

Family 187. GUTTIFERAE

1. *Calophyllum* Linnaeus

Revision:

Stevens, PF. 1980. *A Revision of the Old World Species of Calophyllum* (Guttiferae). Journal of the Arnold Arboretum 61: 117-699.

Calophyllum blancoi Planch. & Triana, Ann. Sci. Nat. Bot. iv, 15 (1862) 272; --Merr., EPFP 3 (1923) 78; --PF Stevens, J. Arnold Arb. 61 (1980) 206.
Calophyllum megistanthum Quisumb. & Merr., PJS 37 (1928) 170. --Type:
Calophyllum ferrugineum Merr., PJS 10 c (1915) Bot. 324; EPFP 3 (1923) 79. --Type:
Calophyllum glabrum Merr., PJS 7 c (1912) Bot. 92; EPFP 3 (1923) 79. --Type:
Calophyllum mindanaense Elmer, LPB 7 (1915) 2684; --Merr., EPFP 3 (1923) 80. --Type:
Calophyllum racemosum Merr., PJS 5 c (1910) Bot. 198; EPFP 3 (1923) 80. --Type:
Taiwan, Philippines, NE Borneo. BATANES (ITBAYAT), CAMIGUIN DE BABUYANES, CALAYAN, LUZON: Ilocos Norte, Ilocos Sur, Cagayan, Isabela, Mountain Province (Bontoc), Ifugao (Banawe, Mt Taggutu; Liwang, Poitan), Benguet, Pangasinan, Cagayan (Peñablanca), Isabela (Mt Moisés; San Mariano; Palanan), Aurora (Baler), Nueva Ecija (Mt Umingan), Zambales (Subic; Botolan), Bataan (Lamao River; Mt Mariveles), Rizal (Mt Lumutan; Montalban, San Mateo; Antipolo; Boso-boso; Morong) Laguna (Mt Makiling; San Antonio; Pangil; Sta. Maria), Quezon (Real, Llavac; Guinayangan; Kinatakután), Camarines Sur (Pasacao; Sipaco, Lagonoy); Sorsogon (Mt Bulusan), AMBIL, PALAWAN, MANGSI, MASBATE, PANAY: Capiz (Macosolon), LEYTE (Ormoc, Lake Danao), SAMAR: (San Jose, Catubig River), TAWI-TAWI (Tarawakan), MINDANAO: Zamboanga (Sax River); Zamboanga del Sur (Port Banga), Lanao del Sur (Lake Lanao, Camp Keithley); Lanao: (Maria Cristina Falls; Siggapod; Kulasinan), Bukidnon (Quilayong; Mt Camates) Davao (Mt Apo, Todaya), Agusan del Norte (Mt Urdaneta =Hilong-hilong; Butuan, San Mateo, Tungao; Diwata Mtns), Surigao del Norte (Mt Kabatuan). In well-drained primary forests, thickets, from near sea level to 1900m. Often abundant. Flowering February-June, rarely in Jan, Aug, Sept, Nov, Dec. Fruiting throughout the year.

Calophyllum brachyphyllum Merr., PJS 17 (1920) 289; EPFP 3 (1923) 78; --PF Stevens, J. Arnold Arb. 61(1980) 6
Surigao del Norte prov., Hegapit River, c. 350m, 25 Apr 1919.
MINDANAO: Surigao del Norte. Streamside forest, altitude c. 350m. Known only from the type collection.

Calophyllum cucullatum Merr., PJS 17 (1920) 288; EPFP 3 (1923) 78; --PF Stevens, J. Arnold Arb. 61 (1980) 382. --Type: BS 34518 Ramos & Pascasio (A, BM, BO, K, L*, NY, P, US*, iso).
Mindanao: Surigao del Norte prov., in thickets along streams at the iron deposit on the NE coast, 25 Apr 1909.
MINDANAO: Surigao del Norte. DINAGAT, based on BS 83930 Ramos & Convocar (NY*, erroneously labeled as an iso). Lowland streamside thickets on 'iron deposit' (may well be lateritic soil on ultramafics which is very common in the two areas).

Calophyllum dasypodum Miq., Fl. Ind. Bat. 1 (1859) 511, *nomen novum* for *C. lanceolatum* Teijsm. & Binn; F-Muell. in Walp., Ann. Syst. Bot. 7 (1868) 357; --PF Stevens, J. Arnold Arb. 61 (1980) 364, Fig. 19 d-g, Map 18. --Type from Java.
S Sumatra, W Java, S Borneo, ?Philippines. BUSUANGA: Malbato, based on Marche

381 (?) (A, P). This only known specimen from the Philippines is sterile.

