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ADDITIONS TO OUR KNOWLEDGE OF THE FLORA OF HAINAN

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In 1920 Mr. W. Y. Chun spent nearly a year in a botanical exploration of Hainan, but no general study has as yet been made of his extensive collection of over 3000 numbers. A partial set of the material collected by him is in the herbarium of the University of Nanking and from this set about 500 duplicates have been sent to me by Mr. A. N. Steward of that Institution for identification. The Chun collections thus far received supply several important additions to our knowledge of the Chinese flora, in this short paper representatives of nine genera being recorded for the first time from China: *Dacrydium*, *Phyllocllamys*, *Popowia*, *Orophea*, *Drypetes*, *Calpigyne*, *Apodytes*, *Lithosanthes* and *Smythea*, several of these being represented by previously undescribed forms.

I have previously published several papers on the flora of Hainan,¹ and previous to my departure from Manila in November, 1923, prepared a manuscript enumeration of Hainan plants. This contains the record of approximately 1100 species of flowering plants and ferns from the island, but manifestly the flora is much richer than this preliminary enumeration would indicate.

My papers were for the most part based on extensive botanical collections made in Hainan by Mr. F. A. McClure of the Canton Christian College, who made two trips to the island, one from September to December, 1921, and the other from March to May, 1922. An enumeration of the McClure collection is in process of publication by Mr. G. W. Groff and his colleagues in the Canton Christian College, three parts having already been issued carrying the enumeration from the Filices through the Solanaceae.²

¹ Merrill, E. D. Two new species of plants from Hainan. (Philip. Jour. Sci. xix 677-679 [1921]); Diagnoses of Hainan plants. (op. cit. xxi. 337-355 [1922]); Diagnoses of Hainan plants II. (op. cit. xxiii. 237-268 [1923]).

² Groff, G. W., E. Ding and E. H. Groff. An enumeration of the McClure collection of Hainan plants. (Lingnaam Agric. Review, i. pt. ii. 27-86 [1923], ii. 9-44 [1924]; 115-139 [1925]).

Mr. McClure has published a very interesting and instructive account of his trips in Hainan.¹

Hainan is located within the tropics being in approximately the same latitude as the Hawaiian Islands and the northernmost part of the Philippine Archipelago. Naturally we find represented here a number of genera chiefly tropical in character, that do not occur in the continental part of southern China.

The actual types of the species described in this paper are deposited in the herbarium of the University of California, and fragments of all of them have been placed in the herbarium of the Arnold Arboretum; duplicates are in the herbarium of the University of Nanking.

TAXACEAE

Dacrydium Solander

Dacrydium elatum (Roxb.) Wallich in Hooker, Jour. Bot. II. 144, t. 2 (1843).

Juniperus elata Roxburgh, Fl. Ind. ed. 2, III. 838 (1832).

HAINAN: Five Finger Mountains, along streams, altitude 1350 m. W. Y. CHUN, nos. 1367, 2989, April and June, 1920.

No. 1367 represents a juvenile form.

Indochina to Sumatra, Borneo, the Philippines, and Celebes. The genus is new to China.

MORACEAE

Taxotrophis Blume

Taxotrophis macrophylla (Blume) Boerlage, Handl. Fl. Nederl. Ind. III. 379 (1900).

HAINAN: road to Tahun, in ravines, W. Y. Chun, no. 1239, April 9, 1920.

In the absence of staminate flowers it is difficult to distinguish between *Balanostreblus ilicifolia* Kurz and *Taxotrophis ilicifolia* Vidal. Hutchinson² has cleared up the confusion between these two genera and species. He accepts the name *Taxotrophis ilicifolia* Vidal for this form, which extends from Burma and Chittagong to Indochina, the Malay Peninsula, Philippines, Celebes and the Moluccas. I have, however, accepted the older specific name given above, based on *Streblus macrophyllus* Blume (*Diplocos macrophylla* Bureau) from Celebes. The genus is new to China, except for Hemsley's record of *Taxotrophis* sp. from Hainan (Henry, no. 8703), this specimen probably representing the same species as Chun's no. 1239.

¹ McClure, F. A. Notes on the Island of Hainan. (Lingnaam Agric. Review, I. pt. I. 66-86, pl. 1-5, map [1922]).

² In Kew Bull. Misc. Inform. 1918, 150.

Phylloclamys Bureau

Phylloclamys taxoides (Heyne) Koorders, *Exkursionsfl. Java*, II. 89 (1912)

Taxotrophis taxoides Heyne in Roth, *Nov. Pl. Sp.* 368 (1821).

