblonga (sp. borneensi-javanica) . . . 4. *L. heterolepis*.

fifi. Petalorum squama bituberculata; foliola sublineari-lanceolata, sicca flavescencia (sp. sumatrana). 5. *L. angustifolia*.

cc. Petalorum squama biloba, ecristata.

a. Petala lineari-oblonga; foliola oblonga, breviter acuminata, viridia (sp. philippinensis) 6. *X. viridis*.

fi. Petala ovato-spathulata; foliola obovato-oblonga, insigniter cuspidato-acuminata, fuscencia (sp. sumatrana). 7. *L. acuminata*.

dd. Petalorum squama biloba, dorso crista fasciculato-corniculata instructa; folia 4—6-juga, foliola elongate lanceolata, livida (sp. assamica). 8. *L. assamica*.

b. Alabastra ovoidea, sufferrugineo-puberula, longius pedicellata.

aa. Petalorum squama bifida, ecristata; foliola oblongo-lanceolata, longiuscule acuminata, in petiolulos sensim attenuata, chartacea, epidermide paginae inferioris crystallophora (sp. burmanica). 9. *L. Browniana*.

bb. Petalorum squama — ?; foliola larga e late obovato-cuneata, breviter acuminata, basi obtusa petiolulis

- insidentia, membranacea, cellulis secretoriis instructa; fructus intus glaber (sp. assamica) . . . 10. *L. Listeri*.
- B. Germen 3-loculare; flores mediocres; petalorum squama biloba, ecristata; discus tomentellus; foliola 4—6, lanceolato-oblonga, in acumen elongatum acutissimum attenuata, epidermide paginae inferioris crystallophora; inflorescentiae ad trunci basin parvae (sp. philippinensis) . . . 11. *L. acutissima*.
- G. Germen 3(—2?)-loculare; flores parvi; petalorum squama integra vel submarginata ecristata; discus ad angulos et intus sericeus; fructus parvus, subglobosus, intus subglaber; foliola 6—14, subopposita vel alterna, elliptico-oblonga, acuminata, basi cuneata, epidermide paginae inferioris crystallophora (sp. malaccensis) 12. *L. cuneata*.
- D. Germen 2-loculare; discus glaber.
- a. Inflorescentia sat ampla, paniculata (*L. macrocarpae* et *perviridis* non visa); antherae subulatae, apiculatae, connectivo angusto glabro; petalorum squama ecristata; fructus transversim ellipsoideus, subcoccat, intus glaber (sp. philippinenses).
- aa. Fructus maximi, endocarpio membranaceo non solubili; flores ignoti; foliola 8, inferiora ovata, superiora plus duplo majora, elliptica, omnia acuta 13. *L. macrocarpa*.
- bb. Fructus mediocres, endocarpio chartaceo solubili; flores majores, alabastra fusco-tomentosa; petalorum squama biloba, subtus dense fusco-villosa; foliola 8—10, breviter oblonga 14. *L. eriolepis*.
- cc. Fructus minores, endocarpio chartaceo solubili; flores mediocres, alabastra ochroleuco-sericea; petalorum squama exciso-bifida vel integra subtruncato-cuneata, subtus sordide villosa; foliola 6—14, lanceolato-oblonga, inferiora subovata. 15. *L. schizolepis*.
- dd. Fructus parvi; foliola 10—18, anguste oblonga, acuminata, inferiora ovato-oblonga. 16. *L. perviridis*.
- b. Inflorescentia brevissima, pauciramosa; antherae ellipticae, obtusae, connectivo lato dorso piloso; petalorum squama cristata; fructus transversim ellipsoideus, subcoccat, intus pilosus; foliola 8—12, anguste lanceolata (sp. tonkinensis) 17. *L. tonkinensis*.
- E. Germen 2-loculare; discus hirtellus; inflorescentia mediocris; flores — ?; fructus abortu 1-spermus, globosus, denique glabratus, intus glaber; foliola 2—4, magna, elliptico-lanceolata, flavo-viridia, epidermide paginae utriusque crystalli singula hic illic gerente (sp. philippinensis) . . 18. *L. palawanica*.
- Sect. II. *Scorododendron* (Blume) Radlk. 11. cc. (Genus *Scorododendron* Blume 1. c): Discus regularis, latiuscule annularis, margine interiore elevato, glaber; petala 5, squamis deflexis bilobis dorso crista lata deflexa biloba instructis (quasi squamis 2 superpositis deflexis subbifidis margine crispato-erosis aucta); germen 2(—3)-loculare.
- Species unica (timorensis), foliis 5—6-jugis, foliolis anguste oblongo-lanceolatis, epidermide paginae inferioris crystallophora 19. *L. pollens*.

Sect. III. Anomosanthes (Blume) Radlk. 11. cc. (Genus *Anomosanthes* Blume 1. c.; *Sapindus* sp., *Cupania* sp., *Hemigyrosa* sp. etc. autor.): Discus irregularis, nunc parum inaequalis (*L. longifolia*), nunc incompletus, interruptus vel 1-lateralis, semi-lunaris; petala 4 vel, si discus minus irregularis, 5 (*L. longifolia*, *Scortechinii*), squamis singulis vel binis (*L. tetraphylla*, *trichocarpa*) ecristatis vel cristatis (*L. tetraphylla*, *trichocarpa*, *membranifolia*, *Kunstleri*, *basicardia*, *burmanica*, *hirtella*) aucta; cotyledones oblique superpositae vel lateraliter juxtapositae; radícula dorsalis.

A. Germen 3-loculare.

a. Semen glabrum.

aa. Petalorum squamae binae, cristatae; discus glaber; fructus intus dense pilosus.

a. Folia 2-, rarius 3-juga, foliola canescentia, epidermide punctata; fructus inappendiculatus, cellulis secretoriis instructus (sp. indico-cambodiana) . . . 20. *L. tetraphylla*.

fi. Folia 3—4-juga, foliola flavescentia, epidermide parum punctata; fructus muricato-appendiculatus, cellulis secretoriis nullis (sp. zeylanica) . . . 21. *L. trichocarpa*.

bb. Petalorum squamae singulae, cristatae (in *L. granulata* non visae).

a. Discus glaber.

aa. Folia 3—4-juga, foliola ex obovato oblonga ellipticave, obtusa vel late acuminata, membranacea, supra subglabra, subtus molliuscula; fructus—? (sp. novoguineensis) . . . 22. *L. membranifolia*.

pp. Folia 4-juga, foliola oblonga, utrinque acuta, glabra; fructus mediocris, siccus leviter granulatus, intus parce pilosus (sp. burmanica) . . . 23. *L. granulata*.

yy. Folia circ. 6-juga, foliola oblonga, basi rotundata, magna, glabra; fructus maximus, intus setoso-hirsutus (sp. malaccensis) . . . 24. *L. KunstlerL*

p. Discus margine puberulus, supra glabriusculus; folia circ. 6-juga, foliola elongate oblonga, acuta, basi angustata oblique cordata petiolulis brevissimis insidentia, subtus ad nervos puberula; fructus — ? (sp. burmanica) . . . 25. *L. basicardia*.

y. Discus hirtus; foliola 5—11, oblongo-lanceolata, basi obtusa, subtus ad nervos puberula; fructus sat magnus, intus glaber (sp. burmanica) . . . 26. *L. burmanica*.

cc. Petalorum squamae singulae, ecristatae; discus glaber.

a. Folia sessilia, 2-juga, foliola ovalia, inferiora stipulas ± aemulantia, hypodermatis specie instructa, epidermide paginae inferioris crystallophora; fructus trigono-globosus, livescenti-tomentellus, intus setoso-hirsutus (sp. andamanica) 27. *L. andamanica*.

p. Folia petiolata, foliola elongate oblonga.

aa. Fructus — ?; foliola 8—14, opposita vel alterna, sublineari-oblonga, epidermide paginae inferioris crystallophora (sp. indica) . 28. *L. deficiens*.

- Pfi.* Fructus processibus conicis vel filiformibus hirsutis muricatus, intus setosus; discus parum inaequalis; foliola 6—8, opposita, oblonga (sp. malaccensis). 29. *L. longifolia.*
- y. Folia petiolata, foliola circ. 10?, ex obovato-oblongo cuneata, maxima, cellulis secretoriis instructa, epidermide paginae inferioris crystallophora (sp. sumatrana). 30. *L. lamponga.*
- Hie? inserenda species malaccensis foliis petiolatis, foliolis plerumque 8 suboppositis elliptico-oblongis largis, fructu suborbiculari 3-lobato sufferrugineo-tomentello intus laxe setoso. *SI?* *L. Scortechini*L
- b. Semen (ut et fructus extus et intus) rufo-villosum; petalorum squama ecristata; discus ad angulos pilosus; folia 4-juga, foliola largissima (sp. sumatrana). 32. *Z. latifolia.*
- B. Germen 2-loculare; petalorum squama cristata, crista obcordata; discus glaber; folia circ. 9-juga, foliola opposita, oblonga, subtus pilis hamatis hirtella (sp. novo-guineensis) 33. *L. hirtella.*
- Sect. IV. Anomorrhiza Radlk. in Engl. u. Prantl, Nat. Pflanzenfam., Nachtr. III. (1907) 203 et in Kew. Bull. Misc. Inform. (1914) 280: Discus 1-lateralis, semilunaris (glaber); petala 4, squamis cristatis aucta; cotyledones oblique superpositae; radícula punctiformis, infra hilum ventralis.
- A. Folia circ. 3-juga, foliola subopposita, lanceolata, glabra, cellulis secretoriis instructa; fructus 3-lobatus, extus et intus glaber (sp. cochinchinensis). 34. *L. mekongensis**
- B. Folia 3—4-juga, foliola inferiora subopposita, elliptico-oblonga, subtus molliter pubescentia; fructus trigono-globosus, hirtello-tomentosus (sp. siamensis). 35. *JL siamensis.*
- Accedit species celebica sedis ob flores et fructus ignotos dubiae, foliis magnis 5-jugis, petiolo rhachique rubro-fuscis, foliolis inferioribus ovatis tenuius petiolulatis, superioribus ex ovali late oblongis crassiuscule petiolulatis, glabris, livescenti-viridibus, insignibus glandulis sphaeroideo-capitatis brevissime stipitatis fuscis omnino immersis (et hac re folia *L. schizolepidis* in mentem revocantibus). 36. *L. celebica.*
- Accedunt species mihi ignotae. 37. *L. hirta.*
38. *L. Forbesii.*

Sect. I. Eulepisanthes Radlk.

1. **L. montua** Bhime, Bijdr. (1825) 238; Gamb. 1. c; Don 1. c; Walp. Rep. I. (1842) 416; Hassk.₄(**Lepidanthes* m.«) 1. c; Blume, Rumph. III. (1847) 151; Miq. 1. c. c. syn. »*L. frutescens* Bl., *L. confinis* Bl.«, excl. syn. »*Z. sessiflora* Bl.«; Teysm. et Binn. Cat. Hort. Bog. (1866) 214; Radlk. Sap. Holl.-Ind. (1877-1878) 10, 33 (80, 103) excl. syn. *L. sessiflora* Bl. et in Engl. u. Prantl, Nat. Pflanzenfam. HI. 5. (1895) 320; Pierre, Fl. forest. Cochinch. Fasc. 21 (1895) t. 327 B, G? (quae figurae B et G secundum specimina a Kurz communicata delineatae dicuntur) excl. ? stirpe descripta ex Indo-China ob »fruct. glabr.« etc.; Koord. et Valet. 1. c. (1903) 165; Koord.-Schum. Syst. Verz. I. Java (1912) Sapind. 7, coll. 39425/?! etc.; Koord. Exk.-Fl. Java II. (1912) 538 et Atlas Baumart. I. 3. (1913) 1.131, coll. 34058)6! etc.; — non Hiern 1. c, nee Kurz in Rep. Pegu Forests (1875) App. A 38, B 40, ex ipso ibid, in Erratis et in Journ. As. Soc. Beng. XLIV. 2. (1875) 184, cfr. *L. burmanica*, nee Kurz ibid. 183 »coll. Wai-

lich« resp. Gomez! et in Forest Fl. Brit. Burma I. (1877) 291, descr. partim emend., cfr. *L. Browniana* Hiern; non F.-Vill. Noviss. App. ad Blanco, Fl. Filip. ed. 3, Add. (188a) 369 c. syn. variis et perperam adjecta indicatione »vidi vivam in ins. Luzon et Panay«. - *L. frutescens* Blume 1. c. (1847) 152; Walp. Ann. II. (1851—1852) 209. — *L. confinis* Blume ibid.; Walp. ibid. — Vulgo: Kiparey s. Kiparai sundaice t. Bl. 1. c; Kipareh fid. Filet, Woordenb. (1876) 181 n. 4272, Ed. 2. (1888) 177 n. 4613; Kilalayu t. Blume sub *L. confini* et Filet, Woordenb. Ed. 2, 174 n. 4520 (cfr. *Eriogloss. rubig.*)\ Man-netjes-Klajoe, Steen-Klajoe, Katilajoe-watoe javanice, Kilalajoe-lalaki sundaice, insuper? Djeboegan t. Koord. et Valet. 1. c. — Arborescens vel frutescens; rami teretiusculi, glabriusculi; foliola 3—7-juga, longe petiolata; foliola subopposita, latius angustiusve oblonga, acuta vel subacuminata, basi inferiora minora obtusa, superiora subcuneata, omnia petiolulis brevibus crassiusculis tomentellis vel glabratis suffulta, subcoriacea, nervis lateralibus oblique adscendentibus subtus magis prominentibus, utrinque glabra vel subtus ad nervos parce puberula, supra sat laevia, nitida, livescentia, subtus reticulato-venosa, pallide subfusca, glandulis basi immersis utrinque sat crebris ornata; thyrsi ad axillas vel cicatrices foliorum singuli vel pauci fasciculati, breviusculi vel elongati, tomentelli, dense cincinnos subsessiles paucifloros gerentes; alabastra globosa; flores mediocres, breviter pedicellati; sepala canescenti-sericea; petala 5, spathulata, ad laminae basin extus sericea, intus glabra et supra unguem squama deflexa brevi lata glabra aucta; discus regularis, glaber; stamina apice ut et antherarum connectivum dorso hirsuta; germen 3-angularis, tomentosum; fructus suborbicularis, 3-angularis, 3-sulcatus, ad angulos superne costa notatus, extus tomento brevi denso sordido indutus, intus hirsutulus, pericarpio cellulis saponinigeris instructo; semen ellipsoideum; cotyledones (an semper?) superpositae, radícula dorsalis.

Arbor 20—30-pedalis vel frutex 10—15-pedalis (ligno durabili ad trabes tabulasque praesertim pontes sternendas apto t. Blume). Folia petiolo 12—25 cm longo striato adjecto 40—70 cm et ultra longa, 25—40 cm lata; foliola cum petiolulis 5—8 mm longis 10—30 cm longa, 4—10 cm lata. Thyrsi 8—30 cm longi. Alabastra diametro 3 mm. Petala denique 5 mm longa, 2 mm lata. Fructus circ. 2 cm longus 2—3 cm latus.

In Java, Sumatra et Malacca (an et in Gochinchina?, cf. supra lit.): In Java: Blume! (in silvis montanis provinciarum Javae occidentalium; Hb. Bl. n. 676! in Hb. Lugd.-Bat., flores; folia ex Hb. Lugd.-Bat. comm. in Hb. DC, Mart., Berol., Vindob.); id! (in silvis orientalibus montis Salak Javae insulae, m. Jun. et Jul. flor.; *L. frutescens* Blume, Hb. Bl. n. 2300! in Hb. Lugd.-Bat., fol. in Hb. Berol.; specim. foliol. angustiorib.); van Hasselt! (in silvis infra craterem montis Puluarie in Javae occid. prov. Bantam., m. Jun. flor.; *L. confinis* Blume manupropr. in Hb. Lugd.-Bat.; fol. in Hb. Berol.; specim. foliolis tenuioribus submembranaceis); Koorders! (in prov. Preanger! et in prov. Banjumas!, cf. ll. cc. 1903, 1912); — in Sumatra: H. O. Forbes n. 1187! (steril.; Hb. Berol.); - in Malacca: King's Collector n. 4563! (Perak, alt. 500 ped., m. Jul. 1883, flor.; ex Hb. Calcutt. comm.); G. Curtis n. 2774! (Flora of Penang, Balich Pulaw, fr.; Hb. Kew.). — Gulta in Hort. Bogor.: Hb. Bogor. n. 14343! (fl. et fr. juv.), n. 14452! (e Bantam; flor.); Hb. Kurz n. 1383! (fl. et fr. matur.).

2. ***L. petiolaris*** Radlk. in Fedde, Repert. XVIII. (1922) 334. - Frutex?; rami teretes; folia abrupte pinnata, 4—5-juga, longissime petiolata, petiolo rhachique subhirsutis; foliola per paria subapproximata, oblonga, in acumen breve obtusiusculum abruptius terminata, basi obtusiuscula petiolulis hirsuto-tomentosis insidentia, membranaceo-chartacea, nervis lateralibus utrinque circ. 15 subtus prominentibus, singulis basi procurvis apice subrecurvis (inde fere sigmoideo-curvatis), ante marginem in nervum continuum margini parallelum anastomosantibus, utrinque glabra nee nisi subtus ad nervos pilis parce adspersa, sat laevia, nitidula, supra livescentia, subtus olivaceo-viridia, glandulis basi immersis utrinque sat crebris ornata, epidermide paginae inferioris sparsim crystallorum concreciones parvas gerente; thyrsi ad nodos ramorum vetustiorum singuli (vel pauci?), breviusculi, flavescenti-hirsuti, cymulis subtrifloris

fuscescentia, subglabra, glandulis parum immersis rarioribus utrinque ornata; thyrsi ad cicatrices vel axillas foliorum singuli geminive eramosi vel ima basi ramo aucti, sat dense cincinnigeri alabastraque canescenti-sericeo-tomentella; flores majusculi, pedicellati; sepala exteriora tomentella, interiora sericea; petala 5, ovata, abruptius breviter unguiculata, medio dorso ut et unguis fusco-pilosa, intus supra unguem squama emarginata vel subbiloba brevi deflexa ecristata subtus villosula aucta; discus regularis, glaber; stamina 8, superne hirsuta; antherae late ellipticae, intus glabrae, dorso hirsutae; germen 3-loculare, dense subflavide tomentosum, intus basi albo-sericeum, stylo brevi, stigmatē capitato-clavato 3-sulco toto extus papillose

Frutex (ut videtur), ramis defoliatis thyrigeris ad 1,5 cm crassis, cortice fusco, longitudinaliter rimoso. Folia petiolo circ. 10 cm longo adjecto circ. 40 cm longa, 20 cm et ultra lata; foliola superiora (majora) 18—26 cm longa, 5—10 cm lata. Thyrsi 3—10 cm longi; cincinni breviter stipitati, patuli; bractee bracteolaeque subulatae, tomentellae. Alabastra globosa, diametro 4 mm. Pedicelli 2—3 mm longi.

In Sumatra occidentali: Beccari it. tert. n. 114! 3041 (in monte Singalan, Padangsche bovenlanden, alt. 1700 m, m. Jun.—Jul. 1878, flor.; Hb. Florent.; Kew.).

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8. **L. assamica** Radlk. in Records Bot. Surv. Ind. III. 3. (1907) 343 (reimpr. in Fedde, Repert. VIII. [1910] 186). — Rami teretes, lenticelloso-verrucosi, pallidi, glabrati, innovationibus flavescenti-tomentosis; folia 4—6-juga, petiolo substriato; foliola subopposita, lanceolato-oblonga, sensim acuminata, petiolulis superne canaliculatis insidentia, subcoriacea, nervis lateralibus numerosis patulis, reti venarum subtus prominulo, livida, utrinque glabra, glandulis sat immersis rarioribus ornata; thyrsi axillares, fasciculati, dense cincinnigeri, cincinnis subsessilibus, petiolos aequantes, cano-tomentelli; alabastra subglobosa; flores sat magni, breviter pedicellati; sepala 5, exteriora tomentella, interiora sericea; petala 5, late spathulata, extus infra medium dorsum villosa, intus squama biloba crista fimbriata instructa aucta; discus regularis, glaber; stamina 11—12, superne albido-villosa, in alabastro bis genuflexa, antherae glabrae vel connectivi lati dorso pilosello; germinis rudimentum triloculare, trisulcatum, villosum.

Frutex? ramis 1 cm crassis. Folia petiolo circ. 5 cm longo adjecto 25—32 cm longa; foliola superiora (majora) 14—18 cm longa, 3—4 cm lata, inferiora 6—7 cm longa, 2—2,5 cm lata., Thyrsi 3—8 cm longi; bractee bracteolaeque 2—3 mm longae, subulatae, tomentellae. Pedicelli 2—3 mm longi. Alabastra diametro 4—5 mm.

In Assam: A. T. Gage n. 185! (South Lushai. Hills, near Fort Lungleh, altit. 3—4000 ped., m. Apr. 1899, alab.; comm. ex Hb. Galtutt.).

9. **L. Browniana** Hiern in Hook. f. Fl. Brit. Ind. I. (1875) 6801. - *Sapindacea?* R. Brown in Wall. Cat. (1828-1832) n. 7497! et in Misc. Works II. 537. - Arbor parva; rami teretes petiolique striati, rubicundi, minutim puberuli, denique glabrescentes; folia 3—5-juga, petiolo longo; foliola subopposita, lanceolato-oblonga vel inferiora breviora subobovata, longiuscule acuminata, subcuneata in petiolulos longiusculos basi incrassatos attenuata, chartacea, utrinque livida, glabra, supra laevia nitida, glandulis (parum) immersis rarioribus ornata, epidermide paginae inferioris sparsim •crystallorum concretae parvas gerente; thyrsi supra foliorum axillas breves, singuli, dense cincinnigeri, tomentelli; alabastra ovoidea; flores mediocres, longius pedicellati, pedicello superne incrassato, paullulum complanato, subsulcato; sepala 5, sufferrugineo-tomentella; petala 5 (rarissime 6), subspathulata, crenulata, extus ungue, intus margine sufferrugineo-barbata, squama profunde bifida ecristata aucta; discus regularis, glaber; stamina 8, superne sufferrugineo-villosa, antherae ellipticae, extus basi hirsutae; germinis rudimentum trigonum, pilosulum.

Rami circ. 1 cm crassi. Folia petiolo 16—25 cm longo adjecto 55—60 cm longa; foliola superiora (majora) cum petiolulis 1—1,5 cm longis circ. 22 cm longa, 6—7 cm lata, inferiora 12—14 cm longa, 5—cm lata. Thyrsi 1,5—2 cm longa; bractee brae-

teolaeque 1 — 2 mm longae, subulatae, tomentellae. Pedicelli 7 — 10 mm longi. Alabastra circ. 6 mm longa, flores 1 cm longi.

In Martaban: W. Gomez n. 342! = n. 7497! in Hb. Wallich, n. 2013! in Hb. DC. (Tavoy et Keloben, m. Oct. 1827, flor.).

10. **L. Listeri** King msc. ex Radlk. in Records Bot. Surv. Ind. III. 3. (1907) 344 (reimpr. in Fedde, Repert. VIII. [1910] 187). - Frutex?; rami teretes, lenticellis oblongis bilabiatis instructi petiolique striati, hirtelli; folia 4-juga; foliola subopposita, obovato-oblonga, breviter acuminata, basi angustiore obtusa petiolulis longiusculis incrassatis insidentia, membranacea, nervo mediano supra vix, subtus valde prominente, utrinque nervisque lateralibus subtus hirtellis, supra sublaevia, nitidula, subtus reticulato-venosa, opaca, glandulis immersis ornata, cellulis secretoriis instructa; thyrsi supraaxillares, (bini vel terni) fasciculati, laxe cincinnigeri, cincinnis subsessilibus; flores non visi nisi partes sub fructu pedicellato relictas; sepala 5, sufferrugineo-tomentella; petala 5 (?), in unguem attenuata, extus sericeo-tomentella, squama — ?; discus regularis, glaber; stamina e basi complanata filiformia, superne subvillosa; fructus breviter ellipsoideus, 3-locularis, loculis compressis, extus adpresse sufferrugineo-tomentosis, intus glabris, pericarpio carnosus; semen ellipticum, hilo longo affixum, glabrum; embryo rectiusculus, cotyledonibus lateraliter juxtapositis, radícula basilari crassiuscula obtusa paullulum incurva.

Rami 1 cm crassi. Folia petiolo 22 cm longo adjecto circ. 70 cm longa; foliola superiora (majora) cum petiolulo 1-centimetrico circ. 30 cm longa, 14 cm lata, inferiora 17 cm longa, 6 cm lata. Thyrsi 6—7 cm longi; bractee bracteolaeque subulatae 2 — 3 mm longae. Fructus (immaturus) 25 mm longus, 18 mm latus, pedicello 12 mm longo basi articulo suffultus.

In Assam: J. L. Lister! (Duphla Hills, Dikrung valley, a. 1874; comm. ex Hb. Galtcutt.).

11. **L. acutissima** Radlk. in Philipp. Journ. Sc. XX. 6. (VI. 1922) 657; Merrill, Enum. Phil. PI. II. (1923) 499. — Frutex mediocris, glaber, cauliflorus; trunci ramique flavescens-cani, teretes, lenticelloso-punctati; folia paripinnata, 2- vel 3-juga, petiolo tereti elongato striato; foliola lanceolato-oblonga, in acumen elongatum acutissimum sensim attenuata, basi inaequaliter obtusata (latere exteriori paullulo latiore longioreque) petiolulis breviusculis subcylindricis hirtellis insidentia, chartacea, nervis lateralibus remotiusculis procurvis, flavo-viridia, utrinque opaca, praeter nervum medianum subtus pilis brevibus laxè adpersum glabra, glandulis praesertim supra profunde immersis ornata, epidermide paginae inferioris sparsim (plerumque in cellulis geminatis) crystallorum concretae parvas gerente; thyrsi ad trunci basin (10 cm supra solum) pauci fasciculati, breviusculi, dense cincinnigeri; flores mediocres; sepala flavide tomentosa, intus glabra; petala 5, lanceolata, unguiculata, dorso praeter marginem sericeo-tomentosa, intus glabra et supra unguem squama brevi biloba deflexa glabriuscula aucta; discus regularis, tomentellus; stamina 8, apice pilosa, antherae glabriusculae; germen trigpno-ovatum, triloculare, dense flavo-tomentosum, in stylum apice glabrum attenuatum, loculis intus infra gemmularum insertiones dense pilosis.

Frutex 1—2 m altus, truncis digitum crassis. Rami foliati 4—5 mm crassi. Folia petiolo 10—12 cm longo adjecto ad 45 cm longa; foliola superiora cum petiolulis 5 mm longis ad 30 cm longa, 8,5 cm lata, inferiora fere dimidio minora. Thyrsi 4 cm longi. Flores 5 mm longi, albi.

In Philippinarum insula Palawan: Merrill n. 9564! (ad lacum Manguao, alt. 80 m, m. Mai 1913, fl.; comm. ex Hb. Manil.).

Obs. Inter species floribus regularibus germineque 3-loculari praeditas excellens inflorescentiis ad trunci basin erumpentibus discoqifè tomentello.

12. **L. euneata** Hiern in Hook. f. Fl. Brit. Ind. I. (1875) 680; King, Mater, etc. (1896) 428; — non F.-Vill. Noviss. App. ad Blanco, Fl. Filip. ed. 3, Add. (1883) 349, perperam adjecta indicatione »vidi vivam«. — Frutex vel arbor parva; rami teretes.

puberuli, mox glabrati, pallidi, epidermide nitida mox rimoso-fissa, petiolique striati; folia 4—7-juga, petiolo gracili; foliola subopposita, e basi subcuneata lanceolato-oblonga, breviter cuspidata, membranacea, nervis subtus valde prominentibus, utrinque laxe reticulato-venosa, glabra, laevia, utrinque glandulis immersis ornata, epidermide paginae inferioris sparsim crystallorum concretiones parvas gerente; thyrsi supra-axillares, pauci fasciculati, spiciformes, dense cincinnigeri, pubescentes; alabastra subglobosa; flores parvi; sepala 5, exteriora ovata, interiora obovata, extus sericeo-tomentosa; petala 5, subspathulata, acuta, dorso infra medium puberula, intus glabra, supra unguem squama integra deflexa aucta; discus regularis, angulis nee non intus sericeus; stamina 8, filamenta supra medium villosa; antherae breviter ellipticae, glabrae; rudimentum germinis pilosulum, 2—3-loculare; fructus depresso globosus (2—)3-locularis, extus sordide tomentellus, intus subglaber, circa seminis insertionem pilosiusculus, cellulis secretoriis nullis; semen glabrum, hilo brevi basilari affixum, cotyledones lateraliter juxtapositae; radícula infra medium dorsum punctiformis.

Frutex 3—4-pedalis, vel arbor 10—15-pedalis, trunco pollicem crasso; rami circ. 6 mm crassi. Folia petiolo 12—18 cm longo adjecto 35 — 75 cm longa, foliola superiora (majora) 20—35 cm longa, 4—9 cm lata. Thyrsi 6—12 cm longi; bractee bracteolaeque subulatae, 1—2 mm longae. Alabastra diametro 2 mm. Fructus diametro 1 cm.

In insula Penang et Peninsula Malaica: Porter! (Penang; Hb. Kew.); Curtis n. 2439! (Penang, m. Apr. 1890, steril.; Hb. Calcutt.), n. 3009 (ibid., ex King I.e.); Wray n. 1400! (Perak; ex Mus. Perak. comm. c. Hb. DC), n. 1990, 3563 (ibid, ex King 1. c); King's Collector n. 3059! (Larut, Perak, altit. 3-800 ped., m. Jun. 1882, flor.; ex Hb.Calcutt. comm. c. Hb. DC), n. 7072 (ibid, ex King 1. c), n. 10489! (Perak, altit. 4—600 ped., m. Jul. 1886, flor.; ex Hb.Calcutt. comm. c. Hb. Monac); Ridley n. 79801 (Perak, m. Mart. 1896, steril.; Hb. Calcutt.). - Cf. etiam Ridley, Fl. Malay Penins. I. (1922) 493.

13. **L. macrocarpa** Radlk. in Philipp. Journ. Sc. XX. 6. (VI. 1922) 658; Merrill, Enum. Phil. PI. 11.(1923) 500. — Frutex mediocris; folia paripinnata, 4-juga, petiolo tereti breviter sufferrugineo-tomehtoso; foliola inferiora ovata, superiora plus duplo majora elliptica, omnia acuta, basi obtusa petiolulis longiusculis tumidis tomentosis insidentia, integerrima, chartacea, nervis lateralibus approximatis obliquis subtus prominentibus, supra praeter nervum medianum hirtellum glabra, laeviuscula, pallide viridia, subtus pilis subulatis patulis hirta, utrinque glandulis profunde immersis ornata; flores — (non suppetebant); fructus major, bilocularis, e transversim ellipsoideo subcylindraceutus, inter loculos sulco levi, septi margini respondenti exaratus, inde subbicoccus, basi sepalorum reliquiis tomentosis suffultus, apice subapiculatus, pericarpio corticoso-coriaceo tomento hirto fusee ochraceo obducto, dein ± glabrato, mesocarpio e concretionibus sclerenchymaticis conflato, endocarpio membranaceo tenuissime fibroso non solubili pilis paucis subsetaceis e pede fusiformi inter endocarpium **fibras** superficiales interjecto emergentibus adperso; semen globosum, ad loculi basin septo affixum, testa tenuiter coriacea laevi brunnea; embryo erectus, obsolete notorrhizus, cotyledonibus hemisphaericis oblique juxtapositis farinaceo-carnosis albidis, radícula brevi micropylen versus curvata.

Frutex circ. 1-metralis. Folia petiolo 10 cm longo adjecto 60 cm longa; foliola inferiora cum petiolulis 1 cm longis 13 cm longa, 6 cm lata, superiora 30 cm longa, 12 cm lata. Fructus 4—4,5 cm latus, 2 cm altus et crassus. Semen diametro 1,5 cm.

In Philippinarum insula Luzon: fyL Ramos n. 19460! (prov. Tayabas, in monte Pular, m. Jan. 1913, fr.; comm. ex Hb. Manil.); Elmer n. 7893 (ex Merrill I.e.).

Obs. Affinis *Lepisaniihi eriolepidi* Radlk., a qua differt foliis acutis, fructu majore, endocarpio non solubili.

14. **L. eriolepis** Radlk. Sap. Holl.-Ind. (1877) 36 (106) et in Philipp. Journ. Sc. VIII. (1913) 445; Vidal, Phan. Cuming. (1885) 20, 105 et Revis. (1886) 951; F.-Vill. Noviss. App. ad Blanco, Fl. Filip. ed. 3, Add. (1883) 349; Merrill, Enum. Phil. PI. 11-

(1923) 500, c. nom. vulg.: Sarakag (Negr.). — Frutex; folia 4—5-juga, petiolo longo substriato sufferrugineo-tomentello; foliola subopposita, breviter oblonga, petiolulo longiusculo basi incrassato insidentia, chartacea, nervis lateralibus crebrioribus (utrinque circ. 15) approximatis oblique patulis margine manifesto anastomosantibus subtus valde prominentibus, supra praeter nervos puberulos subglabra, subtus praesertim in nervis venisque pilis brevibus subulatis patulis obsita, utrinque glandulis fere totis immersis ornata; paniculae (an semper?) infra folia laterales, sat amplae, rhachi ramisque thyrsoides laxae dichasia vel cincinnos glomeruliformes gerentibus tomento fusco-ferrugineo subhirsuto indutis; alabastra subglobosa, fusco-tomentosa; flores majores; sepala 5, orbicularia; petala 5, in unguem attenuata, extus ad basin pilosa, intus glabra, squama biloba ecristata subtus longissime subfusco-villosa aucta; discus regularis, glaber; stamina 8, pilosula, antherae ex oblongo subulatae, apiculatae, connectivo angusto glabro; rudimentum germinis biloculare, obovatum, pilosulum; fructus ut in specie sequenti, attamen major, tomento brevi aurantiaco indutus, endocarpio albide splendenti solubili; semen ut in specie sequenti.

Frutex 2-metralis. Folia petiolo 8 cm longo adjecto circ. 50 cm longa; foliola circ. 18 cm longa, 5—6 cm lata; petioluli 12 mm longi. Panicula 20—25 cm longa, rhachi 2—3 mm crassa; rami thyrsoides 8—14 cm longi. Alabastra diametro 5 mm. Fructus 3 cm latus, 2 cm altus et crassus.

In Philippinarum insulá Luzon: Cuming n. 785! (prov. Tayabas; Hb. Kew., Boiss., Webb.); R. G. MacGregor n. 124921 (prov. Laguna, Galauan, m. Nov.—Dec. 1910, fr.; comm. ex Hb. Manil.).

A Merrill I.e. adjiciuntur: MacGregor n. 22899; Ramos et Edaño n. 26588, 33663.

15. *L. schzolepis* Radlk. Sap. Holl.-Ind. (1877-1978) 87 (238), in J. Perkins, *Fragm. Fl. Philipp. I.* (1904) 60 et in *Philipp. Journ. Sc.* VIII. (1913) 445, c. f. 2.; F.-Vill. *Noviss. App. ad Blanco, Fl. Filip. ed. 3, Add.* (1883) 349; Merrill, *Enum. Phil. PI. II.* (1923) 500, excl.? syn. >*L. perviridis* Elm.< — *L. sp.* Vidal, *Gat. Herb.* (1892) 52! — Vulgo: Balungay tagalice t. Alvarez in sched.; praeterea ex Merrill I.e.: Bayag-daga (Tag-), Pamalatan (Ilk.), Pospos (Bik.). — Frutex vel arbuscula (Loher) vel arbor sat magna (Alvarez); folia 3—6-juga, petiolo striato subglabro; foliola lanceolato-oblonga, breviter petiolulata, apice acuta, basi superiora subcuneata, inferiora obtusa, interdum inferiora abbreviata late ovata, chartacea, nervis lateralibus paucioribus (utrinque circ. 10) remotiusculis procurvis subtus prominentibus, laevia, nitida, pallida, glabra nee nisi pilis microscopicis subulatis patentibus subtus adpersa, rarius pilis longioribus crebris subtus hirtella, utrinque glandulis fere totis immersis ornata; paniculae terminatae vel axillares, amplae, basi iterum ramificatae, rhachi ramisque patulis thyrsoides laxae dichasia vel cincinnos sessiles glomeruliformes gerentibus breviter sordide flavescenti-puberulis; alabastra globosa ochroleuco-sericea; flores mediocres; sepala 5, orbicularia; petala 5, in unguem attenuata, extus infra medium sordide villosa, intus praeter squamam ecristatam, nunc exciso-bifidam, nunc (in forma 2.) integram subtruncatam vel subrependo-3-denticulatam villosam glabra; discus regularis, glaber; stamina 8, filamenta superne dense villosa, antherae subulatae, apiculatae, connectivo angusto glabro; germen biloculare, late ovoideum, sufferrugineo-tomentosum, intus glabrum, stylus subnullus, stigma obtusum; fructus bilocularis, transversim ellipsoideus, sulco inter loculos exaratus, inde subcoccat, 2-spermus, vel abortu 1-spermus subglobosus, adpresse ochraceo-tomentellus, intus glaber, cellulis secretoriis nullis, endocarpio pergamento solubili nitidulo; semen loculo conforme, ventre planum, dorso convexum, ad loculi basin affixum, glabrum, testa tenui spadicea; embryo plano-convexus, subhemisphaericus, cotyledonibus crassis oblique juxtapositis, amylo farctis, radícula ad seminis basin punctiformi.

Frutex 3-metralis vel arbor 12-metralis. Folia petiolo 5—18 cm longo adjecto 20—60 cm longa; foliola 15—28 immo 38 cm longa, 7 — 9 immo 16 cm lata; petioluli

6—10 mm longi. Panicula 20—30 cm et ultra longa, rhachi 2—3 mm crassa; rami thyrsoides 8 — 24 cm longi, inferiores interdum ramulo brevioribus subjecto aucti iidemque (concaulescentia) a bractea stipitiforibus subtus carinata supra sulcata fusco-hirsuta remoti. Alabastra diametro 3 mm. Fructus 2,5 cm latus, 1,8 cm altus et crassus, monospermus globosus diametro vix 2 cm.

Formas 2 distinguere licet:

F. 1. *genuina* Radlk. ap. J. Perkins 1. c: Petalorum squama emarginato-bifida.

F. 2. *sphenolepis* Radlk. ibid.: Petalorum squama integra, cuneata, subtruncata vel subrepando-3-denticulata.

In Philippinarum insula Luzon et in insulis vicinis Babuyanes dictis, nee non t. Merrill 1. c. in ins. Leyte, Negros et Mindanao: Forma 1: Barthel (Manila, a. 1857, fl.; Hb. Paris.); Vidal n. 2463! (Manila, fr.), n. 2464! (Distr. Morong, fl., fol. subtus hirtellis; Hb. Kew.); Eugenio Fenix n.3911! (Babuyan Island, m. Jun. 1907, alab.; Hb. Manil.). - Forma 2: Warburg n. 13237! (prov. Rizal, Montalban, m. Mart. 1888, fl., Hb. Berol.; inflorescentia tantum, adjecto folio Meliaceae cujusdam); Loher n. 2054! 2055! (Montalban, Mo Macaharing, m. Jun. 1890, fl.; Rio Marcap, m. Aug. 1890, fr.), id. n. 5875! (Montalban, m. Jun. 1905, fl.), id. n. 13297! (Montalban, m. Maj. 1918, fl.), n. 13879! (prov. Rizal, m. Jan. 1913, fl.); Merrill n. 23311 (prov. Rizal, Tanay, m. Maj. 1903, fl.; Hb. Berol. ex Hb. Manil.); R. J. Alvarez n.22112! 22405! (prov. Nueva Ecija, alt. 200 m, m. Dec. 1910—Febr. 1911, fl.; comm. ex Hb. Manil.); Elmer n. 8279! (prov. Laguna, Los Baños, m. Apr. 1906, fl.; comm. Elmer); M. L. Merritt n. 7709! (prov. Laguna, Mount Maquiling, m. Oct. 1910?, fr.; comm. ex Hb. Manil.); R. Rosenbluth n. 12813! (prov. Gamarines, m. Nov. 1908, fl.; comm. ex Hb. Manil.); C. B. Robinson n. 17849! (prov. Laguna, Los Baños, m. Apr. 1913, alab.; comm. ex Hb. Manil.).

16? **L. perviridis** Elmer, Leafl. Philipp. Bot. VIII, Art. 121 (1919) 3101. - *L. schizolepis* Radlk. apud Merrill, Enum. Philipp. PI. II. (1913) 500 quoad syn. *L. perviridis* Elm. — Arbor parva, tortuosa, ramis paucis crassiusculis; folia 5—8-juga, petiolo rhachique rigidis striatis sordide puberulis denique glabris; foliola subopposita, anguste oblonga, inferiora ovato-oblonga, acuminata, integerrima, tenuiter chartacea, nervo mediano subtus valde prominente fusco-stramineo glabro, nervis lateralibus utrinque 10—15 prominentibus adscendentibus apice valde procurvis, reti venarum laxo conspicuo, glabra, utrinque viridia, subtus paullulo pallidiora, petiolulis valde incrassatis; inflorescentia axillaris, pube sordide brunnea induta, fere a basi ramos alternos divaricatos breviusculos sursum decrescentes densifloros gerens; flores subsessiles, bracteis pilosis persistentibus suffulti; sepala 5, orbicularia, praeter marginem cano-tomentosa; fructus transversim dilatatus, didymus, 2-spermus, interdum abortu 1-spermus subglobosus, tomento fusco-brunneo indutus, breviter pedicellatus, calyce suffultus, pericarpio tenui exsucco, dissepimento membranaceo; semen plano-convexum, nitidum, brunneum.

Folia 50—80 cm longa; foliola superiora longiora 30 cm longa, 5,5 — 8 cm lata; petioluli 5—8 mm longi. Inflorescentia ad 20 cm longa. Sepala 3 mm longa. Fructus transversim 2-centimetralis. Semen 8 mm latum.

In Philippinarum insula Luzon: Elmer n. 18355 (prov. Laguna, Los Baños, Mount Maquiling, insilvis siccis, alt. humili, m. Jul. 1917, fr.; specimen non vidi, nisi foliolum a cl. Merrill m. Febr. 1922 communicatum).

Obs. Descriptio ex Elmer 1. c, qui speciem comparat cum *L. eriolepidi* Radlk. a R. C. Mac Oregor lecta (n. 12492!) a me determinata, cujus fructus (circ. 3 cm latus) duplo majores quam in specie sua dicit Elmer et plerumque globosus. An ab hac vel a valde affini *L. schizolepidi* Radlk. fructu minore (biloculari circ. 2,5 cm largo, 1-loculari globoso vix 2-centimetrali) re vera diversa Elmeri species? Gl. Merrill in literis m. Febr. 1922 receptis meram formam *Lepisanthis schizolepidis* Radlk. (≠ *perviridem**) eam dicit, adjiciens specimen eodem loco lectum: Baker n. 3308! (Luzon, prov. Laguna, Mount Maquiling, m. Apr. 1914, f 1.; fragmentum comm. cl. Merrill). Attamen forsitan ob foliola angustiora discernenda.

In Merrill, Enum. 1. c, merum synonymum habetur *L. schizolepidis* Radlk.

17. *L. tonkinensis* Radlk., Sapindac. nov. ex Indo-China in H. Lecomte, Notul. syst. I. 10. (1910) 303 (in Lecomte, Fl. Ind.-Chine (1912) omissa). — Arbuscula; rami teretes petiolique striati, puberuli, dein glabrati; folia 4—6-juga; foliola superiora (majora) sublineari-lanceolata, cuspidata, basi cuneata petiolulis incrassatis insidentia, inferiora (minora) anguste oblonga, chartacea, laevia, supra splendentia, praeter nervum medianum glabra, subtus nitidula, in nervis prominentibus subhirsuta, utrinque glandulis profunde immersis ornata; inflorescentia brevissima, pauciramosa, subglobosa, rhachi ramisque flavescenti-puberulis cincinnigeris; alabastra globosa; *f lores minores, breviter pedicellati; sepala 5, extus albide tomentosa; petala 5, extus praeter apicem albide villosa, intus squama lata deflexa dorso crista rectangulari denticulata vel bifida instructa aucta; discus regularis, glaber; stamina 8, antherae ellipticae, obtusae, connectivo lato dorso piloso; rudimentum germinis villosiusculum, biloculare, anceps; fructus bilocularis, transversim ellipsoideus, sulco inter loculos exaratus, inde subcoccat, extus adpresse ochraceo-tomentosus, intus pilosus, cellulis secretoriis nullis; semen loculo conforme, hilo basilari affixum; cotyledones lateraliter juxtapositae, radícula basilaris, punctiformis.

Arbuscula 2 —3-metralis, ramis 0,5 cm crassis. Folia petiolo 10—12 cm longo adjecto 35—45 cm longa; foliola superiora 15—23 cm longa, 3—5 cm lata, inferiora 7—10 cm longa, 2—3,5 cm lata, petiolulo 6—8 mm longo. Inflorescentia circ. 2 cm longa. Alabastra diametro 2,5 mm. Fructus 2,5 cm latus, 1,8 cm altus et crassus. — In sectione »*Eulepisanthes*« insignis germine 2-loculari, uti species philippinenses *L. eriolepis* Radlk. et *L. schizolepis* Radlk.

In Tonkin: H. Bon n. 28051 (prov. Hà Núi, Lat son, in nemore Ghĩa Lạt, m. Nov. 1884, flor.), n. 2828! (in ead. prov. Vo Xá, in monte Chũa Hạc, m. Dec. 1884, fol. tantum), n. 2910! (ibid., m. Maj. 1885, fruct.; Mus. bot. Turic).

18. *L. ?palawanica* Radlk. in Elmer, Leaf. Phil. Bot. V. (1913) 1604 et in Phil. Journ. Sc. VIII. (1913) 445; Merrill, Enum. Phil. Pl. II. (1923) 500. — Arbor parva; rami teretes, rugoso-striati, glabrati, lenticelloso-punctati, rubro-subfusci, innovationibus gemmis paniculisque pilis brevibus pachydermicis supra basin lateraliter affixis vel plane dibrachiatas flavide tomentellis; folia abrupte pinnata, 1—2-juga, longius petiolata, petiolo teretiusculo striato flavido; foliola magna, elliptico-lanceolata, obtuse subacuminata, in petiolulos conspicuos basi incrassatos supra sulco lato exaratos subtus convexos attenuata, integerrima, membranaceo-coriacea, nervis lateralibus remotiusculis arcuato-adscendentibus nervoque mediano subtus magis quam supra prominentibus flavidis, reti venarum sat arcto utrinque prominulo notata, subopaca, subflavide viridia, glabra, nee nisi glandulis microscopicis raris stipitatis (quarum stipites tantum visi inter epidermidis cellulas immissi) subtus adpersa, diachymatis vix lacunosi cellulis superioribus inferiores latitudine aequantibus longitudine subduplo superantibus sat crebre crystallae singulae bacilliformia gerentibus, epidermide hie illic quoque crystallae similia utrinque fovente; paniculae axillares vel in ramulis defoliatis terminales, pauciramosae, ramis patentibus dichasia sessilia 3-flora gerentibus, pedicellis nullis relictis, bracteis bracteolisque parvis linguiformibus flavide tomentellis; flores non visi; fructus e germine 2(— 3?)-loculari enascens abortu 1-locularis, inaequaliter globosus, loculo abortivo brevior lateraliter annexo gibbosus, supra loculum abortivum in apiculum lateralem terminatus, disco annulari hirtello suffultus, firme carnosus (siccus induratus), indehiscens, junior (collectionis Merrill n. 9376) dense breviter flavo-tomentosus, decisis (argilla oblitus collectionis Elmer n. 13046) glabriusculus nee nisi pilis paucis pachydermicis supra basin ± saccatam lateraliter affixis adpersus, sarcocarpio collenchymatico crassiore in endocarpium tenuius e cellularum linearium varie cruciatarum stratis compluribus et ipsis collenchymaticis conflatum glabrum transeunte; semen (loculi evoluti) globosum, testa coriacea subfusca endocarpio arctissime adhaerente (immo cum eo circumcirdter connata?) e cellulis parenchymaticis tanninigeris exstructa

fasciculis vasorum percursa; embryo subglobosus, rectiusculus, cotyledones semi-globosae, in directione radiali juxtapositae, exteriori interiorem paullo minorem apice paullulum obtegente, amylo farctae, stomata nulla exhibentes, radícula ad seminis basin perparva, papilliformis; loculi abortivi semen rudimentarium, potius gemmula aucta solitaria, oblonga, lateraliter compressiuscula, tota longitudine angulo contrali affixa, micropyle extrorsum infera.