Calophyllum gracilipes Merr., PJS 5 c (1910) Bot. 197; EPFP 3 (1923) 79; --PF Stevens, J. Arnold Arb. 61 (1980) 653, Fig. 43k, Map 46. --Type: FB 9405 Whitford & Hutchinson (K, LY, US*, iso). Mindanao: Zamboanga del Sur prov., Port Banga, ridge forest, altitude c. 600m, 3 Feb 1908. Borneo (Sarawak; Brunei; Sabah; Kalimantan), SW Philippines. MINDANAO: Zamboanga (Sax River), Zamboanga del Sur (Port Banga). Mixed dipterocarp forest, altitude c. 600m.

Calophyllum inophyllum L., Sp. Pl. (1753) 513; --Merr., EPFP 3 (1923) 79; --PF Stevens, J. Arnold Arb. 61 (1980) 324, Map 14. Tropical E Africa to India, SE Asia, Hainan, Taiwan, Ryukyu Isls, across Malesia to N Australia, New Caledonia to Polynesia. Introduced to the Neotropics and tropical W Africa. Throughout the Philippines along the seashore, a characteristic strand tree.

Calophyllum laticostatum PF Stevens, Austral. J. Bot. 22 (1974) 575, Fig. 8; J. Arnold Arb. 61 (1980) 579. --Type from Papua New Guinea, New Britain and (fide Stevens) possibly Philippines. LUZON: Quezon (Dolores, Mt Calvario, *FB 30019*, UC).

Calophyllum obliquinervium Merr., PJS 20 (1922) 409; EPFP 3 (1923) 80; --PF Stevens, J. Arnold Arb. 61 (1980) 644, Map 48. --Type: FB 27929 Cenabre, Paras & Gellidon (BM, UC, iso). Palawan: Palawan prov., Feb 1920. NE Borneo (Brunei; Sabah), Philippines. LUZON: Camarines Norte (Paracale), Albay, CULION, PALAWAN: (Silanga; Puerto Princesa, Tapul Mtn; Aborlan: Malasgao River), PANAY, SAMAR. Lowland and medium altitude forests, sometimes along the seashore.

Calophyllum oliganthum Merr., PJS 17 (1920) 289; EPFP 3 (1923) 78; --PF Stevens, J. Arnold Arb. 61(1980) 411. --Type: BS 35110 Ramos & Pascasio (A*, BM, BO, K, P, US*). Bucas Grande: 10 June 1919. DINAGAT, BUCAS GRANDE. Lowland forests. On Dinagat growing on iron deposit. Fl. Jun; fr. Apr and Jun.

Calophyllum pentapetalum (Blanco) Merr., Sp. Blancoanae (1918) 266; EPFP 3 (1923) 80; --PF Stevens, J. Arnold Arb. 61 (1980) 494, Map 33; --Ochrocarpus pentapetalus (Blanco) Fern.-Villar, Novis. App. (1880) 17; --Tovomita pentapetala Blanco, Fl. Filip. (1837) 432. --Type: Not extant; neotype, designated by Stevens, 1980: Merrill Sp. Blancoanae 184 leg. Peña (A*; isoneo: BO, F, GH, K, L*, MO, NSW, NY*, P, US*). Luzon: Lepanto prov. (=a former geographic entity covering W Mountain Province and E Ilocos Sur). *Calophyllum amplexicaule* Choisy ex Planch. & Triana, Ann. Sci. Nat. Bot. IV. 15 (1862) 281; --Vidal, Phan. Cuming. Philip. (1885) 96; Rev. Pl. Vasc. Filip. (1886) 54; --Merr., PJS 5 c (1910) Bot. 199. --Type: Cuming 1212 (G, holo; iso: BM, FI, K, MEL). Luzon: Albay (according to Stevens, properly Ilocos Norte) prov.

var. pentapetalum

LUZON: Ilocos Norte, Ilocos Sur (Candon), La Union (San Fernando), Pangasinan, Benguet, Zambales (Sta Cruz: Barrio Binabag), PALAWAN: (Km 112, Pinagbatuan). Lowland dry forests, sometimes with pines, also in rocky sites in the litoral forest. Fl. Dec, Feb & Mar; fr: Nov, Dec, Mar.