Trophis spinosa Roxburgh, *Fl. Ind.* ed. 2, III. 762 (1832).

Phylloclamys spinosa Bureau in De Candolle, *Prodr.* XVII. 218 (1873).

HAINAN: road to Kunguier, in groves, *W. Y. Chun*, no. 2124, July 4, 1920.

India and Ceylon to Indochina, Java, Palawan, and Timor. The genus is new to China.

ANONACEAE

Fissistigma Griffith

Fissistigma hainanense, nom. nov.

Fissistigma maclurei Merrill in *Philip. Jour. Sci.* XXIII. 241 (1923), non *F. maclurei* Merrill, op. cit. XXI. 342 (1922).

HAINAN: Five Finger Mountains, *F. A. McClure*, no. 9733, *W. Y. Chun*, no. 1606.

Through oversight the same specific name was used for two entirely different species, so that this change in the name accompanying the second description becomes necessary.

Popowia Endlicher

Popowia pisocarpa (Blume) Endlicher in *Walpers Rep.* I. 252 (1842).

Guatteria pisocarpa Blume, *Bijdr.* 21 (1825).

Bocagea pisocarpa Blume, *Fl. Jav. Anon.* 90, t. 45 (1828).

HAINAN: Fan Ta, southwest slope of Five Finger Mountain, in forests, *W. Y. Chun*, no. 1918, June 6, 1920.

The specimen agrees closely with the descriptions of this species and with Blume's plate, as well as with named material available for purposes of comparison. My conception of this species includes *Popowia ramosissima* Hook. f. & Th., and the Philippine *Popowia polyandra* (Presl) Merr. I would call attention to the fact that Gagnepain's interpretation of the genus *Popowia* includes those forms that Ridley¹ places in the genus *Sphaerocoryne* Scheffer but I feel absolutely confident that *Sphaerocoryne* is identical with *Melodorum* as originally characterized by Loureiro, and that consequently *Sphaerocoryne* Scheff. is a synonym of *Melodorum* Lour., while *Melodorum* of all modern authors is *Fissistigma* Griff., as I have previously indicated.² This interpretation of Loureiro's genus is verified by the type specimen of *Melodorum fruticosum* Lour. in the herbarium of the British Museum. Synonyms of *Melodorum fruticosum* Lour., as I understand the species, are *Polyalthia aberrans* Maingay, *P. siamensis* Boerl., *P. affinis* Teysm. & Binn., *Popowia aberrans* Pierre,

¹ Ridley, H. N., *Fl. Malay Penin.* I. 61 (1922).

² Merrill, E. D. On the application of the generic name *Melodorum* of Loureiro. (*Philip. Jour. Sci.* xv. 125-137 [1919]).

Unona Mesneyi Pierre, *Sphaerocoryne aberrans* Ridl., and *Unona dumentorum* Dunal.

Popowia pisocarpa Endl. extends from the Malay Peninsula to Sumatra, Java, Borneo and the Philippines (southern Luzon to Mindanao), but has not been recorded from Indochina, although it almost certainly occurs there. The genus is new to China.

Orophea Blume

Orophea hainanensis, sp. nov.

Arbor parva, circiter 6 m. alta, ramulis junioribus inflorescentiisque leviter ciliatis exceptis glabra, ramulis tenuibus, junioribus vix 1 mm. diametro ciliatis; vetustioribus glabris; foliis chartaceis, in sicco pallidis, nitidis, oblongo-ellipticis, 4 ad 8 cm. longis, 2 ad 3.5 cm. latis, utrinque subaequaliter angustatis, apice distincte obtuseque acuminatis, basi acutis, nervis primariis utrinque circiter 7 distinctis; petiolo circiter 2 mm. longo glabro; inflorescentiis tenuibus, 2 ad 2.5 cm. longis, plerisque 1- vel 2-floris, parvissime ciliatis, pedunculo 1 ad 1.2 cm. longo, 1-bracteato, bracteis lanceolatis, acuminatis, ciliatis, 2 mm. longis, bracteolis plerumque solitariis, parvis; floribus longe (10 ad 12 mm.) pedicellatis; sepalis triangulari-ovatis, acutis, leviter pubescentibus, 1.5 ad 2 mm. longis; petalis exterioribus punctato-glandulosis, late ovatis ad suborbicularibus, acutis, circiter 4 mm. longis latisque, interioribus stipitatis, 7 ad 8 mm. longis, limbo rhomboideo, 4 mm. longo, 3.5 mm. lato, acuto vel obtuso, basi cuneato, intus rugoso; antheris, 6, connectivo curvato; carpellis 6, glabris 1 mm. longis.