Rami 3—4 mm crassi, internodiis 1—10 cm longis. Folia petiolo 4—6 cm longo adjecto 20—35 cm longa; foliola cum petiolulis 1 — 1,5 cm longis 15—25 cm longa, 6—16 cm lata. Paniculae 18 cm longae, ramis 5—7 cm longis. Fructus (aqua e mollit us) diametro 2 cm, pericarpio 3—5 mm crasso. Semen diametro 1 cm.

In Philippinarum insula Palawan: A. D. E. Elmer n. 13046! (prov. Palawan, Puerto Princesa, Mount Pulgar, m. Apr. 1911, fr.; comm. Elmer); Merrill n. 9376! (Taytay, m. Maj. 1013, fr. semimat.; comm. ex Hb. Manil.). Praeterea indicatur a Merrill 1. c: Genabre, Paras et Gellidon n. 27925.

Sect. II. *Scorododendron* (Blume) Radlk.

19. **L. pallens** (Blume) Radlk. Sap. Holl.-Ind. (1877) 10, 36 (80, 106) et in Engl. u. Prantl, Nat. Pflanzenfam. III. 5. (1895) 320. — ?*Erioglossum alliaceum* Zipp. Hb. ed. Spanoghe in Prodr. Fl. Timor, (op. posth. a. 1836), in Linnaea XV. (1841) 181 (descriptio nimis incompleta, in qua semina pendula subarillata dicuntur), ic. ined. n. 21 (a Schlechtendal emta, fide annot. p. 161, forsitan adhuc servata); Walp. Rep. I. (1845) 417. — *Scorododendron pallens* Blume, Rumph. III. (1847) 149! c. syn. an tec, excl. syn. »Arbor palorum alba parvifolia Rumph. Hb. Amb. III. (1743) 98 t. 65, excl. f. A« [planta dubia, a Forster perperam, ut et Bl. p. 112 existimat, sub *Pometia pinnata*, quae conferenda, citata; cf. et Merrill, Interpr. Rumph. Hb. Amb. (1917) 337, ubi ducente certe cl. Blume quaeritur **Lepisanthes* sp. ?]«; a Blume includitur 1. c. p. 149 ramulus quoque floriger in Rumphii tab. 65 ad sinistram depictus, quem eod. 1. c. 112 et 167 pro Rumphii »Arbore palorum alba latifolia« et specie generis *Misehocarpi* habet; Walp. Ann. II. (1851-1852) 211; Miq. Fl. Ind. Bat. I. 2. (1859) 561; Pierre, Fl. forest. Gochinch. Fasc. 21 (1895) in textu ad t. 327 (sphalm. *Scorodendron*). — *Sapindus fraxinifolius*, non DC. (qui errore a Baill. citatur), Hb. Mus. Paris.! ed Bl. 1. c. — *Lepisanthes* sp. Baill. Hist. Pl. V. (1874) 401 excl. cit. »DC. Prodr. I. 608 n. 18 (*Sapindus*)«, i. e. *Sap. fraxinifolius* DC.! (resp. *Erioglossum rubiginosum* BL), commutat. c. syn. antec. — *Pancovia* sp. id. ibid. p. 360 quoad cit. *EriogL (alliac.)* Span, in Linnaea XV. 181. — Frutex interdum arborescens, habitu *L. angustifoliae* simillimus, cortice alutaceo verruculoso glabro; rami teretes sulcati petiolique striati albidii, glabrati; folia 5—6-juga; foliola opposita alternave, anguste oblongo-lanceolata, subacuta vel in acumen obtusum angustata, basi obtusata, petiolulis subcylindricis insidentia, submembranacea, utrinque glabra, nitidula, pallescentia, glandulis immersis rarioribus ornata, paginae inferioris epidermide sparsim crystallorum concretiones parvas gerente; thyrsi axillares vel supraaxillares, elongati, supra basin nudam interdum ramo uno alterove divaricato aucti, rhachi striata apice pubescente basi laxius superne densius cincinnos stipitatos elongatos flexuose 7—9-floros minutissime bracteatos et bracteolatos gerente; flores majusculi, pedicellis sulcatis suffulti; sepala, ut et pedicelli, e gilvo canescenti-sericeo-tomentella; petala 5, spathulato-oblonga, dorso inferne cum ungue villosa, intus supra unguem squama brevi lata biloba deflexa subtus villosa margine lacerato-crispata dorso crista subconformi instructa (inde quasi squama duplici) aucta; discus regularis, glaber; stamina 10, superne crispato-villosa, antherae glabrae; rudimentum germinis 2-loculare, pilosum; fructus (ex Blume) ovoideus, 2-locularis, 2-sulcatus, ochraceo-tomentosus (intus — ?); semina elongato-ovoidea (vix dubie errore tantum »arillata« dicta); cotyledones crassae, oblique superpositae; radícula dorsalis, descendens.

Frutex vel arbuscula 12-pedalis, cortice et foliis fricatis odorem ingratum alliaceum

spargens (Blume). Folia petiolo 10—20-centimetrâli adjecto 40—60 cm longa, 20—25 cm latâ; foliola cum petiolulis (subtus in nervum medianum continuatis) 4—8 mm longis 20 cm longa, 5 cm lata, inferiora minora. Thyrsi 12—30 cm longi. Alabastra diametro 4 mm. Petala cum ungue 2,5 mm longo 6 mm longa, 2,5 mm lata. Stamina petala aequantia.

In insula Timor: Zippell (in montosis Timor circa Kupang, semper fere florens, t. Blume 1. c; Hb. Lugd.-Bat. et ex hoc comm. c. Hb. Berol.); Spanoghe (crescit in fruticetis montanis, floret Novembri, Sp. 1. c); Riedl! (Timor, Voyage du capit. Baudin, a. 1802; Hb. Paris, et ex hoc a. 1821 sine nom. comm. c. Hb. Kunth, irunc Berol. et sub nom. »*Sapindus?*« c. Hb. DC).

Sect. III. Anomosanthes (Blume) Radlk.

20. *L. tetraphylla* (Vahl) Radlk. Sap. Holl.-Ind. (1877) 35 (105), in Sitzungsber. bayer. Akad. VIII. (1878) 276, 303 n. 95, IX. (1879) 513 n. 67, 527 n. 298, 529 n. 339, 534 n. 444, 537 n. 516, et in Engl. u. Prantl, Nat. Pflanzenfam. III. 5. (1895) 320 f. 165; Pierre, Fl. forest. Gochinch. Fasc. 21 (1895) in textu ad tab. 325 B (in tab. ipsa sphalm. *L. eaneseens*) c. var. *indical* et (in textu ad tab. 325 et ad tab. 326B) var. *cambodiana* (*L. cambodiana* Pierre in tab. 326B et in distrib.); Duss, PL Guadel. et Martin. (1896—1897) 122 (cultâ); Brandis, Indian Trees (1906) 189. — *Sapindus tetraphyllus* Vahl, Symb. bot. III. (1794) 54, coll. Kdnlgl; Willd. Sp. Pl. II. 1. (1799) 469; Poir. in Lam. Enc. VI. (1804) 666; Pers. Synops. I. (1805) 445; Smith in Rees Cyclop. XXXI. (1815); DC. Prodr. I. (1824) 608; Spreng. Syst. II. (1825) 250; Camb. in M6m. Mus. d'Hist. nat. XVIII. (1829) 26; Don, Gen. Syst. I. (1831) 666; Wallich, Gatal. (1847) n. 80401 - *Molinaea eaneseens* Roxb. Pl. Goromand. I. (1795) 43 t. 60! (fructu perperam 3-valvi dicto); Willd. 1. c. p. 329; Roxb. Hort. Beng. (1814) 29; Moon, Gatal. Geyl. Pl. (1824) 32; Roxb. Fl. Ind. II. (1832) 243. — *Cupania eaneseens* Pers. Synops. I. (1805) 413; Poir. in Lam. Enc. Suppl. II. (1811) 418; DG. Prodr. I. (1824) 613; Spreng. Syst. II. (1825) 221; Gamb. in M6m. Mus. d'Hist. nat. XVIII. (1829) 28; Don, Gen. Syst. I. (1831) 668; Wight, Gat. (autogr., 1833) 24 n. 3691; Wight et Arn. Prodr. Fl. Penins. Ind. or. I. (1834) 113 c. syn. *Sapindus tetraphyllus* Vahl; Spach, Hist. V6g6t., Phanfr. III. (1834) 59; Graham, Gat. Bombay Pl. (1839) 29; Walp. Rep. I. (1842) 418; Voigt, Hort. suburb. Galtutt. (1845) 94; Dalz. et Gibs. Bomb. Fl. (1861) 35; Gat. Kew. Hb. Griff, etc. (1865) 9 n. 985/11; Teysm. et Binn. Gat. Hort. Bogor. (1866) 214!; — non Arnott in Ann. Sc. nat. 2. s8r. II. (1834) 236 quoad *Eriogloss. cauliflor.* G. et Perr., cfr. *Pancovia bijuga*; non Hb. Wight ed. Wall, in Cat. (1847) n. 8067 A, quae *Euphoria longana* Lam. — *Hemigyrosa eaneseens* Blume, Rumph. III. (1847) 166 in obs.; Thwaites, Enum. Pl. Zeylan. (1858) 56 et Add. (1864) 408, coll. n. 35081; Gat. Kew. Hb. Wight (1869—70) 7 n. 5301; Beddome, Fl. silv. (1869—1873) 1.151 (ex Hiern); Hiera in Hook. f. Fl. Brit. Ind. I. (1875) 671 excl. syn. *H. trichocarpa* Thwait.; Kurz in Journ. As. Soc. Beng. XLIV. 2. (1875) 184, excl. obs. de affinit. c. *Sapindo trifoliata* L., in Rep. Pegu Forests (1875) App. A p. 38, App. B p. 40 et in Forest Fl. Brit. Burma I. (1877) 290; Trimen, Gatal. in Journ. Geyl. Branch R. As. Soc. IX. (1885) 20 et Hand-Book Fl. Ceylon I (1893) 301 excl. var. *fi. trichocarpa*, cfr. *Lepis. trichoc.* Talbot, Trees Bombay (1894) 58 (ex Gooke); G. M. Woodrow, Fl. West. Ind. in Rep. Bot. Surv. Ind. (1898) 16; Gooke, Fl. Pres. Bombay (1902) 264; Lecomte, Fl. Ind.-Ghin. I. (1912) 1016 c. var. *cambodiana* Pierre; — non F.-Villar in Blanco, Fl. Filip. Ed. 3, IV. (1880) Mercado Libro de Medicinas p.*29 et Noviss. App. p. 51 (cfr. *Guioa Perrottetii*). — *Sapindus bijugus* Well Cat. (1847) n. 8045! (cf. Radlk. in Sitzungsber. bayer. Akad. VIII. [1878] 299 n.16). - *Cupania* sp. Wall. ibid. n. 9034!; Hook.f. et Thorns. Hb. Ind or. n. 6!; Cat. Kew. Hb. Griff, etc. (1865) 9 n. 986/1! - *Moulinsia* sp. Thwaites Hb. n. 3508! — *Anomosanthes tetraphylla* Pierre, Fl. forest. Gochinch. Fasc. 21 (1895) in textu ad t. 327. — Vulgo: Gory vie s. Korivee telijigasice t. Roxb. Il. cc; Kurpa in lingua Maratha t. Dalz. et Gibs. 1. c. (1861); Karpâ t. Woo-

drow I.e. 1898; Lohkandi t. Cooke; Vadoo zoonah, tamulice fid. sched. Hb. Wight propr. p. 389 adjectae in Hb. DC; Kadduma marum fid. sched. specim. a Klein? ad Tranquebar lecti; Chhocu bon bon in lingua Mol t. Pierre in scheda, et Soc sol in lingua Kmer t. eod. I.e. (1895, var. *cambodiana*). — Frutex scandens (Pierre) vel arbor sat magna denique tortuosa, trunco crasso, cortice griseo; rami teretes, cinerei petiolique striati puberuli, dein glabrati; folia 2-, rarius 3-juga, brevius petiolata, foliola oblonga vel subobovata, obtusa vel emarginata, rarius subacuta, nervis lateralibus subtus, vix supra, prominentibus, subcoriacea, laevia, nitidula, canescenti-livida, mesophyllo toto staurenychymatico, epidermidis utriusque membranis superficialibus totis punctatis, utrinque glandulis profunde immersis (a Pierre, ut videtur, in var. sua *cambodiana* pro lacunis oleigeris habitis) ornata; thyrsi ad foliorum axillas vel cicatrices, interdum e trunco erumpentes, singuli vel fasciculati, rarius in paniculam brevem congesti, cincinnos sessiles, raro substipitados gerentes, sordide puberuli; alabastra subglobosa; flores majusculi; sepala 5, extus canescenti-tomentoso-sericea; petala 4 (raro 5), spatulata, extus puberula, ad laminae basin villosa, intus glabra,

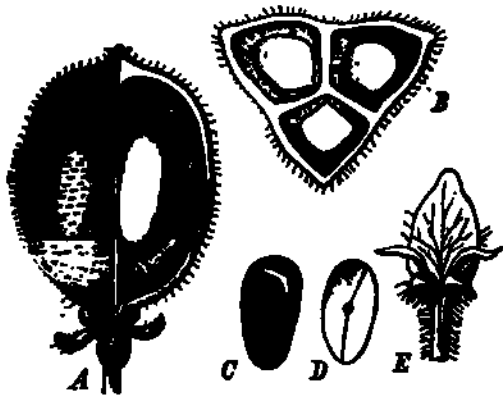


Fig. 15. *Lepisanthes tetraphylla* (Vahl) Radlk. A Fructus, uno loculo aperto. B Fr. transverse sectus. C, D Semen. E Petalum. — Sec. Radlkofer in Engl. u. Prantl, Nat. Pflanzenfam. III. 5. 320, Fig. 165.

Arbor 6—15 m alta. Rami 0,5—1 cm crassi. Folia petiolo 6—8 cm longo adjecto 15—30 cm longa; foliola (superiora paullo majora) plerumque 10—15 cm longa, 4—6 cm lata, rarius latiora (var. *cambodiana* Pierre). Inflorescentia 4—12 cm longa. Alabastra diametro 3 mm. Fructus 2,5 cm altus, 1,8 cm latus. — Fig. 15.

Var. **cambodiana** Pierre: Foliolis latioribus, nullius momenti videtur.

In Indiae orientalis peninsula occidentali a montibus Circars (Hoxb. 1. c.) et a Concan meridiem versus, praesertim in parte orientali provinciae Madras (Hiern 1. c.), in Zeylanîa, Tenasserim et in Gochinchina: In Indiae peninsula: Roxburgh! 1. c. (Circars-, Hb. Deless.); Hooker f. et Thomson Hb. Ind. or., *Cupania* n. 61 (leg. Stocks, Concan, fl. et fr.; Hb. varia); Kanitkar (Concan, Matheran, t. Cooke 1. c.); H. M. Birdwood (ibid., t. eod.); Woodrow (Concan, Parel, t. eod.); id. 1. c. 1898 (Matheran, Diggi Ghaat); A. Meebold n.47101 (Matheran, alt. 4000 ped., m. Apr. 1906, fl.; Hb. Berol.), n. 4711! (Lonaula, alt. 2000 ped., m. Apr. 1906, fl.; Hb. Berol.); Graham 1. c. 1839 (Kandalla, in the ravines); Gibson (Koorur Ghaat, t. Grah. I.e.; Deccan, Bimashankar, t. Cooke 1. c.); Woodrow (Deccan, Palasdari, t. Cooke 1. c.); Dalzell et Gibson (in Mahratta australi, Ramghat, t. Cooke I.e.); Hooker f. et Thomson, Hb. Ind. or. sine n.I (Mysore; Hb. Vindob.); Wight, Distrib. Kew. n. 537! part, (ex confus. c. *Sapindo trifoliata* ad Cannanore lecto, in Hb. Berol. etc.; cfr. *Sap. trifolia*); Koenig! (Madras?; **Sap. tetraphyUus* Vahl«; Hb. Vahl, nunc Havn.); Patr. Russell! (Madras?; Hb. Vindob. ex Hb. Banks); Wall ich, Cat. n.8040BI

squamis binis apice deflexis cristatis villosiusculis aucta; discus semilunaris glaber; stamina 8, filamenta villosa, antherae ellipticae, apiculatae, connectivo lato, glabrae; germen ovatum, trigonum, triloculare, villosum, stigma obtusum trinodosum; fructus breviter ovatus, trilocularis, trigonus, trisulcatus, apice interdum subimpressus, extus adpresse canescenti - ochraceo - tomentosus, intus pilis longis adpressis vestitus, pericarpium cellulis secretoriis substantia nunc saponino affini nunc resinosa foetis instructum. endocarpium denique a sarcocarpio solutum et semini adhaerens; semen glabrum, testa coriacea, hilo infra medium laterali lineari; embryo carnosus, cotyledones oblique superpositae vel fere juxtapositae, radícula grossiuscule punctiformis, dorsalis.

(Hb. Madras); id. n. 8045! (Sallian a. 1827; *Sap. bijugus*); id. n. 8040A! (Hb. Wight e Napohy; *Sap. tetraphyllus* Vahl); Wight, Hb. propr. n. 389! (Madras?; leg. Shuter a. 1832; fl. et fr.; Hb. Kew. etc.); Wight, Distrib. Kew. n. 530! (Courtallum, m. Apr. 1835, fl. et fr.; Nagpu-hills, m. Apr. 1837, fr.; Hb. Kew. etc.); Ritchie n. 981 (Phoonda Ghaat, m. Jan. 1853, fl.; Hb. Boiss.; Moollis, m. Febr. 1853 fl., m. Apr. fr.; Hb. Kew.); Commerson! (Coromandelia, a. 1768; cf. infra Hb. Juss. n. 11385); Soc. unit. Fratr. (resp. Klein) n. 361! (Tranquebar, circ. 1775; Hb. Deless.); Heyne! (Hb. Rottler in Hb. Kew.); Wallich, Cat. n. 8040C! (Hb. Heyne); - in Zeylanica: Walker! (Hb. Kew.); Thwaites n. 3508! (Lower Badulla Road from Kandy, at no great elevation, circ. 1857, flor.; Hb. varia); Trimen (low country, in the dry region I. c); — in Tenasserim: Griffith, Distrib. Kew. n. 985/1!; Heifer, Distrib. Kew. n. 986/1! (Tenasserim and Andamans, m. Febr. 1839, fl.; Hb. Kew., Berol., Vindob., etc.); Kurz 1. c. 1877; Wallich, Cat. n. 8040E! (Tavoy; Hb. Soc. Linn.); id. n. 9034! (leg. W. Gomez, Tavoy, m. Dec. 1827; Hb. Soc. Linn., Kew., Paris.); — in Cochinchina, in majore parte Cambodiae et ad ostia fluminis Mekong (Pierre 1. c): Pierre n. 508! (ad montem Proc in prov. Cambodiana Samrofig long, m. Mart. 1870, fl. et fr.; »var. *cambodiana** Pierre), n. 4131! (ad Songlu in prov. Bien hoa Austro-Cochinchinae, a. 1877 fl. et fr. juv.; »var. *indica** Pierre), n. 4132! (ibid., m. Febr. 1877, steril.). — Ins. Comorenses indicantur, an recte?, a Tijsm. et Binn. 1. c, 1866. — Accedit: Hb. Jussieu n. 113851 part. (part. *Sap. trifoliat.* a Commerson a. 1768 in Coromandelia lect.; cf. ibid.), n. 113981 — In Siam indicatur ex W.G. Craib, Fl. Siam. enum. I. (1926) 327.

Culta in Horto Calcuttensi: Wallich, Cat. n. 8040D! et specimina a Wallich communicata c. Hb. Puerari, nunc DC, c. Hb. Schumacher et Hb. Hornemann, nunc Havn., c. Hb. Webb, etc.; Kamphövener n. 1577! (Galathea-Exped. 1845—1847, comm. ex Hb. Wallich, Hb. Havn.); — in Hort. Bogor.: Beccari sine n.! (m. Jul. 1876, alab., et specim. sterile, Hb. Florent.); — in Hort. bot. Saint-Pierre insulae Martinicensis: Duss n. 1837! (ex insula Antigua introducta; quotannis floret, sed fructus non profert; a. 1891, flor.; Hb. Berol.).

21. *L. trichocarpa* (Thwaites) Radlk. in Fedde, Repert. XVIII. (1922) 335. - *Hemigyrosa trichocarpa* Thwaites, Enum. Pl. Zeylan. (1858) 56, coll. n. 607! c. var./}. »foliis minoribus angustioribus«, sub eodem n. 6071; Beddome, Fl. silv. (1869—1873) Anal. Gen. LXXI (ex Hiern); Walp. Ann. VII. 4. (1869) 621. - *Moulinsia* spec. Thwaites Hb. n. 607. — *Hemigyrosa canescens* Hiern in Hook. f. Fl. Brit. Ind. I. (1875) 671 part.; Trimen, Catal. in Journ. Ceyl. Branch R. As. Soc. IX. (1885) 20 et Hand-Book Fl. Ceylon I. (1893) 301, *var. fi. trichocarpa*. — *? *Hemigyrosa deficiens** Trimen ibid., p. 302, i. e. *H. trichocarpa* var. j8. Thw. — Frutex vel arbor; rami teretes, cinerei petiolique striati puberuli, dein glabrati; folia 3-4-juga, longius petiolata; foliola oblongo-lanceolata, plerumque acuta, membranacea vel subcoriacea, laevia, nitidula, flavescendo-livida, glabra, ceterum ut in *L. tetraphylla*; thyrsi elongati, ex ochraceo sufferrugineo-hirsutuli in paniculas plerumque terminales congesti, sat dense cincinnos 5—6-flores subsessiles gerentes; alabastra subglobosa; flores inter majores; sepala 5, extus sufferrugineo-tomentoso-sericea; petala 4, late spathulata, extus subglabra, ima tantum basi villosa, intus squamis binis apice deflexis cristatis villosiusculis aucta; discus semilunaris, glaber; stamina 8, filamenta villosa, antherae late ellipticae, oonnectivo lato, glabrae; germen ova turn, trigonum, triloculare, villosum; fructus ovatus, trigonus, trisulcatus, trilocularis, apiculatus, processibus parvis verrucoso-appendiculatus, cellulis secretoriis nullis, pilis ochraceis tomentoso-hirsutus, intus sordide setoso-hirsutus; semen glabrum, cotyledones oblique superpositae, radícula dorsalis, punctiformis.

Rami 0,5 — 1 cm crassi. Folia petiolo 8—12 cm longo adjecto 23—36 cm longa; foliola superiora 12—20 cm longa, 4—6 cm lata, inferiora 9—12 cm longa, 3—4 cm lata. Inflorescentia 10—30 cm longa. Alabastra diametro 3,5 mm. Fructus 2 cm altus, 1,4 cm latus.

In Zeylania: Macrae! (Hantam; Hb. Webb, ex Hb. Gardner?); Walker n. 271 88! (circ. 1833; Hb. Deless. ex Hb. Graham); Thvvaite n. 607! (Central Province up to an elevation of 3000 feet, l. c; var.)S. hot drier parts of the Island; fl. etfr.; Hb. Berol., Deless., Webb. etc.).

Obs. Affinis *Lepisanthi tetraphyllae* (Vahl) Radlk.

22. **L. membranifolia** Radlk. Sap. Papuas. in Engler's Bot. Jahrb. LVI. (1920) 252 annot. et 269. — *Erioglossum membranifolium* Radlk. Sap. Holl.-Ind. (1877) 17, 55 (87, 125) et in Engl. u. Prantl, Nat. Pflanzenfam. III. 5. (1895) 317. - Frutex?; rami petiolique pilis sordide flavis subhirsuti; folia 3—4-juga; foliola ex obovato oblonga ellipticave, obtusa vel late acuminata, larga, basi subaequali petiolulis brevibus parum incrassatis insidentia, membranacea, nervis lateralibus procurvis subtus prominentibus, utrinque viridia, nitidula, supra subglabra nee nisi pilis microscopicis subulatis adpersa inque nervis pilis subflavidis siibhirsuta, subtus pilis patulis sparsis molliuscule pubescentia, utrinque glandulis capitatis ad medium usque (praesertim supra) immersis ornata; thyrsi breves in ramulis lateralibus terminales, dense cincinnigeri, cincinnis substipitatis; • alabastra subglobosa, breviter pedicellata; (alabastris) sepala 5, extus canescenti-sericea; petala 4, spathulata, extus supra unguem pilosula, intus glabra, squama brevi deflexa cristata glabra aucta; discus semilunaris, glaber; stamina 8, filamenta apice attenuata, subglabra, antherae ellipticae; germen triloculare, glabrum, stylo brevi; fructus ignotus.

Rami diametro 5 mm. Folia petiolo 12 cm longo adjecto circ. 50 cm longa; foliola (superiora) circ. 25 cm longa, 10—12 cm lata, inferiora minora. Thyrsi 4—5 cm longi; bractee bracteolaeque parvae subulatae. Pedicelli 2—3 mm longi, supra medium articulati, puberuli. Alabastra diametro circ. 3 mm.

In Nova-Guinea: Beccari it. sec. n. 29! 29"! (Ramoi, a. 1872; Andai 1872; flor.; Hb. Florent.).

Obs. Characters anatomici exactius examinati stirpem (alabastris tantum praeditam) inter generis *Lepisanthes* species ascendam esse docuerunt.

23. **L. granulata** Radlk. in Records Bot. Surv. Ind. III. 3. (1907) 344 (reimpr. in Fedde, Repert. VIII. [1910] 187). — Arbor?; rami teretes, cortice cano lenticelloso-punctato, juveniles thyrsique dense sordide puberuli; folia 4-juga, petiolo leviter striato; foliola opposita, oblonga, superiora elongata, omnia utrinque subacuta, conspicue petiolulata, membranaceo-chartacea, nervis lateralibus (utrinque 8—10) oblique procurvis, laxe reticulato-venosa, glabra, glandulis profunde immersis ornata; thyrsi dense cymulas paucifloras brevissime stipitatas gerentes; flores — ?; discus (sub fructu relictus) semilunaris, glaber; fructus mediocris, subglobosus, obscure 3-sulcatus, 3-locularis, extus sordide tomentellus, intus parce pilosus, siccus cellularum sclerenchymaticarum congregationibus crassioribus prominulis leviter granulatus, cellulis secretoriis nullis.

Rami circ. 8 mm crassi. Folia petiolo 8 cm longo adjecto circ. 40 cm longa; foliola cum petiolulis circ. 8 mm longis 10—20 cm longa, 3,5—5 cm lata. Fructus diametro 1,8—2 cm.

In Burma superiore: J. G. Prazer! (a. 1894, fr.; ex Hb. Galtcutt. comm. c. Hb. DC); id. (sub n. 24 et nom. erron. *tL. montana* Bl.« comm. ex Hb. Manil.).

24. **L. Kunstleri** King, Mater, etc. (1896) 427. — Arbor sat alta, ramis robustis; folia 6-juga; foliola subopposita, oblonga vel elliptico-oblonga, breviter cuspidata, basi rotundata, submembranacea, nervis lateralibus (utrinque 9—13) e basi patula arcuato-ascendentibus, utrinque reticulato-venosa, glabra, pallide subfusca, glandulis (parum) immersis ornata; paniculae quodammodo supraaxillares, erectae, pauciramosae, breviter pedunculatae, cincinnos breviter stipitatos 3—5-floros gerentes, minutim tomentosae; alabastra globosa; flores majores, insignius pedicellati; sepala tomentella; petala 4 (5 t. King), extus infra medium villosa, intus supra unguem squama deflexa **lata subtus sericea dorso crista subconformi biloba instructa aucta (alabastris tantum***

visa); discus semilunaris, glaber; stamina 8 antheraeque dorso lanoso-villosa; germinis rudimentum puberulum; fructus magnus, subglobosus, 3-sulcatus, 3-ocularis, loculorum dorso obtusissimo, sufferrugineo-tomentosus, intus subsetoso-hirsutus, pericarpio cellulis resinigeris instructo; semen ellipsoideum, vix compressum, testa tenui fusca endocarpium pilis impressione adhaerentibus adspersa; cotyledones superpositae, amyli granulis parvis foetae, inferior paullo minor; radice punctiformis, dorsalis, hilo elongato opposita.

Arbor 30—60-pedalis. Folia 0,7—1 m longa, rachis glabra; foliola 15—30 cm longa, 6—9 cm lata; petioluli 7—9 mm longi, crassi. Paniculae 20—30 cm longae. Alabastrum diametro 4 mm; pedicelli 4 mm longi. Fructus diametro 3 cm; semen 2,2 cm longum, 1 cm crassum.

In Peninsula Malaica ad Perak: King's Collector n. 4634! (flor.), n. 7359! (fruct.; fragmenta tantum visa ex Hb. Calcutt. comm.); »Gunong Bubu at 500—800 ft. alt. (Kunstler ex Ridley, Fl. Malay Penins. I. (1922) 493.

25. *L. basicardia* Radlk. in Records Bot. Surv. Ind. III. 3. (1907) 345 (reimpr. in Fedde, Repert. VIII. [1910] 188). - Arbor?; ramus* petiolique sordide puberuli; folia circ. 6-juga, petiolo striato, rachis supra profunde 2-sulcata; foliola subopposita, elongate oblonga, acuta vel subacuminata, basin versus angustata, basi ipsa oblique cordata, petiolulis brevissimis suffulta, chartacea, nervis lateralibus (utrinque circ. 15) obliquis ante marginem ascendentibus, utrinque reticulato-venosa, subtus ad nervos puberula, opaca, glandulis profunde immersis ornata, diachymate crystallis singulis crebris persito; paniculae pauciramose, breviter pedunculatae, dense cymulas paucifloras brevissime stipitatas gerentes, tomentellae; alabastra subglobosa; flores mediocres, pedicellati; sepala puberula; petala 4, ex obovato unguiculata, intus squama singula deflexa obovato-cristata aucta, ungue villosa; discus semilunaris, margine puberulus, supra glabriusculus; stamina 8, filamentis villosis; germinis rudimentum 3-loculare, pilosum; fructus — (non visus).

Rami circ. 1 cm crassi. Folia petiolo circ. 15 cm longo adjecto circ. 60 cm longa; foliola 20—25 cm longa, 5 cm lata. Paniculae circ. 12 cm longae. Alabastra diametro 2—2,5 mm; pedicelli 2—3 mm longi.

In Burma superioribus: Shaik Mokiml (Kachin Hills, a. 1897, fl.; ex Hb. Calcutt. comm. c. Hb. DC).

26. *L. burmanica* Kurz in Journ. As. Soc. Beng. XLIV. 2. (1875) 183, in Rep. Pegu Forests (1875) in Erratis et in Forest Fl. Brit. Burma I. (1877) 291; Radlk. Sap. Holl.-Ind. (1877) 35 (105); Pottinger et Prain, Bot. Kachin Hills in Records Bot. Surv. Ind. I. Nr. 11 (1898) 236; Brandis, Indian Trees (1906) 189. — *L. montana*, non Blume, Kurz in Rep. Pegu Forests (1875) App. A p. 38, App. B p. 40; Hiern in Hook. f. Fl. Brit. Ind. I. (1875) 679. — Arbor mediocris trunco palmarum more simplici plerumque eramoso, cortice griseo-fusco minutim longitudinaliter fissis; rami teretes, lenticellis oblongis bilabiatis instructi petiolique striati puberuli, mox glabrati; folia 3—5-juga, foliola oblongo-lanceolata, acuminata, basi obtusa, brevissime petiolulata, chartacea, supra sublaevia, subtus in nervis prominentibus puberula, utrinque opaca, glandulis profunde immersis ornata; thyrsi in paniculas magnas robustas terminates •el rarius supra foliorum axillas laterales congesti, fusco-puberuli, laxe cincinnos vel dichasia stipitata gerentes; flores majusculi, pedicellis longiusculis filiformibus medio articulatis; sepala 5, sordide puberula; petala 4, spathulata, extus ad basin villosa, intus squama singula deflexa cristata albide villosa aucta; discus semilunaris, hirtus; stamina 8, filamenta puberula, antherae late ellipticae, connectivo lato, glabrae; germinis rudimentum triloculare, villosiusculum; fructus sat magnus, subglobosus, trilocularis, obtuse trigonus, apiculatus, carnosus, cellulis resinigeris instructus, extus fusco-tomentosus, intus glaber; semen glabrum, cotyledones oblique superpositae, radice dorsalis.

Arbor 20-25 pedes alta. Rami 1—1,5 cm crassi. Folia petiolo 18 cm longo

adjecto 60—90 cm longa; foliola 16—25 cm longa, 6—10 cm lata; panicula 25 — 35 cm longa, rhachi 5 mm crassa. Alabastra diametro circ. 3 mm. Fructus diametro 2,5 cm.

In Burma: Brandis n. 737! (Pegu, hills between Sitang and Beeling, m. Febr. 1862, fl. et fr. juv.); Kurz n. 2030! (Pegu Yomah, m. Apr. 1871, fruct.); Brandis sine n.! (Salween, altit. 300 ped., a. 1880, fr. semimat.; Hb. Berol.); Native collector Shaik Mo kirn (Myitkyina, Kaahin Hills t. Pott, et Prain 1. c. 1898).

27. *L. andamanica* King, Mater, etc. (1896) 428; Brandis, Indian Trees (1906) 189. — Arbor? glabra; rami teretes, lenticelloso-verruculosi, nitiduli, pallidi; folia scssilia, 2-juga, foliola breviter petiolulata, oblongo-lanceolata, subacuta vel obtusa, basi subcuneata, inferiora parva, elliptica, stipulas mentientia, subcoriacea, nervis remotis patulis utrinque prominulis, laevia, livida, supra nitidula, subtus opaca, hypodermate crystallorum concretionibus persito instructa, epidermide paginae inferioris sparsim (hic illic in cellulis geminatis) crystallorum concretiones parvas gerente, glandulis immersis vix ullis; thyrsi in paniculas graciles axillares congesti, laxe cymulas (cincinnos, dichasia vel polychasia) stipitatas gerentes, cano-puberuli; alabastra globosa; flores minores, pedicellati; sepala*5, cano-sericeo-tomentosa; petala 4(5), extus ima basi cum ungue sericeo-villosa, intus glabra, squama brevi deflexa ecristata aucta; discus semilunaris, glaber; stamina 8, filamenta villosa, antherae ellipticae, connectivo lato basi pilosello; germinis rudimentum subglobosum, glabriusculum; fructus trigonoglobosus, trisulcatus, trilocularis, brevissime apiculatus, in stipitem perbreve contractus, pericarpio crustaceo extus pulverulento-tomentello, intus setoso-hirsuto; semen glabrum, cotyledones oblique superpositae, radícula punctiformis, dorsalis.

Rami 0,5 — 1 cm crassi. Folia 18—25 cm longa; foliola superiora 15—20 cm longa, 5 —7 cm lata, inferiora 2—7 cm longa, 1—4 cm lata. Panicula 10—30 cm longa. Pedicelli 2—3 mm longi. Alabastra diametro circ. 2 mm. Fructus diametro 1,8—2 cm.

In insulis Andamanicis: King's Collector! (South Andaman, Hobdaypur-hill jungle, m. Mart. 1893, fl.; Port Mouat-hill jungle, m. Apr. 1893, fr.; Goplakabang-hill jungle, m. Sept. 1895, fl.; ex Hb. Galtcutt. comm. c. Hb. DC. et Hb. Monac).

28. *L. deficiens* (Wight) Radlk. Sap. Holl.-Ind. (1877) 35 (105) et in Sitzungsber. bayer. Akad. VIII. (1878) 276, 299 n. 27; Brandis, Indian Trees (1906) 189. - *Sap Indus deficiens* Wight, Cat. (autogr., 1833) 24 n. 390; Wight et Arn. Prodr. Fl. Penins. Ind. or. I. (1834) 111 excl. obs. »anne *Cupania* sp.?«; Wight, Illustr. I. (1840) 141. — *Anomosanthes deficiens* Blume, Rumphia III. (1847) 151 in obs.; Cat. Kew. Hb. Wight (1869-1870) 7 n. 535; Beddome, Fl. silv. (1869-1873) Anal. Gen. LXXII. (ex Hiern); Pierre, Fl. forest. Cochinch. Fasc. 21 (1895) in textu ad t. 327. — *Hemigyrosa deficiens* Beddome 1. c. t. 231 (ex Hiern); Hiern in Hook. f. Fl. Brit. Ind. I. (1875) 671; — non Trimen, Hand-Book Fl. Ceylon I. (1893) 302, i. e. *Hemigyrosa trichocarpa* Thw. var./J. Thw. dubitanter hue relata. — Arbor parva vel mediocris; rami teretes, rubicundi petiolique striati, glabrati, innovationibus lanoso-tomentosis; folia 4—7-juga; foliola lineari-lanceolata, sensim acutata, petiolulis incrassatis insidentia, chartacea, nervis remotis oblique erectis utrinque prominulis, laevia, glabra, supra nitidula, subtus opaca, epidermide paginae inferioris sparsim (hic illic in cellulis geminatis) crystallorum concretiones parvas gerente, glandulis immersis raris (supra vix ullis); thyrsi singuli vel bini axillares, elongati, flavescenti-tomentosi, sat dense cincinnos vel dichasia stipitata gerentes; alabastra subglobosa; flores inter majores, pedicellati; sepala 5, flavescenti-lanoso-tomentosa; petala 4, adjecto interdum quinto rudimentario, (alabastri) suborbicularia, glabra nee nisi ima basi extus pilosula, squama brevi deflexa glabra aucta; discus irregularis, inaequalis, glabriusculus; stamina 8—10, filamenta superne villōsa, antherae ellipticae, connectivo lato basi piloso; rudimentum germinis ovoideum, triloculare, dense setoso-pilosum, stylus erectus, apice in stigma discoideum sulcato-trilobum incrassatus; fructus ignotus.

Rami 8 mm crassi. Folia petiolo circ. 10 cm longo adjecto 30—45 cm et ultra,

immo 60 cm (t. Hiern) longa; foliola 12 — 22 cm longa, 3—4 cm lata. Thyrsi 8—20 cm ct ultra, immo 60 cm longi. Pedicelli 1—2 mm longi. Alabastra diametro 5—6 mm.

In Indiae orientalis peninsula occidentali, ad Courtallum, Cochin, Travancor, Tinnevely Ghats et Anamallay-Hills (cf. Hiern 1. c): Wight Herb., Distrib. Kewens. n. 5351 (Courtallum, m. Sept. 1835, flor.; Shenapherry Hills, m. Aug. 1836, flor.; Hb. Kew., Paris., Berol.); Johnson! (Cochin; Hb. Kew.); Beddome n. 198! (Hb. Kew.). — Fide Wight 111. p. 141 in Zeylania quoque obvia est, sed ex Hiern 1. c. nulla exstant specimina zeylanica; dubie restat, an hue recensenda sint specimina nimis manca a Mrs. Walker in Zeylania lecta, in Hb. Webb servata (ex Hb. Gardner, ut videtur, provenientia), recedentia foliolis latioribus et inflorescentiis perbrevibus e ramo vetusto erumpentibus fasciculatis, alabastris fere omnibus delapsis.

29. *L. longifolia* (Hiern) Radlk. Sap. Holl.-Ind. (1877) 35 (105) et in Sitzungsber. bayer. Akad. VIII. (1878) 276; King, Mater, etc. (1896) 429. - *Hemigyrosa longifolia* Hiern in Hook. f. Fl. Brit. Ind. I. (1875) 671! - *Anomosanthes longifolia* Pierre, Fl. forest. Cochinch. Fasc. 21 (1895) in textu ad tab. 327. — Frutex vel arbuscula glabrata, innovationibus thyrsisque sufferrugineo-tomentellis; folia longe petiolata, 3—4-juga; foliola opposita vel (inferiora) subalterna, anguste oblonga, breviter acuminata vel acuta, basi angustata, chartacea, utrinque glabra, livescentia, supra laeviuscula, glandulis profundius immersis interdum geminatis ornata; thyrsi solitarii vel fasciculati, interdum ramificati, axillares vel supraaxillares, breviusculi; alabastra subglobosa; flores magni, longius pedicellati; sepala dense rufescenti-tomentosa; petala 5, oblonga, in unguem attenuata, extus praeter marginem rufo-tomentosa, intus supra unguem squama deflexa integra vel bifida subtus puberula ecristata aucta; discus subregularis, attamen uno latere angustior vel (sub fructu) interruptus, glaber; stamina 8 antheraeque dorso rufule hirsuta; germen ovoidcum 3-sulcatum, 3-loculare, rufo-tomentosum, stylo curvato puberulo terminatum; fructus suborbicularis, 3-gonus, sulcis latis levibus exaratus, pericarpio processibus conicis vel breviter filiformibus («setis» Hiern) flexuosis basi partim connatis sufferrugineo-hirsutis muricato, intus setoso, cellulis saponinigeris instructo; semen ellipticum, hilo prope basin lineari; cotyledones oblique superpositae.

Frutex 8—20-pedalis. Folia petiolo striato glabrato circ. 24 cm longo adjecto circ. 75 cm longa; foliola superiora (majora) circ. 35 cm longa, 8 cm lata; petioluli puberuli, 1 cm longi. Thyrsi 5—8 cm longi. Alabastra diametro 6—8 mm; pedicelli 8, fructigeri 15 mm longi. Petala cum ungue 3—4 millimetrali 8—10 mm longa; germen 5 mm longum, 4 mm latum, stylo paullo brevior. Fructus 2,5 cm longus et latus.

In Malacca: Griffith Hb. n. 994! (Hb. Kew.); Maingay n. 4461 (m. Maj. 1867, flor. et fr. immat.; Hb. Kew.); King's Collector n. 5539! (Perak, m. Febr. 1884, fol.), n. 8465, 10220. - Cf. etiam Ridley, Fl. Malay Penins. I. (1922) 494: »Dense jungle low ground, not common, Johor, Kwala Sembrong (K el sail); base of Gunong Patai. Malacca (Griffith and Maingay). Perak, Larut (Kunstler). Penang. Balik Pulau (Curtis).«

30. *L. lamponga* Radlk. in Records Bot. Surv. Ind. III. 3. (1907) 345 (reimpr. in Fedde, Repert. VIII. [1910] 188). — Arbor mediocris, glabra; folia petiolata, 4—5?-juga; foliola maxima, subopposita, superiora ex obovato curvata, intermedia late oblonga, infima obovata, breviter acuminata vel infima obtusa, chartacea, nervis lateralibus ante marginem evanescentibus, utrinque glabra, supra laeviuscula livescentia, subtus laxe reticulato-venosa pallide subfusca, glandulis sat immersis utrinque ornata, cellulis secretoriis per diachyma sparsis instructa, epidermide paginae inferioris sparsim (in cellulis minoribus saepius geminatis) crystallorum concreciones parvas gerente; thyrsi cincinnigeri albide puberuli (fragmentum tantum visum); alabastra subglobosa; flores mediocres, sat pedicellati; sepala dense tomento brevi sordide albido induta; petala 4 (alabastrum tantum visa), extus inferne sericea, intus squama deflexa brevi ecristata subtus villosa vel subglabra (petalorum lateralium obliqua) aucta; discus

semilunaris, glaber, nee nisi margine inter petalorum insertiones sericeus; stamina 8, lanosa, antherae subglabrae; germinis rudimentum 3-gonum, dense hirsuto-tomentosum; fructus (t. Forbes) pallide viridis, tomentosus.

Arbor 30-pedalis. Folia, ut videtur, ultra 1 m longa; foliola superiora (majora) cum petiolulis 1,5 cm longis crassis glabris rubescentibus 45 cm longa, 15 cm lata. Alabastra diametro 4 mm; pedicelli 4 mm longi.

In Sumatrae prov. Lampong: H.O. Forbes n. 1708! (Penangoengan in silva magna, m. Sept. 1880, flor.; comm. ex Hb. Calcutt.; Hb. Berol.).

31. **L. Seortehinii** King, Mater, etc. (1896) 429. - Arbor?; folia petiolata, plerumque 4-juga; foliola larga, subopposita, elliptico-oblonga, breviter acuminata, basi sensim cuneata, longiuscule petiolulata, subchartacea, nervis lateralibus ante marginem arcuato-anastomosantibus, subtus ad nervos parce puberula, ceterum glabra, supra sat laevia, subtus laxe reticulato-venosa, utrinque livescentia, glandulis profunde immersis ornata; thyrsi axillares, breves, ut et bracteae apice in comam congestae pedicellique velutini; alabastra compressiuscula; flores majusculi; sepala dense flavescenti-tomentella; petala 5, squama deflexa aucta; discus (sub fructu relictus) interruptus, glaber; stamina 8, pilosa; fructus suborbicularis, 3-sulcato-lobatus, lobis compressiusculis, dense sufferrugineo-tomentellus, intus laxe setosus, pericarpio cellulis saponinigeris instructo; semen ellipticum, subcompressum, testa tenui glabra endocarpio (pilorum impressorum ope) arcuissime adhaerente, hilo infra medium lineari, cotyledones oblique superpositae vel (in eodem fructu) lateraliter appositae, radícula punctiformis, dorsalis, hilo opposita.

Folia 60—90 cm longa; foliola ad 45 cm longa, ad 17 cm lata; petioluli 18—24 mm longi, crassi. Thyrsi 5 cm longi, bracteis pedicellisque 6-millimetralibus. Alabastra diametro 6,5 mm. Fructus circ. 2 cm longus et latus.

In Peninsula Malaica ad Perak: Scortechini n. 20901 (fragmenta tantum vidi ex Hb. Calcutt. comm.). — »Kedah, Yan« (ex Ridley, Fl. Malay Penins. I. [1922] 493).

Var. **hirta** Ridley, l. c. 493. — ^Leaves very hairy on the back. Flowers white.«

»Hab. Johor, Serom. Dinding, Lumut.« — »This variety may be distinct specifically.«

32. **L. latifolia** Radlk. in Fedde, Repert. XVIII. (1922) 336. - Frutex?; folia 2—4-juga, petiolo elongato striolato basi incrassato; foliola subopposita, superiora largissima elliptica basi subcuneata, inferiora minora late ovata, omnia breviter obtuse acuminata, petiolulis subcylindricis supra sulcatis insidentia, chartacea, nervis lateralibus parum approximatis patule procurvis subtus prominentibus, livescenti-viridia, glabra vel subtus pilis raris adspersa, glandulis basi immersis supra raris subtus sat crebris ornata; petiolus, ut et rhachis, teretiusculus, supra sulco lato notatus, glaber, rubicundus; thyrsi e trunco digitum crasso super et inter folia singuli vel bini ternive fasciculati erumpentes, eramosi, sat dense cineinnigeri, ut et alabastra germinae rufo-tomentelli; flores minores, breviter pedicellati; sepala praeter margines adpresse rufescenti-sericeo-tomentella; petala 4, oblonga, in unguem attenuata, dorso infra medium rufo-pilosa, intus supra unguem squama deflexa cristata aucta; discus inaequalis vel interruptus, ad angulos rufo-pilosus; stamina 8—9, filiformia, germen aequantia, rufo-pilosa, antheris ovatis glabris; germen ovoideum, 3-loculare, dense rufo-villosum, stylo brevi crasso in stigma hamato-clavatum desinente; fructus juvenilis suborbicularis, triqueter, angulis obtusis, extus et intus rufo-tomentosus, pericarpio cellulis saponinigeris instructo; semen (immaturum) praeter striam basilarem dense rufo-villosum.