var. cumingii (Planch. & Triana) PF Stevens, J. Arnold Arb. 61 (1980) 497, Map 33; --

Calophyllum cumingii Planch. & Triana, Ann. Sci. Nat. Bot. iv, 15 (1861) 259; --Vidal, Phan. Cuming. Philip. (1885) 96; Rev. Pl. Vasc. Filip. (1886) 54; --Merr., EPFP 3 (1923) 78. --Type: Cuming 1077 (G, holo; iso: BM, E, FI, G, K, L*, MEL, NY*, P, W). Luzon: Albay (or Zambales?). *Calophyllum pseudotacamahaca* Planch. & Triana, Ann. Sci. Nat. Bot. IV. 15 (1862) 270; --Vidal, Phan. Cuming. Philip. (1885) 96; Rev. Pl. Vasc. Filip. (1886) 54. --Type: Cuming 1047 (G, holo; iso: BM, E, FI, G, K, L*, MEL, MO, NY*, P, W). Luzon: Albay (or Zambales?) prov.

Calophyllum buxifolium Vesque, *Epharosis* 2 (1889) tt. 18, 19; in *C DC Monog. Phan.* 8 (1893) 538; -- Merr., *EPFP* 3 (1923) 78. --Type: Llanos *sn* (G, holo). Philippines, no definite locality cited, 1853. LUZON: Ilocos Norte (Bangu; Burgos), Ilocos Sur (Sta Maria, Barrio Lugong & vicinity), La Union (San Fernando), Pangasinan (Sual, Cabalatinawan), Zambales (Mt Tapulao; Mt Marayep; Iba, Barrio Amungan, Sitio Apulul; Castillejos, Mt Canaynayan; Botolan; Anuling), Quezon (Guinayangan; Gumihan), GOLO, LUBANG, CULION, PANAY: Iloilo, GUIMARAS, MINDANAO: Zamboanga. Habitats similar to var. *pentapetalum*, altitude 450-917m. Fl. Nov-Mar, and May; fr. Dec-Mar, May, and Aug.

var. *pulgarensis* (Elmer) PF Stevens, *J. Arnold Arb.* 61 (1980) 498, Map 33; --*Calophyllum pulgarensis* Elmer, *LPB* 5 (1913) 1786 (as '*C. pulgarensis*'); --Merr., *EPFP* 3 (1923) 80. --Type: Elmer 13217 (A, neotype; isoneo: BISH*, BM, BO, E, F, FI, G, GH, K, L*, LY, MO*, NSW, NY*, P, U*, US*, W). Palawan: Palawan prov., Puerto Princesa, Mt Pulgar (=Thumb Peak), 4250ft (1295m), May 1911.

PALAWAN: Thumb Peak; Mt Mantalingahan. Mossy summit scrub, 1100-1300m. Fl. May; fr. Dec.

Calophyllum rigidulum PF Stevens, *J. Arnold Arb.* 61 (1980) 668, Fig. 44, g, Map 49. --Type: BS 45686 Ramos & Edaña (A*, holo; iso B, K, NY*, UC, US). Luzon: Aurora prov., Mt Alzapan, 6000ft (1829m), 7 Jun 1925.

LUZON: Aurora (Mt Alzapan). Shrub in mossy forest, altitude c. 1830m. Known only from the type collection.

Calophyllum soulattri Burm.f., *Fl. Ind.* (1768) 121; --Merr., *PJS* 19 (1921) 366; *EPFP* 3 (1923) 81; -- PF Stevens, *J. Arnold Arb.* 61 (1980) 277, Fig. 14 a-m, Map 10; --Backer & Bakh.f., *Fl. Java* 1 (1963) 386; --Whitmore, *Tree Fl. Malaya* 2 (1973) 192. --Type from Java.

Calophyllum kunstleri auct., non King, *J. As. Soc. Beng.* 59² (1890) 174; --Merr., *PJS* 7 c (1912) Bot. 307; *EPFP* 3 (1923) 79.

Calophyllum lancifolium Elmer, *LPB* 7 (1915) 2683; --Merr., *EPFP* 3 (1923) 80. --Type: Elmer 13266 (A, lecto; isolecto: BISH*, BM, BO, E, F, FI, G, GH, K, L*, MO, NY* 2sheets, U*, UC, US*, W). Mindanao: Agusan del Norte prov., Cabadbaran, Mt Urdaneta (=Mt Hilong-hilong), 1000ft (=305m), Jul 1912.