HAINAN: Five Finger Mountains, *W. Y. Chun*, no. 1533, June 16, 1920 altitude indicated as 1700 m. which is probably too high; flowers yellow.

A strongly marked species well characterized by its glabrous leaves and its very slender, 1- or 2-flowered inflorescences. No representative of the genus has hitherto been recorded from China.

RUTACEAE

Evodia Forster

Evodia Chunii, sp. nov.

Arbor circiter 11 m. alta, novellis inflorescentiisque exceptis glabra, ramulis teretibus, circiter 2.5 mm. diametro, lenticellatis; foliis trifoliolatis, petiolo 3 ad 5 cm. longo, glabro; foliolis chartaceis vel membranaceis, in sicco fragilibus viridibus utrinque concoloribus nitidis oblongis obtusis vel breviter obtuse acuminatis, basi cuneatis vel decurrento-acuminatis, aequilateralibus vel leviter inaequilateralibus 7 ad 10 cm. longis et 2 ad 3 cm. latis, nervis primariis utrinque circiter 10 tenuibus distinctis arcuato-anastomosantibus, petiolulis 3 ad 4 mm. longis; cymis in axillis superioribus pedunculatis multifloris 3.5 ad 5 cm. longis leviter pubescentibus circiter 4 cm. diametro, pedunculo circiter 2 cm. longo; floribus albido-viridibus,

4-meris, pedicellis 2 ad 2.5 mm. longis, glabris, basi minute bracteolatis; sepalis late ovatis, rotundatis, 0.5 mm. longis, glabris; petalis oblongo-ellipticis, obtusis, 2 mm. longis; filamentis petalis aequantibus, glabris, antheris oblongis 0.8 mm. longis; ovario rudimenti villosa.

HAINAN: south slope of Five Finger Mountains opposite Suimahu Doong, in forests, *W. Y. Chun*, no. 2038.

The alliance of this species is clearly with *Evodia malayana* Ridley (Fl. Malay. Penins. i. 342 [1922]), which in turn may prove not to be distinct from *Evodia aromatica* Blume, differing in its smaller, fewer-nerved leaflets, smaller cymes, shorter peduncles, glabrous pedicels, and its broadly ovate not oblong sepals. It may have been included by Guillaumin¹ in his conception of *E. triphylla* DC., but this is unlikely, as Guillaumin's description and the specimens named by him that I have seen, represent *Evodia pteleaefolia* (Champ.) Merrill (in Philip. Jour. Sci. Bot. vii. 377 [1912]). *Evodia triphylla* (Lam.) DC. is *Melicope triphylla* (Lam.) Merr., as I have previously shown, this interpretation being based on an examination of Lamarck's type, a Philippine specimen, in Lamarck's herbarium at Paris. Many of the synonyms cited by Guillaumin belong with *Evodia pteleaefolia* Merr., but some of them are wrongly placed. *Zanthoxylum Lamarckianum* Cham. & Schlecht., belongs with *Melicope triphylla* Merr., the type also being a Philippine specimen, but *Evodia Lamarckiana* Benth. is a synonym of *E. pteleaefolium* (Champ.) Merr.²

SIMARUBACEAE

Brucea J. S. Miller

Brucea amarissima (Lour.) Desv. apud Gomes in Mem. Acad. Sci. Lisbon. n. ser. iv, 30 (1872).—Merrill in Philip. Jour. Sci. x. 18 (1915).

Brucea sumatrana Roxburgh Hort. Bengal. 12 (1812); Fl. Ind. i. 469 (1820).

HAINAN: at low altitudes, *F. A. McClure*, nos. 7598, 8018, 8824. India to southeastern China through Malaysia to Australia.

This common and widely distributed species is recorded here merely to call attention to the proper authority for the transfer of Loureiro's specific name *Brucea amarissima* does not appear in Index Kewensis.

POLYGALACEAE

Xanthophyllum Roxburgh

Groff's Hainan record of *Xanthophyllum racemosum* Chod. was based on *McClure*, no. 9440, a specimen with immature fruits, following my identification. It is unfortunate that the name should have been printed without its synonym. *Xanthophyllum racemosum* Chodat is an herbarium name intended to indicate the form described by King and by Ridley as

¹ Lecomte, Fl. Gén. Indo-China i. 632 (1911).

² Merrill, E. D. On the identity of *Evodia triphylla*. (Philip. Jour. Sci. Bot. vii. 373-378 [1912]; Enum. Philip. Pl. ii. 331 [1923]).