Trunci thyrsgeri diametro 17 mm, cortice fusco longitudinaliter rimoso. Folia petiolo 15—18 cm longo adjecto 60 cm et ultra longa, 40 cm lata; foliola superiora 45 cm longa, 16 cm lata, inferiora 20 cm longa, 10 cm lata. Thyrsi 5—15 cm longi; cincinni breviter stipitati, patentes; bracteae bracteolaeque parvae, subulatae, tomentellae. Alabastra ovoidea, ut et pedicelli 3—4 mm longa. Petala 4,5 mm longa.

In Sumatra occidentali: Beccari it. tert. n. 644! (ad Ajer mantjoer, prov. Padang, alt. 360 m, m. Aug. 1878, flops, et fr. jun.; Hb. Florent., Kew.).

Obs. Inter species affines (*L. longifolia* Radlk., *L. Scortechinii* King etc.) insignia semine rufo-villoso (nee glabro).

33. **L. hirtella** Radlk. Sap. Holl.-Ind. (1877) 11, 35 (81, 105), et Sap. Papuae. in Engler's Bot. Jahrb. LVI. (1920) 269. — Frutex?; folia circ. 9-juga; foliola opposite, oblonga, breviter acuminata, petiolulata, subcoriacea, nervis approximatis obliquis, supra praeter nervum medianum glabra, subtus pilis apice bamato-curvatis hirtello-pubescentia, livescenti-viridia, glandulis fere totis immersis interdum geminatis utrinque ornata, diachymate crystallorum concretionibus rarioribus, crystallis vero singulis sat crebris persito; thyrsi robusti, laxiflori, in paniculas magnas laterales terminalesve congesti, adpresse ferrugineo-tomentosi; alabastra globosa (florum (J tantum visa); sepala 5, exteriora flavescenti-tomentella, interiora praeter marginem adpresse sericea (intus omnia glabra); petala 4, extus infra medium nee non margine pilosa, intus squama aucta: squamae apice deflexo laxe barbatae, dorso crista incurva obcordata denticulata basi angustata glabra instructae; discus irregularis, glaber; stamina 8, apice pilosa, antheris oblongis, glabris; pistilli rudimentum obovatum, biloculare, dense pilosum.

Rami in paniculam desinentes diametro 1,5 cm, cortice subfusco, lenticellis fuscis notati. Folia petiolo 12 cm longo adjecto ad 90 cm longa, rhachi teretiuscula 3—4 mm crassa, brevissime tomentella; foliola superiora (majora) circ. 20 cm longa, 6 cm lata, reliqua decrescentim minora, infima 8 cm longa, 5 cm lata, omnia basi obliqua latere exteriori (inferiore) breviora et angustiora petiolulis vix 5 mm longis insidentia. Paniculae rami (thyrsi) inferiores 25 cm, superiores 8 cm longi, 2—3 mm crassi, striati, cincinnos perbreves gerentes. Alabastra diametro 2,5 mm.

In Nova-Guinea: Beccari it. sec. n. 311 (Amberbakin, a. 1872).

Sect. IV. Anomorrhiza Radlk.

34. **L. mekongensis** Pierre, Fl. forest Gochinch. Fasc. 21. (1895) t. 326 A c. explie. et textul; H. Lecomte, Fl. Ind.-Chine I. (1912) 1017. — *Anomosanthes mekongensis* Pierre ibid, in textu ad tab. 327. — Arbor parva; rami teretes petiolique striati, glabrati, innovationes puberulae; folia 3-juga; foliola opposita, lanceolata, sensim acutata vel obtuse acuminata, basi attenuata petiolulis incrassatis brevissimis insidentia, chartacea, nervis tenuibus subtus (vix supra) prominulis, laevia, glaucescenti-livida, glabra, supra nitidula, subtus opaca, cellulis secretoriis (ut et sepala petalaeque) instructa, utrinque glandulis fere totis immersis (interdum geminatis) ornata; thyrsi in paniculas breves terminales congesti, fusco-puberuli, sat dense cincinnos subsessiles gerentes; alabastra late ovoidea; flores mediocres, longiuscule pedicellati; sepala 5, extus cano-puberula, margine villosiusculo; petala 4, spathulata, extus sub medio cum ungue villosiuscula, intus squama bifida cristata villosissima aucta; discus semilunaris glaber; stamina 8, filamenta villosa, antherae late ellipticae, apiculatae, glabrae; germen ovoideum, triloculare, cano-pilosellum; stylus germine longior, pilosulus; fructus trilocularis, depresso trigono-globosus, trisulcato-lobatus, retusus, styli reliquiis apiculatus, extus et intus glaber, pericarpio carnosio cellulis majoribus resinigeris persito, sicco atro-fusco, endocarpio chartaceo; semen ellipticum, glabrum, testa tenuiter coriacea hilo brevi ad medium ventrem notata; embryo carnosus, cotyledones crassae, oblique superpositae, radícula infra hilum ventralis, punctiformis.

Arbdr 3—8 m alta. Rami 6 mm crassi. Folia petiolo 5—8 cm longo adjecto 25—35 cm longa; foliola superiora 12—20 cm longa, circ. 4 cm lata, inferiora 5—9 cm longa, 1,8—3,5 cm lata. Panicula 3—7 cm longa. Alabastra 4 mm longa, 3 mm lata. Pedicelli 4—7 mm longi. Fructus 1,6 cm altus, 2,6 cm latus.

In Cochinchina: Pierre Hb. n.5669! = coll. Harmand n. 25 (secus flumen Mekong in Cambodia, m. Jan. 1877, flor.); Thorel (ibid., ex Lee. 1. c); Pierre n. 8831 (ad basin montis Cherro in Gambodiae prov. Samrong tong, m. Apr. 1870, fruct.).

35. *L. siamensis* Radlk. in Kew Bull. (1914) 279; Craib, Fl. Siam. enum. I. (1926) Zil. — *Sapindus ? siamensis* Radlk. in W. G. Craib, Contrib. Fl. Siam, Addit., in Kew Bull. (1912) 265 (fructu illo tempore ignoto) et Contrib. Fl. Siam in Aberd. Univ. Studies Nr. 57, p. 45. — Vulgo : Ma fuang pa (t. Vanpruk in sched.). — Arbor ramis teretiusculis sulcatis, griseo-pubescentibus, cortice nigro-fusco; folia abrupte pinnata, 3—4-juga, longiuscule petiolata, rhachi supra bisulcata sordide pubescente in apiculum sterilem subulatum terminata; foliola 5—7, inferiora subopposita, superiora alterna, elliptico-oblonga, utrinque obtusa vel subacuta, interdum quodammodo inaequilatera, inferiora latere exteriore, superiora latere interiore angustiora brevioraque, integerrima, breviter petiolulata, membranaceo-chartacea, nervis lateralibus utrinque 10—12 sat approximatis oblique erectis venisque reticulatis supra vix, subtus sat prominentibus, supra praeter nervos glabriuscula, e livescenti-viridi in subfuscum vergentia, nitidula, subtus molliter pubescentia pallidiora opaca glandulis microscopicis clavatis superficiei subadpressis (nee ut in Sapindi speciebus in foveolas conchiformes impressis) raris adpersa, epidermide paginae superioris e cellulis valde convexis granulato-punctatis inanibus conflata, paginae inferioris s to ma turn copia insigni; panicula terminalis, pauciramosa, rhacheos apice ramisque thyrsoides dense cymulas (polychasia vel dichasia in cincinnos abeuntia) subsessiles gerentibus, bracteis bracteolisque subulatis pubescentibus; flores unisexuales, § breviter, § longius pedicellati, oblique symmetrici; sepala 5, breviter oblonga, obtusa, dense albide tomentosa, ciliata, intus subglabra; petala 4 (infimi sede inter sepalum 3. et 5. vacua), sub disci margine inserta, subspathulata, lamina ovato-oblonga obtusiuscula concava, dorso puberula, intus glabra, in unguem lamina paullo breviora dorso margineque villosa attenuata, supra unguem squamulis 2 deflexis dense villosobarbatis dorso minutim cristatis aucta; discus (in floris parte superiore ante sepalum 4.) unilateralis, inter petalorum insertiones in lobulos tumens, glaber; stamina 8, intra discum circa pistillum vel pistilli rudimentum inserta, filiformia, floris <J exserta, floris ⚔ breviora germen vix superantia sterilia, praeter apicem villosula, antheris breviter ovatis subapiculatis dorso supra basin marginatam affixis introrsis glabris; germen (floris <J rudimentarium) ad disci marginem inferiorem ante sepalum 3. et 5. insertum, 3-gono-ovatum, 3-sulcatum, 3-loculare, dense albide tomentosum, in stylum germen aequantem subulato-filiformem sursum curvatum pubescentem apice incrassato stigmatosum terminatum; gemmulae in loculis solitariae, prope basin tuberculo axeos insidentes, erectae, apotropae, campylootropae, micropyle extrorsum infera; fructus indehiscens trilobularis, trigono-globosus, trisulcato-lobatus, hirtello-tomentosus, intus glaber, pericarpio carnosio cellulis magnis crebris gummi-resina quadam (nee in alcohol nee in aqua, sat facile vero, etsi incomplete, in alcohol aquoso solubili) foetis persito, sicco indurato crustaceo rubro-fusco, endocarpio collenchymatico; semen ellipticum, a lateribus compressiusculum, pilis brevibus aureo-splendentibus (sat amplis, pachydermicis) perlaxe adpersum, testa crassiuscula coriaceo-crustacea fusca, hilo longitudinali notata, intus pallidiora laevi reticulato-venosa; embryo carnosus, quodammodo curvatus; cotyledones crassae, oblique superpositae, superiore majore (piano commissurali a micropyle supra basin ventrali fere ad tertiam seminis dorsi partem superiorem adscendente), granulis amyli compositis (in fragmenta 5—9 par tit is) farctae; radícula infra hilum ventralis, punctiformis.

Rami 3—4 mm crassi. Folia petiolo 4—6 cm longo adjecto 20—30 cm longa; foliola cum petiolulis 3—5 mm longis 10—18 cm longa, 4—7 cm lata. Paniculae 13—18 cm longae. Flores 5 mm longi et lati, pedicellis 3—6 mm longis, basi articulatis. Fructus diametro 5 cm, pericarpio (sicco) 1—1,5 mm crasso. Semen 4 cm longum, 1 cm latum, 2 cm crassum.

In Siam: Luang Vanpruk n. 119! (Prd, alt. 156—240 m), n. 191! (ibid, alt. 260 m, m: Maj. 1910, fl.; Hb. Kew.); id. sine n.I (Me Chwa, alt. 150 m, m. Jun. 1913, fl.; Hb. Kew.); Kerr n. 2563! (Lākawn, in savannah, alt. 240 m, m. Maj. 1912, fl. et fr.; comm. ex Hb. Kew.).

Species sedis incertae.

36. *L. eelebica* Radlk. in Fedde, Report. XVIII. (1922) 337. - Frutex?; folium (quod solum suppetebat) magnum, 5-jugum, longiuscule petiolatum; foliola inferiora opposita, ovata, subacuta, basi inaequalia (latere exteriore breviora), tenuius petiolulata, superiora alterna, ex ovali late oblonga, apice — (mutilata), basi subacuta, crassiuscule petiolulata, omnia membranaceo-chartacea, nervis lateralibus utrinque circ. 12 sat approximatis, a nervo mediano (foliolorum inferiorum supra concavo, superiorum convexo) oblique (sub angulo 45°) adscendentibus margine evanescentibus, livescenti-viridia, laeviuscula, nitidula, praeter nervos pilis minutis glandulisque adpersos glabra, glandulis sphaeroideo-capitatis brevissime stipitatis omnino immersis fuscis supra sat crebris subtus crebrioribus modo insigni ornata (et hac re foliola *L. schizolepidis* aeraulantia), diachymate crystallorum concretionibus crebris persito, in cellulis vero venas cingentibus et fere in omnibus quidem non nisi crystalli singula gerente, epidermide e cellulis ± regulatim sexangularibus impunctatis conflata; petiolus lateraliter quodammodo compressus, supra quoque convexus, glabratus, ut et rhachis rubro-fuscus; rhachis teretiuscula, striata, pilis minutis flavidis patulis glandulisque sphaericis subsessilibus fuscis induta.

Folium petiolo adjecto 60 cm longum; petiolus 10 cm longus, 4 mm crassus, rhachis 25 cm longa, interjugis circ. 6 cm longis; foliola inferiora cum petiolulis 1-centimetalibus 16 cm longa, 7,5 cm lata, superiora 25 cm longa, 11 cm lata.

In insulae Celebes parte septentrionali: Warburg n. 155371 (ad Bojong, a. 1887; Hb. Berol.).

Obs. An ex affinitate *Lepisanthis schizolepidis* Radlk?

Accedunt species 2 mihi ignotae:

37. *L. hirta* Ridley in Journ. Fed. Malay. Stat. Mus. X. (1920) 132 ex Ridley, Fl. Malay Peninsula I. (1922) 494. — »Small tree-like shrub; entirely softly hairy except the upper side of the leaves. Leaves 2 ft. long or more; leaflets 10, alternate, elliptic-lanceolate shortly acuminate, nerves 18 pairs, membranous, 12 in. long, 4 in. wide; petiolules 0,15 in. long. Panicles axillary; branches few distant. Flowers 0,1 in. wide racemose. Sepals 5 orbicular pubescent, edge ciliate. Petals 4 glabrous ovate rounded nearly twice as long, scales at base oblong densely white-woolly. Stamens 3 short. Disc undulate. Pistil densely hairy.

In Peninsula Malaica; — »Kelantan, Ghaning Woods (Ridley). A plant on the Pehi stream had much smaller leaves, the leaflets 5 by 2 in., oblong and quite blunt.«

38. *L. Forbesli* Bak. f. in Journ. of Bot. LXII. (1924) Suppl. (Forbes' Malay. PL) 25. — »Arbor; foliis multifoliolatis, rhachi hirsuta, foliolis oblongis, insigniter inaequilateralibus acuminatis, apice ipso obtusis, basi cuneatis, margine undulatis, nervis lateralibus utrinque 9—11, lamina 10—15 cm longa, 25—30 mm lata, petiolulis rufo-hirsutis, 3—5 mm longis; racemis 4—9 cm longis, e ligno vetere ortis, pedicellis brevibus, rhachi cinereo-hirsuta; calyce 5 mm longo, pubescente, disco annulari pubescente, ovario sessili, pubescente, 4-loculari, loculis 1-ovulatis; fructu in sicco nigrescente, extus pilis crassis sparse munito, 8 mm longo, 5 mm lato.t

In Sumatra: »R. Rawas, Moeara Mengkoelem, Palembang, 600 ft. (Forbes n. 3087). Small tree; fruit very dark green on stem.* — ^Distinguished from *L. montana* Bl. and *L. Blumeana* Koord. et Valet, by its unequal-sided leaflets.*

28. *Otophora* Blume.

Otophora Blume, Rumphia III. (1847) 142 char, emendand. quoad semina »arillo involuta* et excl. sp. ex ord. expell.; Walp. Ann. II. (1851-1852) 222; Miq. Fl.-Ind. Bat. I. 2. (1859) 559 excl. sp.; Hiern in Hook. f. Fl. Brit. Ind. I. (1875) 680 char, emend. et excl. sp., cfr. *Aphaniapaucijuga*; Radlk. Sap. Holl.-Ind. (1877) 30 (100), in Sitzungs-

ber. bayer. Akad. XX. (1890) 241, 284 et in Engl. u. Prantl, Nat. Pflanzenfam. III. 5. (1895) 320; Pierre, Fl. forest. Go chinch. Fasc. 21 (1895) t. 330, 331; King, Materials Fl. Malayan Penins., in Journ. As. Soc. Beng. LXV. 2. (1896) 429 char, emendand.; Koord. et Valet. Bijdr. Booms. IX, Meded. Plantent. LXI. (1903) 170. - *Capura*, non »Linn.«, Blanco, Fl. Filip. (1837) 264 (sphalm. 644) et Ed. 2 (1845) 184, reimpr. in Ed. 3. I. (1878) 328, cf. Radlk. Sap. Holl.-Ind. 1. c; Benth. et Hook. f. Gen. 1.1. (1862) 405; Baill. Hist. Pl. V. (1874) 398; Vidal, Sinops. (1883) 98, Atlas XXI, t. 34 fig. E, 338, 344, 359, 372, 385, 393; Boerlage, Handleid. Fl. Nederl. Ind. I. (1890) 274; Merrill, Enum. Philip p. pi. II. (1923) 500. — *Aphanomixis* Korth. Hb. ed. Bl. 1. c. — *Otolepis* Turcz. in Bull. Soc. natural. Moscou XXI. 2. (1848) 572 et in Flora XXXI. 2. (1848) 708; Walp. Ann. II. (1851-1852) 219; Miq. Fl. Ind. Bat. I. 2. (1859) 561; O. Kuntze, Revis. Gen I. (1891) 144, III. 2. (1898) 73, 118; Pierre 1. c. in textu ad tab. 330 et 331. — *Sapindus* sp., *Allophylus* sp., *Melicocca* sp., *Schleichera* sp., *Koelreuteria* sp., *Nephelium* sp. aut. var., cf. lit. spec.

Flores spurie polygami, <J et § (g mentientes) saepius in eadem inflorescentia, regulares, mediocres. Sepala 5 vel 4, orbicularia vel obovato-oblonga, concava, late imbricata, duo exteriora minora, membranacea, praeter basin incrassatam subcoriaceam petaloidea, sicca rubro-fusca, glabra vel sericeo-puberula, denique decidua. Petala 5 vel 4, sepalis multo minora, suborbicularia vel oblonga, subsessilia vel breviter unguiculata, saepius extus vel intus quoque (sub microscopio) subpapillosa, basi margine utroque auriculato-inflexo bisquamulata, squamulis margine villosiusculis ecristatis. Discus completus, minutim patellaris vel annularis, integerrimus vel crenulatus, glaber. Stamina 8(—9), raro 5 (sect. I.), in disci centro circa pistillum vel pistilli rudimentum inserta (floris § abbreviata); filamenta filiformia, brevia, subrecurva, apice erecta, pilosula; antherae filamenta aequantes vel superantes, subulato-oblongae, 3—4-gonae, apiculatae, basi emarginata affixae, subincurvae (in alabastro arete conniventes), subin trorsae, rimis lateralibus dehiscentes, glabrae vel pilosae, connectivo sat crasso sub loculis occulto; pollinis granula trigono-placentiformia (subtetrae*drica), 3-porosa, inter poros tenerrime punctulata. Germen (floris <J rudimentarium) ellipsoideum, 2- vel 3-loculare, septis interdum superne incompletis, glabrum vel villosum, raro stylo tereti instructum (*O. styligera*), plerumque stigma in germinis apice obtuso vel apiculato sessile, breviter 2—3-lobum, lobis suturalibus leviter sulcatis declivibus adnatis rarius erectis intus papillosis (*O. cambodiana*) gerens; gemmulae in loculis solitariae, axi paullo supra basin affixae, erectae, campylotropae, apotropae, micropyle extus infera. Fructus baccatus, succulentus vel corticosus (t. Roxb. edulis), 2—3- vel abortu 1-locularis, subglobosus vel ellipsoideus, interdum obcordatus, saepius 2—3-sulcatus, in 1 specie (*O. midtjuga*) tricoccus, fusco-purpureus vel cinnamomeus, glaber vel denique glabratus, endocarpio tenui glabro interdum a sarcocarpio soluto seminibus adhaerente (ab auctoribus pro arillo habito). Semina loculis conformia, testa tenuiter chartacea fusca, arillo nullo. Embryo rectiusculus; cotyledones crassae, lateraliter juxtapositae vel in semine lateraliter compresso altera dorsali altera ventrali, amylo et interdum substantia tannino affini foetae, tumque brunneae; radícula basilaris, punctiformis.

Arbores vel frutices erecti, subglabri. Folia juventute in nonnullis (ut in *Pometia*, *Schleichera* et *Talisia* quadam specie) colore earned, persicino, immo puniceo insignia, sicca ± subfusca vel superne livescentia, sparsa, abrupte pinnata (foliolo terminali in speciminibus cultis spontaneisque interdum evoluta), 2— oo-juga, foliolis infimis reliquis difformibus stipulas mentientibus ima basi insertis sessilia, attamen rhacheos segmento inter haec et foliola sequentia elongato petiolum aemulante; foliola (praeter infima stipuliformia) plerumque elongate oblonga, lanceolata vel linearia, sursum accrescentia vel a medio decrescentia, opposita vel alterna, petiolulata vel sessilia, integerrima, coriacea vel membranacea, nervis lateralibus nunc paucis procurvis nunc numerosis patentibus, glabra vel in nervis (praesertim subtus) pilosa, glandulis microscopicis robustioribus davatis vel cylindricis articulatis elongatis (*O. glandulosa*, *furcata*, *sessilis*,

setigera, olwiformis) in epidermidis foveolas subcylindricas — profunde immersis partimque materia rubro-fusca foetis nunc crebris nunc rarioribus (*O. reseda, erythrocalyx*) ornata, exceptis speciebus 3 (*O. cambodiana, alata, acuminata*), epidermide nori mucigera, illius paginae inferioris membranis superficialibus in speciebus sect. II. nee non in *O. ramiflora* (sect. I.) inque *O. erythrocalyce* (sect. III.) incrassatis — nunc cellularum fere omnium praeter stomata (majuscula, vestibulo vero angustissimo lineari instructa) cingentes, nunc singularum tantum (*O. sessilis, reseda*) — et insigniter punctatis vel quasi reticulatis (*O. sessilis, furcata, setigera*), in sect. III. vero (excepta *O. erythrocalyce*) et in sect. I. (excepta *O. ramiflora*) leptodermicis impunctatis, diafibymate toto substantia tannino affini foeto, inde sicco fuscescente, insuper in speciebus sect. III. — *O. alata, acuminata, erythrocalyce, pubescenti* et *stylosa* exceptis — cellulis secretoriis (ut et in sepalis petalisque) instructo, crystallis vero praeter ilia nervis et venis adjecta vix ultis nisi in *O. fruticosa* et *spectabili* persito, pneumatenchymate plerumque cavitatibus respiratoriis amplioribus insigni; foliola stipuliformia ramis arete applicata interdum deflexa (ramos amplectentia et formicis hospita), plerumque parva, rotundata vel cordata, rarius sat magna, rarissime foliorum superiorum (in *O. fruticosa*) abortiva, in apiculos parvos reducta vel omnino nulla; rhachis (parte petiolarum — inter foliola stipuliformia et sequentia interjecta — inclusa) teretiuscula, striata, nonnullarum alata (*O. ramiflora, amplifolia, alata, acuminata*), glabra vel pubescens. Paniculae interdum sat amplae vel thyrsi (pauciflori) axillares vel infra ramorum partem foliatam erumpentes, ramis elongatis laxiuscule cymulas (dichasia vel cincinnos) sat multifloras, interdum glomeruliformes gerentibus; pedicelli filiformes, nunc breviores, nunc (praesertim fructuum) longiores, ut et bracteae bracteolaeque breves subulatae, glabri vel puberuli. Alabastra globosa, magnitudine cannabis grana aequantia. Flores expansi 5—6 mm lati, rubri (an semper?). Fructus cerasorum magnitudine, plurium edules (*O. frutibosa, furcata, alata, amoena*), pericarpio carnosio saepius cellulis sclerenchymaticis coacervatis persito, in quibusdam (ex. gr. in *O. amoena, lunduensi*) cellulis substantia saponino affini foetis prope endocarpium instructo (cf. Radlk. in Sitzungsber. bayer. Akad. VIII. [1878] 248, 289).

Species 29 per Asiam tropicam a peninsula malaica usque ad Cochinchinam et per insulas asiaticas usque ad Philippinas dispersae, praesertim in Borneo obviae.

Genus fructu baccato generibus quibusdam Aphaniearum accedens, sed loculis tota longitudine connatis nee in coccos nee in lobos evolutis diversum, in tribu Lepisantheanim insigne foliis spurie stipulatis (uti *Pometia* et *Otonephelium* in tribu Nepheliearum).

Conspectus sectionum et specierum.

Sect. I. Anomotophora Radlk. Sap. Holl.-Ind. I. (1877-1878)

85 (236), in Durand, Ind. Gen. (1887) 75 et in Engl. u. Prantl, Nat. Pflanzenfam. III. 5. (1895) 320: Germen (complete vel incomplete) 2-loculare, glabrum; stamina 5(— 6); sepala 4 vel 5; foliola sessilia, cellulis secretoriis millis; epidermidis paginae inferioris cellulae nunc pachydermicae, punctatae (*O. ramiflora*), nunc leptodermicae, impunctatae (*O. divaricata, pyramidalis*).

A. Sepala 4; stamina 5; germen incomplete 2-loculare; foliorum rhachis (inclusa parte petiolarum) alata; inflorescentiae ad ramorum vetustorum nodos brevissimae (sp. borneensis) 1. *O. ramiflora*.

B. Sepala 5; foliorum rhachis nuda; inflorescentiae axillares (?), sat magnae (sp. borneenses).

a. Germen complete biloculare; stamina 5; inflorescentiae divaricatim ramosae foliorumque rhachis glabriusculae; foliola oblonga, majora (ad 13 cm longa) . . . 2. *O. divaricata*.

b. Germen incomplete 2-loculare; stamina 6; inflorescentiae oblique ramosae foliorumque rhachis pube brevi

- molli indutae; foliola lineari-oblonga, minora (ad 8 cm longa). 3. *O. pyramidalis*.
- Sect. II. Pseudotophora Blume (sphalm. »*Pseudophora**) in Rumphia III. (1847) 142; Hadlk. 1l. cc: Germen (complete vel incomplete) 2-loculare, glabrum; stamina (7—)8; sepala 4 vel 5; foliola — *O. sessili*, *setigera* et *reseda* exceptis — petiolulata, cellulis secretoriis nullis; epidermidis paginae inferioris cellulae pachydermice, punctatae.
- A. Sepala 4 (in *O. cauliflora* non visa).
- a. Germen mox incomplete 2-loculare; inflorescentiae (plerumque) axillares; fructus cerasi parvi magnitudine (sp. malaico-philippinensis). 4. *O. fruticos**.
- b. Fructus septo incompleto 1-locularis; inflorescentia e caule vel ramo erumpens; fructus major (sp. philippinens.) 5. *O. cauliflora*.
- B. Sepala 5.
- a. Germen incomplete 2-loculare.
- aa. Inflorescentiae axillares; foliola sessilia, lanceolato-oblonga, stipuliformia ovato-rotundata (sp. malaccensis). 6. *O. sessilis*.
- bb. Inflorescentiae ad ramorum vetustorum nodos; foliola petiolulata.
- a. Foliola ovato-lanceolata, subtus crebre glandulosa 7. *O. glandulos**.
- p. Foliola linearia, stipuliformia ovata inaequaliter bifida (»furcata« Pierre) magna (sp. cochinchinensis). 8. *O. furcaia*.
- b. Germen complete 2-loculare.
- aa. Inflorescentiae ad ramorum vetustorum nodos elongatae (sp. cochinchinenses).
- a. Foliorum rhachis alata. 9. *O. amplifolia*.
- fi. Foliorum rhachis nuda.
- aa. Foliola lineari-lanceolata, subsessilia, glandulis immersis destituta, stipuliformia subrotunda, parva 10. *O. eambodiana*.
- pp. Foliola oblongo-lanceolata, petiolulata, stipuliformia lanceolata parva (interdum bipartita). 11. *O. nodosa*.
- bb. Inflorescentiae axillares (sp. borneftnses).
- a. Germen suborbiculare.
- aa. Folia bijuga. 12. *O. bijuga*.
- PP. Folia 3—4-juga, anomale foliolo terminali lineari instructa. 13. *O. anomala*.
- p. Germen oblongum; folia 5-juga, interjugis elongatis; foliola magna, lanceolata, basi sensim attenuata, acuminata. 14. *O. lancifolim*.

Accedunt sedis in Sect. II (?) dubiae:

- A. Sepala 5(—4); stamina 8; germen 2-merum — (floris 9 non visum); inflorescentia axillaris; foliola subsessilia, linearia, basi intus oblique truncata, quasi resecta (sp. malaccensis) 15. *O. resect**.
- B. Sepala — ?; stamina — ?; germen (ut e fructu patet) incomplete 2-loculare; inflorescentiae ad ramorum vetustorum nodos (sp. philippinenses).

- a. Foliola anguste lanceolata, basi acuta sessilia, subtus ad nervi mediani basin setis validis obsita 16. *O. setigera*.
- b. Foliola late oblonga; inferiora elliptica, basi obtusa, petiolulo perbrevis setuloso insidentia 17. *O. oliviformis*.
- Sect. III. Eutophora Radlk. 11. cc: Germen incomplete 3-loculare, plerumque dense villosum, in 4 tantum speciebus (*O. alata*, *O. acuminata*, *O. erythrocalyx*, *O. multijuga*) glabrum, stigmatibus sessilibus, in 1 specie stylo tereti longitudinaliter sulcato superatum; capsula ellipsoideo- vel globoso-trigona, in 1 specie (*O. multijuga*) tricocca; stamina 8, sepala 5; foliola in 2 speciebus (*O. acuminata*, *O. erythrocalyx*) petiolulata, in 2 (*O. alata*, *O. lunduensis*) basi acuta, in reliquis basi subtruncata sessilia, glandulis immersis (exceptis *O. alata* et *O. acuminata*) et cellulis secretoriis (exceptis *O. alata*, *O. acuminata*, *O. erythrocalyci*, *O. pubescenti* et *O. stylosa*) instructa; epidermidis paginae inferioris cellulae leptodermicae impunctatae, in 1 tantum specie (*O. erythrocalyx*) pachydermicae punctatae.
- A. Fructus trigono-globosus vel ellipsoideus.
- a. Foliola glandulis immersis et cellulis secretoriis destituta.
- aa. Foliorum rhachis alata; foliola oblongo- vel lineari-lanceolata, basi acuta sessilia (sp. javensi-borneftnsisj).....18. O. *alata*.
- bb. Foliorum rhachis nuda; foliola lineari-lanceolata petiolulata, in acumen elongatum attenuata (sp. borneftnsis). 19. *O. acuminata*.
- b. Foliola glandulis immersis ornata.
- aa. Epidermis paginae inferioris pachydermica punctata, cellulae secretoriae nullae; foliola oblongo-lanceolata, breviter petiolulata (sp. malaccensis). 20. *O. erythrocalyx*.
- bb. Epidermis paginae inferioris leptodermica impunctata.
- a. Foliola lanceolata, basi acuta sessilia, cellulis secretoriis numerosis persita (sp. borneftnsis) 21. *O. lunduensis*.
- ft. Foliola sublinearia, basi subtruncata sessilia, numerosa.
- aa. Foliola parva, pilosissima, cellulis secretoriis nullis (sp. borneensis). 22. *O. pubescent*.
- flfi. Foliola elongata, glabra, cellulis secretoriis (puncta pellucida efficientibus) plerumque numerosis instructa.
1. Foliola stipuliformia insignia.
- | Foliola stipuliformia oblique cordata acuta (sp. borneftnsis). 23. *O. cordigera*.
- |f Foliola stipuliformia breviter ovalia, basi subcordata obtusa (sp. malaccensi-borneftnsis). 24. *O. amoena*.
2. Foliola stipuliformia sequentibus approximatis subsimilia.
- § Foliola superiora ovato-oblonga (sp. bornednsis). 25. *O. spectabilis*.
- {§ Foliola superiora lineari-oblonga (sp. borneensis). 26. *O. imbricata*.

B. Fructus patenter 3-coccus, coccis ellipsoideis; foliola multi-
juga (sp. borneenses).

a. Folia ad rhachin et nervos pilosa; germen tomentosum,

stylus crasse cylindricus 27. *O. styligera*.

b. Folia glaberrima; germen glabrum, stylus pyramidalis . 28. *O. multijuga*.

Sect. I. **Anomotophora** Radlk.

1. *O. ramiflora* Radlk. Sap. Holl.-Ind. (1877-1878) 9, 32, 85 (79, 102, 236) et in Engl. u. Prantl, Nat. Pflanzenfam. III. 5. (1895) 320; Merrill, Bibliogr. enum. Born, pi. (1921) 359. - *Otolepis ramiflora* O. Kuntze I.e. (1891) 144. — Frutex parvus, suberamosus, cortice fusco, lenticellis sparsis exasperate*; folia 4—6-juga, rhachi (parte petiolarum inclusa) sat late alata subtus hirsuta; foliola elongate lanceolata, in acumen attenuata, subsessilia, chartaceo-coriacea, nervis lateralibus procurvis sat approximatis subtus prominentibus, pallide subfusca, glabra nee nisi subtus in nervo mediano utrinque prominente pilis adpersa, immo hirsuta, supra laevia, glandulis immersis utrinque ornata, cellulis secretoriis nullis, epidermidis paginae inferioribus cellulis (stomata cingentibus exceptis) pachydermicis punctatis; inflorescentiae brevissimae, inde flores in truncis vel ramis adultioribus praesertim supra foliorum cicatrices glomerato-coacervati, teneri, quam in reliquis generis speciebus minores, breviter pedicellati; sepala 4, obovato-oblonga, glabra; petala 4, perparva, late ovata, insignius unguiculata, intus supra unguem squamulis 2 parvis deflexis hirsutulis aucta; discus annularis, glaber; stamina 5, villosiuscula, subrecurva, apice erecta, antheris ellipticis glabris; pistilli rudimentum dimerum, compressum, breviter ova turn; fructus juvenilis (potius germen auctum) obovatus, a carpellorum marginibus compressus, extus et intus glaber, stigmatibus sessili subbilobo coronatus, incomplete (basi tantum) bilocularis.

Frutex 1-metralis, trunco 1 cm crasso. Folia rhacheos segmento petiolarum 6—8 cm longo incluso 40—50 cm longa, rhacheos alis utrinque 3—4 mm latis basin versus paullulum angustatis; foliola superiora (majora) 22 cm longa, 4—4,5 cm lata, inferiora dimidio minora, infima (stipuliformia) suborbicularia, 1 cm vix excedentia. Florum glomeruli circ. 1 cm longi. Flores 1,5 mm vix superantes, pedicelli totidem, fructiferi 4 mm longi. Petala 0,5 mm vix excedentia. Stamina 1,5 mm longa.

In Borneo: Beccari n. 235! 3641 (Ragiato di Sarawak, Kutcin, m. Jul.—Aug. 1865, flor. et fr. juven.; Hb. Florent.); Native collector n. 2697! (Sarawak, m. Febr.—Jun. 1914; comm. ex Hb. Manil.).

2. *O. divaricata* Radlk. in Fedde, Repert. XVIII. (1922) 338. - Frutex?; folia (unum tantum basi mutilatum foliolo terminali minore instuctum visum) 5—?-juga, rhachi tereti, subtiliter striata, subglabra; foliola sat magna, subopposita vel inferiora alterna, oblonga, apice acuta, basi oblique obtusa sessilia, chartacea, nervo mediano utrinque semicylindrico prominente supra pilis 1-cellularibus pachydermicis curvatis cinnamomeo-tomentello subtus striato pilis brevibus patulis adperso, nervis lateralibus patulis longius ante marginem anastomosantibus subtus ut et venis laxe reticulatis prominentibus, supra laevia livescentia, subtus rubro-fusca, praeter nervum medianum glabra, cellulis secretoriis nullis, glandulis profunde immersis praesertim subtus ornata, epidermidis paginae inferioris cellulis leptodermicis impunctatis; paniculae (axillares) sat magnae, divaricatim ramosae, ramie ramulisque rhacheosque apice laxe cymulas (dichasia in cincinnos abeuntia) breviter stipitatas compactas rufescenti-puberulas gerentibus glabriusculis atro-purpureis; alabastra globosa, breviter pedicellata; sepala 5, rotundato-ovata; petala 5 orbicularia basi puberula; discus glaber; stamina 5, filamentis brevibus antherisque rufo-hirsutis; germen ovatum, complete 2-loculare, apice pilosiusculum.

Folia ad 45 cm longa, interjugis 3 cm longis, foliola circ. 13 cm longa, 4,5 cm lata (infima stipuliformia rotundata, diametro 2,5 cm). Paniculae 22 cm longae, ramis 8—12 cm longis. Alabastra diametro 1,5 mm.

In Borneo: Collector non indicatus n. 1031 (Kalaka, Sarawak, m. Apr. 1893, fl.; comm. e Mus. Sarawakensis c. Hb. Manil. et ex hoc c. Hb. Monac); native collector n. 10751 (Sarawak; Hb. Manil.; fl.).

Obs. Stamina numero affinis *Otophorae ramiflorae* Radlk.

3. ***O. pyramidalis*** Radlk. in Fedde, Repert. XVIII. (1922) 338. — Frutex?; rami — (non visi); folia sessilia, circ. 6-juga, foliolo terminali parvo (in specimine obvio) anomale instructa, rhachi (parte petiolari inclusa) subtereti, supra planiuscula, subtus convexa striata, pube brevi molli induta; foliola minora, subopposita, lineari-oblonga, acute acuminata, basi obliqua sessilia, subchartacea, nervis lateralibus utrinque 9—11° obliquis longius ante marginem anastomosantibus, praeter nervum medianum supra subtusque puberulum utrinque glabra, supra fusciscentia vel livescentia, subtus rubrofusca, glandulis profunde immersis subtus crebris supra paucioribus ornata, cellulis leptodermicis impunctatis margine eleganter minutim plicato-sinuatis, infima (stipuliformia) perparva, e breviter ovato orbicularia; paniculae (decerptae tantum visae) ut videtur axillares, a basi decrescentim ramosae, pyramidales, rhachi apice ramisque thyrsoides oblique patulis teretifusculis striolatis laxiuscule dichasia stipitata in cincinnos contractos abeuntia gerentibus pube brevi molli indutis; alabastra globosa, glabriuscula; sepala 5, orbicularia, margine sparsim glanduloso-ciliata, ceterum glabra; petala (alabastris) parva, semiorbicularia, supra unguem perbreve marginibus inflexis squamulata, squamulis margine villosis; discus glaber; stamina 6, filamentis dense patule villosis, antheris pubescentibus; germen (floris ♂) rudimentarium, ovatum, 2-loculare, apice albido-comosum; fructus juvenilis obovoideus, 3-locularis (septo completo), stylo brevi in stigma bilobum lobis suturalibus declivibus medio sulcatis terminato apiculatus.

Folia 25—40 cm longa, rhacheos parte petiolari 7—17 cm longa, interjugis 2 — 3 cm longis; foliola ad 8 cm longa, 2,2 cm lata, infima (stipuliformia) diametro 5 — 6 mm. Paniculae ad 25 cm longae, ramis ad 7 cm longis. Alabastra diametro 1,5 mm.

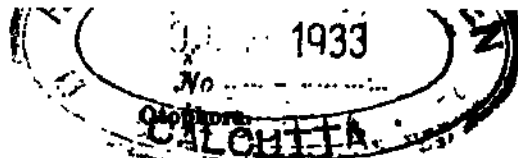
In Borneo prope Sarawak: Collector indigenus n. 3751 (comm. ex Hb. Manil.).

Obs. Affinis *Otophorae divaricatae* Radlk., quae differt foliolis majoribus, paniculae ramis longioribus divaricatis.

Sect. II. **Pseudotophora** Blume.

4. ***O. fruticosa*** (Roxb.) Blume 1. c. (1847) 142 in obs.; Walp. Ann. II. (1851-1852) 222; Miq. 1. c. (1859) 560; Hiern 1. c. (1875) 6801; Radlk. Sap. Holl.-Ind. (1877 —1878) 10, 31, 32, 82, 86 (50, 101, 102, 233, 237) excl. stirpe Siamensi ad *O. Cambodian*, recensenda, in Sitzungsber. Bayer. Akad. VIII. (1878) 299 n. 13, 300 n. 39, 329, IX. (1879) 675, in Engl. u. Prantl, Nat. Pflanzenfam. III. 5. (1895) 320, in J. Perkins, Fragm. Fl. Philipp. I. (1904) 61, et in Hallier, Elberts Sunda-Exp., in Meded. Herb. Leiden Nr. 22 (1914) 15; Koorders, Fl. Minahassae, in Meded. Plantent. XIX. (1898) 4071; Koord. et Val. 1. c. (1903) 174; A. Usteri, Beitr. Kenntn. Philipp. (Diss., Zürich 1905) 114, **Herb**, n. 141; Merrill, Review etc. (1905) 35 c. syn. *Capura pinnata* Blanco et *C. purpurata* Blanco, v. infra; id. Fl. Lamao Forest in Philipp. Journ. Sc., Suppl. I. (1906) 87 et ibid. III. Nr. 2 (1908) 80 quoad *O. Blancoi* Bl. apud Gray 1. infra c; id. Spec. Blanc. (1918) 239 quoad syn. *Capura pinnata* Blanco, *Cap. purpurata* Blanco, *Sapind. baccat.* Blanco, *Koelreuteria edulis* Blanco, *Otoph. Blancoi* Blume, *Otolepis nigrescens* Turcz., *Sapindus arborescens* Llanos, *Otoph. paucijuga* F.-Vill., *Otoph. nigrescens* F.-Vill., *Otoph. pinnata* Merr., coll. n. 374; id. Enum. Phil. PI. II. (1923) 500 c. iisd. syn.; Koord. Exk.-Fl. Java II. (1912) 539; Koord.-Schum. Syst. Verz. III. Celebes (1914) 75, coll. n. 18821/91 **18822/31**; L. S. Gibbs in Journ. Linn. Soc. XLIII. (1914) 66; Merrill, Bibliogr. enum. Born. pi. (1921) 358. — *Sapindus fruticosus* Roxb. Hort. Beng. (1814) 129 et Fl. Ind. II. (1832) 2831; Wight et Arn. Prodr. Fl. Ind. I. (1834) 111 in obs., excl. *Sapindus longifol.* Vahl, i. e. *Euphoria Longana* Graham, Cat. Bomb. PL (1839) 29; Voigt, Hort. suburb. Calcutt. (1845) 94; Wall. Cat. (1847) n. 8043 AI et B1; Anders. Cat. Hort. Calcutt. (1865) 9. — *Allophylus pinnatus* Roxb. Ic. ined. 1.1407 ex Wight et Arn. 1. c. et Hiern

1. c. — *Capura pinnata* Blanco, Fl. Filip. (1837) 264 (sphalm. 644), cf. Radlk. Sap. Holl.-Ind. 31; Vidal, Phanerog. Cuming. (1885) 36, 105, coll. n. 1127!, Revis. (1886) 97, coll. n. 209! 721! (sphalm. »724«, quae *Arytera* sp., cf. idib. 320, 344) et Gat. Herb. (1892) 54, coll. n. 209! 721! (excl. »724«) etc.; A. Usteri 1. c, Herb. n. 142! - *Sap Indus baccatus* Blanco, Fl. Filip. (1837) 290, cf. Radlk. Il. cc. (1877) 31 (101), (1878) 299 n. 13, 329. — *Capura purpurata*, non Linn., Blanco, Fl. Filip. ed. 2. (1845) 184, reimpr. in ed. 3. 1. (1877) 328. — *Koelreuteria edulis* Blanco, ibid. (1845) 202 (= *Sapind. baccat.* ed. 1), reimpr. in ed. 3. II. (1878) 14 1.110 (adjecto a Naves in tab. nom. »*Otolepis nigrescens* Turcz.«). — *Otophora Blancoi* Blume 1. c. (1847) 142 in obs., cf. Radlk. in Sitzungsber. bayer. Akad. VIII. (1878) 329; Walp. Ann. II. (1851-1852) 222; A. Gray in Wilkes Expl.-Bxp. XV, Bot. I. (1854) 259; Miq. 1. c. (1859) 560; F.-Villar, Noviss. App. ad Blanco, Fl. Filip. ed. 3. IV. (1880) 52, perperam excl. syn. **Koelreut.edul.* Blanco«; Merrill, Diction, etc. (1903) 172 et Review etc. (1905) 35, dein 1. c. (1918) ad *O. frutic.* Bl. relata, cf. supra. — *Otolepis nigrescens* Turcz. in Bull. Soc. natural. Moscou XXI. 1. (1848) 573, coll. Cuming n. 1922 in Hb. Turcz.! (cf. Radlk. in Sitzungsber. bayer. Akad. IX. [1879] 581 - in aliis Hb. n.°1127!, cf. infra), ibid. XXXI. 1. (1858) 406 et in Flora XXXI. 2. (1848) 708; Walp. Ann. II. (1851-1852) 220 et VII. 4. (1896) 629 (sub *Capura*); Miq. 1. c. (1859) 561; Naves (1878) 1. supra sub *Koelreuteria eduli* cit. — *Lepisanthes* sp. Zollinger coll. n. 3345! (circ. 1848). — *Sapindus arborescens*, non Aubl., nee »Spreng.« (cf. Radlk. in Sitzungsber. bayer. Akad. VIII. [1878] 298 n. 6 et 9), Llanos, Revis. aliquor. gen., quae in Fl. Philipp. ed. 2 continentur, in Mem. Ac. Madrid. IV. (1856, resp. 1858) 507 n. 15, reimpr. in Blanco, Fl. Filip. ed. 3. IV. (1880) 105 n. 15 quoad *Capuram purpuratam* Blanco 1. c. — *Otophora Zollingeriana* Teysm. et Binn. in Natuurl. Tijdschr. Nederl. Ind. XXV. (1863) 423!, cf. Radlk. Sap. Holl.-Ind. 82 (233) et in Sitzungsber. bayer. Akad. IX. (1879) 675. - *Capura* sp. Teysm. et Binn. Gat. Hort. Bogor. (1866) 214 »Molucc.«, cf. Radlk. Sap. Holl.-Ind. 83 (234), 215 »ex Hort. Galcutt. (12)«I, cf. Radlk. 1. c. 86 (237), excl. stirpe Siamensi »Hb. Bog. n. 6038« ad *O. eambod.* recensend. — *Capura Zollingeriana* iid. ibid. 215!; Filet, Woordenb. (1876) 56 n. 1074, ed. 2. (1888) 56 n.1280, - *Sapindus* sp. iid. ibid. 215 c. indie. »Bourbon«! fide specim. a. 1881 ex Hort. Bog. sub n. 9 comm. hue recensenda (nee, ut in Sitzungsber. bayer. Akad. VIII. [1878] 305 n. 123 et 370 interrogavi, ad *Deinbolliam borbonieam* Scheff.). — ?*Otophora paueijuga*, non Hiern, F.-Villar, Noviss. App. ad Blanco, Fl. Filip. ed. 3, IV. (1880) 52. — *Otophora nigrescens* id. ibid., perperam excl. syn. *Koelreuteria eduli* Blanco. — ?*Otophora spectabUis*, non Bl., id. ibid.; Merrill, Diction, etc. (1903) 172. - *Otophora erythrocalyx*, non Hiefn, F.-Villar I. c. (1880). - *Capura nigrescens* Vidal, Sinops. (1883) Atlas 22 t. 34 f. E. — *Otolepis fruticosa* O. Kuntze 1. c. (1890) 144. — *Capura fruticosa* (adj. sphalm. aut. »Blanco«) Vidal, Gat. Herb. (1892) 541 coll. n. 2510. - *Otophora pinnata* Merrill, Review etc. (1905) 35 (in syn.). — Vulgo: Dirig in Ilocano t. Blanco sub *Sap. bacc.* et *Koelr.edul.*, t. Vidal Sinops. 372 et t. Merrill in Diet. 1. c. et in Review 1. c.; Talinouno in Pampanga t. Blanco sub iisd. nom., t. Vidal Sinops. 393 et t. Merrill in Review 1. c; Balinaonao t. F.-Villar sub *O. Blancoi*, *paucij.* et *nigresc.* t. Vidal, Sinops. 359 et sub *Cap. pinn.* II. cc. 1886, 1892 et t. Merrill Il. cc. 1903, 1906; Paloahan t. F.-Vill. sub *O.spect.* et *erythrocal.* t. Vidal Sinops 385 et t. Merrill in Diet. 1. c.; Matang ulang (i. e. oculus canceris) Tagalis in Morong t. Loher in sched.; Tagbo in Gebu t. Usteri 1. c; Lalingod in Mindanao t. Elmer in sched. n. 11994; Sangar minto incol. Bima t. Zoll. coll. n. 3345; Blimbing tijna t. Teysm. et Binn. sub *O.Zoll.* et *Cap. Zoll.* et fid. Filet, Woordenb. sub *Cap. Zoll.* Il. cc; Balimbing tijna t. Koord. 1. c. 1912; Boewa taai Kambieng in Moluccis t. Teysm. et Binnend.; Boetaai-Kambing in Amboina t. De Fretes in sched.; Mojowontoe in Celebes t. Koord. 1. c. 1898. — Frutex vel arbor parva, eortice glabro griseo; rami teretes, striati, glabri, subnitiduli; folia 3—5-juga, rhachi tereti; foliola oblonga, obtusa vel subacuta, basi subcuneata petiolulis brevibus incrassatis insidentia, chartaceo-subcoriacea, q̄ervis lateralibus e basi patula



procurvis prasesertim subtus prominentibus, lenticulato-venosa, glabra, nitidula, supra livescentia, subtus subfusca, cellulis secretoriis nullis, epidermidis paginae inferioris cellulis (stomata cingentibus exceptis) pachydermicis insigniter (rarius — in speciminibus quibusdam philippinensibus — tenerrime) punctatis, utrinque glandulis profunde immersis (nunc crebris, nunc rarissimis) ornata, foliola infima (stipuliformia) subsessilia, ovata, parva, interdum in foliis superioribus rudimentaria vel subnulla; paniculae supra foliorum axillas laterales, rarius e ramis vetustioribus erumpentes, rhachi ramisque thyrsoideis elongatis patulis laxae cymulas (dichasia vel cincinnos) subsessiles gerentibus glabris atro-purpureis; alabastra globosa, pedicellis filiformibus; flores mediocres; sepala 4, duo exteriora majora, glabra, purpurea; petala 4, obovata, vix unguiculata, glabra, rosea (vel alba t. Roxburgh), intus basi squamis binis villosiusculis aucta; discus glaber; stamina (7 —)8, antheris glabris; germen ovatum, mox incomplete 2-loculare, stigmatibus sessilibus bilobis; fructus baccatus, ovalis vel transverse ellipsoideus, subdicoccus, incomplete 2-locularis, 2- vel abortu 1-spermus, atro-purpureus (t. Roxburgh), magnitudine cerasi parvi, valde pulposus, edulis, sapore dulci-adstringenti (»interdum 3-locularis«?).