Calophyllum zschokkei Elmer, *LPB* 7 (1915) 2686; --Merr., *EPFP* 3 (1923) 81. --Type: Elmer 12129 (GH, lecto; isolecto: A, BISH*, BM, BO, E, F, FI, G, K, L*, LY, MO, NY*, P, US*, W). Sibuyan: Magallanes (=Magdiwang), Mt Giting-giting, Pauala River, altitude 750ft [=225m], Mar 1910.

Calophyllum hibbardii Elmer, *LPB* 2 (1908) 503. --Type: Elmer 9837 (A, BM, BO, E, F, FI, G, K, L*, LY, MO, NY*, P, W, US*). Negros: Negros Oriental prov., Cuernos Mtns, altitude 3500ft [=1067m], Apr 1908.

Andaman Isls, Nicobar Isls, Peninsular Thailand, Cambodia, S Vietnam, Sumatra and adjacent islands, Peninsular Malaysia, Java and adjacent islands, Lesser Sunda Isls (Bali; Lombok; Sumbawa; Flores; Solor; Wetar), Borneo (Sarawak; Brunei; Sabah; Kalimantan), Philippines, Sulawesi, Moluccas (Sanana; Halmahera; Morotai; Bačan; Buru; Ambon; Seram; Kai Isls; Tanimbar Isls; Aru Isls); New Guinea (West Irian; Papua), Australia (Northern Territory), Caroline Isls (Palau).

LUZON: Pangasinan, Mountain Province, Cagayan, Isabela (Palanan), Nueva Vizcaya (Caraballo Mtns), Nueva Ecija, Aurora (Baler), Zambales, Bataan (Mt Mariveles, Lamao River), Bulacan (Angat), Rizal (Montalban; San Mateo), Laguna (Famy, Minayotan; San Antonio), Quezon (Mt Binuang; Lucban), Camarines Norte, Camarines Sur (Sipacao), Albay (Manito), BATAN IS (off Albay prov.), Sorsogon (Cumadcad River; Mt Bulusan), MINDORO: Mindoro Oriental (Mt Yagaw), BUSUANGA (Malbato), PALAWAN (Binohan Mtn near Puerto Princesa), SIBUYAN (Mt Giting-giting), TICAO, CATANDUANES, GUIMARAS, NEGROS: Negros Oriental (Cuernos Mtns), MINDANAO: Lanao del Sur (Camp Keithley), Bukidnon (Mt Candoon; Mt Dumalucpihan; Malaybalay, Kimantri Plain), Davao del Sur (Sta Cruz), Agusan del Norte (Mt Hilong-hilong), Surigao. Lowland and hill forests, swamp forests.

Calophyllum venulosum Miq., Walp. Ann. Syst. Bot. 4 (1857) 366; J. Arnold Arb. 61 (1980) 479, Fig. 30 a,b, d, e, g, Map 32.
Calophyllum auriculatum Merr., PJS 4 c (1909) Bot. 291; EPFP 3 (1923) 78. –Type: RS Williams 2339 (A, K*, NY* (3 sheets), US*, iso). Mindanao: Zamboanga, Sax River River, altitude 500m, 20 Feb 1905.

var. venulosum

Sumatra, Peninsular Malaysia (somewhat doubtful), Borneo (Sarawak; Sabah; Kalimantan), S Philippines. BASILAN (Isabela), MINDANAO: Zamboanga (Sax River), Lanao del Sur (Kolambugan; Camp Keithley). Lowland to medium altitude mixed dipterocarp forests, lakeshore and streamside forests.

Calophyllum whitfordii Merr., PJS 1 (1906) Suppl. 96; --Merr., EPFP 3 (1923) 81; --PF Stevens, J. Arnold Arb. 61 (1980) 629, Fig. 43 q-s, y, Map 47. –Type: FB 2613 Meyer (K, NY*, SING*, US*, iso). Luzon: Bataan prov., Mt Mariveles, altitude 2300ft [=701m], Feb 1905.