Xanthophyllum palembanicum (non Miq.). If my identification of McClure's specimen is correct, in view of Ridley's statement that *Xanthophyllum Maingayi* Benn. is not specifically distinct from *X. palembanicum*, as described by King and by himself, perhaps there is no need for the binomial proposed by Dr. Chodat. In order to place the name *Xanthophyllum racemosum* Chod., the following synonymy is given.

Xanthophyllum racemosum Chodat apud Groff in Lingnaam Agric. Review, II. pt. I. 26 (1924), nomen.

Xanthophyllum palembanicum King in Jour. As. Soc. Bengal, LIX. pt. II. 137 (1890); Materials for a Flora of the Malayan Peninsula, I. 77 (1890).—Ridley, Fl. Malay. Penin. I. 149 (1922).—Non Miquel.

Xanthophyllum Maingayi Benn. in Hook. f., Fl. Brit. Ind. I: 210 (1874)?

Gagnepain¹ confines *Xanthophyllum palembanicum* Miq. to Sumatra and admits *Xanthophyllum Maingayi* Benn. as a valid species. It is interesting to note that neither *Xanthophyllum palembanicum* as interpreted by King and by Ridley, nor *X. Maingayi* Benn., which Ridley claims is identical with *X. palembanicum* as interpreted by King, are recorded from Indochina. In this connection it is suggested that perhaps the Hainan form should be compared with *Xanthophyllum colubrinum* Gagnepain (in Bull. Soc. Bot. France, LV. 35 [1909]; Lecomte, Fl. Gén. Indo-Chine, I. 244, t. 18 [1909]). Flowering material from Hainan is desirable in order to settle the exact status of the form that occurs in this island.

EUPHORBIACEAE

Drypetes Vahl

Drypetes hainanensis, sp. nov. (§ *Sphragidia*).

Arbor parva, circiter 7 m. alta, fructibus exceptis (floribus ignotis) glaberrima, ramis teretibus griseis, ramulis tenuibus, angulatis lenticellatis 1 ad 1.5 mm. diametro; foliis chartaceis oblongis integris, in sicco olivaceis, utrinque concoloribus nitidis, distincte reticulatis, 6 ad 9 cm. longis et 2 ad 3.5 cm. latis, utrinque angustatis, apice breviter obtuseque acuminatis, basi distincte inaequilateralibus, acutis, nervis primariis utrinque circiter 10 distinctis anastomosantibus; petiolo circiter 8 mm. longo; fructibus axillaribus solitariis vel binis sessilibus globosis 2 ad 2.5 cm. diametro fulvo-pulverulentis glabrescentibus, apice leviter umbilicatis, 2-locularibus, exocarpio fragili, endocarpio osseo, mesocarpio crasso spongioso.

HAINAN: northwest slope of Five Finger Mountains, in shade along streams, *W. Y. Chun*, no. 1734, May 27, 1920.

A species well characterized by its entire, somewhat acuminate leaves which are inequilateral and acute at the base; by its slender branchlets; by being entirely glabrous except for its deciduously fulvus-puberulent fruits, which at full maturity are glabrous or nearly so; and by its sessile,

¹ Gagnepain, F. Contribution à la connaissance des *Xanthophyllum*. (Jour. de Bot. XXI. 241-253 [1903]).

globose fruits which attain a diameter of 2.5 cm., the exocarp being pale brown and fragile, the mesocarp thick and spongy. Its alliance is apparently with two recently described species of Indochina, *Drypetes Poilanei* Gagnep. and *D. subsessilis* Gagnep.

Calpigyne Blume

Calpigyne hainanensis, sp. nov.