Rami 1 cm crassi. Folia parte racheos petiolarum 6—10 cm longa inclusa 25-7-45 cm longa; foliola superiora 15—25 cm longa, 3—8 cm lata, infima (stipuliformia) 2—3 cm longa, 1—2 cm lata. Panicula 25—35 cm longa, ramis thyrsoideis 10—15 cm longis. Pedicelli 3 mm, fructigeri 1 — 1,5 cm longi. Alabastra diametro 3—4 mm. Fructus (siccus, an re vera maturus?) 1,4 cm longus, 1 cm latus.

In Java?, Sumbava (Dampo), Borneo, Celebes, in Moluccis et Philippinis: in Java?: Zollinger! (Java orientalis t. Teysm. et Binn. sub *O. Zollingeriana* et *Capura Zollingeriana*, an recte?, cf. Koord. et Val. 1. c. 175; vidi specim. cult., ex Hort. Bogor., a. 1876 a Beccari sub nom. **Cap. Zollingeriana** comm. c. Hb. Florent.); de Vriesel (Java?; Hb. Lugd.-Bat.); — in Sumbava (c. regno Dampo): Zollinger n. 33451 (in silvis ad sinum Tjempie ins. Dampo [ins. moluccana dicta a Koord. et Val. 1. c. 175], m. Aug. 1847, fr. semimat.; Hb. Franquev., DC, Boiss.); — in Borneo: Fraser n. 571 (Brit. North Borneo; Hb. Kew.); Governor Creagh (ibid., m. Maj. 1895, fl.; Hb. Kew.); L. S. Gibbs n. 2625 (North Borneo, about Tenom and Kaningan, m. Jan.-1910, fl.; specim. non vidi); P. Castro et F. Melegrito n. 15771 (Banguay island, British North Borneo, m. Jul.—Sept. 1923, fl.; comm. Merrill, m. Maj. 1925); D. D. Wood n. 17841 (Brit. North Borneo, m. Jul. 1924, fl., leg. Mohamed Taha; comm. Merrill, m. Maj. 1925); — in Celebes: Koorders n. 18821 et 18822)3! (prov. Minahassa in silva primaeva prope Totok, a. 1895, fr.); Ch. Hose n. 8211 (ead. prov., 1894-1895, fl.; Hb. Berol.); Warburg n. 155351 (Celebes septentrionalis, Menado; Hb. Berol.), n. 166951 (Celebes australis, Tjamba, m. Dec. 1888, fl.; id. Hb.); Elbert n. 26761 (Celebes austro-orientalis, ins. Buton, Bau-Bau, alt. 0—75 m, m. Sept. 1909, fl.), n. 28941 (ibid., ins. Muna, pars orientalis, Raha, alt. 0-125 m, m. Jul. 1909, fl.), n. 29341 (ibid., alt. 0-75 m, fl.); — in Moluccis: A. Roxburgh introd. in Hort. Calcutt. a. 17981 (Hb. Roxb., sub nom. *Sapindus fruticosus* Roxb. a Roxb. adscr. in Hb. Wall. n. 8043A; alterum tale specimen c. Roxburghi scheda exstat in Hb. Martius; cf. infra specim. culta); Labillardiere (Amboina; Hb. Webb); De Fretesl (Amboina, fr. juv., Hb. Bogor. n. 55671 in Hb. Rheno-Traj.); id.? (Amboina; culta in Hort. Bogor., Hb. Bogor. n. 14347K steril.); Teysmann? (Moluccae, *Capura* sp. Teysm. et Binn. l.c); Beccari n. 18 bis'! (Amboina, a. 1873, fl. et fr. juv.; Hb. Florent.), n. 18 bis''I (Ternate, m. Oct. 1875, fl. et fr. submat.; Hb. Florent.); Warburg n. 173801 (Amboina), n. 181671 (Batjan; Hb. Berol.)/- in Philippinarum insulis Luzon, Mindoro, Panay, Negros, Cebu, Mindanao, Palawan, Dumaran et Balabac; in Luzon: Warburg n. 116741 (Luzon septentr., Malunu; Hb. Berol.); Vidal n. 2510 (Dirique, prov. Ilocos Norte, 1. c. 1892); H. M. Curran n. 58201 (prov. Zambales, m. Jan. 1907, fl.; comm. ex Hb. Manil.), n. 193251 (prov. Pampanga, m. Mart. 1910, fl.; ex eod. HJb.); Merrill n. 13651 (ead. prov., Arayat; Hb. Berol.);

Blanco (en la Pampanga y Pangasinan, l. c. 1837, 290): Warburg n. 13214! (prow Bataan, Mariveles; Hb. Berol.), n. 13335! (ead. prow, Bayac; id. Herb.); Merrill n. 3808, Copelandn. 29*, Borden n. 2335 (ead. prow, fide Merrill, Fl. Lamao Forest l. c. 1906); Lobb! (Luzon, circ. 1848; Hb. Kow.): Llanos! (fructus soli c. indie. *Capura*, Blanco a. 1858 comin. c. Hb. DC, cf. Radlk. Sap. Holl.-Ind. 31); Chamisso sine n.! (Manila, circ. 1816; Hb. Berol.I: Porrottet! (ibid., a. 1819, fl.; Hb. Paris.); Rich et Brackenridge (Baios prope Manila, circ. 1842, ex Gray l. c.); Barthe! (Manila, a. 1857, fl. et fr. juw; Hb. Paris.); Vidal n. 209! (San Mateo, prov. Manila; Hb. Kew.), n. 2509 (Montalvan, prov. Manila, l. c. 1892), n. 2511 (distr. Morong, l. c. 1892); Warburg n. 13215! (Manila; Hb. Berol.); Loher n. 2051! (San Francisco del monte, prope Manila, m. Mart. 1891, fl.: Hb. Kew.), n. 2052! (Xovaliches, prope Manila, m. Nov. 1891, fr.; Hb. Kew., Monac), n. 2053! (Bosoboso, distr. Morong, m. Mart. 1893, fl.; ead. Hb.). n. 5876! (Montalban, prov. Rizal, m. Jul. 1905: ead. Hb.); Maximo Ramos n. 2068! (Bosoboso, prov. Rizal, m. Febr. 1907, fr. juw; comin. ex Hb. Manil.); Vidal n. 721! (Unisan, prov. Tayabas: Hb. Kew.); Merrill n. 2127! (ead. prow; Hb. Berol.); Cumingn. 1127! Iprov. Albay, a. 1836—1839, fl. et fr.: Hb. Webb, Boiss.: apud Turcz. in Hb. et l. c. 1848 legitur n. 1922!. quae fid. Vidal, Phanerog. Cuming. 75 potius *Ficus rapiformis* Roxb.i: — in Mindoro: Merrill n. 2239! (Pola; Hb. Berol.): M. L. Merritt n. 3660! (Bongabong River, m. Mart. 1906, fl.: comm. ex Hb. Manil.); — in Panay: F.-Villar (in Luzon et Panay. Blanco ed. 3, IV. [1880] 52); — in Negros: Usteri n. 141 (Hacienda Refugio, l. c.), n. 142! (Pontevedra, m. Febr. 1903, fl.; comm. Usteri); — in Cebu: Usteri n. 141 (ad flumen Guadalupe, l. c.); — in Mindanao: Elmer n. 11994! (Distr. Davao, Todaya, Mount Apo, m. Oct. 1909, fr.; comm. Elmer); C. V. Piper n. 460! (Distr. Davao, Mati, m. Maj. 1911, fr.; comm. ex Hb. Manil.); — in Palawan: Merrill n. 727! (Ewiig River; Hb. Berol.); id. Spec. Blanc, n. 374 (Taytay, m. Maj. 1913); F. W. Foxworthy n. 799! (m. Mart.-Apr. 1906, fr.; comm. ex Hb. Manil.): Elmer n. 12996! 12669a! 13149! (prov. Palawan, Puerto Princesa, Mount Pulgar, m. Apr. —Maj. 1911, fl. et fr.; comm. Elmer); — in ins. Dumarán: L. Escritor n. 21632! (m. Aug. 1913, fr. juw: comm. ex Hb. Manil.); — in ins. Balabac: L. Mangubat n. 423! (in silva, m. Mart. —Apr. 1906, fr.; ex eod. Hb.).

In Siam (ex Craib. Fl. Siam. enum. I. [1926] 328).

Culta in Hort. Calcuttensi: A Roxburgh introducta!, cf. supra; aWallich comm. c. Hb. Schumacher! <Hb. Havn.) et c. Hb. Hornemann, n. 568! (id. Hb.); Wallich Cat. n. 8043A! Hb. Roxb. (Hb. Linn. Soc), B! Hort. Calcutt. (Hb. Linn. Soc, Hb. Webb); in Hort. Bombayano t. Grab. l. c. 1839; in Hort. Bogor.: Ex Hort. Calcutt. introd.! sub indie. *Capura* sp., Ht. Calc. 12 in Teysm. et Binn. Cat. 1. c. (ex Hort. Bog. cl. Treub mecum comm. a. 1881 sub n. 18, steril.); a Zollinger e Java? (potius Sumbava?) introd.! *Capura Zollingeriana* Teysm. et Binn. Cat. 1. c. (ex Hort. Bogor. a Beccari a. 1876 allata in Hb. Florent., ram. foliat. et fl. adjunct., cf. supra sub ZolU; e Bourbon (i. e. Hort. Borbon.) introd.! *Sapindus* sp., Bourbon, Teysm. et Binn. Cat. 1. c. (ex Hort. Bogor. cl. Treub mecum comm. a. 1881 sub n.9, steril.); e Celebes introd. III, J, 68! (flor. et fr., comm. a. 1922 c. Hb. Monac); praeterea III, J, 60a! (flor., Hb. Monac).

5. **O. cauliflora** Merrill. Xew or noteworthy Philippine plants, in Philipp. Journ. Sc., C, Bot. XIII. 1. (1918) 24. - Frutex glaber, ramis teretibus subfuscis vel griseis lenticeiosis; folia abrupte pinnata: foliola 5 — 6, oblonga vel oblongo-elliptica, acuminata, basi acuta, breviter petiolulata, chartacea vel subcoriacea, nervis lateralibus utrinque circ. 10 procurvis venisque laxe reticulatis utrinque prominulis, nitidula, supra sordide viridia, subtus pallidiora, cellulis secretoriis nullis, epidermidis paginae inferioris cellulis (stomata cingentibus exceptis) pachydermicis punctatis. utrinque glandulis immersis notata, infima stipuliformia suborbicularia inaequilatera, brevissime obtuso-acuminata vel obtusa; paniculae e truncis vel e ramis crassioribus erumpentes, anguste pyramidatae ramis paucis divaricatis; fructus carnosus, subglobosus, majusculus, albus vel **quod-**

ammodo rubicundus, siccus brunneus, pericarpio tenuiter corticoso fragili granulato; semina 1—2 larga, castanea, nitida.

Frutex 1 m altus (et probabiliter altior quoque). Folia circ. 40 cm longa; foliola 15—25 cm longa, 7—9 cm lata, infima (stipuliformia) 1—2 cm longa. Paniculae circ. 20 cm longae, ramis inferioribus 3—4 cm longis. Fructus 3—4 cm, sicci 2—3 cm diametro. Semina 1,5—2 cm diametro.

In Philippinarum insula Luzon: Ramos et Edaña n.28516 (in scheda 28561!), 28533 (in silvis secus fluvios, alt. humili, m. Maj. 1917, fr.).

Obs. Descriptio ex Merrill l. c. et e fragmento a cl. Merrill benevole communicato. Specks ab *O. fruticosa* Bl. t. Merrill praesertim discrepans fructu multo majore.

6. *O. sessilis* King, Mater, etc. (1896) 430!; Ridley, Fl. Malay Penins. I. (1922) 495. — Frutex vel arbor parva; folia 5—6-juga, rhachi tereti striata glabra, foliola alterna vel subopposita, sat larga, lanceolato-oblonga, breviter cuspidata, basi obliqua sessilia, chartacea, nervis lateralibus e basi patula procurvis subtus valde prominentibus, laxe reticulato-venosa, circa insertiones subtus setigera, ceterum glabra, supra nitida, laevia, laete viridia, sicca olivacea, subtus violaceo-fusca, cellulis secretoriis nullis, epidermidis paginae inferioris cellulis paucis tantum pachydermicis subreticulato-punctatis. utrinque glandulis profunde immersis ornata, infima (stipuliformia) ovato-rotundata; thyrsi pauci in paniculas axillares congesti, laxe cincinnos sessiles gerentes, glabri; alabastra subglobosa; flores pallide, extus saturate rubri; sepala 5 (4 t. King), ovata, glabra; petala 5 (4 t. King), elliptica, breviter unguiculata, glabra, intus squama minima submarginata pilosula aucta; discus glaber; stamina 8 (6 t. King), filamentis antherisque glabris; rudimentum germinis 2-merum, glabrum; fructus baccatus, subellipticus, utrinque subacutus, a carpellorum marginibus compressus, septo subnullo quasi 1-ocularis, abortu 1-spermus, glaber; embryo compressus, cotyledonibus erectis fructus angulos spectantibus.

Frutex 6—10-pedalis. Folia 70 cm—1 m longa; foliola 20—30 cm longa, 7—10 cm lata, infima (stipuliformia) 5—6,5 cm longa. Paniculae 20—25 cm longae. Alabastra diametro circ. 3 mm. Fructus ad 2,5 cm longus, 1,2 cm latus (t. King).

In peninsulae malaicae ditone Perak: King's collector Kunstler n. 2460! (flor.); Wray n.2883! (fruct.); n.5043! (Larut, dense jungle, rocky locality, alt. 600—800 ped., m. Oct. 1883, folia; Hb. DC). - In Siam (ex Craib, Fl. Siam. enum. I. [1926] 328).

7. ***O. glandulosa*** Radlk. n. sp. in Merrill, PI. Elmer, borneenses (1929) 174. — Arbor?; folia sat robusta, parte petiolari valida, abrupte pinnata, ad 5-juga; foliola alterna vel subopposita (stipuliformia desunt), breviter sed valide petiolulata, petiolulis glabris nee setosis, e basi cuneata latiuscule oblongo-lanceolata, brevissime obtuse apiculata, rigide chartacea, nitidula, supra virescentia, subtus pallide subfusca, nervis subtus valde prominentibus, epidermide pachydermica punctata, glandulis numerosis elongatis 1-seriatim multicellularibus (-J- vermicularibus) rubro-fuscis basi immersis crebris utrinque, praesertim subtus, ornata; inflorescentia e trunco divaricato-ramosa; sepala 5; petala 5, oblonga, basi pilosa; stamina 7, brevissima, villosissima, antheris albide pilosis; germen floris <J rudimentarium glabrum; fructus breviter pedicellati, breviter ellipsoidei, septo perbrevis 1-oculares, 2-spermi, rubiginosi, pericarpio tenuiter crustaceo opaco; semina subplanoconvexa, testa tenuiter Crustacea, nitida, atropurpurea.

Folia cum parte petiolari 15 cm longa 65—70 cm longa; interjuga 6—8 cm longa; foliola inter se subaequimagna, inferiora (parum majora) cum petiolulo circ. 7 mm longo 18-20 cm longa, 6,5-7,5 cm lata, apiculo vix 5 mm longo. Fructus maturus circ. 12 mm longus, 9 mm crassus.

In insula Borneo indigena: Elmer n. 20128! (Sandakan, Myburgh Prow, Brit. N. B. X-XII 1921) [= Ramos 1299 et 1693? ex scheda].

•The same species is represented by Wood 772, Sandakan, Ramos 299, 1693, Sandakan, Clemens 10782, Mount Kinabalu, and Clemens 11175, Mount Kalawat, British North Borneo, all named by Dr. Radlkofer* (Merrill, I.e.).

8. **O. fureato** Pierre, Fl. forest. Cochinch. Fasc. 21. (1895) t. 330B et in distrib.!: Lecomte, Fl. Ind.-Chin. I. (1912) 1033. — *Otolepis furcata* Pierre l. c. in textu ad tab. cit. — Vulgo: Con chdm in lingua Annam., Sosang peyhan in lingua Moi t. Pierre l. c. — Arbor mediocris, glabra; rami teretes, subcompressi, striati, grisei, glabri; folia 12-juga, rhachi tereti striata superne subangulosa glabra, foliola subalternâ, lineari-lanceolata, acuta, petiolulata, subcoriacea, nervis lateralibus procurvis praesertim subtus prominentibus, reticulato-venosa, glabra, laevissima, splendentia, supra viridia, subtus subfusca, cellulis secretoriis nullis, epidermidis paginae inferioris cellulis pachydermicis subreticulato-punctatis, utrinque glandulis profunde immersis ornata, infima (stipuliformia) magna, late ovata, subsessilia, fere usque ad medium inaequaliter bifida (bifurcata); thyrsi in paniculas amplas e ramorum vetustorum nodis pendentes fasciculatas congesti, rhachi angulosa, glabra, laxe cincinnos sessiles gerentes; alabastra subglobosa, pedicellata; flores mediocres; sepala 5, praeter marginem ciliolatum glabra; petala 5, elliptica, unguiculata, extus basi pilosula, intus squama minima emarginata aucta; discus glaber; stamina 8, filamenta parce pilosula, antherae glabrae; germen ova turn, incomplete biloculare, glabrum, stigmatibus bilobo; fructus baccatus, incomplete bilocularis, septo vix tertiam fructus partem attingente, 2- vel abortu 1-spermus, ellipticus, subcompressus, bisulcatus, apiculatus, purpureus, longiuscule pedicellatus.

Arbor 4—10-metralis; rami 12 — 15 mm crassi. Folia parte rhacheos petiolarum 22 cm longa inclusa circ. 80 cm longa; foliola (sursum decrescentia) 16—18 cm longa, 3,5—4 cm lata, petiolulis 4—6 mm longis; infima (stipuliformia) 5—6 cm longa, 4 cm lata. Paniculae circ. 30 cm longae ramis thyrsoideis 15—18 cm longis. Pedicelli fructigeri 10—12 mm longi. Alabastra di a metro 3—4 mm. Fructus 2,4—2,8 cm longus, 2,2 cm latus, 1 cm crassus, edulis.

In Gochinchinae provincia Bien hoa ad montem Lu in silvis: Pierre n. 41271 (m. Mart. 1877, flor. et fruct.).

9. **O. amplifolia** Pierre, Fl. forest. Gochinch. Fasc. 21 (1895) t. 331B et in distrib.!: Lecomte, Fl. Ind.-Chin. I. (1912) 1031 f. 129. — *Otolepis amplifolia* Pierre l. c. in textu ad tab. cit. — Arbor parva ramis crassis teretibus striatis glabrescentibus nitidulis; folia 56-juga, rhachi late alata striata glabrescente; foliola opposita, oblongo-lanceolata, breviter subacuminata, basi cuneata petiolulis crassis brevissimis insidentia, chartacea, nervis lateralibus procurvis utrinque prominentibus, laxe reticulato-venosa, glabra, supra nitida, subtus nitidula, e viridi glaucescentia, cellulis secretoriis nullis, epidermidis paginae inferioris cellulis pachydermicis punctatis, utrinque glandulis profunde immersis ornata, foliola infima (stipuliformia) magna, sessilia, e basi cordata lanceolata; paniculae magnae, laxae, paucae fasciculatae ad ramorum vetustorum nodos vel axillares, rhachi ramisque thyrsoideis elongatis atro-purpureis, laxe cincinnos subsessiles gerentibus; flores ignoti, nisi partes sub fructu relictæ; sepala 5; stamina 8; fructus baccatus, plenimque obcordatus, complete bilocularis, bisulcatus, vel abortu 1-ocularis, obovatus, purpureus.

Arbor 2—3-metralis. Rami 1,5—2 cm crassi. Folia parte rhacheos petiolarum circ. 15 cm longa inclusa 50—70 cm longa; rhacheos ala utraque 2—12 mm lata; foliola 15—40 cm longa, 5—8 cm lata, infima (stipuliformia) 8—14 cm longa, 4—5 cm lata. Panicula 30—45 cm longa, ramis thyrsoideis 15—20 cm longis. Pedicelli fructigeri 8—14 mm longi, medio vel prope basin articulati. Fructus (siccus) 15 mm altus, 20 mm latus, 9 mm crassus.

In Gochinchinae prov. Bien hoa prope Chiao Khan: Pierre n. 41281 (m. Mart. 1877, fruct.).

10. **O. eambodiana** Pierre, Fl. forest. Gochinch. Fasc. 21 (1895) t. 330A et in distrib.!: W. 6. Graib, List of Siamese PL in Kew Bull. (1911) 32, Fl. Siam. enum. I. (1926) 328; Lecomte, Fl. Ind.-Chin. I. (1912) 1033 f. 129. — *Otolepis eambodiana* Pierre l. c. in textu ad tab. cit. — *Capura* sp. Teysm. et Binn. Gat. Hort. Bogor. (1866) 391, perperam ad *O. fruticos.* recensita in Radlk. Sap. Holl.-Ind. (1879) 86 (237). — Vulgo:

Phoñ rieng soeñ Siamensibus t. Teysm. 1. c — Arbor parva trunco nodoso; rami teretes, striati, glabri; folia 7-8-juga, rhachi tereti striata; foliola lineari-lanceolata, obtusa vel acuta, breviter petiolulata, chartacea, nervis lateralibus e basi patula procurvis utrinque prominulis, reticulato-venosa, glabra, nitidula vel opaca, supra glauoescencia, subtus pallide subfusca, cellulis secretoriis nullis, epidermidis paginae inferioris cellulis pachydermicis punctatis, glandulis nullis vel in pagina superiore rarissimis, infima (stipuliformia) parva, e basi subcordata rotundata; thyrsi fasciculati vel in paniculas breves laxas congesti ad ramorum vetustorum nodos, glabri, laxe cincinnos sessiles gerentes; alabastra subglobosa, pedicellata; flores roseo-purpurei; septe 5, ovata, glabra; petala 5, sepalis paullo minora, elliptica, breviter unguiculata, extus basi cum ungue pilosula, margine ciliolata, intus basi squamis binis parvis medio connatis villosiusculis aucta; discus glaber; stamina 8, filamenta crassiuscula, pilosula, antherae glabrae; germen crassiuscule fusiforme, glabrum, biloculare, stigmatate bilobo, lobis erectis; fructus baccatus, obcordatus, subcompressus, complete bilocularis.

Arbor 3—4-metralis. Rami foliati 5 mm, thyrsigeri circ. 2 cm crassi. Folia parte rhacheos petiolarum 8—10 cm longa inclusa 30—45 cm longa; foliola 12—18 cm longa, 2,5—3,5 cm lata, infima (stipuliformia) 5—20 mm longa et lata. Thyrsi 8-18 cm longi. Pedicelli circ. 1 cm longi, basi articulati. Alabastra diametro circ. 3 mm. Fructus {sat evolutus} 12 mm altus, 14 mm latus, 5 mm crassus (t. Pierre).

In Cambodia, Siam et Laos: Harmand n. 1031 (Cambodia secus flumen Dongnai prope Stung Treng, a. 1876, flor. et fr. juven.; Herb. Pierre n. 4129, comm. Pierre); Thorel (Bassin de Mekong, ex H. Lee. 1. c); — in Siam: Teysmann, Herb. Bogor. n. 6038! (Badboerin; rami foliati et fructus adjecti ab insectis valde mutilati; Hb. Bogor.); Harmand (ex H. Lee. 1. c); Zimmermann n. 1121 (prope Bangkok, a. 1899, flor.; Hb. Berol., Monac); — in Laos: Harmand (Bassin du Sè-moan, ex H. Lee. 1. c).

Culta in Hort. Bogor., e Siam introd., Ill, J, 481 (flor. comm. a. 1922, fruct. comm. 1925 c. Hb. Monac).

11. **O. nodosa** Pierre, Fl. forest. Cochinch. Fasc. 21 (1895) t. 331A et in distrib.1; Lecomte, Fl. Ind.-Chin. I. (1912) 1032 f. 129. - *Otalepis nodosa* Pierre 1. c., in textu ad tab. cit. — Arbor mediocris, trunco laevi; rami teretes, striati, glabri; folia 7—14-juga, rhachi tereti striata; foliola subopposita, oblongo-lanceolata, sensim obtuse acuminata, basi obliqua petiolulis insidentia, subcoriacea, nervis lateralibus procurvis utrinque prominentibus, laxe reticulato-venosa, glabra, nitidula, supra viridula, subtus subfusca, cellulis secretoriis nullis, epidermidis paginae inferioris cellulis pachydermicis punctatis, utrinque glandulis profunde immersis ornata, infima (stipuliformia) parva, sessilia, lanceolata; thyrsi fasciculati ad ramorum vetustorum nodos, sat dense cincinnos 3—8-flores breviter stipitatos gerentes, glabri; alabastra subglobosa, longius pedicellata; flores purpurei; sepala 5, obovata, glabra; petala 5, elliptica, unguiculata, extus basi cum ungue pilosula, margine ciliolata, intus squama majuscula biloba villosiuscula aucta; discus glaber; stamina 7—8 (10 ex Pierre in textu, 8 vero in tab.), filamenta pilosula, antherae glabrae; germen obovatum, subcompressum, glabrum, biloculare, stigmatate bilobo; fructus baccatus, subobcordatus, complete bilocularis, glaber, purpureus.

Arbor 8—10-metralis. Rami circ. 1 cm crassi. Folia parte rhacheos petiolarum circ. 15 cm longa inclusa 60—75 cm longa; foliola 14—18 cm longa, 3—4 cm lata, petiolulis 7 mm longis, infima (stipuliformia) 1—2 cm longa, 5 mm lata. Thyrsi 12—18 cm longi. Pedicelli 10—12 mm longi. Alabastra diametro 3—4 mm. Fructus 12—15 mm altus, 14-16 mm latus (t. Pierre).

In Cochinchinae prov. Bien-hoa ad ripas fluminis Dongnai prope Trihuen: Pierre n. 12831 (m. Januar. 1873, flor. et fruct. juven.).

12. **O. bljuga** Radlk. n. sp. in Merrill, Pl. Elmer, borneenses (1929) 173 nomèn. — Frutex gracilis pauciramosus, cortice laevi; folia resupinata (ex collectore »descendingt), 2-juga, rhachi (parte petiolarum inclusa) subtereti obtuse angulata glaber-

rima; foliola breviter vel longius petiolulata, ampla, late oblongo-elliptica vel e'basi subovata late oblonga, obtusiuscula, marginata, rigide chartaceo-coriacea, supra opaca livescentia, subtus nitidula, cinnamomea (viva laetius viridia), glaberrima, reticulata reti venarum supra densiore, nervis venisque subtus valde prominentibus, nervo mediano basin versus 2-canaliculato, utrinque glandulis immersis adpersa, epidermidis paginae inferioris cellulis (stomata cingentibus exceptis) flexuose pachydermicis punctatis, cellulis secretoriis nullis, foliola stipuliformia suborbiculata; inflorescentiae axillares, brevissimae; (flores non suppetebant); fructus juvenilis globosus, glaberrimus, stigmatate sessili transverse exarato utrinque parum descendente, maturus pericarpio tenuiter crustaceo; semen globosum testa spadicea nitidissima.

Folia ad 30 cm longa, parte rhachidis petiolarum 2—6 cm longa, 3 mm crassa; foliola superiora cum petiolulis 4 — 11 mm, in aliis ad 25 mm longis, ad 23 cm longa, 9 cm lata, infima (stipuliformia) 23—30 mm longa et lata. Inflorescentia 4 — 6 cm longa; flores flavidi (ex coll.)- Fructus maturus diametro 1 cm, pedicellis 6 mm longis.

In Borneo: Elmer n. 20749! (Tawao, Elphinstone Prov. Brit. N. Borneo, in dense woods near a flat along a creek, m. Oct. 1922 — m. Mart. 1923; Hb. Univ. California); G. Boden Kloss n. 19103! (Bettotan w. Sandakan, 12. Aug. 1927; Hb. Univ. California).

13. **O. anomala** Radlk. n. sp. — Arbuscula ramis cortice cinnamomeo rimuloso, lenticelloso-aspero; folia 2—4-juga, foliolo terminali anomala, parte rhachidis petiolarum brevissima vel subnulla, unde jugum infimum foliolis stipuliformibus proximum fere contiguum; foliola media (maxima) oblongo-ovata, acutiuscula vel breviter acuminata, breviter petiolulata, nervis oblique adscendentibus, reti venarum utrinque, subtus magis, prominulo, rigide chartacea, cellulis secretoriis nullis, epidermidis paginae inferioris cellulis flexuose pachydermicis punctatis, utrinque glandulis immersis adpersa; foliolum terminate valde aberrans, lineare, ceteris multo brevius, angustissimum; foliola stipuliformia nunc perparva, nunc majora, ovalia velsubrotunda; inflorescentiae axillares subterminales, elongatae, rhachi angulosa, plerumque cincinnos 3-flores laxe gerentes, pedicellis patentibus crassiusculis; sepala 4, glabra; petala 4 breviora; stamina 6—7 filamentis puberulis; germen subglobosum puberulum, stigmatate sessili transverse exarato.

Folia ad 15 cm longa; foliola infima et media (maxima) 10—18 cm longa, 5—7 cm lata, terminale 7 cm longum, 6 mm latum, stipuliformia 8—30 mm longa, 5—20 mm lata. Inflorescentiae ad 25 cm longae; pedicelli ad 8 mm longi; flores aperti (ex collectore rubelli et flavidi) diametro circ. 7 mm, sepalis 3 mm, petalis 2,5 mm, staminibus 2 mm longis.

In Borneo: Mary Strong Clemens n. 9880! (Kibayo to Keung, 29. Oct. 1915; Hb. Bur. Sci. Manila).

14. **O. lancifolia** Radlk. n. sp. — Arbor?; folia remote 6-juga; foliola elongate lanceolata, in petiolulos breves sensim attenuata, apice breviuscule acuminata, supra livida, subtus quodammodo rubescentia, infima (stipuliformia) magna, rotundato-ovata, omnia reticulato-venosa, utrinque nitidula; inflorescentia axillaris, pauciramosa; flores breviter pedicellati; sepala 5, floris deflorati reflexa, elliptica; petala 5, sepalis dimidio breviora, glabra, intus squama aucta; stamina 8, glabriuscula; germen complete 2-loculare, stigmatate sessili decliviter 2-lobo superatum.

Foliola ad 35 cm longa, 10 cm lata; stipuliformia 5—6 cm longa, 4—5 cm lata. Sepala floris deflorati 3 mm longa, 1,5—2 mm lata; petala rubra (ex scheda); germen (floris deflorati) 3—4 mm longum, 1,5—2 mm latum.

In insula Borneo indigena: Ramos n. 1443! (Batolima, Sandakan, fl. Oct. 1920).

15. **O. reseeta** Radlk. in Records Bot. Surv. Ind. III. 3. (1907) 346 (reimpr. in Fedde, Repert. VIII. [1910] 189); Ridley, Fl. Malay Penins. I. (1922) 495. - Arbor parva; rami teretes, subtiliter striati glabri; folia (mutilatam tantum visum) 10-juga, rhachi tereti superne a lateribus compressiuscula striata glabra, foliola sessilia, sub-

opposita, refracta, linearia, sensim acuminata, basi inaequaliter subacuta, i. e. intus oblique truncata, quasi resecta, extus sensim arcuato-angustata, petiolulis brevissimis tumidis, membranaceo-chartacea, nervis lateralibus subtilibus remotiusculis e basi patula procurvis utrinque prominulis reticulato-venosa, nitidula, glabra, supra livescentia, subtus pallide subfusca, cellulis secretoriis nullis, epidermidis paginae inferioris cellulis hic illic singulis vel binis vicinis pachydermicis subreticulato-punctatis, utrinque glandulis profunde immersis attamen raris ornata, infima (stipuliformia) mediocria, suborbicularia, sessilia; panicula elongata, glabra, ramis thyrsoides patentibus vel refractis cincinnos sessiles gerentibus, rhachi subangulosa; alabastra subglobosa, pedicellata; flores rubri; sepala 5(—4), ovata, glabra; petala 5(—4), elliptica, vixungiculata, sepalis multo minora, margine ciliolata, extus basi pilosula, intus squama minima emarginata pilosula aucta; stamina 8, filamenta villosa, antherae glabrae; germinis rudimentum 2-merum, glabrum.

Ram! circ. 1 cm crassi. Folium (mutilatum) 75 cm longum; foliola 20—22 cm longa, circ. 3 cm lata. Panicula circ. 35 cm longa, ramis thyrsoides 2—14 cm longis. Pedicelli 5—6 mm longi, basi articulati. Alabastra diametro circ. 3 mm.

In insula malaccensi Pulu Penang: Ridley n. 6948! (Penang, Bukit, m. Dec. 1895, flor.; Hb. Calcutt.).

16. **O. setigera** Radlk. in Phil. Journ. Sc. VIII. 6. (1913) 455. - Arbor parva; folia (unum basi mutilatum tantum visum) 8-juga, rhachi striata minutim puberula; foliola alternantia, lanceolata, apice acuminata, basi cuneata, subsessilia, chartacea, nervis lateralibus approximatis obliquis procurvis, in nervo mediano subtus infra medium setis validis obsita, ceterum glabra, opaca, livida, cellulis secretoriis nullis, epidermidis paginae inferioris cellulis pachydermicis subreticulato-punctatis, utrinque glandulis cylindricis e cellulis circ. 12 uniseriatis exstructis basi immersis ornata (foliola infima non visa); fructus (fide schedae) »paniculati« (panicula »decerpta« verisimiliter e trunco enata), ellipsoidei, (sicci) tenuiter crustacei, coccinei, utrinque leviter sulcati, septo evanido 1-loculares, dispermi; semina semiellipsoidea, contigua, basi affixa, testa fusco-spadicea subcoriacea.

Arbor 8 ped. alta. Folium (mutilatum) 50 cm longum; foliola intermedia ad 20 cm longa, ad 4 cm lata, superiora et inferiora paullo minora. Fructus ad 2 cm longus, fere totidem latus.

In Philippinarum insula Mindanao: Maj. E. A. Mearns et W. I. Hutchinson n. 4569 (Mount Malindang, prov. Misamis, in silvis, altit. 3000 ped., m. Maj. 1906, fruct.; comm. ex Hb. Manil.); cf. Merrill, Enum. Philipp. pi. II. (1923) 501.

17. **O. oliviformis** Radlk. in Phil. Journ. Sc. VI. 3. (1911) 181. - Arbor mediocris; folia ad trunci apicem congesta, magna, sessilia, circ. 7-juga, rhachi tereti striata praesertim superne setuloso-hirsuta; foliola opposita, late oblonga, vel inferiora elliptica, breviter obtuse acuminata, basi obtusa inaequaliter subcordata petiolulo per brevi tumido setuloso insidentia, membranaceo-chartacea, nervis lateralibus procurvis subtus-prominentibus, laxe reticulato-venosa, praeter nervi mediani basin parce setulosam glabra, supra livida, subtus pallidiora, praesertim supra nitida, cellulis secretoriis nullis, epidermidis inferioris cellulis pachydermicis margine punctatis, utrinque glandulis cylindricis e cellulis 12—20 uniseriatis exstructis basi (profunde) immersis ornata, infima (stipuliformia) parva, sessilia, ovata; thyrsi e trunco enascentes, solitarii (?), sessiles, valde elongati, rhachi sat dense cincinnigera striata glabra fusco-purpurea; cincinni sessiles; fructus baccatus, oliviformis, incomplete 2-locularis, glaber, rubicundus (siccus cinnamomeus), longiuscule pedicellatus, stigmatibus sessilibus obsolete bilobo coronatus; semina — (immatura tantum suppetebant).

Arbor 10-metralis. Folia parte rhacheos petiolarum 17 cm longa inclusa 60 cm longa, interjugis 6—8 cm longis; foliola cum petiolulis ad 6 mm longis 17—28 cm longa, ad 8,5 cm lata. Thyrsus (unus tantum suppetebat) 32 cm longus, pedicelli prope basin, articulati 14 mm longi. Fructus 2 cm longus, 1,2 cm latus.

In Philippinarum insula Polillo: McGregor n. 103301 (m. Oct.—Nov. 1909, fr.; comm. ex Hb. Manil.); cf. Merrill, I.e. 501.

Sect. III. Euotophora Radlk.

18. **O. alata** Blume 1. c. (1847) 145!; Wai p. Ann. II. (1851-1852) 222; Miq. 1. c. {1859} 560; Radlk. Sap. Holl.-Ind. (1877-1878) 10, 32, 86 (80, 102, 237), in Engl. u. Prantl, Nat. Pflanzenfam. III. 5. (1895) 320 et in Winkler, Beitr. Fl. Borneo, in Engler's Bot. Jahrb. XLIX. (1913) 370; Hoola van Nooten, Fleurs etc. de Java <1863), Ed. 2. (1866), Ed. 3. (1880) icon.; Koord. et Val. I.e. (1903) 143, 170; Backer, Fl. Batav. I. (1907) 342; Koord.-Schum. Syst. Verz. I! Java (1912) Sapinjd. 7, coll. n. 14227)8 etc.; Koord. Exk.-Fl. Java II. (1912) 538 et Atlas Baumart. 1.3. (1913) t.129, coll. n. 2259101; Merrill, Bibliogr. enum. Born. pi. (1921) 358. — *Lepisanthes alaris* Zolling. coll. n. 3456! (circ. 1845). — *Aphanomixis alata* Korth. Hb. ed. Blume 1. c. 146. — *Capura alata* Teysm. et Binn. Gat. Hort. Bogor. (1866) 214; A. F. W. Schimper, Pflanzengeogr. (1898) 165, 166 f. 87, inter plantas formicis hospitium praebentes. — *Otolepis alata* O. Kuntze 1. c. (1891) 144. — Vulgo: Kiangier t. Teysm. et Binn. 1. c; Ki-angier s. Ki-anjer Filet, Woordenb. (1876) 169 n. 3972, {1888} 165 n.4313*; Pisang Tjina t. H. v. Nooten 1. c; Tjermeh Landa t. Backer 1. c.; Belang gasua Borneensibus t. Winkler. — Frutex vel arbor mediocris, cortice nigro-fusco verrucoso rimoso; rami subangulares, striati, glabri; folia 4—7—10-juga, rhachi alata striata, foliola subsessilia, oblongo- vel lineari-lanceolata, apice brevius longiusve acuminata, basi acuta, membranacea vel chartacea, nervis lateralibus (intermediis adjectis) numerosioribus patulis vel procurvis utrinque prominulis, reticulato-venosa, glabra, nitidula, supra glaucescentia subtus subfusca, glandulis cellulisque secretoriis nullis, infima (stipuliformia) parva, ovata, acuta, basi rotundata vel subcordata sessilia, recurva, ramulos amplectentia (formicis hospitium praebentia); paniculae axillares vel ad ramorum defoliatorum nodos laterales, elongatae, ramis (in parte inferiore) paucis thyrsoides patentibus, laxe einennos sessiles gerentibus subangulosis glabris; alabastra subglobosa, breviter pedicellata; flores albidi (t. Blume) vel purpurei (t. Zollinger in scheda); sepala 5, ovata, glabra, rotundata; petala ovalia, brevissime unguiculata, margine parce ciliolata, intus squama minima emarginata pilis paucis adspersa aucta; discus glaber; stamina 8, filamentis brevibus villosiusculis, antheris papillosis; germen ovoideo-3(—4)-gonum, 3(—4)-loculare, glabrum, stigmatibus 3(—4)-lobo; fructus corticosus, magnitudine cerasi (t. Blume) vel nucis Juglandis (t. Motley), depresso subglobosus, apiculatus, 3(—4)-locularis, 3(—4)-gonus, 3(—4)-sulcatus, glaber, citrinus <t. Blume) vel saturate ruber (t. Motley), pedicellis elongatis.

Frutex 1—2 m altus (t. Beccari) vel arbor 30—40-pedalis. Rami 0,5—1,4 cm crassi. Folia 20—45 cm immo ultra 1 m longa; foliola 10—20—45 cm longa, 1,8—7 cm lata, infima (stipuliformia) 1—2 cm longa, 1—1,5 cm lata, rhacheos alis utrisque 2—4—8 mm latis. Panicula 25—35 cm longa, ramis thyrsoides 6—20 cm longis. Alabastra diametro circ. 3 mm. Pedicelli fructigeri ad 2 cm longi. Fructus diametro circ. 2 cm, edulis saporis adstringentis (t. Motley).

In insulis Borneo et Java nee non in arehipelagi Suluensis insula Jolo: In Borneo: Korthals! (in regionibus meridionalibus depressis, fruct. submat.; Hb. Lugd.-Bat., specim. a Bl. determ. et c. Hb. Rheno-Traj., Berol., Mart., Vindob. comm.); J. Motley n. 905! (Bangarmassing a. 1857—1858, indigena et culta; Hb. Kew.); Beccari n. 3416! (prov. Pontianak, ad ostium fluminis Sungei Kantut, m. Maj. 1867, flor. et fr.; Hb. Florent.); Teysmann n. 10862! (Sebalomo, flor. et fr. juv.; a Beccari a. 1876 comm. c. Hb. Florent. ut et specim. in Hort. Bogor. culta); H. Winkler n. 13351 (in Borneo orientali, in ripa fluminis Sungei Pahu, m. Aug. 1908, fl.; Hb. Berol.); Hallier n. 912! (Borneo, Sanggouw, a. 1893—1894, fr.; comm. ex Hb. Bogor.). — in Java: Leschenault n. 591 (Hb. Paris.); Horsfield Sapind. n. 14! (Hb. Kew.); Teysmann! (Hb. Bogor. n. 14553!, fruct. juv.); Forbes n. 11601 (South East Java

a. 1880-1882, steril.; Hb. Berol.); Koorders n. 14227/?! 22591/?! (prov. Pekalongan, interdum culta); — in archipelagi Suluensis insula Jolo: Ramos et Edafto n.444031 (m. Sept. 1924, fr.; comm. Merrill). — Gulta in Hort. Bogor. exstat in coll. Zollinger n. 3456! (m. Nov. 1845, »Hort. Bog. Sapindac. n. 983 D«, flor. et fr. juv., Hb. Franquev., Boiss.); a Teysmann a. 1867—1868 comm. in Hb. Hasskarll et Hb. Berol., in Hb. Bogor. n. 14527! (f rue tig.); in coll. Warburg n. 1989! (Hb. Berol.), in reliquiis Hillebrandianis (Hb. Berol.); Hort. Bogor. XII B, IX 56! (e Java in trod., fl., comm. a. 1922 c. Hb. Monac); culta in Javae prov. Pekalongan ab indigenis t. Koord. et Val. 1. c. 143, 170, Hb. Koorders n. 22591^1

19. **O. acuminata** Radlk. n. sp. — Arbor?; folia gracilia abrupte pinnata, ad 8-juga; foliola alterna vel subopposita, distincte petiolulata, e basi in petiolulum attenuata anguste lanceolata, margine angustissime reflexo parum undulato, longe acuminata, acumine tenui plerumque subfalcato, nervis subtus prominulis, supra nervo primario excepto vix distinctis, glaberrima, supra nitida, e viridulo livescentia, subtus opaca, subfusca, tenuiter chartacea, infima (stipuliformia) minutissima, lineari-lanceolata, plerumque hamatim reflexa; inflorescentia e trunco orta robusta, eramosa (?); fructus valide pedicellatus, ellipsoideus, obtuse trigonus, complete 3-ocularis (abortu interdum 2—1-ocularis), inter loculos late et leviter sulcatus, oblique rostratus, glaber, pericarpio crasse crustaceo durissimo sublignoso opaco; seminis oblongi carinati testa nitida membranacea.

Folia cum parte petiolarum 5—7 cm longa circ. 40 cm longa; foliola superiora (longiora) cum petiolulis circ. 6—10 mm longis ad 20 cm longa, 2—2,5 cm lata, acumine a basi 1 cm lata ad 5 cm longo, stipuliformia 4—6 mm longa, 1,5—2 mm lata. Inflorescentia fructifera (an ramus?) 18 cm longa, rhachi ad basin 4,5 mm crassa. Fructus cum rostro 2 mm longo 2,5 cm longus, 1,7 mm crassus, pedicello circ. 1 cm longo.

In insula Borneo indigena: H. Hallier n. 911! (Sanggouw, fr. 1893—1894; Hb. Bogor.).

20. **O. erythrocalyx** Hiern in Hook.f. Fl. Brit. Ind. I. (1875) 680!; Radlk. Sap. Holl.-Ind. (1877-1878) 83, 86 (234, 237) et in Engl.u Prantl, Nat. Pflanzenfam. III. 5. (1895) 320; King, Mater, etc. (1896) 430!; Ridley, Fl. Malay Penins. I. (1922) 496. - *Otolepis erythrocalyx* O. Kuntze l. c. (1891) 144. — Arbor parva, glabra; folia 7—10-juga, rhachi tereti; foliola alterna vel opposita, ex oblongo lanceolata, apice breviter acuminata, basi acuta petiolulis brevibus totis tumidis supra planiusculis insidentia, coriacea, nervis lateralibus procurvis subtus prominentibus, laxe reticulato-venosa, glabra, supra laevia olivacea, subtus subfusca, cellulis secretoriis nullis, epidermidis paginae inferioris cellulis pachydermicis punctatis, glandulis immersis raris supra tantum ornata, infima (stipuliformia) ovata; paniculae amplae, ramosissimae, folia longitudine fere aequantes; pedicelli filiformes; sepala 5, ovata, glabra, sanguinea; petala 5, elliptica, breviter unguiculata, margine ciliolata, extus basi pilosula, intus squama minima emarginata pilosula aucta, pallide rosea; discus glaber; stamina 8, filamentis villosiusculis, antheris iriitutissime puberulis; germen trigonum, glabrum, stigmatibus sessilibus 3-lobo; fructus baccatus, subobovatus, complete trilocularis, trigonus, trisulcatus, apiculatus, glaber albidus (t. Hiern), pedicellis elongatis.