LUZON: Cagayan, Isabela (Mt Moises), Zambales (Subic), Bataan (Mt Mariveles, Lamao River), Laguna (Famy, Minayotan), Quezon (Malicboy), MINDORO, MINDANAO: Davao Oriental (Mt Galintan). Hill forests, altitude 150-700m. Fl. Jan-Mar; (submature) fr. May-Jul.

Calophyllum sp. 95 (Entry #95 in Stevens' monograph) --PF Stevens, J. Arnold Arb. 61 (1980) 493, Map 32. –Voucher: PNH 41930 (L, PNH, SING). Mindanao: Agusan del Norte prov., Butuan, San Mateo Bo., Tungao Bo., along Ojot River, Maasin Line Km 25, altitude 350m.
MINDANAO: Agusan del Norte. Hill forest, altitude 350m. Fr. Jun. Known only from a single collection.

Calophyllum sp. 121. PF Stevens, J. Arnold Arb. 61 (1980) 565, Fig. 36 m-o; Map 39.
LUZON: Bataan (Mt Mariveles, Lamao River and Forest Reserve). Based on Whitford 257, RS Williams 424, and BS 1577. Lower montane forest, altitude c. 1000m. Fl. Jan, fr. Mar, May, Jul, Oct, Nov.

Calophyllum sp. 178. PF Stevens, J. Arnold Arb. 61 (1980) 678. –Voucher: FB 30772 (NY). Luzon: Quezon prov. (Malbog), altitude 100m.
LUZON: Quezon (Malbog). Forest, altitude c. 100m. Fl. Feb. Only known from a single collection.

Insufficiently Known:

Calophyllum vanoverberghii Merr., PJS 9 c (1914) Bot. 454; EPFP 3 (1923) 81; -- PF Stevens, J. Arnold Arb. 61 (1980) 680. –Type: Vanoverbergh 1466 (PNH, destroyed). Luzon: Mountain Province, Bauco, altitude c. 1700m, 12 Sept 1918.

From Merrill's original description, Stevens distinguishes this taxon from *C. soulattri* in the following vegetative features: oblong, very coriaceous lamina that dries concolorous & nitid. An additional specimen from Catanduanes, *BS 75484*, may belong here.

2. *Garcinia* Linnaeus

Garcinia benthami Pierre, Fl. Forest. Coch. 1 (1889) t. 55, 56; --Merr., EPFP 3 (1923) 83.
S Vietnam, Philippines.
PALAWAN, BALABAC. Low altitude primary forests.

Garcinia bicolorata Elmer, LPB 5 (1913) 1790; --Merr., EPFP 3 (1923) 83.
PALAWAN. Forests along streams, c. 600m.

Garcinia binucao (Blanco) Choisy, Mém. Soc. Phys. Hist. Nat. Genève 12 (1850) 414; --Merr.,

EPFP 3 (1923) 83.

LUZON (Cagayan to Sorsogon), MINDORO, BURIAS, PANAY, GUIMARAS, NEGROS.
Low altitude primary forests, often common.

Garcinia busuangaensis Merr., PJS 26 (1925) 472; EPFP 4 (1925) 249. --Type: BS 41243 Ramos
(NY*, iso). BUSUANGA.
BUSUANGA. Dry forests at low altitudes.

Garcinia celebica L., Syst. ed. XII. 326.

Garcinia cumingiana Pierre, Fl. Forest. Cochin. 1 (1889) XI, t. 78, Fig. F, E; --Merr., EPFP 3 (1923) 84.
LUZON: Ilocos Norte, Ilocos Sur, Mountain Province, Cagayan. Primary forests at low
and medium altitudes. (as *G. cumingiana*, sec. Merr., 1923)

Garcinia cordata Merr., PJS 5 c (1910) Bot. 199; EPFP 3 (1923) 83.
LUZON: Cagayan. Low altitude forests along streams.

Garcinia dives Pierre, Fl. Forest. Cochin. 1 (1889) XXXV, t. 90, Fig. B; --Merr., EPFP 3 (1923) 84.
LUZON: Ilocos Norte, Ilocos Sur, Zambales, Pampanga, Bataan, Rizal, Laguna,
Batangas, Camarines, PALAWAN, SIBUYAN, PANAY, LEYTE, MINDANAO: Lanao.
Primary forests at low and medium altitudes.

Garcinia dulcis (Roxb.) Kurz, For. Fl. Brit. Myanmar 1 (1877) 92; --Merr., EPFP 3 (1923) 84.
Peninsular Malaysia to the Moluccas.
LUZON (Cagayan to Sorsogon) to PALAWAN, BALABAC and MINDANAO. Primary
forests at low and medium altitudes.