Frutex vel arbor parva (3 ad 8 m. alta, fide Chun), ramulis junioribus et petiolis et inflorescentiis dense stellato-tomentosis exceptis glabra, ramis glabris teretibus, ramulis circiter 1.5 mm. diametro; foliis oblongo-ellipticis ad oblongo-lanceolatis chartaceis, in sicco pallidis vel olivaceis, utrinque nitidis, 12 ad 19 cm. longis, 3 ad 8 cm. latis, acutis ad obscure acuminatis, basi plerisque leviter inaequilateralibus, subacutis ad rotundatis vel obscure auriculato-cordatis, margine crenulato-serratis vel crenatis crenulis glanduligeris; nervis primariis utrinque circiter 14 perspicuis arcuato-anastomosantibus curvato-adscendentibus, secundariis subparallelis, subrectis vel undulato-curvatis, distinctis; petiolo 5 ad 8 mm. longo, dense castaneo- vel subferrugineo-pubescente; stipulis lanceolatis, circiter 5 mm. longis, rigidis, incis; inflorescentiis spicatis, axillaribus et ex axillis defoliatis, spicis numerosis tenuibus fasciculatis, 4 ad 6 mm. longis dense fulvo- vel cinereo-pubescentibus, indumento stellato; floribus inferioribus pistillatis paucis solitariis, superioribus omnibus staminatis glomeratim fasciculatis numerosis, quam pistillati multo minoribus; calyce floris pistillati ovoideo vel ellipsoideo, circiter 4 mm. longo, dense stellato-tomentoso, 5- vel 6-lobato, lobis ovatis 1.5 ad 2.5 mm. longis valvatis, alternis plerumque paullo minoribus; ovario dense stellato-tomentoso, ovoideo; stylis circiter 2 mm. longis, crassis, deorsum leviter connatis, curvatis, bifidis, eroso-laceratis, extus stellato-tomentosis, intus perspicue papillois; floribus staminatis glomeratim fasciculatis, alabastro vix 1 mm. diametro, fasciculis 3- ad 7-floris, bracteis late ovatis 1.5 ad 2.5 mm. longis; calyce extus pubescente, lobis late ovatis valvatis membranaceis; staminibus 3 ad 5, plerumque 4, filamentis brevissimis crassis deorsum connatis, antheris subreniformibus, loculis subhorizontalibus introrsis, loculamentis inferioribus quam superioribus distincte minoribus.

HAINAN: Nam Fung, growing along streams (flowers pale yellow), *W. Y. Chun*, nos. 1092 (type), 1122, March 21 and 23, 1920.

Calpigyne has hitherto been a monotypic genus known only from the original collection or collections, as Blume in describing it in 1856 records it from both Borneo and Celebes. The original species *Calpigyne frutescens* Blume has apparently not appeared in recent collections, or if so it has not been recognized. While Blume's description is incomplete in some particulars, yet the present species conforms in essential generic characters to those given by him. *Calpigyne hainanensis* differing from *C. frutescens* in its chartaceous, crenate or crenulate-serrate leaves. The staminate calyces in the present species are equally or subequally 3-lobed (not 4-

lobed, with alternate longer and shorter lobes), while the filaments are very short and stout, not subulate-acuminate.

ICACINACEAE

Apodytes E. Meyer

Apodytes cambodiana Pierre, Fl. Forest. Cochinch. t. 267 (1892); Gagnepain in Lecomte, Fl. Gén. Indo-Chine, 1. 834. (1911).

Apodytes javanica Koorders & Valetton, Bijdr. Boomsort. Java, v. 159 (1900).

HAINAN: northwest slope of Five Finger Mountain, *W. Y. Chun*, no. 2096, in forests apparently at high altitudes.

No representative of this genus has hitherto been recorded from China, the specimen cited above agreeing in all essential details with material from Indo-China and Java, as well as with the descriptions and Pierre's plate. It occurs in Indo-China and in Java, and according to Koorders,¹ also in India.

I strongly suspect that *Nothapodytes montana* Blume (*Mappia montana* Miq.), will prove to be the same as this, in which case Blume's specific name will replace Pierre's.

RHAMNACEAE

Smythea Seemann

Smythea nitida, sp. nov.

Frutex scandens, subglaber, ramis teretibus glabris olivaceis, ramulis tenuibus circiter 1 mm. diametro, junioribus parvissime ciliatis; foliis olivaceis nitidis chartaceis ovatis ad elliptico-ovatis, 3 ad 7 cm. longis et 1.5 ad 3 cm. latis, glaberrimis, basi aequilateralibus vel subaequilateralibus late rotundatis, apice breviter obtuseque acuminatis vel obtusis, margine distanter denticulatis, nervis lateralibus utrinque 4 vel 5, perspicuis, arcuato-adscedentibus; petiolo 3 ad 5 mm. longo, plus minusve hirsuto; floribus axillaribus fasciculatis 5-meris circiter 4 mm. diametro, fasciculis plerisque 4-floris, pedicellis 2 mm. longis; calycis lobis parvissime hirsutis triangularibus, acutis, 1.5 mm. longis, petalis parvis, obcordatis, retusis, vix 1 mm. longis, margine inflexis, dorsum angustatis, brevissime stipitatis; filamentis 1 mm. longis. Fructibus ignotis.

HAINAN: Five Finger Mountains, altitude about 1350 m., *W. Y. Chun*, no. 1465, May 6, 1920.