Folia 75—110 cm longa; foliola 12—22 cm longa, 3,5—7 cm lata, petiolulis circ. 5 mm longis. Panicula 50—75 cm longa (immo longior). Pedicelli fructigeri circ. 1 cm longi. Fructus diametro circ. 3 cm (t. Hiern).

In Malacca: Maingay n. 447! (Hb. Kew.j.

21. **O. lunduensis** Radlk. in Fedde, Report. XVIII. (1922) 339. - Arbor medio-cris; rami teretes, glabrati, lenticellosi-rimosi, rubro-fusci; folia 5—6-juga, rhachi subtereti strata laxa puberula; foliola opposita, lanceolata, acuminata, basi oblique acutata (latere exteriori angustiore) sessilia, subbriacea, nervis lateralibus obliquis ante marginem anastomosantibus, subtus venisque laxa reticulatis prominentibus, praeter nervum medianum utrinque puberulum glabra, supra laevia, livescentia, subtus

e subfusco in rubrum vergentia, utrinque nitidula, glandulis immersis praesertim subtus ornata, cellulis secretoriis numerosis instructa, infima (stipuliformia) minuta, oblique ovata vel suborbicularia; paniculae axillares vel subterminales ramis ramisque oblique erectis striatis cymulas paucifloras sessiles glomeruliformes vel superne flores singulos gerentibus minutim puberulis; alabastra globosa, breviter pedicellata; flores pro genere parvi; sepala 5, obovato-elliptica, basi minutim puberula, glanduloso-ciliolata; petala 5, sepalis dimidio breviora, deltoidea, margine squamulaeque basilares albo-villosa; discus glaber; stamina 7 — 8, filamentis brevibus albo-villosis, antheris pilosiusculis; germen (floris \nless) rudimentarium, dense villosum; fructus (semimaturus) corticoso-carnosus, breviter ellipsoideus, trisulcato-trilobus, 3-locularis, obtuse apiculatus, apiculo stigmatis lobis 3 suturalibus sulcatis declivibus adnatis oblecto, glabratus, subfuscus.

Arbor 7 m alta. Rami 3 mm crassi. Folia ad 24 cm longa, interjugis circ. 3 cm longis, parte petiolari paullo breviora; foliola ad 10 cm longa, 3 cm lata, infima (stipuliformia) ad 7 mm longa, 6 mm lata. Paniculae circ. 20 cm longae, ramis inferioribus 8—12 cm longis, superioribus brevioribus. Alabastra diametro 2 mm; pedicelli 1,5 mm, fructigeri 5 mm longi.

In insulae Borneo ditone Sarawak: F. W. Foxworthy n. 17! (Lundu ad marginem silvae paludosae, m. Maj. 1908, flor. et fruct. semimat.; comm. Merrill).

Obs. Affinis *Otophorae erythrocalyci* Hiern, quae differt foliolis majoribus oblongis manifeste petiolulatis, cellulis secretoriis nullis.

22. *O. pubescens* Blume 1. c. (1847) 145!; Walp. Ann. II. (1851-1852) 222; Miq. 1. c. (1859) 560; Radlk. Sap. Holl.-Ind. (1877-1878) 8, 86 (78, 237); Merrill, Bibl. enum. Born. pi. (1921) 359. — *Otolepis pubescens* O. Kuntze 1. c. (1891) 144. — Arbuscula simplex vel pauciramosa; rami teretes, striati, foliorum lapsu tuberculato-cicatrissati, tomento ochrascenti-fusco molles; folia ad 42-juga, rhachi tereti striata molliter pubescenti, foliola subopposita, approximata, patentia, inferiora per paria remota refracta, linearia, apice acuta et interdum quodammodo sursum falcata, basi ovata vel rotundata sessilia, membranacea, nervis lateralibus numerosis subtilibus patulis utrinque prominulis, reticulato-venosa, supra praeter nervum medianum glabra laevia, nitida, subtus pilis longioribus ad nervum medianum crebris patentibus ad venas paucis adspersa, subfusca, utrinque glandulis profunde immersis ornata, cellulis secretoriis nullis, infima (stipuliformia) parva, subcordato-ovata, acutiuscula; paniculae axillares vel terminales erectae, elongatae, molliter pubescentes, rhachi subangulosa ramisque thyrsoides laxae cymulas (polychasia vel dichasia) gerentibus; alabastra subglobosa, pedicellis brevibus pubescentibus; flores mediocres; sepala 5, ovata, glabra; petala 5, elliptica, breviter unguiculata, extus praesertim ad basin subsericea, intus squamulis binis basi connatis pilosulis aucta; discus glaber; stamina 8, filamentis setoso-hirsutis, antheris glabris (a cl. Blume perperam »lepidotae« dictis); germinis rudimentum ovoideo-trigonum, hirtum; fructus coriaceo-corticosus depresso globosus, glabratus.

Arbuscula 10—15-pedalis. Rami circ. 1 cm crassi. Folia 90—95 cm longa, foliola 8—10 cm longa, 13—18 mm lata, superiora nee non inferiora minora, infima (stipuliformia) 1—1,4 cm longa, circ. 1 cm lata. Paniculae circ. 25 cm longae, ramis thyrsoides 5—10 cm longis. Pedicelli (alabastris) circ. 2 mm longi. Alabastra diametro circ. 3 mm. Fructus diametro circ. 2,5 cm.

In Borneo: Korthals! (in regionibus meridionalibus; flor.; Hb. Lugd.-Bat., Berol.); Beccari n. 2860! (Ragiato di Sarawak, Gunon Wah, m. Nov. 1866, fruct.; Hb. Florent.).

23. **O. cordigera** Radlk. Sap. Holl.-Ind. (1877-1878) 85, 86 (236, 237); Merrill, Bibl. enum. Born. pi. (1921) 358. — *Otolepis cordigera* O. Kuntze 1. c. (1891) 144. — Arbuscula, caule simplici apice folioso, cortice subfusco lenticelloso sparsim puberulo; folia 7—10-juga, rhachi (parte petiolari inclusa) nuda tereti striata puberula; foliola e basi oblique truncata lineari-lanceolata, acuminata, sessilia, subcoriacea, nervis lateralibus (intermediis vix subtilioribus adjectis) numerosis patulis, glabriuscula, supra

laevia, nigricantia, subtus rubro-fusca, glandulis immersis ornata, cellulis secretoriis instructa, infima (stipuliformia) oblique cordata, acuta, deflexa; panicula ad caulis apicem lateralis vel terminalis, a basi ramosa, pyramidalis, rhachi apice ramisque angulosis striatis laxe puberulis dichasia vel polychasia subglomeruliformia gerentibus; alabastra globosa, basi puberula ut et pedicelli, bractee bracteolaeque perparvae subulatae; sepala 5, obovato-elliptica, praeter basin glabra, glanduloso-ciliolata; petala 5 (vel abortu pauciora) parva, late ovata, unguiculata, supra unguem marginibus inflexis subsquamulata, ad margines et unguem villosula; discus annularis, glaber; stamina 8, brevia, vix exserta, filamentis basi villosis, antheris filamenta aequantibus ovato-oblongis puberulis; germen ova turn, 3-gonum, 3-loculare, dense rufescenti-villosum.

Caulis 1—2-metralis, apice 6 mm crassus. Folia rhacheos segmento petiolari 5—7 cm longo incluso 25—40 cm longa; foliola circ. 10 cm longa, 2,5 cm lata, infima (stipuliformia) circ. 3 cm longa, 2 cm lata. Paniculae circ. 35 cm longae, basi 20 cm latae; alabastra diametro 2 mm, pedicelli 3—4, sub fructu juvenili (potius germine aucto) 8 mm longi. Sepala 3,5, petala 1, stamina 3 mm longa.

In Borneo: Beccari n. 3359! (prov. Pontianak, Sungei Unpanang, m. Maj. 1867, flor.; Hb. Florent.).

24. **O. amoena** (Hassk.) Blume 1. c. (1847) 142 in obs. (foliis perperam »obovato-oblongis« dictis, cf. infra sub Hassk.); Walp. Ann. II. (1851—1852) 222; Miq. 1. c. (1859) 560; Radlk. Sap. Holl.-Ind. (1877-1878) 10, 31, 83, 86 (80, 101, 234, 237) et in Winkler, Beitr. Fl. Borneo in Engler's Bot. Jahrb. XLIX. (1913) 370; Koord.-Schum. Syst. Verz. I. Java (1912) Sapind. 7, coll. n. 30419/?! etc., excl. syn. *O. spectab.* Bl. — *Melicoccus amoenus* Hassk. Diagn. novae in Flora XXV. 2. (1842) Beibl. Nr. 3, 39!, Adnot. in Tijdschr. natuurl. Geschied. en Physiol. X. (1843) 139 n. 993,1, Catal. Hort. Bogor. (1844) 225 n. 993,1 (foliis sphalm. obovato-oblongis dictis — quod à Blume 1. c. repetitur — loco ovato-oblongis, ut in Flora 1. c. et adjecta cit. »Dec.« loco Adnot., ut videtur), Aantek. over het Nut (1845) 70. — *Schleichera amoena* Walp. Rep. V. (1845—1846) 366; Hassk. PI. Jav. rar. (1848) 291. — *Otophora spectabilis* var. *fi. pubicosta* Blume 1. c. (1847) 143!; Miq. 1. c. 559 excl. syn. »*O. confinis* Bl.« — *Capura* sp. Teysm. et Binn. Gat. Hort. Bogor. (1866) 214 ^Sumatra prov. Lampongs«l et ?»prov. Priaman.« — *Otolepis amoena* Kuntze 1. c. (1891) 144. — *O. spectabilis*, non Blume, Koord. Exk.-Fl. Java II. (1912) 539 et Atlas Baumart. I. 3. (1913) 1.139, coll. n.240620! »etc.« — Vulgo: Kiangier Hassk. II. cc. (1842—1844) sive Kipapangka id. Over het Nut (1845) 70; Ki-angier s. Ki-anjer Filet, Woordenb. (1876) 169 n. 3972, (1888) 165 n.4313; Ki-pagpanka id. (1888) 177 n.4610; Tangara-han oetjal in Sumatra, prov. Lampong t. Teysm. 1. c; Tengeran bisa in Sumatra, prov. Palembang t. Teysm. in Hb. Bog. n. 3561; Kongsoa in Borneo t. Teysm. in Hb. Bog. n. 8645; ?Langir sundaice et Pohonsapi malaice t. Koord. et Val. 1. c. 173; K&lampai sowak in Bangka, Sobo in Palembang ex Heyne, Nutt. PI. III. (1917) 152. — Frutex arborescens vel arbor humilis; rami erecti, teretes, striati, glabrati; folia ad 12—20-juga (in specimenibus cultis interdum foliolo genuine terminali instructa, rarius in spontaneis, ex. gr. in coll. Forbes n. 1162, in coll. Koord. n. 240620), juvenilia colore rubro tinctorum, rhachi tereti vel subangulosa striata puberula mox glabrata, foliola opposita vel alterna, patentia, e basi ovata lineari-oblonga, acuminata, basi praesertim superiora obliqua, altero latere (exteriore) rotundata altero oblique truncata, sessilia, membranacea vel chartacea, nervis lateralibus subtilibus numerosis patulis praesertim subtus prominulis, praeter nervum medianum supra hirtellum glabra, opaca, subfusca, cellulis secretoriis instructa, utrinque glandulis profunde immersis ornata, infima (stipuliformia) deflexa, ramos obtegentia, e basi subcordata oblique ovalia, sessilia; panicula terminalis vel subterminalis, ampla, robusta, rhachi ramisque subangulosis thyrsoides puberulis laxe cymulas subglomeruliformes (polychasia vel dichasia) gerentibus; alabastra ovoidea, puberula, pedicellata; flores flavescentes (t. Hasskarl); sepala 5, ovata, extus adpresse pubescentia, intus basi tan turn pilosula; petala 2—4, minuta, unguiculi-

lata, extus villosa, intus squamula emarginata villosiuscula aucta, saepius rudimentaria; discus glaber; stamina 8, filamentis brevibus antherisque villosis; germen trigono-ovoideum, triloculare, dense rufescenti-hirsutum, stigmat* trilobo; fructus coriaceo-corticatus, subglobosus, subtrilobus, lobis dorso obtuse carinatis, trilocularis, apiculatus, glabratus, ruber, siccus subfuscus.

Arbor 6-10 m alta (Koord. et Val.)- Rami 10-12 mm crassi. Folia 30—70 cm longa; foliola 12—18 cm longa, 3—4 cm lata, infima (stipuliformia) diametro circ. 4 cm. Panicula ad 60 cm longa, rhachi ad 8 mm crassa, ramis thyrsoides 2—25 cm. Alabastra circ. 4 mm longa, 3 mm lata, pedicellis circ. 3 mm longis, fructigeris crassiusculis 5—7 mm longis infra medium articulatis. Fructus diametro circ. 2,4 cm, lobis circ. 1,2 cm crassis, edulis quidem, sed saporis minus grati, acido-adstringentis (t. Hasskari, Over het Nut [1845] 70).

In Malacca et archipelago malaico: In Malacca: Riedel n. 7395! (State of Selangor, Labu river, m. Maj. 1896, fruct. submat.; Hb. Calcutt.); — in Sumatra: Teysmann! (prov. Lampong; culta in Hort. Bogor.; cl. Treub comm. a. 1881 sub n.3, flor., et sub n.19, fructig. c. nom. vulg. Tangara-han oetjal); id.! (prov. Palembang, Moeara-doewa, comm. ex Hb. Bog. sub n. 3561 c. nom. vulg. Tengeran bisa); Forbes n. 1162! (steril.; Hb. Berol.), n. 1717! (Lampong, m. Sept. 1880, flor.; comm. ex Hb. Calcutt.); — in Bangka: Teysmann! (comm. ex Hb. Bogor. sub n. 14545!, folia, et n. 14547! adjecto fructu); — in Billiton: Riedel! (c. fruct. submat.; comm. a Beccari c. Hb. Florent. a. 1876); — in Java: Hasskarl(?)! (Hb. Reinwardt in Hb. Lugd.-Bat., florig., sub nom. *Melicoccus amoenus* ab Hassk. adscr.); Blume! (in Javae regionibus occidentalibus, flor. et fr. juven., Hb. Lugd.-Bat. sub nom. *O. spectabilis* var. *pubicosta* a Blume adscript, et aliud specim. florig. sub nom. erroneo ined. a Blume adscr.); Junghuhn n. 61! 62! (fl. et fr. juven.; Hb. Lugd.-Bat.); Kuhl et van Hasselt! (florig.; Hb. Lugd.-Bat.); Teysmann?! (florig., Hb. Bogor. n. 76, culta?); Koorders n. 24062)3! 30419)3! 31061)3! (prov. Batavia); — in Borneo: Korthals! (Dressen, fol. tantum; Hb. Lugd.-Bat., a Blume altero nom. insignit., cf. Radlk. Sap. Holl.-Ind. 32 [102]); Teysmann! (Kapoeas Salimboum, c. nom. vulg.: Kongsoa, florig.; Hb. Bogor. n. 8645! mihi visa a. 1878); Schlechter n. 13405! (LongWahan, m. Jul.1901, fl.; Hb. Berol.); Winkler H. n.31361 (in Borneo orientali, ad ripam fluminis Sungei Pahu, m. Aug. 1908, fl.; Hb. Berol.); Native collector n. 2778! (Sarawak, m. Oct. —Dec. 1914, fl., omnes decisi; Hb. Manil.).

Hue quoque recensendae videntur Teysmann n. 4772! in Borneo prope Kapoeas lecta (cf. supra) et in Ht. Bogor. introducta, a. 1881 sub n. 5 a cl. Treub communicata c. obs. »nondum floruit«, habitu *O. pubescenti* similis, sed distincta foliolis dense pellucide punctatis, eademque (ut ex indicatione adjecta »Kapoeas« patet) dein a cl. Warburg m. Jul. 1886 florigera in Hb. Bogor. lecta, coll. n. 1991! (Hb. Berol.), et Engler n. 4207!, in Ht. Bogor. lecta, florigera, nom. *O. pubescent*, insignita, foliolis minoribus vix pellucide punctatis, attamen cellulis secretoriis instructis.

Praeterea hue recensenda sunt specimina in Hort. Bogor. culta, a. 1922 c. Hb. Monac. comm., foliolis parvis similia plantae a Teysmann e Borneo introductae, sub n. 4722 supra indicatae: III, J, 63a!, Borneo, fl.; XI, B, XV. 36!, sine patriae indie, fl. et fr. adject.; XI B, XV 56!, Borneo, fl. et fr. adject.; XIB, XVIII. 2221, Borneo, fl.; insuper specimina culta foliolis majoribus praedita: III, J, 61 al, Borneo, fr. adj.; XIB, VIII. 137!, Borneo, fl. et fr. adj.; XIB, XIII. 144! sine patriae indie, fr. adj.; XIB, XVIII!, sine patriae indie, fl.

25. *O. spectabilis* Blume 1. c. (1847) 142! excl. var. *ft. pubicostal*, quae *O. amoena*-< Walp. Ann. II. (1851-1852) 222; Miq. 1. c. (1859) 559 excl. var.; Radlk. Sap. Holl.-Ind. (1877-1878) 8, 86 (78, 237); Koord. et Val. I.e.(1903) 171; Merrill, Bibl. enum. Born. pl. (1921) 359. - non F.-Villar, cfr. *O. fruticosa*, nee Koord. (1912,1913), cfr. *O. amoena*. - *O. confinis* Blume 1. c. 143!; Walp. I.e. 222. — *Capuraspectabilis* Teysm. et Binn. Gat. Hort. Bog. (1866) 214 (a Koord. et Val. l. c. 172 ad *O. amoen.* cit., forsandrete). — *Otolepispectabilis*

0. Kuntzel.c. (1891)144. — Vulgo: Kiangierjavens.et Rarak, quo nomine etiam *Sapindum rarak* significant, t. Blume 1. c. 143, nee non Lengersar, uti *Pometiae* sp. et *Neph. juglandifol.*, t. Bl. 1. c. 113 in obs.; Ki-angier s. Ki-anjer fid. Filet, Woordenb. (1876) 169 n. 3972, (1888) 165 n. 4313 ut et *O. alata* et *amoena*; Rarak ibid. (1876) 258 n. 6798, (1888) 252 n. 7175 ut et *Sapindus rarak*. — Arbor mediocris; rami erecti, teretes, fusci, glabri, lenticellis oblongis punctati; folia 10—15-juga, rhachi tereti striata subglabra; foliola opposita vel alterna, patentia, ovato-oblonga, acuminata, basi aequaliter obtusata sessilia, membranacea, nervis lateralibus subtilibus numerosis patulis, reticulato-venosa, glabra, opaca, subfusca, cellulis secretoriis instructa, utrinque glandulis profunde immersis ornata, infima (stipuliformia) oblique reniformia vel transversim ovalia, deflexa; panicula terminalis vel subterminalis, puberula, mox glabrata, rhachi ramisque subangulosis patentibus thyrsoides laxae cymulas (polychasia vel dichasia) subsessiles gerentibus; alabastra ovoidea, minutim puberula, pedicellata; sepala 5, ovalia, minutim puberula vel glabriuscula; petala 5, minuta, vix unguiculata, extus basi rufescenti-pilosa, intus squamula minima villosiuscula aucta; discus glaber; stamina 8, filamentis brevibus antherisque parce pilosis; germinis rudimentum setoso-hirsutum; fructus (immaturus) turbinatus, depresso trigonus, trilocularis, velutinus, gilvus (t. Blume).

Arbor 20—25-pedalis. Rami circ. 6 mm crassi. Folia 30—45 cm longa; foliola 9—16 cm longa, 4—5 cm lata, infima (stipuliformia) circ. 2 cm longa, 3 cm lata. Panicula 30—60 cm longa, rhachi circ. 3 mm crassa, ramis thyrsoides 2—12 cm longis. Alabastra circ. 4 mm longa, 3 mm lata, pedicellis circ. 2 mm longis. •

In Java et Borneo: Blume! (in Javae regionibus occidentalibus, e. gr. prope Jassinga provinciae Bantam etc.; Hb. Lugd.-Bat.); Korthals! (Borneo; Hb. Lugd.-Bat. sub nom. *O. confinis* a Blume adscr.). — Verisimiliter et in Bangka fid. Herb. Meter n. 54 in Mus. Bogor. t. Koord. et Val. 1. c. 171.

26. *O. imbriata* Blume 1. c. (1847) 144!; Walp. Ann. II. (1851-1852) 222; Miq. 1. c. (1859) 559; Radlk. Sap. Holl.-Ind. (1877-1878) 8, 82, 86 (78, 233, 237) et in Winkler, Beitr. Fl. Borneo in Engler's Bot. Jahrb. XLIX. (1913) 370; L. S. Gibbs, Gontrib. Fl. North Borneo in Journ. Linn. Soc. XLII. (1914) 66; Merrill, Bibl. enum. Born. pi. (1921) 358. — *Otolépis imbriata* O. Kuntzel.c. (1891) 144. — Vulgo: Tampuhu t. Winkler insched. — Arbor mediocris; folia circ. 20-juga, rhachi tereti striata puberula mox glabrata, foliola opposita vel alterna, patentia, lineari-oblonga, sensim acuminata, basi in angulum obtusum subaequaliter coarctata vel superiora oblique subcordata, sessilia, membranacea, nervis lateralibus subtilibus numerosis patulis utrinque prominulis, reticulato-venosa, praeter nervum medianum supra puberulum glabra, opaca vel nitidula, subfusca, cellulis secretoriis instructa, utrinque glandulis profunde immersis ornata, ilia jugorum inferiorum duorum infimis stipuliformibus late subrotundis obliquis conformia, sursum imbriata; panicula terminalis, ampla, puberula, rhachi ramisque subangulosis thyrsoides laxae cymulas (polychasia vel dichasia) sessiles gerentibus; alabastra ovoidea, puberula, breviter pedicellata; sepala 5, ovalia, extus puberula; petala 5, minuta, vix unguiculata, extus basi rufescenti-villosa, intus squamula emarginata villosiuscula aucta, interdum rudimentaria; discus glaber; stamina 8, filamentis brevibus antherisque albide villosis; rudimentum germinis trigono-ovoideum, setoso-hirsutum; fructus (immaturus) corticosus, trigono-turbinatus, trisulcatus, trilocularis, mox glabratus, suberoso-punctatus.

Arbor 30-pedalis. Folia 70—90 cm longa; foliola 15—20 cm longa, 3—4 cm lata, infima (stipuliformia) diametro circ. 3 cm, sequentia stipuliformibus conformia circ. 6-7 cm. Panicula circ. 35 cm longa, rhachi ad 4 mm crassa, ramis thyrsoides 3—15 cm longis. Alabastra circ. 4 mm longa, 3 mm lata, pedicellis 2—4 mm longis. Flores flavo-virides (t. Winkler). Fructus edulis (t. Winkler). — Anne forma tantum *O. amoenae*?

In Borneo: Korthals! (ad fluminum ripas insulae Borneo inter austrum et orientem, ex Bl. 1. c; Hb. Lugd.-Bat., specim. a Bl. determ.); H. Winkler n. 2265!

(in Borneo australi-orientali, Hayoep, in silva, m. Maj. 1908, fruct.; Hb. Berol., ut et seq.), n. 2430! (ibid. m. Jun., fl.); L. S. Gibbs n. 2863 (North Borneo, Tenom, alt. 700—1000 ped., m. Jan. 1910, fl., fr. juv.; specim. non vidi). — In Peninsula Malaica (ex Ridley, Fl. Malay Penins. I. [1922] 495).

27. *O. styligera* Radlk. — Arbor?; folia elongata, filiciformia, abrupte pinnata, multijuga, jugis ad 25 approximatis, rhachi supra carinata ubique striguloso-hirta; foliola alterna, sessilia, e basi oblique rotundata lineari-lanceolata, breviter acuminata, integerrima, subtus tenuissime reticulata, nervis lateralibus sat densis ante marginem anastomosantibus, nervo mediano utrinque prominente flavide striguloso-hirto, chartacea, sicca supra nigro-fuscata, subtus pallide subfusca, pilis laxè adpersa, utrinque opaca et glandulis immersis parcius obsita, cellulis utriusque paginae leptodermicis impunctatis, infima (stipuliformia) oblique cordata, obtusiuscula, parva; inflorescentia paniculata, sat ampla, lata, abbreviata, rhachi ramisque divaricatis angulatis ochraceo-tomentellis; flores globosi, brevissime pedicellati; sepala (4—)5, extus pubescentia, intus basi laxè pilosa, margine laxè glandulosa; petala nunc 4 (quorum 2 majora, 2 minora), nunc 5 (subaequalia), e basi breviter sed distincte unguiculata suborbicularia vel oblata, sepalis multo minora, extus villosa, supra unguem pilosa bisquamulata; discus obliquus, foveolatus glaberrimus; stamina 8, brevia, villosa, antheris ubique pilosis; germen 3-loculare, dense ferrugineo-tomentosum, stylo crasse cylindrico (fragili) ovario subaequilongo in lineis 3 piloso coronatum.

Folia ad 50 cm longa, 12 cm lata, inter jugis circ. 1,8 cm longis, parte petiolari 1,5—4 cm longa; foliola (a basi accrescentia) media et superiora 6,5—7 cm longa, 1,4—1,6 cm lata, terminate 8—10 cm longum, 2 cm latum. Inflorescentia circ. 25 cm longa. Flores diametro circ. 3 mm.

In insula Borneo indigena: Plants of Sarawak, Native Collector n. 17841 (sine loco accuratiore; Hb. Bur. Sci. Manila).

28. *O. multijuga* (Hook, f.) Merrill, Bibliogr. enum. Bornean pi. (1921) 358. — *Nephelium multijugurn* Hook. f. in Trans. Linn. Soc. XXIII. (1860) 164. — *Capura* sp. Hook. f. in Benth. et Hook. f. Gen. I. (1867) 405. — *Otophora tricocca* Radlk. ex Merrill, Pl. Elmer, borneenses (1929) 174. — *Otophora imbricata* Blume apud Radlk. Sap. Holl.-Ind. in Act. Congr. bot. Amsterd. (1877) 233 (seors. impr. [1877-1878] 82). — Arbor?; folia elongata, filiciformia, abrupte pinnata, multijuga, jugis 15—25 approximatis; foliola plerumque alterna, subsessilia, e basi rotunda, immo subcordata elongate lineari-lanceolata, breviter acuminata, integerrima, utrinque tenuiter reticulata, nervis lateralibus sat densis valde patentibus ante marginem anastomosantibus, tenuiter chartacea, glaberrima, utrinque nitidula, supra e viridi livescentia, subtus pallide subfusca, glandulis praesertim supra profunde immersis crebriusculis instructa, cellulis secretoriis (sed inanibus) persita, epidermidis paginae inferioris cellulis leptodermicis impunctatis, infima (stipuliformia) sat magna, late cordata, acuta; inflorescentia paniculata ampla elongata laxa, rhachi ramisque ascendentibus angulatis; flores globosi breviter pedicellati; sepala 5, margine glandulis parvis ciliolata, cellulis (ut et petala) secretoriis crebris persita; petala 5, sepalis multo minora (fl. (? nulla), e late ovato semiorbicularia, paucipilosa, margine ciliata, basi supra unguem perbreve bisquamulata, squamis interdum connatis; discus tenuis glaber; stamina 8, brevia, albo-villosa, antheris linearibus intus et margine albo-pilosis; germen 3-loculare, 3-coccum, glabrum, inter coccos in apiculum (stylum) pyramidalem stigmatè decliviter 3-lobo obductum **productum**; fructus 3-coccus, coccis ellipsoideis oblique patulis denique divaricatis 1-spermis, pericarpio subcorticoso maculato, cellulis sclerenchymaticis aliisque resinigeris coacervatis albis persito, endocarpio fibroso laevi glabro; semen conforme, testa tenui nitida.

Folia ad 90 cm longa, interjugis circ. 2 cm longis, parte petiolari 2,5—8 cm longa; foliola ad 16 cm longa, 3 cm lata, stipuliformia 4,5 cm longa, 4 cm lata. Panicula 30—60 cm longa. Flores diametro circ. 2—2,5 mm. Fructus cocci ad 18 mm longi, 12 mm crassi.

In insula Borneo indigena: Elmer n. 200101 et 202001 (Sandakan, Myburgh Prov., Brit. N. B. X-XII, 1921, Hb. Berol.) [= Ramos 1173]; in ora septentrionali insulae Borneo, ad Labuan, leg. Motley (ex Hook. f. 1. c).

Accedunt species auctori ignotae:

O. *Hullettii* Ridley, Fl. Malay Penins. I. (1922) 494. - *Capura Hullettii* Ridley in Journ. Roy. As. Soc. Straits Branch LIV. (1910) 36. — Frutex?; folia »simplicia« (ob foliola stipuliformia potius 1-juga vel trifoliolata), lanceolata (id est foliolum terminale), longe acuminata, basi breviter angustata, nervis 6-jugis; foliola stipuliformia ovato-rotundata, petiolata; panicula pauciramosa laxa; flores parvi, pubescentes, pedicellis brevibus; sepala 4, acuta, pubescentia; petala 4, lineari-oblonga, stellato-pubescentia; stamina 8; discus parvus annularis; germen pubescens.

Folium (foliolum terminale) cum rhacheos parte petiolari 2,5 cm longo 14,5 cm longum, 5 cm la turn; foliola stipuliformia 1,2 cm longa et lata. Panicula 7,5—10 cm longa. Flores diametro 4—5 mm. (ex descriptione 1. c.)

In peninsula Malacca indigena: Hullett (Mt. Ophir).

O. *siamensis* Graib in Kew Bull. (1926) 360, Fl. Siam. enum. I. (1926) 328. - »Ab affini O. *furcata* Pierre petiolis pedicellisque multo brevioribus facile distinguenda.«

»Frutex vel arbor 3—4-metralis (ex Kerr et Marcan); ramuli sparse breviter pubescentes vel puberuli, pallide brunneo-corticati. Folia pinnata, 56—67 cm (petiolo communi 10,5—18 cm longo incluso) longa, petiolo subterete, rhachi superne angulata vel subalata, ambobus striatis et puberulis; stipulae obliquae, ovatae vel subellipticae et 2 cm latae, saepe divisae, inferne puberulae sessiles; foliola 19—23, alterna vel subopposita, lanceolata vel anguste lanceolato-oblonga, apice acuminata vel subacuminata, basi inaequilateralis, latere altero angustata vel saepius acuminata, altero rotundata vel truncata, 5,5—22,5 cm longa, 2—5 cm lata, chartacea, sicco plus minusve fusca, subtus pallidiora, glabra, nervis lateralibus utrinque ad 18 bene intra marginem anastomosantibus supra conspicuis subtus prominentibus, nervulis rete supra saepe conspicuum subtus prominulum efficientibus, integra, sessilia vel petiolulo crasso circa 1 mm longo suffulta. Panicula infra folia orta, circa 52 cm (pedunculo communi 5 cm longo incluso) longa, ramis inferioribus ad 40 cm longis, iuventute puberula, mox omnino glabra; flores rubri (ex Kerr) e ramulis ultimis 1—2 mm longis orti, pedicellis 4 mm longis glabris suffulti. Sepala 4, oblongo-elliptica vel obovata, ad 4 mm longa et 3 mm lata, ciliolata. Petala oblonga vel subquadrato-oblonga, 2,5—3 mm longa, 2—2,5 mm lata, basi latere utroque auriculata, extra basi pilis paucis instructa, praesertim inferne ciliata. Antherae 2 mm. longae, filamentis brevibus. Fructus plus minusve globosus saepe compressus, ad 1,2 cm diametro, pedicello ad 7 mm longo suffultus.«

In Siam: »Krat, Kao Saming, under 20 m, evergreen forest, Kerr 9401 (type). Kaw Chang, 2 m, stream bank, Marcan 1271.«

Species ex ordine exclusae.

Otophora? paradoxa Blume, Rumphia III. (1847) 146! (in Manilla legit Perrottet a. 1819, sine flor. et fruct. ex Hb. Delessert comm.); Walp. Ann. II. (1851—1852) 223; Miq. Fl. Ind. Bat. I. 2. (1859) 560; Naves et F.-Villar, Noviss. App. in Blanco, Fl. Filip. Ed. 3. IV. (1880) 52 = *Parmentiera alata* Miers in Transact. Linn. Soc. XXVI. (1868) 166. — *Crescentia alata* Kunth in Humb. Bonpl. Kunth Nov. Gen. et Sp. III. (1818) 158. - *Crescentia trifolia* Blanco, Fl. Filip. (1837) 489; cf. Radlk. Sap. Holl.-Ind. (1877-1878) 83-85 (234-236).

Otophora pycnostachys K. Schum. sphalm. loco *Otiophora* p. K. Schum. in Engl. Pflwelt Ost-Afr. G. (1895) 393, inter Rubiaceas.

29. Radlkofera Giig.

Radlkofera Gilg in Engler's Bot. Jahrb. XXIV. (1897) 300 t. 2 et in Engl. u. Prantl, Nat. Pflanzenfam., Nachträge I. (1897) 228.

'Flores spurie polygami? (§ tantum visi), oblique symmetrici, majusculi. Calyx subgloboso-saccatus ore angusto, inaequaliter 5-dentatus, subbilabiatus, dentibus deltoideis anguste imbricatis, 2 inferioribus (sepalis 3. et 5. respondentibus, labium inferius exhibentibus) inter se et a reliquis fissura profundiore separatis latioribus, 3 superioribus fissuris minus profundis separatis angustioribus conniventibus, in termed io eorum (sepalo 4. respondente) minore, coriaceus, fusco-tomentellus, intus ± adpresse villosus. Petala 4, calyce breviora, in parte floris superiore ad marginem disci inserta, cochleariformia, lamina e suborbiculari transversim elliptica in unguem duplo longiorem cuneiformem contracta, intus supra unguem squama lata conformi dorso cristata una cum crista et ipsa conformi deflexa aucta, ad laminae squamaeque paginam internam concavam et ad unguis marginem villosa. Discus 1-lateralis, transversim dilatatus, inter petalorum insertiones in lobulos tumens, in floris parte inferiore circa stamina et pistilli rudimentum in marginem elevatum productus, glaber vel pubescens. Stamina 7—8, circa pistilli rudimentum ad floris partem inferiorem intra disci marginem elevatum inserta, filiformia, infra medium in partem fusiformem dense lanoso-tomentosam incrassata, inferiora longiora petala superantia attamen vix exserta; antherae oblongae, introrsae, dorso supra basin excisam affixae, pilis laxe adpersae, connective* glabro ad dorsi subdilatai apicem cellulis magnis mucigeris tumido et in glandulam ± conspicuam producto; pollinis granula depresso globosa, 3-porosa, inter, majora, pallida, leptodermica. Pistilli rudimentum parvum, obtusum, 8-loculare, fusco-tomentosum. Flores feminei et fructus — non suppetebant.

Arbor pulcherrima, satalta, non vel vixramosa*), trunco gracili, cortice griseo, superne pilis perbrevibus sufferrugineis dense pulverulento-tomentoso. Folia ad trunci apicem conferta, gigantea, abrupte pinnata, 13—15- immo 20-juga, petiolata, exstipulata, cicatrices largas relinquentia; foliola subopposita, inferiora breviora ovata vel ovato-lanceolata, reliqua elongate oblonga, acutata vel longius breviusve acuminata, basi obtusa vel subacuta petiolulis brevibus crassiusculis insidentia, integerrima, coriacea, pinnatinervia, nervis lateralibus numerosis sat approximatis oblique adscendentibus ante marginem anastomosantibus subtus manifeste prominentibus, clathratovenosa, venulis ultimis reticulatis, supra nitida glabra, subtus nitidula et pilis brevibus in nervis venisque laxe adpersa glandulisque microscopicis stipitatis curvatis ornata, cellulis secretoriis per pneumatenchyma dispersis obsolete pellucido-punctata, epidermide non mucigera, praesertim paginae superioris e cellulis margine subtiliter sinuatis et punctulatis conflata; petiolus robustus, supra planus, subtus convexus striatus, tomento pulverulento denso brunneo indutus. Racemi e trunci parte inferiore ad foliorum cicatrices erumpentes vel axillares quoque, rhachi sulcata fere a basi confertissime flores singulos breviter pedicellatos gerente, pedicellis basi bracteatis ad medium bibracteolatis supra medium articulatis, bracteis bracteolisque lineari-subulatis elongatis deflexis persistentibus flores et post florum delapsam inflorescentiae partem denudatam obtegentibus (quasi velantibus), summis sterilibus in comam brevem erectis, toti (rhachis, pedicelli, bractee, alabastra) dense brunneo-tomentosi; alabastra globosa. Flores magnitudine pisi semen aequantes vel paullo super:* nte*.

Species 1 Africae tropicae occidentalis et centralis incola.

Genus flore symmetrico, germine pluriloculari et antheris mucigero-gibbosis valde affine generi *Glosokpis*, a quo differt petalorum figura, androeceo diplo- (nee pleio-) stemoni, bractearum longitudine, foliolorum cellulis secretoriis eorumque glandulis curvatis.

*) De habitu generis huius nee non generum *Chytranthus* et *GlossoUpu* cf. Mildbraed, Wissenschaftl. Ergebn. 2. Deutsch. Zentral-Afr.-Exped. 1910—1911. II. (1922) 112; arbusculae trunco simpliciter vel parce ramoso, coma magna foliorum pinnatorum terminato, sicuti species quaedam generis americani *TalUia*, »Schopfbäumchen«.

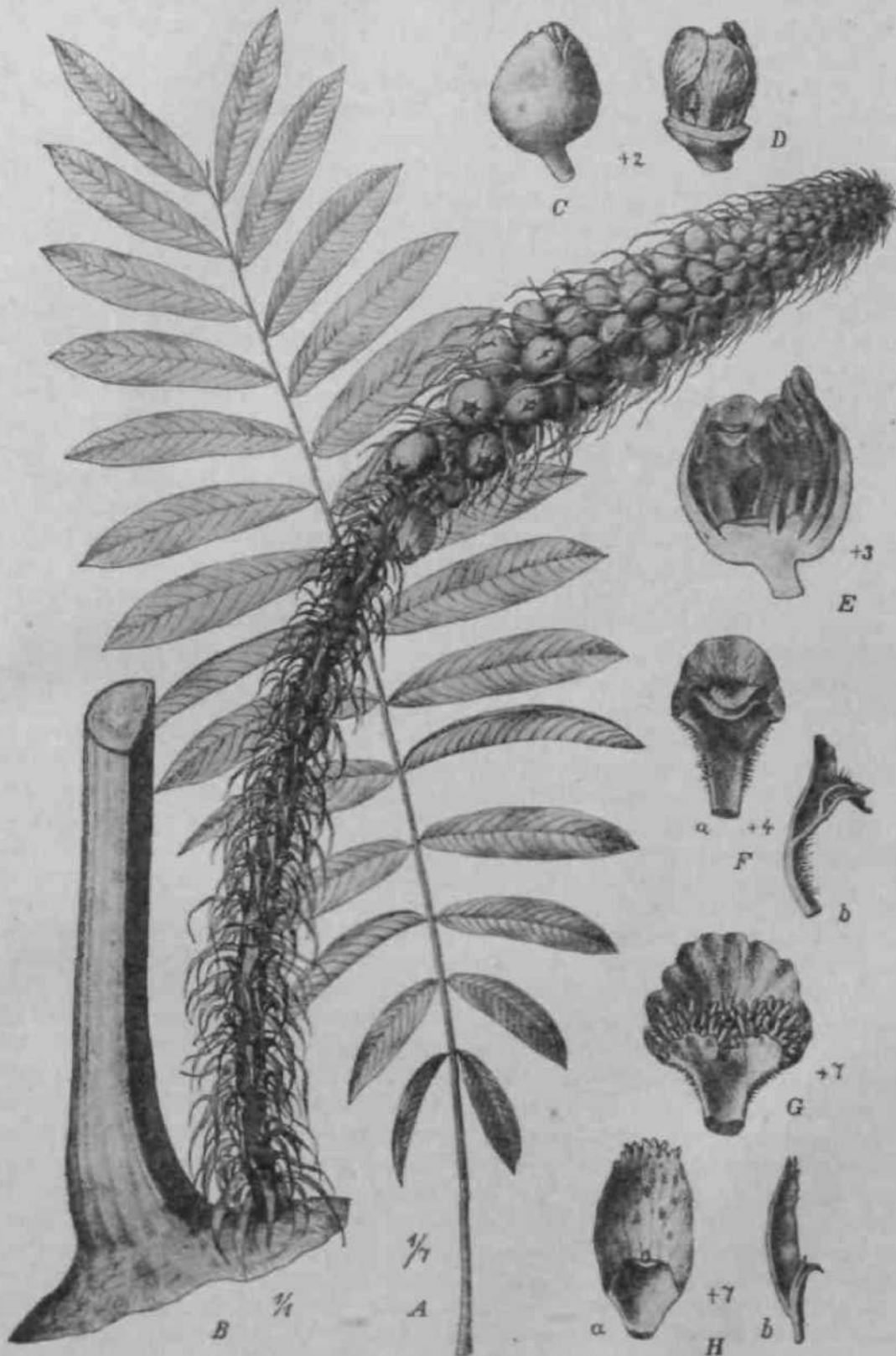


Fig. It. A-F *HadUxifro ratodrn4n>t* Gl%. J Fnlium. * Polkha H inflort, centia. < Alabastrum. D COTOA. K F10« luuKitutl. soclus. F E^ntlum. — ^ Auiowia *Uarm'tana* Gilg. Petalum. — H *Chytranthus punctatus* H<<lli. FVUlum. — See. Engl^r, Pftanw««^ Aiftta* fff. 2. (1921)

R. calodendron Gilgl. c; E. De Wildem. Mission (Enum. Pl.) Laurent (Fasc. 2) (1905) 145; Th. et H. Durand, Syll. Fl. Gongol. (1909) 112; Radlk. in Wiss. Ergebn. Afr.-Exp. 1907-1908, II. (1912) 479. - Character generis.

Arbor 6—15 m alta, trunci parte inflorescentias gerente 3 cm crassa. Folia petiolo 25 — 30 cm longo basi 1,5 cm crasso adjecto 1—2 m longa, 40—50 cm lata; foliola 10—30 immo 36 cm longa, 5—12 cm lata, petiolulo 8 mm — foliolorum infimorum 1,5 cm — longo. Inflorescentiae 9—30 cm longae, 1,5 cm latae; pedicelli 3—4 mm longi; bractee ad 2 cm longae, ad 2 mm latae, bracteolae breviores; alabastra anthesi proxima (in Alcohol servata) diametro 8 mm. Flores brunnei vel fusco-olivacei. Petala (sicca) 4—5 mm longa, stamina paullo longiora. — Flores nonnulli (morboſi?) petala et antheras exhibent dense villosa.

In Africa tropica occidentali et centrali: In Kamerun: Zenkeret Staudt n. 636! (Jaunde, in silva primaeva ± umbrosa, alt. 800m, m. Jan. 1895, fl.; Hb. Berol.); J. Mildbraed n. 82231 (inter Jaunde et Dengdeng, et quidem inter Inwoghe Tidenà et Ebogo Dumu, m. Febr. 1914, fl.; Hb. Berol. ut et seq.), n. 8723! (prope Dengdeng, in via ad Ngete's [Mambeia], m. Mart. 1914, fl.); — in Congo belgico: E. et M. Laurent (Bolombo, distr. Bangala, m. Nov. 1903); J. Mildbraed n. 3222! (Ituri: inter Mawambi et Awakubi prope Bafwaitu, in silva, m. Apr. 1908, fl.; Hb. Berol.); — in Congo lusitanico: Gossweiler n. 6103 (Mayumbe, Pango Munga), n. 6896 (Mayumbe, Bucu Zau); cf. Exell, Gossweiler's Pl. (Suppl. I. Journ. of Bot.) (1928) 89.

30. *Glossolepis* Güg.

Glossolepis Gilg in Engler's Bot. Jahrb. XXIV. (1897) 299 1.1 et in Engl. u. Prajtitl, Nat. Pflanzenfam., Nachträge I. (1897) 228.

Flores spurie polygami? (♂ tantum visi), oblique symmetrici, inter majores. Calyx subgloboso- vel ovoideo-saccatus, basi obliquus, apice inaequaliter 5-dentatus, subbilabiatuſ, dentibus deltoideis anguste imbricatis, 2 inferioribus (sepalis 3. et 5. respondentibus, labium inferius exhibentibus) inter se at a reliquis fissura profundiore separatis longioribus et latioribus, 3 superioribus fissuris minus profundis separatis angustioribus conniventibus, intermedio eorum (sepalis 4. respondente) brevior vel interdum ± obsoleto, coriaceus, sordide minutim tomentellus, intus laxè puberulus. Petala 4 (infimi sede inter sepalum 3. et 5. vacua), calycem superantia, ad disci marginem inserta, nunc sessilia, nunc breviter unguiculata, intus squama cum laminae marginibus basi connata dorso ligulato-cristata aucta, adpresse puberula. Discus 1-lateralis, semi-lunaris, inter petala superiora et stamina late expansus, carnosulus, glaber. Stamina 12 — 15, circa pistilli rudimentum ad floris marginem inferiorem inserta, filiformia, superiora breviora, inferiora incurvata denique erecta exserta, hirtella; antherae ellipticae, introrsae, supra basin excisam infra medium dorsum affixae, glabrae, connectivo ad dorsi dilatati apicem cellulis magnis mucigeris instructo; pollinis granula depresso globosa, 3-porosa, inter majora. Pistilli rudimentum pyriforme, parvum, 8-loculare, fusco-tomentosum. Fructus baccatus, ex ellipsoideo breviter fusiformis, obtuse 6—8-costatus, inter costas valleculis exaratus, (junior) duriuscule carnosus, tomentellus, loculis supra medium sitis a semine repletis glabris. Semen (juvenile) ellipticum, basi acutiusculum, a lateribus compressum, margine interiore longitudinaliter affixum, testa laevi e cellulis elongatis angustis complanatis conflata.