Garcinia eugeniaefolia Wall., xxx

Garcinia brevirostris Scheff., Tijdschr. Nederl. Ind. 31 (1870) 353; --Merr., EPFP 3 (1923) 83.
Garcinia microphylla Merr., PJS 11 c (1916) Bot. 20; EPFP 3 (1923) 85.
Andaman Isls, Sumatra, Peninsular Malaysia, Penang, Banka, Philippines.
LUZON: Aurora, Quezon, Camarines, Sorsogon, MINDORO, PALAWAN, SIBUYAN,
PANAY, CEBU, LEYTE, BASILAN. Primary forests at low and medium altitudes up to c.
1000m. (as *G. brevirostris* and *G. microphylla*, sec. Merr., 1923).

Garcinia garciae Elmer, LPB 3 (1911) 1048; --Merr., EPFP 3 (1923) 84.
SIBUYAN (Mt Giting-giting). Forested ridges, c. 750m.

Garcinia ituman Merr., PJS 26 (1925) 473; EPFP 4 (1925) 249.
MINDORO, AMBIL, PANAY, BOHOL. On rocky forested slopes in limestone regions.

Garcinia lateriflora Blume, Bijdr. (1825) 214; --Merr., EPFP 3 (1923) 85.
Java, Philippines.
BABUYAN ISLS, LUZON: Abra, Cagayan, Isabela, Aurora, Bataan, Laguna, Camarines,
Sorsogon, MINDANAO, BASILAN. Primary forests at low altitudes.

Garcinia linearifolia Elmer, LPB 3 (1911) 1051; --Merr., EPFP 3 (1923) 85.
SIBUYAN. Forests along streams, c. 225m.

Garcinia luzoniensis Merr., PJS 3 c (1908) Bot. 362; EPFP 3 (1923) 85.
LUZON: Quezon (Atimonan), SIBUYAN. Primary forests at low altitudes.

Garcinia macgregorii Merr., PJS 11 c (1916) Bot. 198; EPFP 3 (1923) 85.

LUZON: Isabela, Laguna, Quezon, PALAWAN, PANAY, BILIRAN, LEYTE, SAMAR.
Primary forests at low altitudes.

Garcinia mindanaensis Merr., PJS 3 c (1908) Bot. 367; EPFP 3 (1923) 85.

MINDANAO: Zamboanga, Lanao, Bukidnon, Davao, Agusan del Norte. Forests at medium altitudes.

Garcinia moseleyana Pierre, Fl. Forest. Cochin. 1 (1889) Enum. X; --Merr., EPFP 3 (1923) 86.

LUZON: Sorsogon, LEYTE, MINDANAO: Surigao, MALAMAUI, BASILAN. Primary forests at low altitudes.

Garcinia multibracteolata Merr., PJS 12 c (1917) Bot. 284; EPFP 3 (1923) 86.

MINDANAO: Surigao. Primary forests, c. 150m.

Garcinia nervosa Miq., Ann. Mus. Bot. Lugd.-Bat. 1 (1863-64) 208; --Merr., EPFP 3 (1923) 86.

Sumatra, Peninsular Malaysia, Singapore, Philippines.

LUZON: **Tayabas**, Camarines, PALAWAN, SAMAR. Primary forests at low altitudes.

Garcinia pacifica Merr., PJS 26 (1925) 473; EPFP 4 (1925) 249. --Type: BS 28649 Ramos & Edaño (A*, iso). Luzon: Quezon prov. (Mt Binuang), alt. 300m.

LUZON: Quezon (Mt Binuang). Primary lowland forest, 300m.

Garcinia ramosii Merr., PJS 7 c (1912) Bot. 307; EPFP 3 (1923) 86.

LUZON: Cagayan. Primary forests at low altitudes.

Garcinia rhizophoroides Elmer, LPB 3 (1911) 1049; --Merr., EPFP 3 (1923) 86.

LUZON: Camarines, SIBUYAN, LEYTE. Primary forests, 150-500m.

Garcinia rubra Merr., PJS 3 c (1908) Bot. 366; EPFP 3 (1923) 86. --Type: RC McGregor 192 (NY*, US*, iso). Mindoro: Mindoro Oriental prov., Baco River, Apr 1905.