The first representative of the genus to be recorded from China, apparently most closely allied to *Smythea macrocarpa* Hemsl., but with differently shaped, fewer-nerved leaves which are broadly rounded and nearly equilateral at the base. Although the fruits are unknown, and without these it is difficult to distinguish between *Smythea* and *Ventilago*, I do not hesitate in referring the present species to *Smythea* because of its axillary fascicled flowers. From the description I strongly suspect that *Ventilago*

¹ Exkursionsfl. Java II. 532. (1912).

pauciflora Pitard of Indo-China belongs in *Smythea* rather than in *Ventilago*.

STERCULIACEAE

Heritiera Dryander

Heritiera parvifolia, sp. nov.

Arbor circiter 30 m. alta (fide Chun), ramis glabris, ramulis gracilibus, circiter 1 mm. diametro, dense lepidotis; foliis subcoriaceis, lanceolatis ad oblongo-lanceolatis, 6 ad 8 cm. longis, 1.5 ad 3 cm. latis, acuminatis, basi acutis ad subrotundatis, triplinerviis, in sicco pallidis, supra subolivaceis nitidis glaberrimis, subtus dense subargenteo- vel brunneo-lepidotis; nervis utrinque circiter 6, subtus distinctis; petiolo 1 ad 1.5 cm. longo, lepidoto; inflorescentiis axillaribus dense subferrugineo-stellato-tomentosis 3 ad 5 cm. longis; floribus circiter 4 mm. longis, calyce 5- vel 6-lobato, extus dense, intus leviter stellato-tomentoso, lobis oblongo-ovatis obtusis 1.5 ad 2 mm. longis; androphoro gracili, glabro 1 mm. longo, basi disco crasso 0.8 mm. diametro cincto; antheris 8 ad 10, 1-seriatis, in capitulis 0.8 mm. diametro dispositis. Fructibus ignotis.

HAINAN: northwest slope of Five Finger Mountains, *W. Y. Chun*, no. 2100, June 29, 1920, apparently in forests.

While by definition this species falls in *Heritiera*, on account of the thick disk surrounding the base of the androphore, yet I cannot escape the conviction that its true relationships are with the Philippine *Tarrietia sylvatica* (Vidal) Merr., and that when fruits are available it will probably be best to transfer it to the latter genus. In *Heritiera* it is well characterized by its small, few-nerved leaves.

FLACOURTIACEAE

Flacourtia L'Héritier

Flacourtia indica (Burm. f.) Merrill, Interpret. Herb. Amb. 377 (1917); Enum. Philip. Pl. III. 112 (1923).

Gmelina indica Burman f., Fl. Ind. 132, t. 39, fig. 5. (1768).

Flacourtia sepiaria Roxburgh, Pl. Coromandel, I. 48, t. 68 (1795).

Flacourtia Balansae Gagnepain in Bull. Soc. Bot. France LIV. 521 (1908)—Lecomte, Fl. Gén. Indo-Chine, I. 235, fig. 23 (1909).

HAINAN: road from Hoihow, Namfong, and without locality, *W. Y. Chun*, nos. 975, 1007, 1068, February and March, 1920.

This species was previously recorded from Hainan by Gagnepain, as *Flacourtia Balansae* Gagnep., who gives its range as Indochina, Hainan, and the Philippines. My Hainan material presents staminate and pistillate flowers, the latter with 6 styles, and the branches are spiny, some of the ultimate branchlets bearing spines up to 2 cm. in length, the older branches with spines up to 4 cm. long. The distinguishing characters given by Gagnepain as between *Flacourtia sepiaria* Roxb. and *F. Balansae* Gagnep. are apparently not constant, and I have accordingly reduced

the latter species. In any case if a specific name is needed for the form with 6 or 7 styles (*F. Balansae* Gagnep.), other than the above name I have adopted from the younger Burman, then this is supplied by *Myroxylon decline* Blanco (1837) and *Stigmarota edulis* Blanco (1845), for Blanco's species is exactly identical with the form described by Gagnepain. The form with six styles also occurs in the Malay Peninsula and presumably in Java as Koorders and Valetton describe *Flacourtia ramontchi* L'Hér., which I believe also to be a synonym of *F. indica* Merr., as having 4- to 7-merous flowers. *Flacourtia rukam* Z. & M., *F. inermis* Roxb., and *F. jangomas* Steud., all present the same variation in the number of styles as does *F. indica* Merr. I therefore consider the style character to be an inconstant one in *Flacourtia*, and that *F. Balansae* Gagnep. cannot be separated from *F. sepiaria* Roxb. = *F. indica* (Burm. f.) Merr.