Arbores mediocres, 8—10 m altae, vix ramosae, coma rosulata (t. Zenker). Folia magna, abrupte pinnata, 4—10-juga, petiolo sat longo striato basi incrassato; foliola subopposita vel alterna, oblonga, acuminata, basi superiora interdum oblique cuneata latere exteriori angustiore, integerrima, petiolulata, chartacea vel subcoriacea, pinnati-nervia, nervis sat approximatis utrinque circ. 15 obliquis subtus prominulis, supra laevia nitida livescenti-fuscescentia, subtus pallidiora opaca vel nitidula et laxè reticulato-venosa, glabra nee nisi glandulis lepidoideis parvis teneris fugacibus hic illic ornata, epidermide non mucigera, paginae superioris e cellulis tannigeris margine

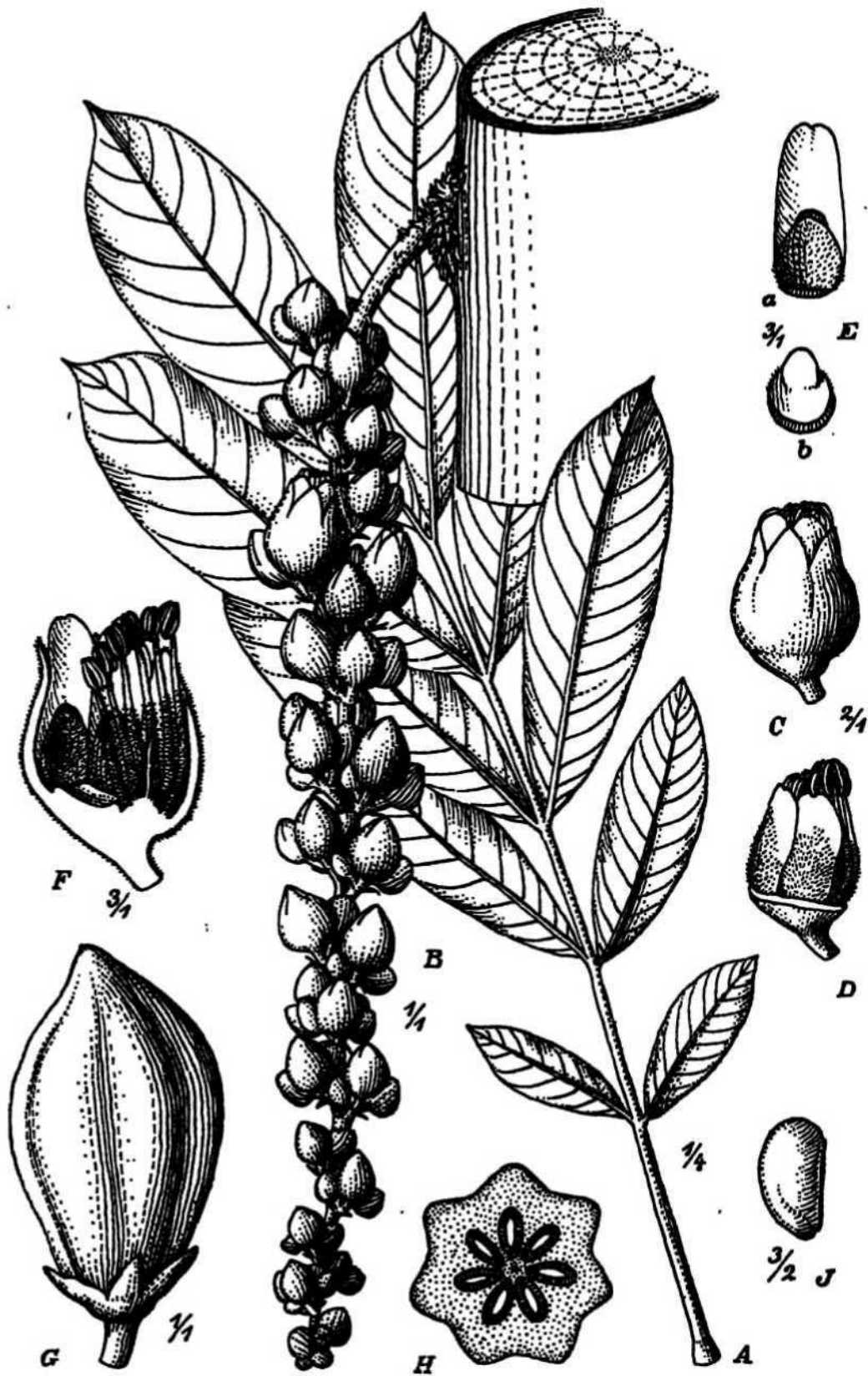


Fig. 17. *GbMolepii maerobotry** Gilg. A Folium. B Inflorescencia, C, D Flos. E Petalum cum Bqaama. F Flos, longitud. sectos. G Fructus semimatuniB, H transverse sectus. J Semen juvenile. — Sec. *GUG* in *Bngler'e Bot. Jahrb.* XXIV. (1897) 300 1.1.

quodammodo finuatis et punctatis conflata, paginae inferioris in 1 specie pulchre crystallophora, stomatibus parvis, cellulis secretoriis nee in staurencymate e cellulis breviusculis angustissimis exstructo nee in pneumatencymate sat crasso ullis. Thyrsi racemiformes, ad trunci basin e gemmis adventitiis erumpentes, elongati, eramosi, penduli, rhachi sulcata angulosa interrupte vel sat dense cincinnos 3—6-floros subsessiles gerente, pulverulento-puberuli, bracteis bracteolisque parvis pubescentibus; pedicelli breviusculi, basi articulati; alabastra globosa vel ovoidea, versus rhacheos basin re versa. Flores 12 — 22 mm longi, sordide viridi-flavescentes. Fructus maturus (t. Zenker) 10 — 15 cm longus, viridis, sapore valde ingrato.

Species 2 (vel 4), Africae tropicae occidentalis incolae.

Genus inter affinia africana floribus symmetricis praeditis (*Radlkofera*, *Chytranthus*, *Pancovia*) insigne androceo pleiostemoni, ad quod non approximant nisi singuli *Chytranthi macrophylli* floret staminibus 11 praediti; ceterum ab hoc genere (*Chytrantho*) differt petalorum fabrica (squama scilicet dorso libera nee cum petali lamina secus medianam d= connata) et seminis testa laevi.

Conspectus specierum.

- A. Calyx subgloboso-saccatus; petala sessilia; foliola breviter oblonga, breviter acuminata, superiora basi oblique cuneata, epidermide paginae inferioris pulchre crystallophora (sp. kamerunensis). 1. *GL macrobotrys*.
- B. Calyx ovoideo-saccatus; petala unguiculata; foliola elongate oblonga, longiuscule acuminata, basi subaequaliter acutata, epidermide paginae inferioris non vel vix crystallophora (sp. kamerunensi-gabonensis). 2. *GL Pilgeriana*.

Accedunt species mihi ignotae:

- A. Species nigerica 3. *GL Talbotii*.
- B. Species congoensis 4. *GL Giorgii*.

1. **GL macrobotrys** Gilgll. c.c. (1897); H. Winkler, Tropische Früchte etc. in Engler's Bot. Jahrb. XXXVIII. 3. (1906) 235, 259. - Arbor mediocris, trunco simplici vel pauciramoso; folia ad trunci apicem congesta, magna, 4—6-juga; foliola subopposita, breviter oblonga, apice latiore rotundato abrupte breviuscule acuminata, superiora basi oblique subcuneata (latere exteriore angustiore), coriacea, supra fuscescentia, subtus rufula, epidermide paginae inferioris (an semper?) pulchre crystallophora; thyrsi mediocres, sat dense florigeri; alabastra globosa; flores sordide flavi (Zenker); calyx subgloboso-saccatus; petala sessilia, breviter loriformia vel subspathulata, dorso praeter apicem puberula, intus glabra, basi squama brevi late ovata infus praeter marginem dense pubescente dorso cristata aucta, crista linguiformi obtusa vel emarginata squamae apicem latitudine aequante longitudine paullulum superante glabra; reliqua generis.

Arbor 6—10 m alta, cortice laevi (Zenker). Folia petiolo 20 cm longo adjecto 70 cm—1 m longa; foliola cum petiolulis 0,5—1 cm longis ad 34 cm longa, 11 cm lata, inferiora dimidio minora. Thyrsi 12—30, immo 60 cm longi; cincinni breviter stipitati; pedicelli 3—4 mm longi. Calyx circ. 6 mm longus; petala 7 mm longa, 2 mm lata; stamina 8 mm longa. Fructus (t. Zenker) 10—15 cm longus. — Fig. 17.

In Kamerun: Zenker et Staudt n. 388! (Yaunde, in silva primaeva, m. Jul. 1894, fl. et fr. immat.; Hb. Berol. ut et seqq.); Zenker n. 659a! (ibid., alt. 800 m, in. Mart. 1895, fl.); H. Winkler n. 1457! (in silva primaeva prope pagum Molive, m. Jul. 1905, folia et — in Alkohol — fruct. immat. »albide pruinosa); — in Congo lusitanico: Gossweiler n. 6685, n. 8076 (Mayumbe, Buco Zau); cf. Exell, Gossweiler's Pl. (Suppl. I. Journ. of Bot.) (1928) 87.

2. **GL Pilgeriana** Gilg in sched. coll. Zenker n. 2304 (circ. 1902) et in Engler, Pflanzenwelt Afr. III. 2. (1921) 276. - Vulgo: Endün, Okbuâwdss et Atti lung in Guinea hisp. t. Tessmann (cf. infra). — Arbor mediocris, trunco simplici; folia ad trunci apicem magna, 8—9-juga; foliola subalterna elongate oblonga, apice et basi

aequilata, longius acuminata, basi subaequaliter acutata, chartaceo-coriacea, supra livescenti-subfusca, subtus pallida, epidermide paginae inferioris non vel vix crystallophora; thyrsi elongati, interrupte cymuligeri; alabastra ovoidea, longius pedicellata; flores albo-flavidi (Zenker); calyx ovoideo-saccatus; petala conspicue unguiculata, loriformia, apice emarginata, dorso sparsim puberula, margine pilis deorsum versis ciliolata, intus glabra, supra unguem squama oblonga acutiuscula praesertim margine albide pubescente a crista dorsali obovata vix superata aucta; reliqua generis.

Arbor circ. 8 m alta. Folia petiolo 12—20 cm longo adjecto ad 80 cm longa; foliola cum petiolulis 1 cm longis ad 38 cm longa, 9 cm lata, inferiora minora. Thyrsi ad 54 cm longi; cincinni sessiles; pedicelli 8 mm longi. Calyx 1 cm longus; petala cum ungue 3-millimetrati 12—13 mm longa, 2 mm lata; stamina 14 mm longa.

In Kamerun: Zenker n. 2081 (Bipindi, Urwaldgebiet, Weg nach der Kflste, m. Jun. 1*99, fl.; Hb. Berol., ut et seqq.), n. 21251 (Bipindi, Urwald des Mimfia, m. Jil. 1899, fl.), n.2304! (Bipindi, Mimfia, m. Dec. 1900, fl.), n.3525! (Bipindihof, Mimfia, Urwald, m. Nov. 1907, fl.), n. 3598! (Bipindihof, Makao, m. Dec. 1907, fl.).

Vix dubie hue quoque recensenda sunt: Günther Tessmann n. 1231 1251 (Spanisch Guinea, Fanggebiet, Uelleburg, a. 1907, folia tantum c. nom. vulg. End An sub n. 123 et Okbuáwöss sub n. 125; Hb. Berol.), n. 7401 (Bebao, Campogebiet, m. Dec. 1908, fl., c. nom. vulg. Atti lung; Hb. Berol.); R. P. Klaine n. 2500! (Sibange, prope Libreville Gaboniae, m. Oct. 1901, fl.; a Pierre comm. c. Hb. Berol.); J. Mildbraed n. 3855! (Siidkameruner Waldgebiet, Bezirk und Station Molundu am Dscha [Ngoko] 15° 12' 5. L., 2° n. B., m. Nov. 1910, fol. et thyrsi elongati floribus destituti, Hb. Berol.); Mildbraed, Wissensch. Ergebn. 2. Deutsch.Zentral-Afrika-Exped. 1910-1911, II. (1922) 33. - Cf. etiam Fr. Pellegrin, Fl. Mayombe, in Mém. Soc. Linn. Normandie XXVI. 2. (1924) 71 (specimina a cl. Le Testu collecta).

3. 61. TalbotU Bak. f. in Rendle etc. Catal. Pl. Talbot, South Nigeria (1913) 20; Hutchinson and Dalziel, Fl. West Trop. Afr. I. 2. (1928) 503. — »Arbor; foliis pinnatis multifoliolatis foliolis 8—9-jugis glabris oblongis apice acuminatis apice ipso obtusis nervis lateralibus utrinque 13—15 juxta marginem conjunctis foliolorum petiolulo brevi crassiusculo petiolo communi glabro longitudinaliter striato basi incrassato; floribus masc. pseudo-racemosis brevi-pedicellatis in cymulas saepissime 2—4-floras dispositis; calycis segmentis acutis; petalis angustis dorso hirtis basin versus squamis instructis; staminibus circ. 12 inaequilongis filamentis hirtis; disco magno excentrico; ovario crudo; floribus fern. ignotis.«

In Nigeria: »Oban; n. 1686.« (Coll. Talbot, mihi non visa.)

•Leaves 60—85 cm long, leaflets 15—20 cm long, 5,5—6,0 cm broad, shining above, secondary nerves reticulate below; petiolules 2—6 mm long. Inflorescence ± 22 cm long. Calyx 11 mm long. Petals ± 1.1 mm long. Stamens, filaments 10—12 mm long.*

•Differs from *G. macrobotrys* Gilg in having 8—9 pairs of leaflets instead of 4—5, and from *G. Pilgeriana* Gilg in the shorter acumen to the leaf.*

4. Gl. Giorgil De Wild, in Fedde, Repert. spec. nov. XIII. Nr. 24/26 (m. Jul. 1914) 379. — »Frutex; foliis pennatis, foliolis 3-jugis? oppositis, obovatis, abrupte et ± longe acuminatis, basi cuneatis et inaequilateralibus, petiolulatis, petiolulo crasso, usque 1 cm longo et 3 mm lato, lamina subcoriacea, glabra, margine undulata, Integra, nervis lateralibus I [primi ordinis] utrinque ultra 12, ante marginem arcuatim anastomosantibus, 25—32 cm longa et 6—11,5 cm lata, inflorescentiis usque 35 cm longis, rhachi breviter brunneo-toraentqsa; floribus fasciculatis, fasciculis laxis, 3—5-floris, breviter pedicellatis, pedicello velutino, bracteolato, bracteolis caducis; calyce urceolato, circ. 6 mm longo 5-lobulato, extus dense brunneo-pubescenti; petalis breviter exsertis, filamentis sparse velutinis, antheris circ. 1,5 mm longis.«

»In Congo belgico: Dundusana, 1913 (De Giorgi n. 1130).« (Mihi non visa).

tObs. Affinia *G. maerobotryi* Gilg (in Engler's Bot. Jahrb. XXIV. 299 tab. 1), sed foliola basi multo **angustiora.**

31. *Chytranthus* Hook. f.

Chytranthus Hook. f. in Benth. et Hook. f. Gen. Pl. I. 1. (1862) 403 n. 40; Baker in Oliv. Fl. trop. Afr. I. (1868) 429; Baillon, Hist. Pl. V. (1874) 414; Radlk. in Sitzungsber. bayer. Akad. XX. (1890) 240, 242-243, 284 et in Engl. u. Prantl, Nat. Pflanzenfam. III. 5. (1895) 320. - *Talisia* sp. Hort., cf. lit. sp.

Flores spurie polygami (feminei g mentientes), dioeci(?), oblique symmetric[^] mediocres. Calyx urceolatus vel turbinatus fere usque ad medium inaequaliter 5-partitus (subbilabiatus), partibus ovatis anguste imbricatis, summa (sepalo 4. respondente) brevior angustiore, coriaceus, utrinque tomentellus, interdum [*Ch. villiger, subvilliger*] villis (i. e. processibus filiformibus dense pilis 1-cellularibus vestitis) ultra tomentum productis obsitus. Petala 4 (infimi sede intersepalum 3. et 5. vacua), interdum anomale 5—7, calycem superantia, ovato-, oblongo- vel lineari-spathulata, apice saepius crenulata et corrugata, dorso vel utrinque puberula, intus supra unguem squama obtusa vel acuta erecta vel apice cucullato-deflexa secus medianam inferne vel tota laminae adnata (inde petala ± bisaccata efficiente) et dorso saepius crista ± conspicua corniformi (et ipsa interdum aut laminae aut squamae adnata) in 1 specie tantum [*Ch. Klaineanus*] fimbriato-biloba instructa aucta. Discus 1-lateralis, reniformis vel semi-lunaris, inter petala in lobulos tumens, glaber. Stamina 7—8 (raro 9—11), circa pistillum ad floris marginem inferiorem inserta, inaequilonga (superiora breviora), petala vix superantia (floris \$ breviora, antheris sterilibus indehiscentibus); filamenta filiformia, hirtella; antherae oblongae, introrsae, dorso supra basin emarginatam affixae, intus saepius adpresse hispidulae, dorso dilatato glabro interdum cellulis majoribus mucigeris instructo (*Ch. strigosus*) apice glandulam (ut in *Radlkofera* et *Glossolepide*) efficientibus (*Ch. sexocularis, Prieurianus, punctatus, micranthus, Ledermannii, Klaineanus*); pollinis granula trigono-placentiformia, 3-porosa, majuscula. Germen (floris <J rudimentarium) sphaericum vel ovoideum, plerumque 3-lobatum, rarius 5- vel 7—8-costatum, 3—8-loculare, tomentosum, loculis intus pilosis (*Ch. brunneo'tomentosuSy Mannii*) glabrisve (*Ch. setosus, stenophyllus, Gerardii, Gilletii*); stylus subulatus, germine longior, apice stigmatoso clavato ± sulcato erecto vel curvato; gemmulae in loculis solitariae, oblongae, lateraliter compressae, hilo longitudinali angulo centrali affixae, campylotropae, apotropae, micropylis extrorsum infera. Fructus (in 3 tantum speciebus — *Ch. setosus, stenophyllus, Mannii* — visus) coriaceo-baccatus, suborbicularis, ellipticus vel obcordatus, late 3-lobatus (quasi 3-alatus) vel 5—8-costatus, lobis costisve lateraliter compressis interdum cristatis (*Ch. stenophyllus*), varie vestitis (setoso-hirsutis in *Ch. setoso* et *stenophyllo*, granulato-pilosis in *Ch. Mannii*), sarcocarpio crasso carnoso, endocarpio tenuiter chartaceo laevi glabro vel laxe piloso, siccis induratis crustaceis. Semen orbiculare, ellipticum vel obovatum, a lateribus [^] compressum, hilo lineari ad marginem interiorem longitudinaliter affixum; testa coriacea, brunnea, cellulis superficialibus magnis collapsis et impressis scrobiculata, interdum in utroque latere sulco longitudinali cotyledonum marginibus respondente notata. Embryo erectus, parum curvatus; cotyledones lateraliter compressae, altera dorsali longitudinaliter paullulum incurvata alteri ventrali arete applicata, amyli granulis parvis farctae; radícula infera, minima, punctiformis.

Frutices vel arbores parvae, habitu palmarum, trunco simplici vel pauciramoso apice folia rosulatum conferta gerente. Folia alterna, paripinnata, 5—8-juga, petiolata exstipulata; foliola saepius magna, deorsum decrescentia, opposita vel subopposita, breviter petiolata, oblonga vel cuneata, acuminata, chartacea, pinnatinervia, nervo mediano supra impresso applanato (setulis tantum secus lineam medianam coacervatis costulam prominulam mentientibus) subtus nervisque lateralibus prominentibus, glabra vej subtus praesertim ad nervos (ut et rhachis) pilosa vel setosa, pilis saepius minutim subulatis inter epidermidis cellulas stellatim dispositas basi paullum dilatata insertis interdum perraris (*Ch. subvilliger*), insuper in nonnullis speciebus glandulis microscopicis subclavatis raris (in *Ch. Prieur.*) ad petiolulos tantum obviis vel subscutatis [*Ch. brae-*

teosus) adspersa, epidermide ± mucigera (in *Ch. sexloculari* solo non mucigera), praesertim paginae superioris e cellulis margine subtiliter sinuatis et inter sinus punctatis conflata, paginae inferioris plerumque in cellulis geminis vel pluribus aggregatis crystallata singula vel pauca gerente, staurechymate e cellularum breviuscularum strato unico exstructo nee non pneumatenchymate sat crasso parce vel omnino non crystallophoris, cellulis secretoriis in 4 tantum speciebus (*Ch. Gilletii*, *flavo-viridis*, *Ledermannii* et *punctatus*) obviis.. Thyrsi spiciformes plerumque e trunci basi enascentes, breviusculi longioresve, cincinnos paucifloros sessiles gerentes, pubescentes; bracteae bracteolaeque parvae subulatae vel interdum late ovatae. Flores breviter pedicellati, mediocres, calyce cameo- vel rubicundo- vel sufferrugineo-tomentoso, petalis albidis. Fructus ad 3,5 cm altus, 4 cm latus, saepius hirsutus, specierum complurium edulis.

Species 26 (vel 29), Africae tropicae, praesertim [occidentalis, rarius orientalis (*Ch. carneus*, *obliquinervis*)] incolae.

Genus arete affine generibus *Glossolepis* et *Pancovia*. Ab utroque differt petalorum squama secus medianam petali laminae dt adnata plerumque crista corniformi instructa, a *Pancovia* insuper absentia pilorum obverse clavelliformium nee non foliolorum nervo mediano supra impresso (cf. *supra*),

Conspectus specierum.

A. Germen 8—5-loculare.

- a. Setosa; petalorum squama crista minuta adnata instructa; antherae hispidulae; germen 7-8-loculare (sp. nigerico-congo#nsis). 1. *Ch.setosus*.
- b. Subglabra; petalorum squama cucullata, margine pilosa, crista linguiformi instructa; germen 6-loculare.
 - aa. Petala 4 (sp. kamerunensis). 2. *Ch. sexlocularis*.
 - bb. Petala 6 (sp. nigerica). 3. *Ch. atroviolaceus*.
- c. Tomentella; petalorum squama crista rudimentaria adnata vel interdum apice libera instructa; antherae glabrae; germen 5-loculare (sp. kamerunensis).
 - aa. Bracteolae minutae. 4. *Clu brunneo-tomentosus*.
 - bb. Bracteolae majusculae. 5. *Ck. bracteosus*.

B. Germen 3-loculare.

- a. Setigerae.
 - aa. Foliola subtus ad nervum medianum dense setoso-strigosa; petalorum squama cristata; antherae hispidulae; germen glabrum (sp. kamerunensis) 6. *Ck. strigosus*.
 - bb. Foliola basi ad marginem petiolulique setosa; petalorum squama alta crista bifurca instructa; antherae glabrae; fructus hispido-tomentosus (sp. kamerunensis). 7. *Ch. longiracemosus*.
- b. Esetosae.
 - aa. Foliola subfusca vel rubescentia vel livescentia.
 - a. Molliusculae; petalorum squama ecristata; antherae hispidulae.
 - aa. Foliola angusta, cellulis secretoriis nullis.
 1. Fructus lobi 3-cristati (sp. congoSnsis) . . . 8. *Ck. stenopkyllus*.
 2. Fructus lobi ecristati (sp. congofinsis) . . . 9. *Ch. Gerardii*.
 - (tft. Foliola latiora, cellulis secretoriis instructa.
 1. Foliola laevia (sp. congofinsis). 10. *Ch. Gilletii*.
 2. Foliola bullata (sp. kamerunensis) 11. *Ck. dasystackys*.

fi. Glabriusculae.

aa. Petalorum squama deltoideo-subulata, adnata, in cristam et ipsam adnatam desinens; antherae hispidulae (sp. kamerunensi-gabonensis) . . . 12. *Ch. macrophyllus.*

Pfi. Petalorum squama medio adnata, bisaccata, ecristata; antherae glabrae (sp. kamerunensis) 13. *Ch. calophyllus.*

yy. Petalorum squama cucullata, cristata.

1. Foliola impunctata.

* Alabastra subglobosa; foliola subfusca; antherae glabrae (sp. Insulae Principis et Angolae) . . . 14. *Ch. Mannii.*

* Alabastra globoso-ovoidea; folia livescencia; antherae glabrae (sp. orientali-congofinsis). . . 15. *Ch. carneus.*

*** Alabastra turbinata; antherae minutim pilosulae, in glandulam terminatae (sp. senegalensis?). . . 16. *Ch. Prieurianus.*

2. Foliola punctata; alabastra ellipsoidea, minutim puberula (sp. kamerunensis) . . . 17. *Ch. punctatus.*

66. Petalorum squama late deflexa; thyrsorum rhachis et alabastra villigera (sp. kamerunenses).

1. Bractee minutae; thyrsi elongati; filamenta glabra . . . 18. *Ch. villiger.*

2. Bractee majusculae; thyrsi abbreviati; filamenta pilosula . . . 19. *Ch. subvilliger.*

bb. Foliola flavescenti-viridia.

a. Alabastra ellipsoidea; petalorum squama crista corniformi instructa (sp. kamerunenses).

aa. Foliola large elliptica . . . 20. *Ch. flavoviridis.*

PP. Foliola sublinearia . . . 21. *Ch. xanthophyllus.*

p. Alabastra turbinata.

aa. Petalorum squama fimbriato-biloba; antherae in glandulam terminatae; folia 4-(?)juga, cellulis secretoriis nullis (sp. gabonensis) . . . 22. *Ch. Klaineanus.*

PP. Petalorum squama biloba, divergenti-reflexa; antherae in glandulam terminatae; folia 4—5-juga, cellulis secretoriis in staurenchymate obviis (sp. kamerunensis). . . 23. *Ch. micranthus.*

yy. Petalorum squama obovata, crista digitato-fimbriata; folia 3-juga, cellulis secretoriis in pneumatenchymate obviis (sp. kamerunensis) 24. *Ch. Ledermannii.*

Accedunt species 2 floribus ignotis:

A. Glabriuscula; folia 3-juga, foliolis late elliptico-lanceolatis, patentinerviis (sp. kamerunensis). . . 25. *Ch. Dinklagei.*

B. Pilosula; folia 4—?-juga, foliolis elongate oblongis, obliquinerviis (sp. usambarica). . . 26. *Ch. obliquinervis.*

Accedunt species auctori non notae *Ch. angustifolius.*
Ch. ellipticus.
Ch. mayumbensis.

i. *Ch. setosus* Radjk. L c. (1890) 210 annot.; Hulchinson et Dalwel, PI. West Trop. Afr. I. 2. (1928) 504, — Arbor parva (Mann) vel frulex (Zenker); truncus obtuse costatus, ut et petioli subtusque foliorum nervus medianus dense patule flavido-setosus; folia magna, paripinnata, -i—6-juga, petiolo elongate teretiusculo striato basi incrassato; foliola magna, oblonga, brevius longiusve acuminata, basi subacuta vel -f- cuneata, petiolulata, intigerriraa, thartac&a, nervis lateralibus sat *approximatis* (utrinque 16—20) oblique adscendentibus ante marginem anaslomosantibus necvoque nwdiano supra inipresso et flavide setuloso sublus prominenttbutj. inter

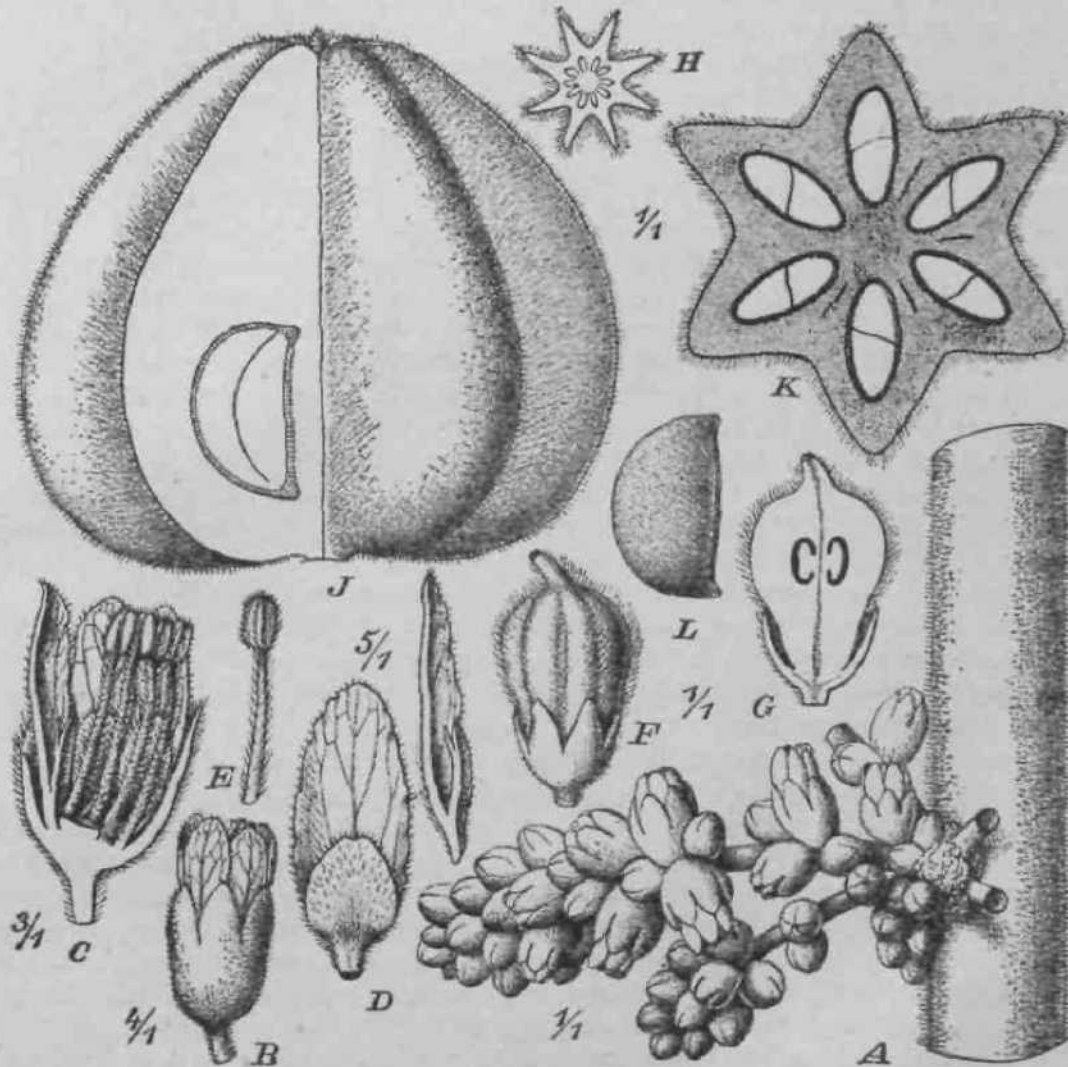


Fig. 18. *Chytranthus setosus* Radikofer- A laflorKscontia e raniulo enaia. B Alfhaalmm. C Flos (), longitud. wctus. D Petrlum- E Stamen. F Flos \$. G Pistillum bngitud. seclum. H Ovanum traosverse sectnm. J FructU3, K transvene soctus. L Semen. — Sec. En^kr, Pfl&nienwtiH Afnhus III- 2, (1921) 347 f. 132.

nervos denique -J; bullata, supra giabra, subtus ad nervos laterales venasque pilis setaceis otsi hixiua quatr ad nervum medianum adspersa glandulisque microacopicis capita Us ornata, utrinque nlttdula, e viridi subf»sca, struclura generis; Liirsy ad truiirini fasciouJati, breves, rhaclii slriata dense cineraaceni- vel suferrugineo-tomentosa selisque adspersa cymulis contigua pauciFloris obtecta, bracteU bracteolisqmqj brevibtu fubutalis; aJahastra e breviter conico subglobosa; flores brfvttter pedicellati; calyx paltide vei ^ubfusce ochraceo-tomentosu3, intus flavescenti-pubescons; petala 4—5< —7i

flavido-albida, oblonga, in unguem brevem contracta, remote denticulata, dorso praesertim ad unguem adpresse puberula vel subhirsuta, intus subglabra et supra unguem squama brevi rotundata intus puberula dorso secus medianam cum lamina ± connata et crista brevi lanceolata adnata apice interdum libera (saepius obsoleta) instructa aucta; stamina 8—9, pilosa, antherae intus hispidulae, connectivo dorso dilatato glabro; germen floris <J rudimentarium, perparium, 8-loculare, setosum, apice obtuso glabro intrusum, quasi infundibuliforme, infundibuli margine 8-costato, floris \$ ex obovato fusiforme, breviter stipitatum, acute 8-costatum, costis subuliformibus, 8-loculare, apice in rostrum stylicherum attenuatum, dense setoso-hirsutum, intus glabrum; fructus sat magnus, coriaceo-baccatus, subglobosus, obtuse 6—8-costatus, 6—8-locularis, setoso-hirsutus, sarcocarpio carnosio e cellulis magnis parenchymaticis exstructo, endocarpio chartaceo laevi glabro e cellulis complanatis margine sinuatis paullo latioribus quam longis conflato; semen generis obovatum, compressum, breviter amygdaliforme.

Arbor 2—4 m alta, trunco 1,5 cm crasso. Folia petiolo 12—15 cm longo adjecto 50—80 cm longa; foliola superiora cum petiolulis 6—8 mm longis 25—40 cm longa, 8—12 cm lata, inferiora plus dimidio minora. Thyrsi circ. 8 cm longi, pedicellis vix 2 mm longis. Calyx 7 mm longus; petala 7—8 mm longa, 2,5 mm lata; stamina 8—9 mm longa. Germen (jam auctum) 10 mm longum, 4—5 mm crassum. Fructus diametro 4—5 cm. Semina 17 mm longa, 12 mm lata, 5—6 mm crassa. — Fig. 18.

In Africa tropica occidentali a Nigeria ad Congou Mann n. 22811 (Nigeria, ad flumen Old Calabar, m. Febr. 1863, fl.; Hb. Kew.); Dinklage n. 1332! (Kamerun, Batanga, in silva dumetosa sicca, m. Sept. 1891, fr.; Hb. Berol., ut et seqq.), n. 14171 (ibid., m. Dec. 1891, fl.); Zenker et Staudt n. 6591 (Kamerun, Yaunde, in silva primaeva, m. Febr. 1897, fl.); Zenker n. 15871 (Bipindi, in silva primaeva, m. Dec. 1897, fl.), n. 22841 (Bipindi, Mimfia, m. Apr. 1900, fr.). - Vix dubie hue quoque recensenda est: Dewèvre n. 1076! (Congo, loco accuratius non indicate, folia tantum ± bullata, ut et in Zenker n. 2284; Hb. Bruxell.). — Indicatur praeterea in Congo lusitanico: Gossweiler n. 6015 (Mayumbe, Pango Munga); cf. Exell, Gossweiler's PL (Suppl. I. Journ. of Bot.) (1928) 85.

2. **Ch. sexlocularis** Radlk. — Arbor parva vel mediocris; folia • 5-juga, rhachi crassiuscula leviter striata, pulverulento-tomentella nigrescente; foliola subopposita vel parum alternantia, late elliptico-oblonga, basi in petiolulum breviter attenuata, cuspidata, tenuiter chartacea, opaca, petiolulis gracilibus; thyrsi chordiformes, e trunco vetusto orti, cincinnos paucifloros sessiles laxe gerentes, rhachi anguloso-sulcata, tomento humili cinnamomeo ut et alabastra induta; alabastra obovoidea; calyx bilabiatus, albus (ex coll.), in pedicellum subaequilongum sensim angustatus haud constrictus; petala 4, alba (ex coll.), sub apice constricta, dorso adpresse pilosula, basi squama cucullato-reflexa margine pilosa, crista linguiformi instructa ornata; stamina 11—13, filamentis roseis, antheris subcoeruleis (ex coll.), connectivo mucigero; germen ovoideum, pilosum, sexsulcatum, 6-loculare, stylo capitato stigmatoso.

Arbor 6—8 m alta. Folia ultra 70 cm longa; foliola summa cum petiolulis circ. 1 cm longis 25 cm longa, 8 cm lata, infima circ. 16 cm longa, 7,5 mm lata. Thyrsi 15—20 cm longi. Alabastra sub anthesi 5 mm longa, 4 mm lata, pedicellis 4 mm longis, 2 mm crassis.

In Kamerun: Ledermann n. 9871 (Nkolebunde, Malande, in silva mediocri, 24. X. 1908, Hb. Berol.).

3. **Ch. atroviolaceus** Bak. f. ex Hutchinson and Dalziel, Fl. West Trop. Africa I. 2. (1928) 504; cf. Kew Bull. (1929) 26 (diagnosis latina). - *Ch. macrophyUus* Oilg var. nov. *obanensis* Bak. f. in A. B. Rendle, E. G. Baker etc. Catal. Pl. Talbot Oban Distr., South Nigeria (1913) 19. — Arbor cortice brunneo; folia abrupte pinnata, 5—6-juga; foliola anguste oblonga, basi breviter cuneata, apice caudato-acuminata; thyrsi e trunco erumpentes, graciles, rhachi profunde sulcata angulosa tenuiter tomen-

tosa, sat remote cincinnos paucifloros sessiles gerente, bracteis brevibus horizontaliter patentibus; flores breviter pedicellati, pedicellis gracilibus; calyx 5-lobus, extus rubiginoso-tomentosus, intus densissime cano-pilosus; petala 6, oblonga, extus pilis laxè adpersa, intus subglaberrima, squama sat lata deflexa, dorso laxè pilosa; discus unilateralis, subplanus, indistincte angulosus glaberrimus; stamina?, filamentis minutim pilosis, antheris glabris; germinis rudimentum 6-loculare, stramineo-strigosum.

Foliola 20—35 cm longa, 9—15 cm lata. Thyrsi 20-35 cm longi, bracteis 1,5 mm longis. Calyx 7-8 mm longus; petala 8—10 mm longa, circ. 2—3,5 mm lata; stamina 7 mm longa.

In Nigeria australi: Talbot n. 1583, 1596 (Oban District). - Indicatur praeterea: In Sierra Leone (Smythe n. 126); cf. Hutchinson et Dalziel, 1. c.

4. Ch. **brunneo-tomentosus** Gilg msc. in Hb. Berol. sine descr. — Vulgo: Kēyeke s. Kēseke t. Conrau. — Arbor, cortice brunneo-tomentello; folia ad trunci apicem conferta, magna, paripinnata, 3—6-juga, petiolo elongato teretiusculo striato rhachi petiolulisque supra sulcatis fulvo- vel brunneo-tomentellis; foliola oblonga, breviter acuminata, basi subacuta vel ± cuneata, petiolulata, integerrima, coriaceo-chartacea, nervis lateralibus approximatis (utrinque circ. 20) patulis ante marginem anastomosantibus nervoque mediano supra impresso et fulvo-setuloso subtus prominentibus, supra glabra, subtus praesertim ad nervos minutim puberula, utrinque nitidula, fusca, structura generis; thyrsi ad truncum fasciculati, longiusculi, rhachi sulcata dense fusco-tomentosa sat dense cymulas sessiles 5—9-floras gerente, bracteis bracteolisque subulatis; alabastra breviter conica; flores breviter pedicellati, reflexi; calyx e purpurascenti fusco-tomentosus, intus dense pallide ochraceo-lanatus; petale 4(—6), flavescenti-albida, ex oblongo in unguem attenuata, utrinque puberula, intus supra unguem squama erecta oblonga secus medianam cum lamina ± connata et incrassata, i. e. crista filiformi rudimentaria adnata interdum apice libera instructa, puberula aucta; stamina 7—8, puberula, antherae glabrae, connectivo dorso dilatato; germen (floris < J rudimentarium) ovatum, acute 5-costatum, 5-loculare, densissime fusco-tomentosum, intus dense lanoso-pilosum, stylo quam germen duplo longiore basi hirsuto apice incrassato stigmatoso superatum.

Truncus apice 2 cm crassus, infra foliorum insertiones juxta costam obtusam utrinque sulco profundo exaratus. Folia petiolo 15—25 cm longo 5—7 mm crasso adjecto 40—60 cm et ultra longa; foliola superiora cfm petiolulis 8 mm longis 32 cm longa, 9 cm lata, inferiora dimidio minora. Thyrsi 12—18 cm longi, pedicellis 2—3 mm longis. Calyx 6 mm longus; petala 8 mm longa, 2,5 mm lata; stamina 9 mm longa. Germen 3 mm, stylus 5 mm longus.

In Kamerun septentrionali: Conrau n. 941 172 (Bangwe, ad marginem silvae, alt. 900 m, m. Apr. 1899; Hb. Berol.).

5. Oh. **bracteosus** Radlk. — Arbuscula comosa, trunco tenui; folia abrupte pinnata, 9-juga, foliolis inferis alternis, mediis (longissimis) et supremis (decrementibus) suboppositis-oppositis; foliola oblonga, suprema angusta marginibus medio subparallelis, basi breviter cuneata, apice tenuiter cuspidata, infima parum breviora, latius eUiptico-oblonga, omnia glaberrima, chartacea, opaca, rhachi tereti vix striata; thyrsi spiciformes congesti, patentes, e trunco erumpentes, rhachi sulcata obtusangula, cincinnos 3—1-floros sessiles bractea majuscula reflexa suffultos ipsosque reflexos laxè gerente, ut et calyx fusco-tomentosa; flores obovoidei subsessiles parum aperti; calyx bilabiatus, intus pallide tomentellus; petala 4, subovata, apice indistincte erosula, baseos margine laxè piloso excepto glaberrima, cellulis secretoriis paucissimis parce pellucide punctata, bina latiora symmetrica, squama latiore deflexa glaberrima, bina angustiora asymmetrica, squama altiore magis cucullato-reflexa, omnibus ecristatis, aucta; stamina 7, inaequalia, 5 inter se aequilonga minora, 2 longiora filamentis dilatatis, omnia filamentis dense appresse pilosis, antheris minus dense piliferis; discus 1-lateralis glaberrimus, sub-5-lobatus, lobis 3 majoribus latis obtusangulis, 2 indistinctis; germinis rudimentum dense pilosum, 5-sulcatum, 5-loculare.

Arbuscula 3 m alta. Folia ultra 90 cm longa; foliola maxima (media) cum petiolulis 5 mm longis 27 cm longa, 5 cm lata, suprema circ. 22 cm longa, 4 cm lata, infima 16 cm longa, 5 cm lata. Thyrsi 15 — 24 cm longi; bracteae 4 — 5 mm longae; flores 6—7 mm longi, 5 mm lati.

In Kamerun: Mildbraed n. 5695! (Südkameruner Waldgebiet: Bezirk Ebolowa, Ekuk, 22 km östl. Eb., Hiigelland, 700 m, Gneis, 20. VI. 1911; Hb. Berol.).

6. **Ch. strigosus** Radlk. — Arbor parva vel frutex (G. Ledermann), fulvo-setosus; folia sat magna (mutilatum tantum visum sine parte inferiore), paripinnata, circ. 5-juga, rhachi petiolulisque dense strigoso-setosis, setis sordide fulvis ad latus inferius versis; foliola magna ex obovato-oblongo subcuneata, longe cuspidato-acuminata, basi subacuta, integerrima, chartacea, nervis lateralibus numerosis (utrinque 20—25), approximatis oblique patulis ante marginem anastomosantibus nervoque mediano supra impresso et fulvo-setuloso subtus prominentibus, inter nervos quodammodo bullata, supra (praeter nervum medianum) glabra, subtus setis flexibilibus flavidis undique adspersa iisque ad nervos laterales crebrioribus ad nervum medianum creberrimis patulis insuper glandulis microscopicis capitatis ornata, supra viridia nitidula, subtus in flavidum vergentia subopaca, structura generis; thyrsi ad truncum fasciculati, longiusculi, interdum basi ramulo aucti, rhachi angulosa tenui remotiuscule cymulas paucifloras gerente dense pilis subsetaceis sufferrugineis patulis, ut et alabastra, induta, bracteis bracteolisque subulatis setosis; alabastra subglobosa; flores sessiles; calyx subgloboso-urceolatus, breviter 5-dentatus, ferrugineo-setoso-tomentosus, intus flavide tomentellus; petala 4, alba, calyce breviora, lamina ovata obtusa dorso et margine laxe puberula intus glabra, in unguem lamina breviora contracta, intus supra unguem squama brevi deflexa submarginata dorso crista perparva lanceolata adnata margine tantum libera instructa subtus puberula aucta; discus 1-lateralis, 3-lobatus, glaber; stamina 8, vix exserta, sericeo-pilosa, antherae intus adpresse hyspidulae, connectivo dorso dilatato glabro hic illic cellulis majoribus mucigeris instructo; germen floris <J rudimentarium, 3-angulare, glabrum.

Foliorum interjuga 4 cm longa; foliola cum petiolulis 1 cm longis ad 32 cm longa (acumine 2—3 cm longo), ad 8 cm lata. Thyrsi 12—22 cm longi; alabastra diametro 5 — 6 mm. Calyx 5 mm longus, petala et stamina 4 mm vix superantia.

In Kamerun: C. Ledermann n. 7911 (Nkolebunde, in silva densa, alt. 200 m, m. Oct. 1908, fl.; Hb. Berol.).

7. **Ch. longiracemosus** Gilg in sched. — Arbuscula comato-foliosa; folia 8—9-juga, rhachi e basi valde incrassata robusta striata, tomentella, nigrescente; foliola ultima anguste oblonga, basi subcuneata, infima basi parabolica, longiuscule subcaudato-cuspidata, nervis lateralibus valde patentibus ante marginem amoene arcuato-anastomosantibus, subcoriacea, subglaberrima nee nisi pilis singulis parvis elongatis adspersa atque margine et in petiolulis setosa; thyrsi e trunco orti, elongati, rhachi valide profunde sulcata angulosa, cincinnos plurifloros aliquantum secundos sat laxe gerente; calyx dense ferrugineo-tomentosus; petala 4 (ad fructus unum latus rejecta), squama alta cristata, crista bifurca, instructa; stamina (8?), filamentis complanatis praesertim apice dense setoso-pilosis, antheris glabris; capsula late obcordata, obtuse trigona, trilocularis, inter coccos angulatim prominentes subplana, basi late conica, apice obtuse umbonata, dense ferrugineo-velutina subvillosa, pericarpio lignoso crasso duro, loculis intus villosis.

Folia ultra 1,20 m longa; foliola suprema cum petiolulis 1 cm longis, 4 mm crassis circ. 40 cm longa, 8—9 cm lata, infima 13 cm longa, 4 cm lata. Thyrsi 40—50 cm longi, rhachi 3—4 mm crassa, cincinnis (fructiferis) 8—10 cm longis. Fructus submaturus (?) 20—22 mm longus, 22—24 mm crassus.

In Kamerun: Zenker n. 38031 (Bipindi, Uferwald am Lokundje, XI. 1908, Hb. Berol.).

8. *Ch. stenophyUus* Gilg in Engler's Bot Jahrb. XXIV. 2. (1897) 297, coll. Camp n. 41!; Em. De Wildem. in Ann. Mus. Congo, Bot. Sér. 5, Fl. Bas- et Moyen-Congo, I. Fasc. 3. (Jan. 1906) 285, coll. Gillet n. 1966 (sphalm. »1906«), 2070; Th. et H. Durand, Syll. Fl. Congol. (1909) 112. — Arbor humilis, cortice nigrescente; folia paripinnata, 4—5-juga, petiolo rhachi petiolulisque dense fulvo-tomentosis; foliola superiora elongata cuneata, inferiora breviora oblonga, omnia cuspidato-acuminata, integerrima, subundulata, chartacea, nervis lateralibus sat approximatis (utrinque 15—24) obliquis nervoque mediano supra impresso subtus prominentibus, supra glabra nitidula, subtus praesertim ad nervos molliuscule pilosa glandulisque microscopicis capitatis adpersa, e viridi olivacea, structura generis, attamen epidermide parum nuicigera et paginae inferioris interdum crystallis destituta (Gillet n. 2070); thyrsi e trunco defoliato supra radices enascentes, spiciformes, elongati, rhachi tereti fulvo-tomentosa dense cymulas sessiles 5—7-floras gerente, bracteis bracteolisque brevibus late ovatis acutis; flores subsessiles (alabastra tantum visa, globosa); calyx sufferrugineo-tomentellus, intus dense minutim puberulus; petala (3—)4, glabra, intus supra unguem squama deflexa ecristata imo dorso laminae secus medianam adnata margine subtusque puberula aucta; stamina 7 (6—8), glabra, antherae intus hispidulae, connectivo dorso dilatato glabro; germen (floris \$) ovatum, triquetrum, 3-loculare, fulvo-setosum, intus glabrum, in stylum 3-gonum glabrum acutatum; fructus (ad Gillet n. 2070 adjectus) coriaceo-baccatus, obcordatus, 3-lobatus, 3-ocularis, lobis dorso in cristam aliformem rotundatam cristis (vel alulis) minoribus lateralibus auctam productis, basi in stipitem brevem attenuatus, apice inter lobos in rostrum curvatum vel spiraliter convolutum stylicherum productus, totus pilis setaceis sufferrugineo-hirsutus, loculis intus subglabris nee nisi setis perpauca adpersis; semen generis obovatum, utrinque sulco longitudinali* paullum curvato notatum.