Garcinia oligophlebia Merr., PJS 9 c (1914) Bot. 378; EPFP 3 (1923) 86, **syn. nov.**; --Type: CA Wenzel 632 (A*, US*, iso). Leyte: Leyte prov., Jaro, in forest, altitude c. 500m, 15 Mar 1914.

LUZON: Apayao, Cagayan, Isabela, Rizal, Quezon, Laguna, Camarines, Sorsogon, MINDORO, CATANDUANES, LEYTE, SAMAR, CAMIGUIN, MINDANAO, BASILAN.
Primary forests at low altitudes.

Garcinia samarensis Merr., PJS 11 c (1916) Bot. 197; EPFP 3 (1923) 86.

SAMAR. Damp primary forests at low altitudes.

Garcinia subelliptica Merr., PJS 3 c (1908) Bot. 361; EPFP 3 (1923) 86.

LUZON: Cagayan, Quezon (Mauban), Camarines, POLILLO. Forests immediately behind sandy beaches.

Garcinia sulphurea Elmer, LPB 5 (1913) 1789; --Merr., EPFP 3 (1923) 87.

BUSUANGA, PALAWAN. Forests at low altitudes.

Garcinia tetrandra Pierre, Fl. Forest. Cochin. 1 (1889) XX, t. 94, Fig. D; --Merr., EPFP 3 (1923) 87.

LUZON: Camarines, Sorsogon, LEYTE, SAMAR, MINDANAO: Zamboanga, Misamis, Lanao, Bukidnon, Agusan. Primary forests at low altitudes.

Garcinia venulosa (Blanco) Choisy, Mém. Soc. Phys. Hist. Nat. Genève 12 (1850) 414; --Merr., EPFP 3 (1923) 87.

LUZON: Cagayan to Sorsogon, in most or all provinces, MINDORO, PALAWAN, MINDANAO. Primary forests at low altitudes, often abundant.

Garcinia vidalii Merr., PJS 3 c (1908) Bot. 360; EPFP 3 (1923) 87.

LUZON: Benguet, Pangasinan, Rizal, Laguna, Sorsogon, SIBUYAN, PANAY, LEYTE, SAMAR, MINDANAO. Primary forests at low and medium altitudes.

Garcinia whitfordii Merr., PJS 26 (1925) 474; EPFP 4 (1925) 250. --Type: FB 9142 Whitford & Hutchinson. Mindanao: Zamboanga

MINDANAO: Zamboanga. In lowland rainforest.

Cultivated:

Garcinia mangostana L., Sp. Pl. (1753) 635; --Merr., EPFP 3 (1923) 85.

Planted in some parts of the Philippines, particularly Mindanao and Sulu. Introduced from Malaya. Mangosteen.

3. Kayea Wallich

Kayea garciae (Fern.-Villar) Vesque in DC. Monog. Phan. 8 (1893) 629; --Merr., EPFP 3 (1923) 82. --Type:

Mesua garciae (Fern.-Villar) Kosterm., Reinwardtia 7 (1969) 427.

LUZON: Zambales, Rizal, Tayabas. POLILLO. Primary forests, ascending to 330m.

Kayea lanceolata Merr., PJS 17 (1920) 290; --Merr., EPFP 3 (1923) 82. --Type:

Mesua lanceolata (Merr.) Kosterm., Reinwardtia 7 (1969) 427.

LUZON: Camarines Norte (Paracale). Primary forests at low altitudes.

Kayea megalocarpa Merr., PJS 12 c (1917) 285; --Merr., EPFP 3 (1923) 82. --Type:

Mesua megalocarpa (Merr.) Kosterm., Reinwardtia 7 (1969) 428.

LUZON: Nueva Ecija (Mt Umingan =Mingan). Primary forests at low altitudes.

Kayea navesii (Fern.-Villar) Vesque in DC. Monog. Phan. 8 (1893) 628; --Merr., EPFP 3 (1923) 82.

Mesua navesii (Fern.-Villar) Kosterm., Reinwardtia 7 (1969) 428

Mesua brevipes (Merr.) Kosterm., Reinwardtia 7 (1969) 426; --Kayea brevipes Merr., PJS 5 c (1910) Bot. 200; --Merr., EPFP 3 (1923) 81. --Type:

LUZON: Apayao, Isabela, Nueva Vizcaya, Pangasinan, Rizal, Quezon. Forests at low or medium altitudes.