MYRTACEAE

Eugenia Micheli

Eugenia multipunctata, sp. nov. (§ *Jambosa*).

Arbor glabra, 8 ad 10 m. alta, ramis ramulisque teretibus, brunneis, ramulis 1 ad 1.5 mm. diametro; foliis oppositis, oblongo-ellipticis ad ellipticis, utrinque angustatis, apice acuminatis, basi subobtusis ad cuneatis, in sicco olivaceis nitidis, subtus pallidioribus et perspicue multipunctatis, chartaceis ad subcoriaceis, 5 ad 9 cm. longis, 2 ad 4.5 cm. latis, nervis utrinque circiter 10 tenuibus obscuris, reticulis obsoletis; petiolo circiter 5 mm. longo; cymis plerisque axillaribus paucifloris 1 ad 3 cm. longis e basi ramosis, ramis paucis; floribus albis, omnibus pedicellatis plerisque 3-meris, 7 ad 8 mm. diametro, pedicellis circiter 3 mm. longis, bracteis lanceolatis acuminatis 1.3 mm. longis; calyce late infundibuliformi basi minute bibracteolato circiter 1.5 mm. longo, sepalis 3, raro 4, orbiculari-ovatis rotundatis 1 mm. longis; petalis 3, raro 4, ellipticis rotundatis circiter 3.5 mm. longis punctato-glandulosis; filamentis numerosis 3 ad 4 mm. longis.

HAINAN: Five Finger Mountains, *W. Y. Chun*, no. 2034 (type), 1567, May and June, 1920, in forests. Chun's no. 2033 probably also belongs here, but I have seen no specimen of this, having merely Mr. A. N. Steward's note on which to base this deduction.

This species is strongly characterized by its conspicuously multipunctate leaves and especially by its 3-merous, rarely 4-merous, flowers, 3-merous flowers being an aberrant character in this large genus.

SYMPLOCACEAE

Symplocos Jacquin

Symplocos Chunii, sp. nov. (§ *Bobua*, *Lodhra*).

Arbor circiter 7 m. alta, inflorescentiis dense ferrugineo-pubescentibus exceptis glabra, ramulis circiter 2 mm. diametro; foliis chartaceis, suboli-

vaceis, subtus paullo pallidioribus, glaberrimis, anguste oblongis ad oblongo-oblancheolatis, 8 ad 10 cm. longis, 2 ad 3 cm. latis, apice acutis, obscure obtuseque acuminatis vel obtusis, deorsum angustatis, basi cuneatis, margine cartilagineis, leviter undulato-crenatis crenulis apiculatis, costa supra leviter impressa, subtus prominula; nervis primariis utrinque 8 ad 10, adscendentibus, tenuibus distinctis obscure arcuato-anastamosantibus; petiolo 6 ad 8 mm. longo; inflorescentiis spicatis, axillaribus et in axillis defoliatis, brevibus densis paucifloris 0.8 ad 1.5 cm. longis, plerumque 4- ad 8-floris, axi bracteolisque dense ferrugineo-pubescentibus; floribus flavidis 10 ad 12 mm. diametro, bracteolis ovatis 2 mm. longis, calyces involucentibus; calyce glabro, tubo 1.5 mm. longo, lobis 5 patulis ovatis ad oblongo-ovatis obtusis, tubo aequantibus vel paullo brevioribus; petalis ellipticis glabris apice rotundatis circiter 4.5 mm. longis et 2.5 mm. latis; staminibus circiter 70, filamentis glabris, deorsum vix connatis, obscurissime pentadelphis, 3 ad 7 mm. longis; stylis 5 mm. longis, glabris; ovario 3-loculare.

HAINAN: Lotus Range near Nodda, *W. Y. Chun*, no. 642, January 15, 1920, in ravines along small streams, altitude about 600 m.

A well marked species belonging in the group with *Symplocos garcinifolia* Guillaumin but with smaller leaves which are not slenderly acuminate, their margins obscurely undulate-crenate, although the crenulations are glandular-apiculate. The flowers are larger than in Guillaumin's species, while the calyx-tube is about as long as the lobes. It seems to be equally distinct from other species in this group such as *Symplocos congesta* Benth. and *S. cuspidata* Brand.