Folia, ut videtur, 50—60 cm longa; foliola superiora cum petiolulis 8 mm longis 30 cm longa, 5,5 cm lata, inferiora dimidio minora. Thyrsi 17—19 cm longi. Alabastra diametro 3 mm. Fructus 2—3 cm altus et latus. Semina 14 mm longa, 7 mm lata, 5 mm crassa.

In Congo: Capit. J. H. Camp n. 41! (Bas-Congo; alabastra; ex Hb. Bruxell. comm. c. Hb. Berol., ut et seqq.); J. Gillet n. 1966! (1906 sphalm. ap. De Wildem. 1. c; environs de Kimuenza, distr. Stanley-Pool, m. Jan. 1901, alab.), n. 2070! (ibid.; m. Mart. 1901, fr.).

9. **Ch. Gerardil** E. De Wildem. in Ann. Mus. Congo, Bot. Sér. 5, Fl. Bas- et Moyen-Congo I. Fasc. 3 (Jan. 1906) 2831; Th. et H. Durand, Syll. Fl. Congol. (1909) 111. - Frutex; folia paripinnata, 5—7(—9)-juga, longe petiolata, petiolo basi incrassato rhachique teretiusculis striatis breviter puberulis denique ± glabratibus; foliola opposita vel subopposita, lanceolata, cuspidato-acuminata, basi superiora cuneata inferiora obtusiuscula, petiolulis longiusculis crassis suffulta, integerrima, subcoriacea, nervis lateralibus oblique adscendentibus ante marginem anastomosantibus subtus nervoque mediano supra impresso prominentibus, supra glabra laevia nitida, subtus ad nervos laxè puberula glandulisque microscopicis capitatis adpersa, e viridi rubescentia, structura generis; inflorescentiae e trunco enascentes ramosae, ramis thyrsoides strictis sufferrugineo-pilosis dense cymulas sessiles gerentibus, bracteis bracteolisque e basi late ovata subulatis; flores subsessiles; calyx 5-partitus, sufferrugineo-tomentellus, intus adpresse pubescens; petala 4(-5), spathulata, intus supra unguem latiusculum squama erecta obtusa (interdum biloba) pilosiuscula ecristata basi perbreviter laminae secus medianam adnata aucta; stamina hirtella, antherae intus hispidulae, connectivo dorso dilatato glabro; fructus juvenilis 3-ocularis, 3-lobatus, subrhombeus, in rostrum stylicherum acutatus, vel subobcordatus, submaturi lobis (t. De Wildem.) rotundatis supra styli basin sat productis, dense sufferrugineo-tomentosus setisque obsitus, intus glaber.

Folia petiolo 14 cm longo adjecto ad 50 cm et ultra longa; foliola 11—22 cm longa, 3—5 cm lata. Inflorescentiae rami ad 20 cm longi. Calyx circ. 5 mm longus; petala

4—5 mm longa, 2 mm lata. Fructus (maturus?) 2 cm altus, 2,1 cm latus (t. De Wildeman).

In Congo: Gh. Gérard, in Hb. J. Gillet n. 2045 insignitus! (Kimuenza, distr. Stanley-Pool, m. Mart. 1902; ex Hb. Bruxell. comm. c. Hb. Berol.).

10. **Ch. Gulefi** E. De Wildem. in Ann. Mus. Congo, Bot. Sér. 5, Fl. Bas- et Moyen-Congo I. Fasc. 3 (Jan. 1906) 284!; Th. et H. Durand, Syll. Fl. Congol. (1909) 111. - Arbor parva; rami petiolique teretiusculi striati pilis setisque sufferrugineo-fuscis dense obsiti, subhirsuti; folia paripinnata, 3—5?-juga, petiolo elongato; foliola opposita, latiuicula oblonga vel subcuneata, abruptius acuminata, basi obtusa petiolulis crassiusculis insidentia, integerrima, chartacea, nervis lateralibus sat approximatis (utrinque 17—23) oblique patulis ante marginem anastomosantibus nervoque mediano hirtello supra impressis subtus prominentibus, supra praeter nervum medianum glabra laevia nitida, subtus pilis flexibilibus (ad nervum medianum patulis) molliuscula glandulisque microscopicis capitatis adpersa, subfusca, staurechymate cellulis secretoriis laxe persito, ceterum structura generis; inflorescentiae e trunco enascentes ramosae, ramis thyrsoides fusco-tomentosis dense cymulas sessiles gerentibus, bracteis bracteolisque brevibus late ovatis acutis; flores subsessiles; calyx 5-partitus, ferrugineo-tomentellus, intus cinereo-puberulus; petala 4, subspathulata, ex oblongo in unguem latiusculum attenuata, subcrenulata, glabra, intus supra unguem squama obtusa apice paullulum reflexa cristata et ipsa glabra aucta; stamina circ. 7, subglabra, antherae intus hispidae; germen ovatum, 3-quetrum, 3-loculare, pilis subsetaceis densissime flavescens-tomentosum, intus glabrum, stylus germine duplo longior, basi pilosus, supra medium stigmatoso-papillosum.

Folia petiolo 20 cm longo adjecto »ultra 50 cm longa« (De Wildem.); foliola ad 40 cm longa, 14 cm lata. Inflorescentiae rami ad 10 cm longi. Calyx 5 mm longus; petala 4 mm longa, 1,5 mm lata.

In Congo: J. Gillet sine n. I (Vallée de la Djuma, distr. Kwango, m. Jul. 1902; ex Hb. Bruxell. comm. c. Hb. Berol.).

11. **Ch. dasystachys** Gilg in Wiss. Ergebn. Deutsch. Zentr.-Afr. Exped. 1910—1911 II. (1922) 78 (nomen). — Arbuscula, trunco gracili, comosa; folia maxima, 7-juga, rhachi valida, obtuse angulosa, sulcata, nigrescente; foliola opposita, longiuscule petiolulata, petiolulis tumido-incrasatis, superiora oblongo-elliptica vel oblongo-obovata, basi obtusiuscula, apice cuspidata, leviter bullata, nervis lateralibus valde regularibus divaricatis, rigide chartacea, glaberrima, supra laeviuscula; thyrsi e medio trunco orti, penduli, crassiusculi, cincinnos plurifloros densissime glomerulatos sessiles gerentes, rhachi valida ut et alabastra ferrugineo-tomentosa, parum sulcata; alabastra globosa; calyx profunde 5-partitus, lobis subaequalibus oblongis obtusis utrinque ferrugineo-tomentellis; petala 4, e calyce parum prominentia, viridi-alba, oblonga, unguiculata, ungue glaberrimo, squama bipartita (medio adnata) partibus sacciformibus pilosis, lamina integerrima obtusiuscula; stamina 7, filamentis appresse hirsutis filiformibus, antheris ellipticis; germen nullum.

Arbuscula 6 m alta. Folia 110—120 cm longa; foliola summa cum petiolulis circ. 15—18 mm longis, 3—5 mm crassis ultra 40 cm longa, 10 cm lata, infima ultra 20 cm longa, 8,5 cm lata. Thyrsi 15—20 cm longi. Flores 5 mm longi; petalis 4 mm longis, 1 mm latis (sub anthesi).

In Kamerun: Mildbraed n. 5101! (Städtkameruner Waldgebiet; Bez. Lomie, zwischen Assobam am Bumba u. Stat. Lomie, 28. IV. 1911).

12. **Ch. maerophyllus** Gilg in Engler's Bot. Jahrb. XXIV. 2. (1897) 298, coll. Zenker n. 1025!; — non Bak. f., »var. obanensis*, cfr. *Ch. atroviolaceus* Bak. f. — *Ch. Zenkeri* Gilg ibid., coll. Zenker n. 1010! — Vulgo: Nsang, t. Zenker sub n. 2718. — Frutex vel arbor non vel vix ramosa (Zenker), trunco ad foliorum insertionem tereti pilis longioribus dense fusco-tomentoso; folia maxima ad apicem caulis rosulato-conferta, paripinnata, 5—8-juga, petiolo rhachique teretiusculis striatis parce brunneo-

tomentosis; foliola obovato-oblonga, basin versus sensim angustata, longissime et anguste acuminata, basi subacuta petiolulis crassis immo crassissimis ittsidentia, integerrima, chartacea vel rigide chartacea, nervo mediano supra immerso hirtello subtus nervisque lateralibus sat approximatis (utrinque 15—25) procurvis prominentibus, supra glabra nitida, subtus praesertim ad nervos pilis glandulisque microscopicis capitatis parce adspersa vel glabriuscula (*Ch.Zenkeri* Gilg) opaca, structura generis; thyrsi e trunci parte defoliata enascentes, racemiformes, sat elongati, rhachi sulcata brunneo-tomentella a basi sat dense cymulas sessiles 3—6-floras gerente, bracteis bracteolisque parvis subulatis; alabastra ovoidea, conspicue pedicellata, deflexa, ke. in thyrso verisimiliter pendulo sursum versa (fere ut in *Glossolepidis* speciebus); flores coccinei petalis albis (Zenker); calyx rubescenti-, intus ochraceo-tomentellus; petala 4(—6), calyce paullo longiora, anguste oblonga vel subrhombea, in unguem longiusculum margine pilosum attenuata, apice denticulata, glabra vel dorso puberula, intus supra unguem squama ex ovato-lanceolato subulata erecta secus medianam cum lamina connata (inde petalum ± bisaccatum efficiente) et in cristam ± conspicuam filiformem et ipsam adnatam (interdum sulco exaratam, quasi duplicatam) pilosulam vel glabram desinente lateraliter vel fere tota pilosa aucta; stamina 8(—11), petala superantia, pilosula, antherae intus hispidulae, connectivo dorso dilatato glabro; germen floris <J rudimentarium, 3-loculare, dense setoso-tomentosum; fructus (t. Zenker sub n. 2718) cinnabarinus, sapore vinoso-acidulo (mihi non visus).

Arbor 3—8 m alta. Folia petiolo 20 cm longo adjecto ad 1,5 m longa; foliola cum petiolulis circ. 1 cm longis 4 mm crassis 16—45 cm longa (acumine 2—3 cm longo), 7—11 cm lata. Thyrsi 10—25 cm longi. Alabastra 8—10 mm longa, 4—5 mm crassa, pedicellis 3—4 mm longis. Calyx 6 mm, petala 8 mm, stamina 1 cm longa.

In Kamerun et in Gabonia: Zenker n. 10251 (Bipindi, in silva primaeva umbrosa, m. Jul. 1896, alab.; Hb. Berol., ut et seqq.), n. 10101 (ibid., alt. 80 m, m. Jun. 1896, alab.; *Ch.Zenkeri* Gilg), n. 23121 (ibid., Mimfia, m. Dec. 1900, alab.), n. 27181 (ibid., alt. 80 m, m. Sept. 1903, c. obs. de fructu et c. nom. vulg.; a. 1904, folia, ex Hb. Berol. sub nom. *Ch.Zenkeri* comm. c. Hb. Monac); Dinklage sine n.l (Gross Batanga, a. 1898?, folium); Soyaux n. 9! (Gabon in ditione Munda, Sibange-Farm, m. Aug. 1879, alab.).

13. **Ch. ealophyllus** Radlk. — Arbuscula trunco simplici, comosa; folia robusta, rhachi valida tereti sulcata nigrescente, tomentella; foliola ex obovato-oblongo in basin cuneatam longe angustata, longiuscule cuspidata, petiolulis incrassatis rugulosis nigris, supra sublaevigata nitidula, subtus reticulato-venosa, subglaberrima; thyrsi ex ipsa trunci basi orti, penduli, densiuscule cincinnos paucifloros gerentes, rhachi sulcata ut et alabastra ferrugineo-tomentosa; flores majusc'uli, c? tantum visi; calyx oblique urceolatus, breviter 5-lobatus, lobis brevibus inaequalibus, extus ferrugineo-tomentosus; petala 4, oblonga, longiuscule unguiculata, ungue lineari subtus canaliculate, supra tumide marginato, ubique hirsute, squama bipartita (medio adnata) partibus sacciformibus, margine pilosis, lamina anguste oblonga, integerrima, haud pellucide punctata; discus unilateralis, 5-angulatus; stamina 8, filamentis longis, angulatis strigulosis, antheris anguste oblongis; germen nullum.

Folia 90—100 cm longa; foliola superiora circ. 36 cm longa, 7,5—9 cm lata, infima 16—20 cm longa, 6—7,5 cm lata, petiolulis 8—10 cm longis, 3—4 mm crassis. Thyrsi 12—18 cm longi. Flores cum pedicellis 2 mm longis 13 mm longi, 5 mm lati; petala 9 mm longa, 2 mm lata; stamina 10 mm longa, antheris ultra 2 mm longis 0,4 mm latis.

In Kamerun: Mildbraed n. 60111 (Bezirk Kribi, westl. Abdachung des Randgebirges, Hfigelland, circ. 200 m, bei Fenda, 58 km dstl. Kribi, VII. 1911).

14. **Ch. Mannii** Hook. f. 1. c. 4041; Bak. 1. c. 430; Ficalho, Pl. uteis etc. (1884) 123; Radlk. 1. c. (1890) 240, (1895) 321; Hiern, Gat. Welw. PL I. (1896) 170, coll. 1690!, 1689!, 1688; Greshoff in Meded. Plantent. XXIX. (1900) 38. - *Ch.edulis* Pierre in BuO. Soc. Linn. Paris Nr. 158 (1896) 1249, coll. Klaine n. 201! - Vulgo: Koe t. ScOtt

Elliot in sched. n. 5147; Pecegueiro (fructus Pecego, i. e. Persica) Lusitanis t. Ficalho l. c. — Arbor parva, habitu palmarum (Hiem l. c.); folia magna, paripinnata, 5—7-juga, petiolo elongato tereti minutim puberulo; foliola obovato-oblonga, basi cuneata, longe acuminata, integerrima, subcoriacea, nervis lateralibus (utrinque 12—15) parum approximatis obliquis ante marginem anastomosantibus nervoque mediano supra impresso subtus prominentibus, utrinque glabra nee nisi pilis conicis vel breviter subulatis patentibus minutissimis sub microscopio tan turn perceptibilibus subtus adspersa, nitidula, subfusca, structura generis; thyrsi e trunco enascentes mediocres racemiformes nutantes, rhachi sulcata fusco-tomentella dense cymulas perbreve stipitatas circ. 5-floras gerente, bracteis bracteolisque brevibus ovatis; alabastra subglobosa, breviter pedicellata, reflexa; flores generis; calyx subfusco-tomentellus, in statu recenti roseo-scarlatinus (Hiern), intus dense ochraceo-pubescentis; petala 4(—6), lineari-oblonga, in unguem attenuata, apice denticulata, dorso subhirsuta, intus supra unguem squama erecta apice cucullato-reflexa interdum biloba crista corniformi simplici vel in petalis intermediis duplici pilosula instructa secus medianam (ut interdum et crista basi) laminae adnata subtus pilosula aucta; stamina 7—8, petala superantia, hirsuta, antherae utrinque glabrae, connectivo dorso dilatato; germen (floris \$ rudimentarium dense pilosum) subgloboso-3-lobum, 3-loculare, dense fusco-pilosum, intus secus loculorum dorsum pilis paucis adpersum, stylo subtriplo longiore subulato-filiformi adpresse pilosulo apice lineis 3 stigmatosis notato superatum; fructus magnus coriaceo-baccatus, ex orbiculari transversim ellipticus, breviter apiculatus, vix stipitatus, late 3-lobatus, 3-ocularis, lobis lateraliter compressis, siccis crustaceis transversim rugosis, pilis minutis clavatis pachydermicis fusco-ferrugineis dense vestitus (quasi granulatus), intus setis tubulosis adpersus; semen generis orbiculare, compressum, numuliforme.

Arbor 5 — 6 m alta. Foliola majora cum petiolulis 6 mm longis 35—45 cm longa, 7—10 cm lata. Thyrsi 7—10 cm longi. Calyx 6 mm longus; petala 8 mm longa, 1,5 mm lata. Fructus edulis, 3 cm altus, 4 cm latus, loculis (siccis) 8 mm crassis. Semina venenosa (t. Greshoff l. c.), circ. 2 cm longa, 1,8 cm lata, 4 mm crassa.

In Africa tropica occidentali: Barter n. 1958! (Prince's Island, Niger Exped. a. 1859, fr. juv.; Hb. Kew., ut et seqq.); Mann n. 1111! (ibid., a. 1871, fr.); id. n. 1835! (Banks of the river Muni, m. Sept. 1862); Welwitsch n. 1689! (Prince's Island, in wooded places at elevation of 300—400 feet, in plantations of *Theobroma cacao* L., m. Sept. 1853, fl.), n. 1688! (Island of St. Thomas, in mountainous places, Monte Gaffe, m. Dec. 1860, fl.), n. 1690!*) (Golungo Alto, abundant in primitive forests at 2000 to 2300 feet alt., near Sange, at Capopa, m. Aug. 1855, fl. (J); Klaine n. 2011 (Libreville, m. Oct. 1895, fl. et fr.). — Cf. etiam Fr. Pellegrin, Fl. du Mayombe, in Mém. Soc. Linn. Normandie XXVI. 2. (1924) 70 (specimina a cl. Le Testu collecta).

15. **Ch. carneus** Radlk. in Wiss. Ergebn. Afr.-Exp. 1907-1908, II. (1912) 478. — Arbuscula parva, trunco simplici, foliis in comam apicalem congestis; folia magna, paripinnata, 6—8?-juga, petiolo elongato rhachique teretibus subtiliter striatis lenticellosis sub lente pulverulento-puberulis; foliola inferiora late ovato-lanceolata, acuta, basi rotundata petiolulis crassiusculis transversim rugosis pilosulis insidentia, foliola superiora elongata, ex obovato-oblongo cuneata, acuminata, basi inaequalia, latere

*) Specimina Welwitsch n. 1690 (Angola) et Mann n. 1835 (Gabonia, River Muni) speciem propriam sistere dicuntur: **Ch. Welwitschii** Exell, Gossweiler's Pl. (Suppl. I. Journ. of Bot.) (1928) 85; diagnosi latinae addita differentia specifica ut sequitur: »The species differs from *Ch. Mannii* Hook, f., which is apparently confined to Prince's Island and to the Island of St. Thomas, in having somewhat smaller leaflets which are much more abruptly acuminate, a less distinctly urceolate calyx, a smoother tomentum on the inflorescences and shorter, relatively broader petals.* Additur specimen Gossweiler n. 5429 (Angola, Monte Bello). Indicantur porro sub *Ch. Welwitschii* Exell specimina sequentia in Congo lusitanico collecta: Gossweiler n. 6734 (Buco Zau), n. 6180, n. 8166 (River Chilungo, prope Ghinfim).

interiore brevior, omnia integerrima, subcoriacea, nervis lateralibus parum approximatis procurvis longius ante marginem anastomosantibus nervoque mediano (supra impresso) subtus prominentibus, utrinque glabra, nitidula, livescentia, structura generis; thyrsi e trunci basi tumida enascentes longiusculi, racemiformes, rhachi sulcata rubicundo-tomentosa basi (interdum ramulis aucta) interrupte apice conferte cymulas breviter stipitatas vel superiores sessiles 5—7-floras gerente, bracteis bracteolisque parvis subulatis; alabastra e subgloboso breviter ovoidea, insignius pedicellata, patula vel subreflexa; flores generis; calyx carneo-velutinus (siccus pallide ochraceus), intus canescenti-tomentellus; petala 4 (— 7) longius exserta, oblonga, in unguem brevem attenuata, apice denticulata, glabra vel utrinque secus medianam subhirsuta, intus supra unguem squama alta petala dimidia superante apice reflexa interdum biloba crista filiformi pilosula instructa secus medianam (ut et crista basi) laminae adnata (marginibus liberis) subtus pilosula aucta; stamina 7, petala paullo superantia, pilosa, antherae utrinque glabrae, connectivo dorso dilatato; germen (floris <J) rudimentarium, 3-loculare, pilis amethystinis dense tomentosum.

Folia petiolo 16 cm longo adjecto circ. 80 cm et ultra longa; foliola inferiora cum petiolulis circ. 8 mm longis 25 cm longa, 8,5 cm lata, superiora 35 cm longa, 6—8 cm lata. Thyrsi 20—25 cm longi, pedicellis 3—4 mm longis. Calyx 7 mm longus; petala 8 mm longa, 15 mm lata; stamina 9 mm longa.

In regni Congo parte orientali: J. Mildbraed n. 30321 (Ituri, inter Irumu et Mawambi prope Kalonda, in silva primaeva, m. Apr. 1908, fl.), n. 3231! (inter Mawambi et Awakubi prope Fariala, in silva, m. Apr. 1908, fl.; Hb. Berol.).

16. **Ch. Prieurianus** Baill. in Adans. XI. (1874) 241!; Radlk. 1. c. (1890) 240. - *Talisia Prieuriana* Hort. Paris.! ed. D. Bois in Bull. Mus. d'Hist. nat. (1901) 379. — Arbor; folia abrupte pinnata, 5-juga, jugis approximatis, rhachi tereti leviter striata; foliola opposita, breviter petiolulata, ultima basalibus subconformia, mediana majora, omnia obovato-oblonga, basi obtusissima, late obtuseque apiculata, nervis patentibus, glaberrima, chartacea, supra nitidula livescentia, subtus subfusca, glandulis microscopicis capitatis non nisi ad petiolulos obviis; thyrsi — ?; alabastra turbinata; flores breviter pedicellati, graciles; calyx oblique urceolatus, 5—6-lobus, tomentosus, intus pallide tomentellus; petala 4, linearia, calycem superantia, margine dorsoque pilis patentibus laxè adspersa, squama reflexa margine ciliata aucta; stamina 7—8, filamentis minute pilosis, antheris oblongis margine minutim puberulis, connectivo dorso parum dilatato apice cellulis magnis mucigeris in glandulam pallidam pellucidam intumescente; germen triquetrum, 3-loculare, dense hispido-pilosum.

Folia cum petiolo 10—14 cm longo ultra 40 cm longa; foliola majora 20—21 cm longa, 7 — 7,5 cm lata. Flores ultra 6 mm longi, 2—2,5 mm lati; petala 5—6 mm longa, 0,6 mm lata; stamina 4—5 mm longa.

»Planta longis ab annis in caldario Hort. Paris, culta, olim a C. Leprieur e Guiana [an sphalm. Guinea?] gallica, ut aiunt (sed verisimiliter Senegambia), allata est.« (ex Adansonia 1. c). *

17. **Ch. punctatus** Radlk. - *Pancovia maerophylla* Gilg in Engler's Bot. Jahrb. XXIV. (1897) 303 t. 2 f. H, coll. Zenker n. 1067! — Frutex; rami petiolique teretes, leviter striati, apice pulverulento-puberuli, mox glabrati, cortice cinerascens; folia 2—3-juga, longiuscule petiolata, petiolo basi incrassato; foliola deorsum decrescentia, opposita, obovata vel obovato-oblonga, basin versus sensim angustata, petiolulata, apice longiuscule acuminata, integerrima, chartacea, nervo mediano supra impresso, nervis lateralibus patulis curvatis retique venarum laxo subtus prominentibus, supra sublaevia, nitidula, glabra nee nisi subtus pilis minutissimis inter epidermidis cellulas insertis (parte immissa medio paullulum constricta) laxè adspersa, cellulis secretoriis (substantiam hyalinam saponino affinem foventibus) in staurenychymate et (interdum utriculiformibus) in pneumatenchymate (ut et floris partes) instructa, epidermide (e cellulis margine subtiliter sinuatis et punctatis conflata) mucigera, paginae superioris

super cellulis secretoriis leviter impressa, paginae inferioris hic illic in cellulis minoribus saepius geminatis crystallophora: thyrsi brevissimi, rarius axillares, plerumque e truncis usque ad collum radice erumpentes, dense cincinnos sessiles 3—1-flos glomeruliformes gerentes, bracteis brevibus linearibus deflexis rhachique sulcata sufferrugineo-puberulis; alabastra obovoidea, minutim sordide tomentella; flores parvi, brevissime pedicellati; calyx turbinatus, basi obliquus, ultra medium 5-partitus, partibus ovatis acutiusculis anguste imbricatis utrinque pulverulento-tomentellis; petala 4, sepala subaequantia, ex oblongo subcuneata, apice crispato-fimbriolata papillosa, glabra, perbreviter unguiculata, intus supra unguem squama apice deflexa (petalorum lateralium obliqua) aucta, squamis dorso crista corniformi (petalorum lateralium inferne cum lamina connata) ins true tis; discus unilateralis, semilunaris, medio depressus, glaber; stamina 7, filiformia, minutim puberula, antheris glabris, rectangulari-ellipticis, dorso supra basin emarginatam affixis, connectivo dorso dilatato supra medium cellulis magnis mucigeris tumido; pistilli rudimentum minimum 3-gonum, 3-loculare, flavo-tomentosum, apice 3-lobum.

Frutex 2 m altus. Rami 3 mm crassi. Folia petiolo 6—8 cm longo adjecto 30—50 cm longa; foliola cum petiolulis 5—10 mm longis 13—25 cm longa, 5—12 cm lata. Thyrsi 7—15 mm longi. Alabastra 3 mm longa, 1,5—2 mm lata, pedicelli circ. 1 mm longi. Flores flavidi, calyce rubicundo (Zenker). — Fig. 16H.

In Kamerun: Zenker n. 1067! (Bipinde, sub arboribus silvae primaevae, alt. 90 m, m. Sept. 1896, flor.; Hb. Berol.).

18. **Ch. villiger** Radlk. - Arbuscula comata; folia abrupte pinnata, 5-?-juga; foliola opposita vel subalterna, ex obovato longe cuneata, cuspidata, in petiolulos breviusculos subaequales attenuata, pilis breviusculis oblique insertis obsita; thyrsi in medio trunco ad foliorum cicatrices singuli vel pauci congesti erumpentes, elongate chordiformes penduli, rhachi sulcata obtusangula laxe cincinnos circ. 5-flos glomeriformes sessiles gerente, ut et alabastra tomento denso fusco-ferrugineo obducta villisque (ut dicunt) — emergentia filiformi multicellulari — densissime pilis 1-cellularibus aliis acutis aliis obovato-clavatis exstructis supra tomentum prominentibus adspersa; alabastra globoso-conica, brevissime pedicellata; calyx subbilabiatus, intus densissime pilis patulis pallidis subcano-flavidulis indutus; petala 5, oblonga, dorso praeter marginem adpresse cupreo-pilosa, intus parce pilosa, squama lata deflexa in alabastro ecristata sed dorso pilosa aucta; discus glaber, 1-lateralis, subtrilobatus; stamina 7—8, glabra, antherae glabrae, connectivo non mucigero; germinis rudimentum dense pilosum, 3-loculare.

Arbuscula ad 8 m alta coma foliorum coronata. Folia ultra 60 cm longa, foliola superiora circ. 30 cm longa, 7 cm lata, glabra nee nisi pilis minutis inter cellulas 8(6—9) rosulatas insertis crebris subtus adspersa. Thyrsi 40—50 cm longi. Flores lactei (ex coll.).

In Kamerun: Zenker n. 4627! (Bipinde: Mimfia, m. maj. alab., 1912).

19. **Ch. subvilliger** Radlk. — Arbuscula comosa; folia abrupte pinnata, 8—10-juga; •foliola infera (jugis 3—4) alterna, supera subopposita vel opposita, breviter et accrescent im petiolulata, superiora suberecto-potentia, ex anguste obovato longe cuneata, tamen basi ipsa obtusiuscula, inferiora magis divergentia, multo **breviora**, e basi **latiore** subelliptica, omnia breviter cuspidata, subglaberrima nee nisi pilis brevibus **oblique** insertis sparsissime obsita, rigide chartacea, utrinque nitidula, supra livescentia, **subtus** pallide brunnea, rhachi sulcato-striata glabrescente; thyrsi e trunci basi incrassata orti complures congesti nutantes, abbreviati, rhachi sat valida sulcata **obtusangula**, sat dense cincinnos circ. 2-flos sessiles, bracteis subulatis late divergentibus (**sub** aestivatione) superatos gerente, ut et alabastra tomento denso **fusco-ferrugineo obducta** villisque (ut in specie antecedente) sed multo parcius adspersa; alabastra **subglobosa**, brevissime pedicellata; calyx minus distincte (**ex alabastro**) **bilabiatus**, **intus** densissime pilis patulis pallidis subcano-flavidulis indutus; **petala 5**, **subovata**, **apice** eroso-fimbriolata, **extus** dense adpresse pilosa, intus **area mediana** aureo-sericea,

squama lata circ $\frac{1}{8}$ petaii longiudinem aequante deflexa, in alabastro ecristata glaberrima aucta; discus 1-lateralis subtrilobatus; stamina 8, aequalia, filamentis laxe pilosulis, antheris glabris connectivo non mucigero; germinis rudimentum dense rubiginosopilosum, 3-loculare.

Arbuscula 7,4 m alta. Folia circ. 1 m longa; foliola suprema cum petiolulis 5 mm longis 23—29 cm longa, 6—7 cm lata, infima 6—12 cm longa, 2,5—4 cm lata. Thyrsi 17—18 cm longi, bracteis 5—6 mm longis, basi vix 2 mm latis. Alabastra diametro vix 4 mm.

In Kamerun: Mildbraed n. 8717! (Ausläufer der geschlossenen Hylaea um Dendeng, etwa 250 km NO Jaunde; südlich Dendeng, am Weg nach Ngete's (Mambeia), Ende März 1914, Hb. Berol.).

Obs. A priore proxima recedit thyrsis brevioribus bracteos in collo tranci erumpentibus, filamentis pilosulis.

20. *Ch. flavoviridis* Radlk. — Arbor parva; folia paripinnata, 3-juga, petiolo longiusculo rhachique teretibus striatis pulverulento-puberulis; foliola large elliptica, utrinque subacuta, petiolulis crassiusculis longitudinaliter striatis et corrugatis insidentia, integerrima, margine subrevoluta, chartacea, nervis lateralibus remotiusculis patulis ante marginem anastomosantibus nervoque mediano supra impresso subtus prominentibus, utrinque glabra, supra nitidula, subtus opaca, flavescenti-viridia, staurechymate cellulis secretoriis parvis persito, ceterum structura generis; thyrsi ad truncum breves, a basi dense cymulas paucifloras vel superiores ad flores singulos reductas gerentes,* flavescenti-sufferrugineo-hirtelli, bracteis bracteolisque brevibus subulatis; alabastra ellipsoidea; flores generis parvi, brevissime pedicellati; calyx ultra medium 5-partitus, partibus anguste imbricatis obtusiusculis, e sufferrugineo subflavide puberulus, intus canescenti-puberulus; petala 4, alba, oblonga, denticulata, intus supra unguem perbrevev squama subcucullata cristae parvae obtusae ope cum lamina secus medianam connata aucta; stamina 6, parce pilosula, antherae glabrae; germen (floris \sphericalangle) rudimentarium, aureo-pilosum.

Folia petiolo 10 cm longo adjecto 42 cm longa; foliola 24 cm longa, 11 cm lata. Thyrsi 1,5—3 cm longi. Calyx 3,5 mm longus.

In Kamerun: C. Ledermann n. 10281 (Kribi, Lunda, alt. 25 m, m. Oct. 1908, fl.; Hb. Berol.).

21. *Ch. xanthophyllus* Radlk.— Arbor sat alta, ramis petiolisque teretiusculis striatis dense minutim fusco-ferrugineo-puberulis; folia abrupte pinnata, 10—U-juga, petiolo longiusculo, rhachi superne tenui supra costula notata; foliola linearManceolata, in acumen elongatum obtusiusculum sensim attenuata, basi acuta, petiolulata, integerrima, membranaceo-chartacea, nervis lateralibus sat approximatis patulis longius ante marginem anastomosantibus nervoque mediano supra impresso puberulo subtus prominentibus, utrinque glabra, nitidula, e viridi flavescentia, structura generis; thyrsi ad truncum fasciculati, longiusculi, rhachi angulosa sufferrugineo-hirtella a basi cymulas sat crebras sessiles paucifloras gerente, bracteis bracteolisque parvis ovato-lanceolatis; alabastra breviter obtuse conica, vix pedicellate, pube brevi subflavida induta; flores generis; calyx e flavido sufferrugineo-, intus flavescenti-tomentellus; petala 4, alba, oblonga, in unguem perbrevev latiusculum angustata, integerrima, glabra, intus squama oblonga alta laminam mediam attingente subcucullata interdum biloba secus medianam cum lamina connata ecristata vel crista dorsali parva corniformi instructa prope marginem pilis adspersa aucta; stamina 7, puberula, antherae glabrae; germen (floris \sphericalangle) rudimentarium parvum trigonum pilosulum.

Arbor 12-15 m alta. Rami 6 mm crassi. Folia petiolo 8-10 cm longo adjecto ad 70 cm longa; foliola cum petiolulis 5 mm longis 22 cm longa, 3,5 cm lata. Thyrsi circ. 15 cm longi. Calyx 5 mm longus, petala totidem, stamina 6 mm longa.

In Kamerun: C. Ledermann n. 875! (Nkolebunde, am Nanga, überschwemmte Stelle des lichten Nangawaldes am Nlongobach, alt. 220 m, m. Oct. 1908, fl.; Hb. Berol.).

22. **Gh. Klaineanus** Radlk. — *Pancovia* ? *Klaineana* Pierre msc. — Arbuscula?; folia paripinnata, 4?-juga, rhachi tereti petiolulisque crassiusculis longiusculis supra sulco exaratis pilis longioribus molliter pubescentibus; foliola elliptico-lanceolata, in acumen elongatum obtusiusculum protracta, basi acuta, integerrima, membranaceo-chartacea, nervis lateralibus approximatis, patulo-procurvis ante marginem anastomosantibus nervoque mediano supra impresso dense piloso subtus prominentibus, supra glabra nitidula, subtus pilis flavidis praesertim ad nervos densis molliuscula, e viridi praesertim subtus quodammodo flavescentia, structura generis; thyrsi ad truncum parvi, rhachi sulcata gracili flavide tomentosa laxe cymulas sessiles paucifloras gerente, bracteis bracteolisque parvis ovatis; alabastra turbinata, perbreviter pedicellata; flores generis; calyx inter sepala superiora et inferiora ultra medium fissus, minutim flavido-intus albido-puberulus; petala 4, anguste subspathulata, in unguem brevem sensim angustata, apice biloba, denticulata, corrugata, intus supra unguem squama alta secus medianam usque ad media petala adnata apice cucullato-deflexa crispula dorso crista latiuscule obovata fimbriolato-biloba deflexa instructa aucta, glabra; stamina 8, minutim puberula; antherae glabrae, connectivo dorso dilatato apice cellulis mucigeris magnis in glandulam grossiusculam intumescente; germen (floris \leq) rudimentarium, perparvum, dense tomentoso-pilosum.

Arbuscula? 1 m alta. Foliorum interjuga 6 cm longa, rhachis 3 mm crassa; foliola ad 24 cm longa, 9,5 cm lata, acumine 2 cm longo, petiolulis 1 cm longis, 3 mm crassis. Thyrsi 5—8 cm longi. Calyx 6 mm longus; petala 8 mm longa •., stamina inferiora longiora 9 mm longa, reliqua 7 — 8 mm longa.

In Gabonia: R. P. Klaine n. 1920! (=1320 ex Pierre; m. Aug. 1900, fl.; Hb. Berol., comm. ex Hb. L. Pierre).

23. **Ch. micranthus** Gilg in Wiss. Ergebn. Deutsch. Zentr. Afr. Exped. 1910—1911 II. (1922) 96 (nomen). — Arbuscula; folia 4 —5-juga, rhachi griseo-tomentella; foliola subopposita, superiora multo majora, ex late obovato breviter cuneata, breviter petiolulata, graciliter cuspidata, inferiora minora, late elliptica, supra glaberrima, subtus pilis minutis adspersa, cellulis secretoriis in staurenchymate instructa; thyrsi graciles, ex trunco vetusto orti, nutantes vel arcuato-penduli, rhachi leviter sulcata, ochraceo-tomentosa, minutim hispidula, cincinnos paucifloros densiuscule gerentes; flores minores, brevissime pedicellati, griseo-rubicundi (ex coll.); sepala 5, subaequalia, oblonga, parum tegentia, extus griseo-tomentosa; petala 4, oblonga, apice glanduloso-fimbriata, basi squama magna cucullato-reflexa, margine crispata dorso cristata, crista bilobata lobis acutis divergenti-reflexis ornata, cellulis secretoriis pellucide punctata; stamina 8, obscure rubra (ex coll.), filamentis sursum clavato-incrassatis sub anthera constrictis in alabastro genuflexis pilosulis, antheris connectivo rubro apice tumido mucigero. Germen non visum.

Folia ultra 60 cm longa; foliola superiora cum petiolulis 5—6 mm longis circ. 30 cm longa, 10 cm lata, infima 14 cm longa, 5,5 cm lata. Thyrsi 8—16 cm longi. Alabastra sub anthesi vix 4 mm longa, 2,5 mm lata, pedicellis 1 mm longis.

In Kamerun: Mildbraed n. 5894! (Bezirk Kribi, westl. Abdachung des Randgebirges, Hiigelland, 200 m, bei Fenda, 58 km distl. Kribi, VII. 1911).

24. **Ch. Ledermannii** Gilg in sched. — Arbor alta; folia abrupte pinnata, 3-juga, brevissime petiolata, rhachi tenui striato-sulcata, glaberrima; foliola opposita, breviter petiolulata, latissime ovato-elliptica, basi breviter cuneata, apice obtuse lateque apiculata, nervis lateralibus remotis, membranacea, flavescenti-viridia, supra livescentia (anne nisi juvenilia?), nitida, cellulis secretoriis in pneumatenchymate instructa; thyrsi e trunco orti (penduli?), spiciformes, graciles, rhachi tenui anguloso-striata, ut et alabastra ochraceo-tomentella, cincinnos 3—1-flos sessiles sat approximates gerente; flores distincte graciliter pedicellati, inter majores; calyx patulus subbilabiatus, lobis 5 ultra medium liberis, mediano angustiore calloso-angustato, utrinque tenuiter tomentellis; petala 4, lineari-oblonga, basi dorsali margineque basali pilosulis exceptis glaberrima,

apice eroso-crispula, squama magna angusta cucullato-deflexa glabra, dorso cristata, crista digitato-fimbriata ipsaque reflexo-crispula glaberrima aucta; discus 1-lateralis vallaris humilis; stamina 6, quorum 3 longiora, 3 breviora, filamentis appresse minutim pilosis, antheris glabris; germen triquetrum, triloculare, ferrugineo- vel ochraceo-tomentosum, in stylum longum, e flore prominentem subulatum, apice curvatum stigmatosum terminatum; fructus immaturus triqueter ochraceo-tomentosus, longe rostratus.

Arbor 15—20 m alta. Folia cum petiolo 4—7 mm longo 25—30 cm longa; foliola infima 8—12 cm longa, 4,5—7,5 cm lata, suprema circ. 18 cm longa, 10—11 cm lata. Thyrsi 18—22 cm longi, bracteis 2 mm longis. Pedicelli 4 mm longi. Flores 8—9 mm longi, 6 mm lati, pallide rosei (ex coll.); petala 8 mm longa, 1,5 mm lata; stamina longiora 6 mm longa, antheris 1,3 mm longis. Fructus immaturus cum rostro 8 mm longo 15 mm longus, basi 5 mm latus.

In Kamerun: Ledermann n. 6444! (Lorn, Wald mit wenig Riesen, viel mittleren Bäumen, Lianen, Sträuchern, teilweise sehr licht, 200—300 m, 3. IX. 1909, Hb. Berol.).

25. **Ch. Dinklagei** Gilg msc. in Hb. Berol. sine descr. — Frutex, truncis teretibus, cortice laevi nitido lenticellis orbicularibus sparsis notato; folia sat magna paripinnata, 3-juga, petiolo elongato teretiustulo striato basi incrassato et longitudinaliter rugoso pulverulento-puberulo; foliola late elliptico-lanceolata, utrinque acuta vel apice breviter acuminata, longiuscule petiolulata, integerrima, chartacea, nervis lateralibus sat approximatis (utrinque 15—20) patentibus margine anastomosantibus nervoque mediano supra impresso glabro subtus prominentibus, supra glabra nitidula viridia, subtus ad nervos minutim puberula subopaca olivacea, structura generis; thyrsi ad trunci partem foliatam singuli laterales, mediocres (ut videtur — mutilati tantum visi —), rhachi striata pube pulverulenta sufferruginea induta dense cymulas breviter stipitatas gerente; flores — (non visi); fructus (quantum e Gilgii notis et delineationibus conjicere licet) coriaceo-carnosus ellipsoideus, trilobatus, 3-locularis, apice exciso styli reliquiis apiculatus, glaber, aurantiacus (t. Dinklage); semen oblongum, a lateribus compressiusculum; embryo quodammodo curvatus, cotyledone dorsali concavitate interiore ventralem excipiente quam ventralis subduplo crassiore, radícula basilari papilliformi.

Trunci pars foliata 1 cm crassa. Folia petiolo 7—12 cm longo adjecto 30—40 cm longa; foliola cum petiolulis 8—10 mm longis 20—25 cm longa, 7,5—12 cm lata, inferiora minora. Fructus 3,8 cm altus, 2,6 cm crassus; embryo 2,7 cm longus, 9 mm latus, 7 mm crassus.

In Kamerun: Dinklage n. 11301 (Buschwald bei Gross-Batanga, m. Febr. 1891; Hb. Berol.).

26. **Ch. obliquinervis** Radlk. — Arbuscula sat alta, ramis juvenilibus fusco-pulverulento-puberulis; folia magna, paripinnata, 4—?-juga (mutilata tantum visa), rhachi teretiustula striata pilis subsetaceis hirsuta, dein glabrata; foliola elongate oblonga vel sublinearia, in acumen longum attenuata, basi angustata obtusiuscula petiolulis longiusculis pilosis insidentia, margine integerrimo saepius revoluta, coriaceo-chartacea, nervis lateralibus sat approximatis (utrinque circ. 25) oblique erectis margine anastomosantibus nervoque mediano supra impresso glabro subtus prominentibus, praeter nervos subtus pilis subsetaceis adpresse adpersos utrinque glabra, nitidula, supra saturate subtus laete viridia, sicca utrinque olivaceo-viridia, structura generis; thyrsi secus totum truncum hie illic in protuberantiis corticosis coacervati, breves, rhachi sulcata cinnamomeo- dein fusco-tomeitosa cymulas sessiles crebras gerente, bracteis bracteolisque brevibus ovatis acutis; alabastra juvenilia globosa, cameo-tomentosa; flores evoluti (t. Scheffler) extus fusco-lilacini, intus subflavidi (mihi non visi).

Arbuscula 8—10 m alta, denique, ut videtur, altitudine insigni excellens (t. Scheffler). Folia vix dubie 80 cm et ultra longa, rhachi 3—4 mm crassa, interjugis 5—6 cm

longis; foliola cum petiolulis 8—12 mm longis 40 cm et ultra longa, 7,5—10 cm lata. Thyrsi circ. 5 cm longi.

In Africa tropica orientali: G. Scheffler n. 185! (Usambara, Derema, in silva primaeva, alt. 800—900 m, m. Jan. 1900, alab. juven.; Hb. Berol.).

Species ab auctore non visae.

Ch. angustifolius Exell, Gossweiler's PI. (Suppl. I. Journ. of Bot.) (1928) 86. — »Suffrutex ramulis glabrescentibus; foliis pinnatis 8—10-jugis, rhachi petiolulisque minute densissime brunneo-pubescentibus fere pulverulentis glabrescentibus, foliolis anguste oblongo-oblancoatis apice sensim vel abrupte acuminatis basi cuneatis supra costa media excepta pubescente glabris subtus minutissime pubescentibus, costa media supra impressa subtus prominente, costis lateralibus utrinque 18—22 supra inconspicuis infra prominulis; floribus pedicellatis, pedicello brunneo-tomentoso, in facem e trunco ortis; calyce campanulato extus brunneo-tomentoso intus velutino, lobis ovato-lanceolatis; petalis ovato-lanceolatis breviter unguiculatis basi squama medio affixa instructis; staminibus 6—7 (vel 8?); ovario brunneo-tomentoso, 4—5-loculari; fructu juventute fusiformi 4-alato, brunneo-tomentoso.«

In Congo lusitanico: »common in shady humid forests along the River Luali, near the Official Residence at Belize, Mayumbe, fl. and young fr. Dec, (Gossweiler) n. 7594«. — »A palm-shaped undershrub, unbranched and up to 3 m in height; flowers appearing on the trunk.« »Leaves about 45 cm long; leaflets 9—16 X 2,5—3 cm; petiolules 2—5 mm long; inflorescences 12—14 cm long; pedicels 2—8 mm long; calyx-lobes 3—4 x 2—3 mm; petals 3—4 X 1,5—2 mm; young fruits 12—14 X 5—8 mm.«

»This species is allied to *Ch. stenophyllus* Gilg and *Ch. Laurentii* De Wild., both from the Belgian Congo. It differs from the former by the extremely minute pubescence beneath the leaves, those of *Ch. stenophyllus* being described as laxly pilose on the nerves. Moreover, the leaves are 9- or perhaps 10-jugate in the Gossweiler specimens, while in *Ch. stenophyllus* the leaves are described as 4—5-jugate. *Ch. Laurentii* De Wild, has axillary racemes arising from the axils of leaves, which have not yet fallen off, and not from the trunk, as in *Ch. angustifolius*.*

Ch. ellipticus Hutchinson et Dalziel, Fl. West Trop. Afr. I. 2. (1928) 504, in Kew Bull. (1929) 26 (diagn. latina). - »Affinis *Ch. setoso* Radlk., sed foliolis basi rotundatis vel subcordatis ellipticis differt.«

»Ramuli tomentelli. Foliola oblongo-elliptica, acute acuminata, basi rotundata vel subcordata, 20—25 cm longa, 8—10 cm lata, costa et nervis lateralibus utrinsecus circ. 14 dense et longe pilosis, subbuata; petioluli circ. 5 mm longi, hirsuti. Racemi conferti, juniores densissime floriferi, demum usque ad 15 cm longi ubique molliter tomentosi. Bractae breviter triangulari-subulatae, tomentosae, 2 mm longae. Alabastra pyramidata, circ. 5 mm longa.«

In Nigeria: ^Southern Provinces; Oban, Talbot n. 1399; Eket, Talbot n. 3129 (type)*.

Ch. mayumbensis Exell, Gossweiler's PI. (Suppl. I. Journ. of Bot.) (1928) 86. — »Arbuscula erecta, ramulis rufo-pulverulentis; foliis pinnatis, brunneo-pulverulentis, foliolis petiolulatis, petiolulo incrassato rugoso, oblongis apice acuminatis acutis basi obtusis vel paullo cuneatis omnino glabris supra nitidulis, costis lateralibus utrinque 12—14 supra in conspicuis subtus prominentibus; inflorescentiis pseudoracemosis e trunco ortis, floribus in cymulas 3—5-floras congestis; sepalis in calycem urceolatum connatis, lobis triangularibus obtusis; petalis ellipticis brevissime unguiculatis basi squama munitis, squama solum margine et basi affixa; staminibus 12, filamentis inferne pilosis superne parum dilatatis; ovario subgloboso porcato 6-loculari, stylo crasso, stigmatibus pyriformi incrassato porcato.«

In Congo lusitanico: »Bucu Zau, Mayumbe, fl. Dec. (Gossweiler) n. 6855«. — »The following is conspecific: P. Congo: common in shady woods at Pango Munga,

fl. Dec, n. 6016«. — »An erect unbranched miniature tree; trunk often divided at the base; leaves only at the extremities of the stems; flowers appearing all over the trunk; calyx greyish-brown externally.« »Leaves about 60 cm long; leaflets 14—25 X 5—9 cm; petiolules up to 10 mm long; inflorescences 20—30 cm long; pedicels up to at least 5 mm long; calyx connate for 2—3 mm with lobes 4 x 2 mm; petals 5—7 X 2,5—3 mm; stamens 5—5,5 mm long; ovary 3,5 mm in diam. with style 2 mm long.«

»This species seems to be allied to *Ch. setosus* Radlk., from the Gameroons, which has also a 6-locular ovary and petal-scales which are not joined to the petals by the median ridge, which is characteristic of the genus. Both these species, and particularly *Ch. mayumbensis*, approach the genus *Glossolepis* in their characters. The latter genus has been distinguished by the greater number of stamens (12—15 in *Glossolepis*, 8 in *Chytranthus*) and by the petal-scales, which are joined at the base and partly at the edges, and provided with an extra flap or crest; while in *Chytranthus* the petal-scale has a median ridge as mentioned above. *Ch. Zenkeri* Gilg is described, however, as having up to 11 stamens, while *Ch. mayumbensis* has 12; *Ch. setosus* Radlk. and *Ch. mayumbensis* both have petal-scales, which are free except at the base and margins. The only distinction between *Glossolepis* and *Chytranthus* is thus the crest to the petal-scale.«

Species exclusiva.