Kayea paniculata (Blanco) Merr., Govt. Lab. Publ. (*Philip.*) 17 (1904) 29; 27 (1905) 20; --Merr., EPFP 3 (1923) 82. Mesua paniculata (Blanco) Kosterm., Reinwardtia 7 (1969) 428.

LUZON: Cagayan, Isabela, Bataan, Laguna, Quezon, Camarines, MINDORO, PALAWAN, BALABAC, MINDANAO: Lanao, Agusan del Norte, BASILAN. Primary forests at low and medium altitudes. Common along streams.

Kayea philippinensis Planch. ex Tr., Ann. Sci. Nat. Bot. IV 15 (1861) 298, *nom. nud.*; in DC. Monog. Phan. 8 (1893) 616; --Merr., EPFP 3 (1923) 82. --Type:

Mesua philippinensis (Planch. ex Tr. & Planch.) Kosterm., Reinwardtia 7 (1969) 428.

LUZON: Albay, Sorsogon, SIBUYAN, PANAY, NEGROS, CEBU, MINDANAO: Zamboanga. Forests along streams at low and medium altitudes.

Ined. Names:

Kayea brachybotrys PF Stevens, ined. --Voucher: Co 3476 (A*, PNH, PUH, CAHUP, L, US, K, KEP). Luzon: Sierra Madre Range, Isabela prov., Palanan municip., steep headland (N spur of Ditolong Peak), c. 4km SW of Palanan Point, 17° 07.5'N, 122°29.4'E. Dense pole forest of low-diameter trees on ultramafic site, prevailing canopy not exceeding 15m, altitude 30m, 16 May 1991.

Kayea lineata PF Stevens, ined. --Voucher: PNH 118372 [=Madulid et al. 1405] (A*, iso). Samar: Eastern Samar prov., Balangiga, Barrio Guinmangahan, May 1971.

Kayea paniculata ssp. triangularis PF Stevens, ined., --Voucher: Elmer 12744 (A*, holo; iso in NY*). Palawan: Puerto Princesa, Mt Pulgar (=Thumb Peak), Mar 1911.

Kayea pauciflora PF Stevens, ined., --Voucher: PNH 39429 Lagrimas (A*). Luzon: Quezon prov., Tagkawayan, Mapatong, 21 May 1959.

Kayea stenophylla Merr. & Quisumb. ex PF Stevens, ined., --Voucher: PNH 170 Edaño (L*, iso). Palawan: Puerto Princesa, Bacungan, sea level, along river in forest, 24 Mar 1947.

4. *Mammea* Linnaeus

Mammea ramiflora (Merr.) Kosterm.

Ochrocarpos 'sphalm. *Ochrocarpus*' *ramiflorus* Merr., PJS 10 c (1915) Bot. 325; --Merr., EPFP 3 (1923) 77. LUZON: Quezon, Camarines. Primary forests along streams at low altitudes.

Ined. Names:

Mammea digallarina PF Stevens, ined., --Voucher: ISU 449 Ridsdale, Baquiran et al. (A*, holo; iso L, PNH). Luzon: Isabela prov., Palanan, Digallorin (=Digollorin), Divinisa camp site, 16°50'N, 122° 26'E, streamside forest on ultrabasic, altitude 50m, 9 Apr 1992.

Mammea ultramafica PF Stevens, ined. --Voucher: ISU 278 Ridsdale, Dejan & Baquiran (A*, L, PNH). Luzon: Isabela prov., Palanan, Diguyo, 122°30 N, 16°55 E, low stature disturbed forest on ultrabasic, altitude 50m, 27 Apr 1991.

Ochrocarpos (sphalm. 'Ochrocarpus') Merr. =*Mammea*

Ined. new genus:

Malindangia Merrill

Malindangia glabra Merr., ined. genus et sp. nov. --Voucher: FB 4767 Mearns & Hutchinson (PNH*). Mindanao: Misamis Occidental prov., Mt Malindang, alt. c.1700m.

According to attached unpublished ms by Merrill, apparently allied to *Montrouziera* Pancher, a genus of several species endemic to New Caledonia. However, the Malindang plant appear to be septicidally dehiscent while genera that are within Tribe Moronobeae all have indehiscent fruits. Structurally the flowers are very similar to those of *Archtaea* (Theaceae), but all Theaceae have alternate leaves.