***Symplocos fasciculiflora*, sp. nov. (§ *Bobua*, *Lodhra*).**

Arbor parva, circiter 5 m. alta, bracteolis ferrugineo-pubescentibus exceptis glabra, ramis ramulisque teretibus, ramulis 1.5 ad 2 mm. diametro; foliis in sicco utrinque viridibus opacis chartaceis vel subcoriaceis oblongis ad oblongo-ellipticis, 5 ad 8 cm. longis et 2 ad 3.5 cm. latis, integerrimis, acutis vel abrupte breviterque acuminatis, basi cuneatis, costa supra leviter impressa, subtus valde prominula; nervis primariis utrinque 8 ad 10 tenuibus haud perspicuis; petiolo circiter 1 cm. longo; inflorescentiis axillaribus paucifloris fasciculatis in ramulis ultimis dispositis; floribus albis sessilibus 5-meris 6 ad 8 mm. diametro bracteolatis, bracteolis 3 late ovatis circiter 1 mm. diametro, ferrugineo-pubescentibus; calyce glabro, tubo circiter 1 mm. longo, lobis late ovatis rotundatis tubo subaequantibus; petalis oblongo-ellipticis rotundatis 3 mm. longis, basi leviter connatis; staminibus circiter 30, filamentis glabris liberis 2 ad 4 mm. longis; stylis crassis glabris 4 mm. longis, sursum incrassatis, distincte clavatis.

HAINAN: northwest slope of Five Finger Mountains, *W. Y. Chun*, no. 1873, June 4, 1920, in forests, altitude indicated as 1800 m. which is probably too high.

A species in the general group with *Symplocos cuspidata* Brand and *S.*

congesta Benth., from both of which it is at once distinguished by its much fewer stamens.

RUBIACEAE

Litosanthes Blume

Litosanthes biflora Blume, Cat. Gew. Buitenzorg, 21 (1823).—Merrill, Enum. Philip. Pl. III. 568 (1923).

Lasianthus gracilis King & Gamble in Jour. As. Soc. Bengal, LXXIII. pt. II. 132 (Mat. Fl. Malay. Penin. IV. 206) (1904).

HAINAN: Five Finger Mountains, *F. A. McClure*, no. 8708, on forested slopes, altitude 700 m.

Malay Peninsula, Java, and the Philippines (Luzon, Mindoro, Catanduanes, Leyte, Negros, Mindanao). The genus is new to China.

FURTHER NOTES ON CHINESE LIGNEOUS PLANTS.¹

H. H. HU.

Alnus Jackii, sp. nov.

Arbor ad 10 m. alta, cortice cinereo; ramuli glabri, lenticellati. Folia elliptica, ovata vel elliptico-obovata, 4–7.5 cm. longa et 2.2–3 cm. lata, apice acuta vel cuspidata, basi subrotundata vel rarius late cuneata, glanduloso-serrata, utrinque intense viridia, subtus ad costam et sparsissime ad venas rectas utrinque circiter 10 puberula, ceterum glabra; petioli graciles, ad 2 cm. longi: inflorescentia mascula ex amentis 5–6 cylindricis autumnis circiter 2 cm. longis composita, resinosa, pedunculis erectis 8 mm. longis. Strobili solitarii, erecti, pedunculo circiter 1 cm. longo sustenti, ovoidei vel ellipsoidei, circiter 2 cm. longi et 1.2 cm. diam.; bractee apice truncatae, breviter lobulatae, circiter 5 mm. longae et 7 mm. latae; semina orbicularia, compressa, circiter 3.5 mm. longa et lata, apice acutiuscula, margine coriaceo angusto, nitida, castanea.

Ab affini *A. formosana* Makino praecipue differt foliorum forma et strobilis solitariis.

CHEKIANG: Tien-tai-shan, *Ren-Chang Ching*, no. 2606 (type), Dec. 10, 1924, and no. 1514, May 9, 1924. FOKIEN: Siu-Ning-sien, *Ren-Chang Ching*, no. 2295, Aug. 5, 1924.

Meratia yunnanensis, comb. nov.

Chimonanthus yunnanensis W. W. Smith in Notes Bot. Gard. Edinb. VIII. 182 (1914).

As Rehder and Wilson remarked in *Plantae Wilsonianae*, I. 419 (1913) that *Meratia* Loiseleur was published one year before *Chimonanthus* Lindley, we have to accept Loiseleur's name for this genus. Accepting Rehder and Wilson's statement this new combination is made.

Deutzia Chunii, sp. nov.

Ramuli graciles, sparse stellato-pilosi. Folia oblongo-lanceolata, 3–5.5

¹See Vol. V. 227 of this Journal for preceding Notes.



Merrill, Elmer D. 1925. "Additions to our Knowledge of the Flora of Hainan." *Journal of the Arnold Arboretum* 6(3), 129–140.
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