Chytranthus Laurentii De Wildem. Enum. Pl. Laurent. (1905) 146 t. 33 = *Pancovia Laurentii* Gilg ed. De Wildem. in Fl. Bas- et Moyen-Gongo, in Ann. Mus. Congo, Bot. Sér. 5, III. 1. (1909) 112.

32. Pancovia wnid.

Pancovia Willd. Spec. pi. II. 1. (1799) 280 et 285!; Poir. in Lam. Enc. V. (1804) 152; Reichenb. Consp. (1828) 212; Endl. Gen. Pl. (1836-1840) 1319 (*Afzeliae* syn. dub.); Meissner, Gen. Pl. (1836—1843) Comment. 70 (sub n. 328 perperam *Afzeliae* syn. dictum); Benth. et Hook. f. Gen. Pl. I. 2. (1862) 465 (ad calcem Leguminosar. e gen. *Afzelia* excl., »planta dubia« dicta); Baillon, Adansonia IX. (1870) 229, excl. genere *Erioglossum* c. syn.; id. Hist. Pl. V. (1874) 359 et 414 n. 45 excl. charact., cit. et patriae indicat. plurib. *Erioglossum rubiginosum* et *Sapindum rarak* spectantibus; Radlk. in Sitzungsber. bayer. Akad. VIII. (1878) 268, XX. (1890) 240, 242, 284 et in Engl. u. Prantl, Nat. Pflanzenfam. III. 5. (1895) 321; - non Kurz, Forest Fl. Brit. Burma I. (1877) 295, cfr. *Erioglossum rubiginosum* et *Sapindus rarak*; non *P.* sp. Franchet (1886, 1889), cfr. *Sapindus Delavayi*, nee Claudel (1894), cfr. *Paullinia pinnata*. — *Moulinsia* (non Camb. etc., cfr. *Erioglossum* Blume), Blume, Rumph. III. (1847) 119 in obs. — *Afzelia* ?sp., *Erioglossum* sp., *Cupania* sp., *Aphonia* sp., *Chytranthus* sp. autor. varior., cf. lit. spec.

Flores spurie polygami, <J et \$ (g mentientes) interdum in eadem inflorescentia, oblique symmetrici, mediocres. Calyx breviter campanulatus vel turbinatus, ad medium vel fere ad basin inaequaliter vel subbilabiatim 5-partitus, segmentis ovato-oblongis obtusiusculis anguste imbricatis vel subvalvatis, 2 inferioribus (sepalis 3. et 5. respondentibus) latioribus et inter se (ut et reliqua) minus profunde quam a reliquis separatis, summo (i. e. sepalo 4. utrinque anguste obtecto) angustissimo simulque brevior, interdum (cfr. *P. Harmsiana*) obsoleto, tumque calyce 4-lobo, coriaceus, utrinque sordide tomentellus. Petala 4 (infimi — quod rarissime rudimentarium exstat — sede inter sepalum 3. et 5. vacua) interdum (si calyx 4-lobus) 3 tantum, sepala paullo superantia, spathulata, lamina saepius late ovata vel suborbiculari concava margine undulato denticulata glabra in unguem subaequilongum complanatum crassiusculum hirtellum attenuata, intus supra unguem squama profunde biloba (vel in squamulas 2 dissecta) in alabastro erecta dein cucullato-deflexa crispato-fimbriata aucta, lobo utroque crista et ipsa petaloidea crispato-fimbriolata (quasi squamae reduplicationem paullo minorem exhibente) instructo. Discus 1-lateralis, pulvinatus, pentagonus vel

semilunaris, ad petalorum insertiones subsinuatus, glaber. Stamina (6—)8 cum pistillo ad floris marginem inferiorem rejecta, circa pistillum vel pistilli rudimentum inserta (floris \$ breviora, germen vix superantia, antheris sterilibus); filamenta fusiformi-subulata, basi incrassata deflexa, superne tenuiora sursum curvata, conspicue exserta, infra medium hirtella, infima 2 reliquis saepius longiora; antherae ellipticae, introrsae, supra basin excisam ad medium dorsum affixae, glabrae, connectivo dorso dilatato, in specie 1 dubia (*P. ?Hildebrandtii* Gilg) apice cellulis magnis mucigeris tumido (ut in generibus *Radlkofera* et *Glossolepis* et in *Chytranthi* speciebus nonhullis); pollinis granula trigono-placentiformia triporosa, inter majora. Germen (floris (J rudimentarium) 3-gono-subglobosum, 3-sulcatum, 3-loculare, tomentosum, stylo subulato germine ipso longiore sursum curvato piloso apice subclavato in strias 3 suturales tumidas stigmatosas producto coronatum; gemmulae in loculis solitariae, oblongae, erectae, campylotropae, apotropae, hilo longitudinali a basi ultra medium angulo centrali affixae, micropyle extrorsum infera. Fructus coriaceo-baccatus, sub-orbicularis (in 2 speciebus tantum submaturus visus), 3-sulcato—3-lobatus, basi apiceque emarginatus, lobo uno alterove interdum \pm abortivo, carnosus (t. Hiern edulis deliciosus), siccus dure crustaceus, lobis dorso tumidis vel (in sect. II.) alato-cristatis sordide tomentellis vel hirtotomentosus, styli reliquiis apiculatus, endocarpio tenui interdum parce piloso cum sarcocarpii tanninigeri stratis interioribus semini arete adhaerente (arillum mentiente). Semen ellipticum a lateribus compressum, testa coriacea brunnea cellulis superficialibus magnis impressis \wedge conspicue scrobiculata. Embryo notorrhizus; cotyledones erectae, a marginibus compressae infra medium conferruminatae, altera dorsali superne intus concava alteram ventralem marginibus obtegente, siccae duriusculae amyliigerae, interdum immixtis cellulis brunneis tanninigeris; radicula parva, infera.

Arbores parvae, ramosae, praeter flores subglabrae. Folia sparsa, pari-pinnata, 2—6-juga, petiolata, exstipulata; foliola opposita vel subopposita, breviter petiolulata, elliptica vel lanceolata cuneatave deorsum decrescentia, chartacea vel subcoriacea, nervo mediano lateralibusque utrinque prominentibus, laevia, livescenti-viridia, glabra nee nisi pilis obverse clavelliformibus minutissimis 1-cellularibus curvatis vel rectiusculis basi bulbosa reticulatim incrassato-striata (clavelli caput exhibente) sub epidermidis cellulis immersis laxis utrinque vel subtus tantum ornata immixtis interdum longioribus ebulbosis adpressis, in 4 speciebus (*P. Harmsiana*, *subcuneata*, *Laurentii* et *angustifolia*) glandulis quoque lepidoidis minutis capitulo scutiformi 4—8-cellulari raris obsita (ut in *Glossolepide* et *Chytranthi* speciebus quibusdam), epidermide — speciebus nonnullis [*P. Holtzii*, *subcuneata*, *Laurentii* et *angustifolia*] exceptis — mucigera (membranarum interiorum substantia in aqua sensim tantum circumciter intumescere indeque e cellula laesa emissa initio nucleum solidum adhuc continente et oculo praebente), paginae superioris vel inferioris quoque e cellulis margine subtiliter sinuatis et inter sinus punctatis conflata, paginae inferioris sparsim in cellulis minoribus plerumque geminatis crystalla singula (in *P. bijuga* et *turbinata* perrara) fovente, mesophyllo crystallis solitariis laxe persito, cellulis secretoriis in aliis speciebus sat crebris, nunc in staenchymate et pneumatenchymate (*P. bijuga*), nunc in pneumatenchymate tantum (*P. HoUzii*, *pedicellaris*, *subcuneata*, *Laurentii*) instructo, in aliis (*P. polyantha*, *turbinata*, *Harmsiana* et *angustifolia*) omnino vel interdum (*P. pedicellaris*, *Laurentii*) nullis. Thyrsi axillares vel saepius (et interdum quidem in eadem specie) e trunco erumpentes, singuli vel pauci fasciculati, plerumque breviusculi, densius laxiusve cincinnigeri, tomentelli vel hirtelli; cincinni (*P. ? Hildebrandtii* excepta) sessiles; pedicelli floribus nunc breviores nunc paulo longiores; bractee bracteolaeque parvae deltoideae. Flores 3—8 mm longi, albidii. Fructus circ. 15 mm altus, 18 mm latus.

Species 10 (vel 12), Africae tropicae, praesertim occidentalis incolae, quibus accedit 1 dubia Africae orientalis.

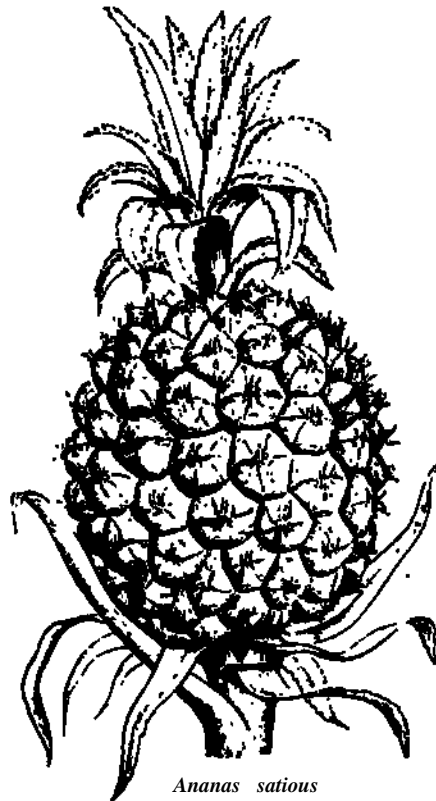
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Die erste Auflage der „Natürlichen Pflanzenfamilien“ ist seit mehreren Jahren vergriffen. Das Werk ist durch die Behandlung des Stoffes und den Reichtum der bildlichen Darstellung nicht nur für den Fachbotaniker als großes, zusammenfassendes Handbuch der Systematik ein unentbehrliches Rüstzeug geworden, sondern hat auch dem Biologen und Geographen, dem Apotheker, Arzt, Forst- und Landwirt, dem Gärtner, dem Lehrer und Studierenden der Naturwissenschaften, dem wissenschaftlichen Reisenden und dem Kaufmann im Ausland sich überall als vielseitiges Hilfsmittel bewährt.

Die neue Auflage des Werkes soll im Geist der ersten Auflage gehalten sein und ihm seine alte Bedeutung bewahren. Wieder wird jede Familie des Pflanzenreiches eine eigene, von Spezialisten verfaßte Darstellung erhalten. Diese bringt eine Übersicht über die Literatur, im Gegensatz zu der ersten Auflage vollständige Zitate der Gattungsnamen sowie andere wichtige Literaturnachweise und eine eingehende Charakteristik der Familie. Dann werden die Vegetationsorgane morphologisch und anatomisch behandelt und in weiteren Kapiteln die Inhaltsstoffe, Blütenverhältnisse, Bestäubung, Embryologie, Frucht und Same, geographische Verbreitung, fossiles Vorkommen, verwandtschaftliche Beziehungen, sowie Verwendung und Nutzen dargestellt; im systematischen Teil wird eine Einteilung der Familie mit Bestimmungstabelle aller Gattungen gegeben, die einzelnen Gattungen werden nach ihren Merkmalen beschrieben und alle wichtigen Arten, namentlich soweit sie Nutzpflanzen sind, aufgeführt.

Bei der neuen Auflage soll eine möglichste Gleichmäßigkeit in der Behandlung aller Gruppen angestrebt werden. Die bei der ersten Auflage mit dem Erscheinen in Einzelheften verbundenen Obelstände sollen vermieden werden. Die neue Auflage wird daher bandweise herausgegeben werden. Das Werk soll in etwa 35 einzelnen Bänden erscheinen und wird im ganzen — unverbindlich — etwa 1500 Bogen zu je 16 Seiten umfassen. Es sind folgende Bände und Publikationsjahre vorgesehen:

- | | |
|--|--|
| 1. Schizophyta, Monadinae. 1932. | 17. Ranales-Sarraceniales. 1933. |
| 2. Myxoinycetes, Dinoflagellatae, Barillariales. Erschienen 1928. | 18a. Podostemonales. Rosales-Saxifragineae. Erschienen 1930. |
| 3. Conjugatae, Chlorophyceae, Charophyta. Erschienen 1927. | 18b. Rosales - Rosineae. (Platanaceae bis Connaraceae.) 1932. |
| 4. Phaeophyceae, Rhodophyceae. 1934. | 18c. Rosales-Leguminosae. 1933. |
| 5. Phycomycetes, Ascomycetes. 1932. | 19a. Geraniales 1. (Geraniaceae bis Burseraceae.) Erschienen 1931. |
| 6. Basidiomycetes 1. Erschienen 1928. | 19b. Geraniales 2. (Meliaceae bis Potygalaceae.) 1932. |
| 7. Basidiomycetes 2. 1933. | 19c. Geraniales 3. (Euphorbiaceae.) Erschienen 1931. |
| 8. Lichenes. Erschienen 1920. | 20. Sapindales-Malvales. 1932. |
| 9. Hepaticae. 1932. | 21. Parietales-Opuntiales. Erschienen 1925 |
| 10. Musci 1. Erschienen 1924. | 22. Myrtiflorae-Umbelliflorae. 1933. |
| 11. Musci 2. „ 1925. | 23. Ericales-Contortae. 1933. |
| 12. Pteridophyta. 1933. | 24. Tubiflorae. 1934. |
| 13. Gymnospermae. Erschienen 1926. | 25. Rubiales-Cucurbitales. 1934. |
| 14a. Blüten- und Fortpflanzungsverhältnisse der Angiospermae. Erschienen 1926. | 26. Gampanulatae. 1934. |
| 14b. Pandanales-Spathiflorae. 1932. | 27. Register. 1935. |
| 15a. Farinosae-Scitamineae. Erschienen 1930. | |
| 15b. Microspermae. 1933. | |
| 16. Verticillatae-Centrospermae. 1932. | |

Das Werk soll in der Zeit von 1924 bis 1935 erscheinen. Jährlich werden etwa drei bis vier Bände veröffentlicht. Jeder Band wird von einem Bandredaktor herausgegeben; die Gesamtleitung liegt jetzt in der Hand von H. Harms,

Als Bandredaktoren wirken die Herren V. Brotherus f, P. Claußen, L. Diels, E. Gilg, H. Harms, E. Jahn, F. Pax, R. Pilger, V. Schiffner, A. Zahlbruckner.

Für die Darstellung der Familien haben außerdem ihre Mitarbeit zugesagt die Herren W. Becker f, G. Beck-Mannagetta f, W. Benecke, A. Berger f, G. Bitter f, W. von Brehmer, J. Briquet, F. Bucholtz f, G. von Büren, H. Burgeff, M. Burret, R. Chodat, P. Dietel, O. Drude, H. Farenholtz, F. Fedde, Ed. Fischer, R. E. Fries, K. Fritsch, M. Funfstück f, Charlotte Gilg-Benedict, W. Gothan, P. Graebner, A. Heimerl, K. Hoffmann, E. Irmscher, E. Janchen, G. Karsten, R. Keller, O. von Kirchner f, W. Kirschstein, S. Killermann, R. Knuth, Job. Krause, K. Krause, R. Kriuscl, F. Laibach, G. Lakon, K. Lewin, E. Lindemann, L. Lindinger, A. v. Lingelsheim, Th. Loesener, G. Malme, R. Mansfeld, F. Mark-

Wif, J. Mattfeld, H. Melchior, C. Mez, J. Miidbraed, M. von Minden, F. Niedenzu, H. Paul, II. Printz, E. Pritzel, L. Radlkofer t, K. Rosenthal, W. Ruhland, G. Schellenberg, A. K. Schindler, H. Schinz, Günther Schmid, O. Ch. Schmidt, C. Schneider, O. E. Schulz, G. Senn, O. Skottsberg, E. Ulbrich, J. C. Th. Uphof, F. Vaupel f, F. Vierhapper, W. Wangerin, K. Werdenmann, R. von Wettstein, Hubert Winkler.

Im allgemeinen erfolgt der Satz nach dem Muster der ersten Auflage. Aus Rticksicht auf den internationalen Gebrauch des Werkes erscheint es ratsam, einige deutschen Fachausdrttcke durch die dem Latcinischen angepafiten und vielfach international eingebtirtger-ten zu crsetzen, wie dies in folgenden Proben geschehen ist.

Einteilung der Familie.

- C. Blotter gegenständig. BlUten g oder polygamisch. Stam. zahlreich, frei oder nur am Grunde vereinigt oder in 5 cine ROhre bildenden Verbänden. Ovar lfächerig usw. **III.** Calophylloideae.
- a. Stam. frei oder nur am Grunde vereint. Hypokotyles Stämmchen des Keimlings sehr kurz mit dickfleischigen Keimblättern, die bisweilen in einen soliden KOrper verwachsen
- a. Griffel einfach mit schildffirmiger oder breit gelappter Narbe. m m Caloplylleae.
- I. Ovar 2—4fächerig.
1. Sep. 4. Ovar 2fiächerig, mit 4 Samenanlagen. Blttcn einzeln. Yorderindien, Monsungbict 13. Mesua.
2. Sep. 2 vereinigt, erst zur Bltzeit sich voncinander losOsend oder die Kelchkappe sich spaltend.
- * Ovar 4—2fachrig, mit 4 Samenanlagen. Bliiten achselständig. Narbe 2—4lappig. Tropisches Amerika, tropisches Afrika 14. **Mammea.**
- ** Ovar 2f&cherig, mit je 2 Samenanlagen. BlUten in Bfischeln. Narbe schildfOrmig. Palaeotrop 15. Ochrocarpus.
- II. Ovar lfächerig, mit 1 Samenanlage. Bltitcn in Trauben oder Rispen oder Büscheln.
1. Ovar mit 1 Samenanlage. Stam. zahlreich. Trop. 16. Calophyllum.
2. Ovar mit 2 Samenanlagen. Stam. 8. Ncu-Guinea 17. Nouhouysia.
- p. Griffel an der Spitze 2- oder 4spaltig, mit spitzen Narben
- I. Ovar 2ftcherig, mit je 2 Samenanlagen in jedem Fach. 2 Griffel mit spitzen Narben. Vorderindien 18. Poeciloneuron.
- II. Ovar lfächerig mit 4 Samenanlagen. 1 Griffel mit 4spaltiger Narbe. Vorderindien, Monsungebiet 19. Eayea.
- b. Stam. in 5 zu einer ROhre vereinten Verbänden mit nach innen stehenden Antheren. Nur cin Earpell mit einem fadenfg. exzentrischen Griffel usw. **III.** 7. Endodesmieae. Einzige Gattung, tropisches Westafrika 20. **Endodesmia.**
- D. Blatter gegenständig, selten wechselständig. Blliten selten § oder polygamisch, oft diOz. Stam. zahlreich, selten in bestimmter Zahl, frei oder mannigfach vereinigt usw.

Unterfam. IV. Clusioideae.

Clusioideae Engl. in Fl. brasil. XII. 1. (1888) 398 u. in E. P. 1. Aufl. III. 6. (1893) 205. Vgl. S. . . . (im Schlttssel der Gattungen).

Trib. IV. 8. Clusioideae*Clusieae.

Clusieae Choisy in De Cand. Prodr, I. (1824) 557, Engl. in E. P. 1. Aufl. III. 6. (1893) 205. — Stam. frei oder alle vereint, niemals in getrennten Verbänden vor den Pet. Griffel sehr kurz, getrennt oder fast fehlend. Narben getrennt, sitzend. Frucht eine zuletzt scheidewandfttrmige usw.

2.C!usIa L. Spec. pi. ed. 1. (1753) 509 [L. Gen. ed. 1. (1737)] (*Xanthe* Schreb. Gen. II. [1791] 710; *Arrudea* A. St. Hilaire, Fl. brasil. merid. I. [1825] 318, f. 66; *Triplandron* Benth. Bot. Sulph. [1844] 78, t. 38; *Cahotia* Karsten in Linnaea XXXVIII. [1856] 448; *Lipophyllum* Miers in Trans. Linn. Soc. XXI. [1855] 251, t. 26). — Bliiten difiz., selten polygamisch. Sep. mehrere. die inneren oder alle dachziegelig. Pet. 4—10, die äufieren oft vor den usw.

Wichtigste spezielleLiteratur: Planehon et Triana, Mem. Guttif., in Ann. sc. nat. 4. sér. XIII. (1859) 318. — Engl. in Fl. bras. XII. 1. (1888) 399-433. t. 81—93. — Vesque, Epharm. III. (1892) t. 1—66, in DC. Hon. Phan. (1893) 27—141. — Urban, Symb. Antill. I. (1899) 367, IV. (1910) 413, 414, V. (1908) 434, VII. (1912) 286, VIII. (1920) 439. — Rusby in New York Bot. Gard. VIII. (1912) 105.

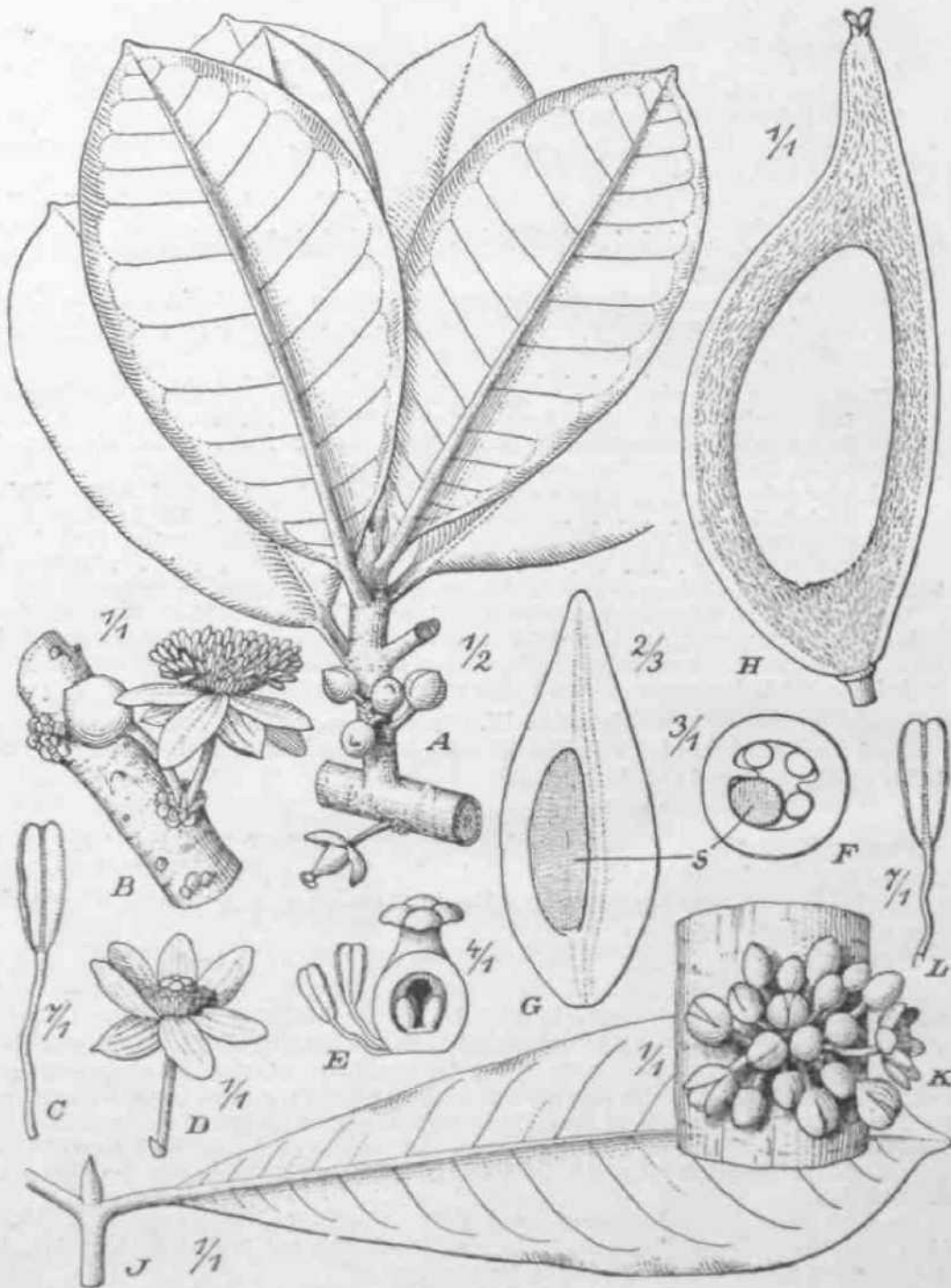
Etwa 100 Arten im tropischen und subtropischen Amerika, besonders zahlreich in den Urwäldern Brasiliens, Guianas, Venezuelan, Golumbias, Westindiens und Zentralamerikas; aber auch in den Savunnen und in den BuschgehOlzen der Hochgebirge.

Untergatt. I. *Thysanoclusia* Vesque in DC. Monogr. Phaner. VIII. (1893) 28. — Stam. zahlreich, frei od. nur unten vereint usw.

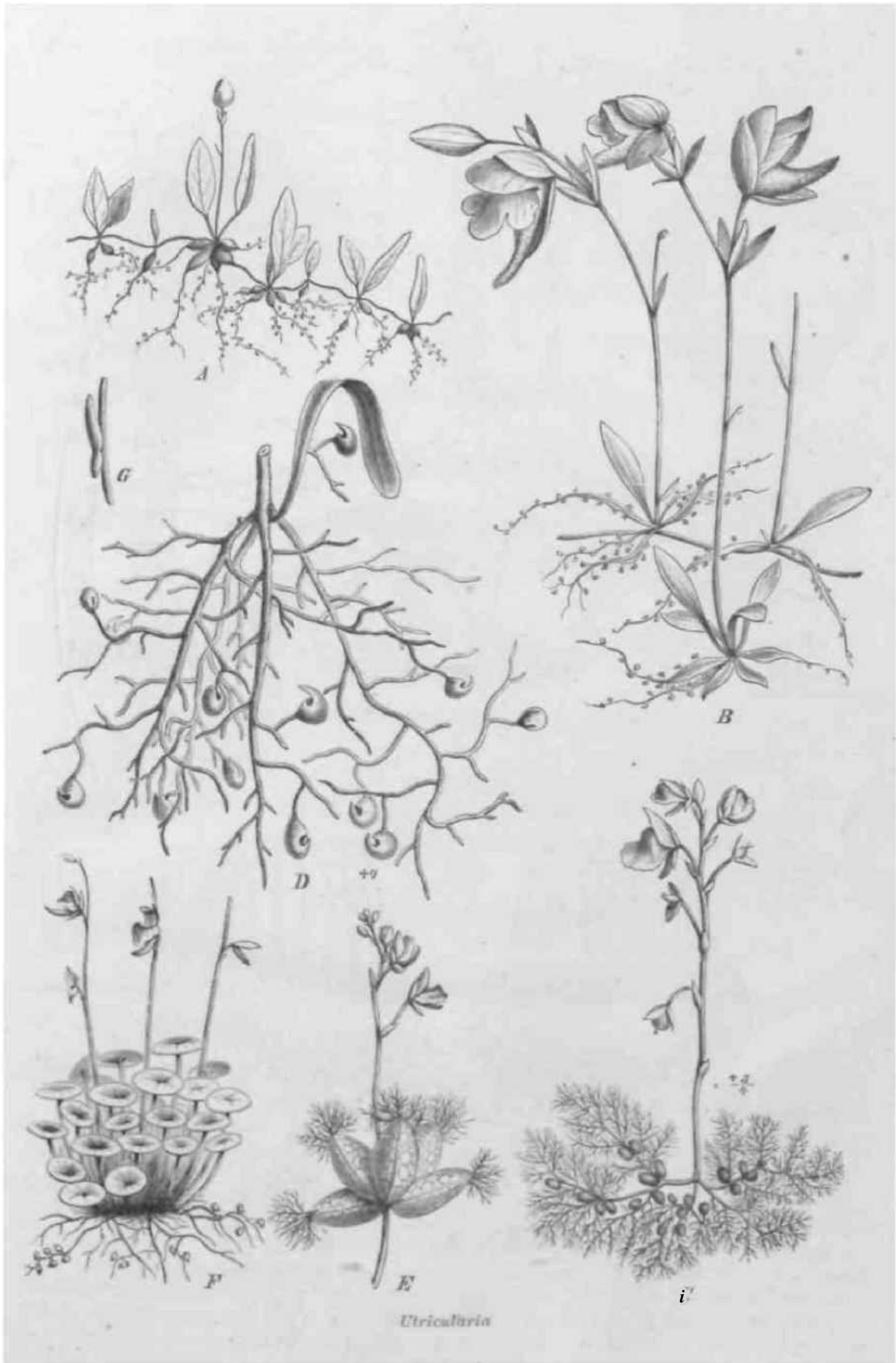
A. Filamente flach und deutlich entwickelt.

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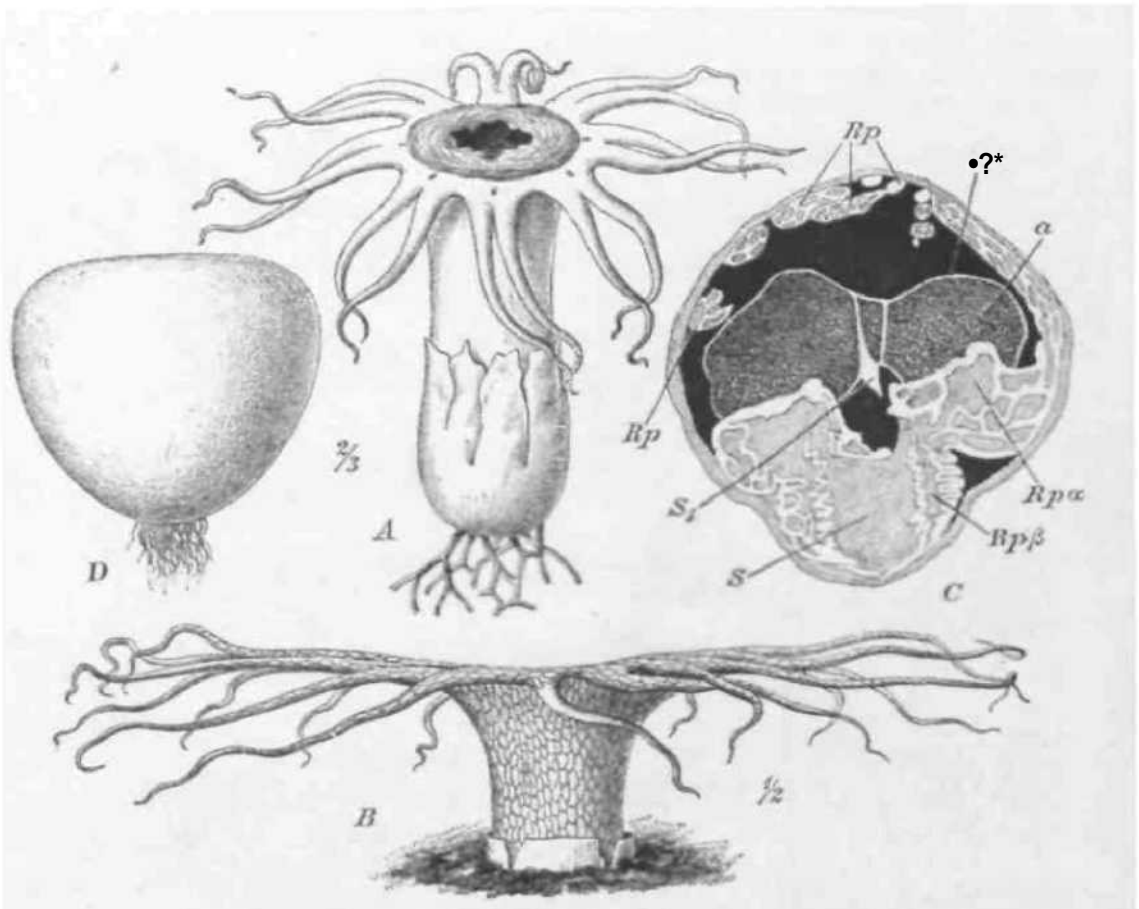
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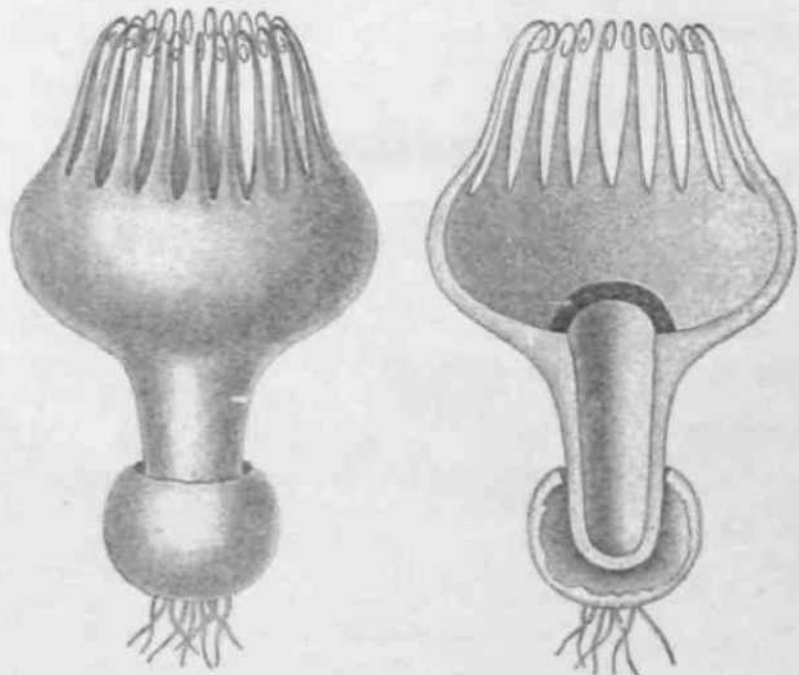
Ochrocarpus



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A. B. R. in *Journal of Bot.* LXVII. Ir. 813. (1930) 286.

-The volume forms a valuable contribution to systematic botany, and Professor Engler and his fellow-workers are to be congratulated on the result of their work. It is in fact a classic work." (Betrifft Band XVa.)

Pharmazeutische Zeitung, Heft 20, 1926.

Die stufenweise Aufeinanderfolge der Bände dieses epochalen Werkes ist mit größter Freude zu begrüßen. Die „Pflanzenfamilien“ sind zu einem unentbehrlichen Monumentalwerke von internationaler Bedeutung geworden, das neben dem Index Kewensis nicht mehr aus der botanischen Literatur hinwegzudenken ist. Nicht nur für jedes botanische Institut, sondern auch für jeden selbstständig schaffenden Botaniker ist diese geniale Leistung Adolf Englers eine conditio sine qua non zum Arbeiten. Im Interesse der gesamten botanischen Wissenschaft ist das weitere Erscheinen der Bände der Neuauflage dringend zu wünschen.

Dr. R. M.

Journal of Botany, Vol. LXII, No. 741, September 1924.

The wonder is, that under present conditions in Germany it is possible to issue at all, and at so reasonable a price, a volume so well produced and so complete, and one which will certainly be indispensable to all bryologists who desire an acquaintance with the mosses of other regions beside their own. 11. N. D.

Berliner Tageblatt, Nr. 569, 30. XI. 1924.

Bis zum fernsten deutschen Reisenden und Kaufmann in den Tropen wird es ein Klang sein, daß der große Engler-Prantl wieder herauskommt. Diesmal bloß von Engler, mit einem Stabe bester Helfer. Wenn die 27 handlichen Bände mit ihrem vorzüglichen Bildermaterial fertig vorliegen, wird es für das Durchschnittsbedürfnis nach praktischer Botanik wieder das Werk sein, in dem „alles steht“. Das griffige und das verlässlichste. Es ist ein Weltbuch, vom Ausland so geschätzt wie bei uns.

Berliner Tageblatt, Nr. 577, Dezember 1925.

Dieses Monumentalwerk deutscher wissenschaftlicher Kraft hat gerade zu Weihnachten wieder zwei Prachtbände herausgebracht, von denen der eine jetzt auch (mit einer Fülle instruktiver Bilder) in die höheren Blütenpflanzen greift. Einem Kreise hochbeglückter „Stiller im Lande“, nämlich der ehrsamten Zunft der Kaktusfreunde, sei verraten, daß er gerade auch ihre Lieblinge behandelt.

Tropenpflanzer, Heft 8, 1927.

... Auch die Ausstattung ist, wie bei den früheren Bänden dieses großen Standardwerkes, in jeder Beziehung durchaus mäßig.

La Nature, Nr. 2622, 5. Juli 1924.

La nouvelle édition en 27 volumes, dont la publication commence aujourd'hui, mise à jour et augmentée, deviendra certainement le livre de chevet de tous les botanistes. Son style clair, son illustration abondante facilitent les déterminations.

Die Naturwissenschaften, Heft 51, 1924.

Es gibt in der botanischen Literatur wohl kaum ein Nachschlagewerk, das sich eines solchen wohl begründeten Rufes und solcher Beliebtheit erfreute wie die „Natürlichen Pflanzenfamilien“, und wenn wir mit berechtigtem Stolz die Tatsache verzeichnen können, daß das Englersche Pflanzensystem im Verlaufe der letzten zwei Jahrzehnte immer mehr zu allgemeiner Geltung gelangt ist, so kommt an diesem Erfolge der deutschen Wissenschaft auch jenem Werk sicher ein erhebliches Verdienst zu. Auch stellt dasselbe nicht bloß für den Fachbotaniker und speziell den Systematiker ein unentbehrliches Rüstzeug dar, sondern es hat sich auch für weitere Kreise der an der Pflanzenwelt Interessierten als ein vielseitiges und insbesondere auch durch seine illustrative Ausstattung überaus schätzenswertes Hilfsmittel bewährt.

Österreichische botanische Zeitschrift, Bd. 24, Nr. 7-9 1925.

Mit Freude werden es alle Botaniker begrüßen, daß unser wichtigstes systematisches Sammelwerk: „Die natürlichen Pflanzenfamilien“ in zweiter Auflage erscheint und daß A. Engler sich entschlossen hat, seine unerreichte wissenschaftliche Organisationskraft in den Dienst dieser Aufgabe zu stellen.

Schweizerische Apotheker-Zeitung, 62. Jg., Nr. 28, 12. Juli 1924.

Obgleich das Werk durch seine erste Auflage allen Botanikern längst rühmlichst bekannt ist, so muß doch immer wieder die Geschicklichkeit bewundert werden, wie der Herausgeber mit seinem Stabe von Fachgelehrten versteht, die ungeheure Fülle sämtlicher Pflanzenformen der Erde in knapper conciser Form so klar zur Darstellung zu bringen.... Noch ist mit einem Worte der Anerkennung der überaus reichen und prägnanten Illustration zu gedenken.

The Vegetation of New Zealand

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. . . This edition is practically a new book, by far the larger part having been rewritten and the remainder thoroughly revised. That the making of a book so greatly changed was possible is due in large measure to my having botanically re-explored much of the Region, thanks especially to the carrying-out of plant-ecological studies at all altitudes of the tussock-grassland and forest areas for the Department of Agriculture and the State Forest Service respectively. Not only were localities visited with which I was more or less familiar but many others were examined the vegetation of which was unknown. In addition I have received important communications concerning areas previously unbotanized from Drs. H. H. Allan and W. Me. Kay and Messrs. T. A. MacPherson, W. R. B. Oliver, G. Simpson and J. Scott Thomson (working together) and W. A. Thomson. Also during the period which has elapsed since the manuscript of the first edition was sent to the publisher (beginning of 1914 to the end of 1927), as may be seen in Part I, Chapter II, much has been published in various branches of New Zealand botany and of this a good deal finds a place in the book . . .

Extract from a review of the 1st edition :

„. . . Dr. Cockayne commenced his botanical work in 1887, and has continued his explorations with great assiduity and keen insight ever since. Becoming gradually more interested in ecology, the present volume, dealing with the vegetation of New Zealand in its many aspects and in relation *to* the varied plant associations, could not have been entrusted to more worthy hands. Nor could the subject have been more ably treated."

(Nature, No. 2788, Vol. III, 7. April 1923)

Recoupling the new ground during the retreat of the glaciers. Even today, glaciated New Zealand, at a very low level indeed, is not a thing of the past. Probably, a fair' idea of what many valleys of glaciated Westland were like during the retreat of the ice from the coastal plain and lower mountain slopes is afforded by the Franz Josef and Fox glaciers and their immediate neighbourhood with their terminal faces at 211 m. and 204 m. respectively and distant only a few kilometres from the sea. At the present time, the peopling of the new ground just abandoned by the ice can be observed, together with what has taken place at no distant date, indeed every transition can be plainly seen from bare rock, or moraine a year or so old, to forest. It seems then not unreasonable to conclude that what is happening at the present time is merely a repetition of what occurred throughout the Western district at the conclusion of the New Zealand ice-age.

In the case of the Franz Josef glacier — studied by me in 1910 and 1911 — three habitats are being invaded, namely rock smoothed by the ice, moraine, (both lateral and terminal) and river-bed, the rock being by far the most extensive. At an altitude of *bout 300 m. close to the abandoned rock (quartzose schist marked by numerous cracks, grooves and notches running parallel to the ice) there is no vegetation, but at a few metres distance from the ice, there are everywhere patches large and small some 2 to 3 m. deep of the moss *Racomitrium symphiodon*. This plant clings to the rock with great tenacity; its leaves when wet are spreading and hold much water in their axils, but when dry, they are erect and pressed closely to the stem. When the moss, through its rapid decay has prepared a seed-bed, the chinks in the rock are invaded by vascular plants (Fig. 51), the "seeds" brought by wind from the neighbouring scrub and forest or carried on the rock-surface by water. More than 30 species of pteridophytes and spermatophytes take part in the invasion¹).

The transformation of this open succession to one that is closed is a slow process, so that there are many extensive bare patches of considerable age. Where moraine, even if quite thin is deposited upon the rock, a closed association is quickly produced. Thus Harper Rock, a roche moutonnée still partly embedded in the terminal face of the glacier, was

1) The following are the most important: — *Hymenophyllum multifidum* (grows on solid rock and Forms soil), *Lycopodium varium*, *Deyeuxia pilosa*, *Poa novae-zelandiae*, *P. Cock ay niana* (forms large mats), *Schoenus pauciflorus* (especially where water lies), *Earina autumnale*, *Carmichaelia grandiflora*, *Coriaria arborea*, *Metrosideros lucida*, *Gunnera albocarpa* (broad, rooting mats), *Gaultheria rupestris*, *Dracophyllum longifolium*, *Hebe subalpina*, *Veronica Lyallii*, *Coprosma rugosa*, *Celmisia bellidioides*, *Olearia auicenniaefolia* (almost the first to arrive), *O. Hidfolia*, *O. arborescens* and *O. Colensoi*. All these species occur in the immediate neighbourhood of the glacier and, except the *Earina*, belong to the subalpine florula. No species, not belonging to the locality has been observed.

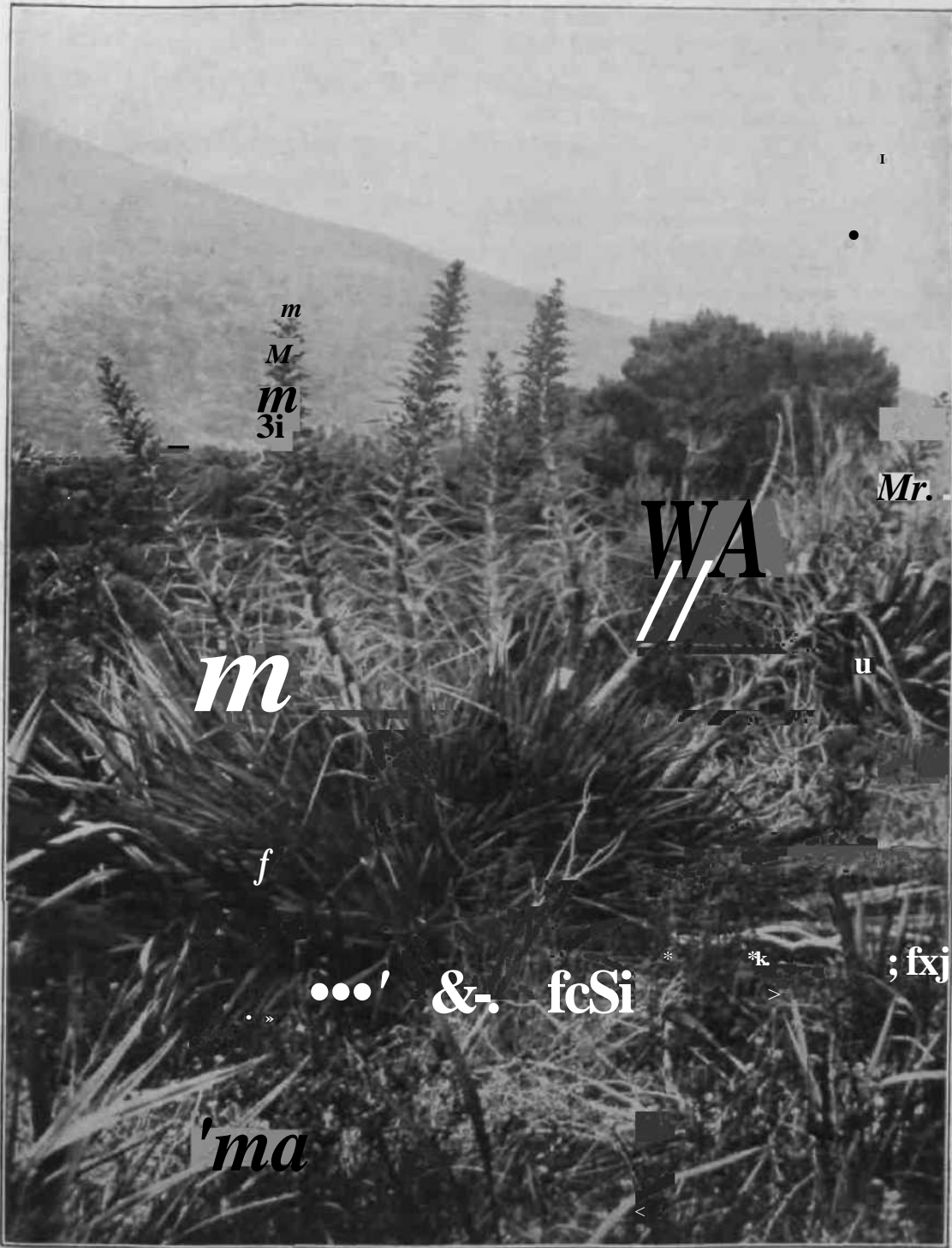


Fig. 16. *Aciphylla Scott-Thomsonii*, showing the Yucca-form common in the hills, growing on Flagstaff Hill, South Otago district
 Photo G. Simpson.

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