8 km. south of Quezaltenango on highway 9s, near the hydroelectric plant 1/2 km. north of Zunil, at an altitude of about 2075 m., Quezaltenango, Guatemala, on July 31, 1965 (14°45' N; 91°30' W), and is deposited in the H. N. Moldenke herbarium at Plainfield, New Jersey. The collectors describe the plant as a shrub, 1.5 m. tall, with a pungent odor and with white flowers.

- - - - - - - - - - - - - - - -

ADDITIONAL MATERIALS TOWARD A MONOGRAPH OF THE GENUS CALLICARPA. VI

Harold N. Moldenke

CALLICARPA L.

Additional & emended bibliography: Sieb., Jaarb. Konink. Nederl. Maatsch. Tuinb. [Ann. Hort. Pays-Bas] 1844: 25. 1844; Lindl. & Paxt. in Paxt., Flow. Gard. 2: 165--166, fig. 221. 1853; Scheffer, Ann. Jard. Bot. Buitenz. 1: 41. 1876; P. Henderson, Hand. Pl., ed. 1, 34--35. 1881; Regel, Gartenfl. 30: 42. 1881; Lefroy, Bull. U. S. Nat. Mus. 25: 97. 1884; "B.", Gard. Illustr. 9: 323. 1887; J. Matsum., Bot. Mag. Tokyo 3: 115 & 318. 1889; P. Henderson, Handb. Pl., ed. 2, 64. 1890; K. Schum. & Warb., Notizbl. Bot. Gart. Berlin 2: 144. 1898; "X.", Gard. Illustr. 24: 633--634. 1903; Hattori, Journ. Coll. Sci. Univ. Tokyo 23 (10): 34. 1908; King & Gamble, Journ. Roy. Asiat. Soc. Bengal 74 (2), extra no. 794 & 801--808. 1908; King & Gamble, Mat. Fl. Malay. Penins. 21: 1011--1018. 1909; P. Henderson, Handb. Pl., ed. 3, 65. 1910; C. K. Schneid., Illust. Handb. Laubholzk. 587 & 591--594, fig. 384 c--i & 385 b--l. 1911; Bakh. in Lam & Bakh., Bull. Jard. Bot. Buitenz., ser. 3, 3: [1], 3, 9--27, [106]--108, & Addit. [I]. 1921; E. D. Merr., Enum. Philip. Flow. Pl. 382--389. 1923; Nakai, Fl. Sylv. Kor. 14: 27--33 & 133, pl. 5--9. 1923; Gamble, Fl. Presid. Madras 1085 & 1091--1092. 1924; Metc., Lingnan Sci. Journ. 11: 405--408. 1932; Suzuki, Trans. Nat. Hist. Soc. Formos. 25: 130--131. 1935; Sugiura, Cytologia 7: 544. 1936; Yamamoto, Journ. Soc. Trop. Agr. 10: 277. 1938; Koidz. in Shirasawa, Icon. Essenc. Forest. Jap. 2: fig. 2487 & 2488. 1938; A. W. Hill, Ind. Kew. Suppl. 9: 45--46. 1938; Nakai, Journ. Jap. Bot. 14: 639--641. 1938; Fletcher, Kew Bull. Misc. Inf. 1938: 199, 409, & 411--415. 1938; Merr. & Chun, Sunyatsenia 5: 178--179, pl. 27. 1940; Masamune, Trans. Nat. Hist. Soc. Formos. 30: 63--64. 1940; Van Melle, Journ. N. Y. Bot. Gard. 43: 36 & 42. 1942; E. J. Salisb., Ind. Kew. Suppl. 10: 38. 1947; Rehd., Bibl. Cult. Trees 583--584. 1949; W. J. Bean in Chittenden, Roy. Hort. Soc. Dict. Gard. 1: 358--359. 1951; Darlington & Wylie, Chromosome Atl., pr. 1, 323 & 503. 1955; Satyanarayan, Proc. Sympos. Humid Trop. Veg. 201 & 207. 1958; J. Hutchinson, Fam. Flow. Pl., ed. 2, 2: 395. 1959; Anon., Kew Bull. Gen. Index 1929-1956, 59. 1959; Satyanarayan, Sympos Impact Man Humid Trop. Veg. 229. 1960; Darlington & Wylie, Chromosome Atl., pr. 2, 323 & 503. 1961;

Runner, Rep. G. W. Groff Coll. 362. 1961; Hanelt, Kulturpfl. 11: 224. 1963; Quisumb., Govt. Sarawak Sympos. Ecol. Res. Humid Trop. Veg. 34. 1965; Harvill, Rhodora 67: 394. 1965; Moldenke, Phytologia 13: 466--506 & 508 (1966) and 14: 36--63, 99--128, & 140--192. 1966; Stearn, Botan. Latin 264. 1966.

Bean (1951) says of the members of this genus "They love the sunshine and thrive in good loamy soil. Easily increased by softish cuttings with gentle bottom heat, and by seed. It has been found, with some species at any rate, that better crops of fruit are borne when several plants are closely associated -- a common occurrence, however, with fruit-bearing shrubs."

Yamamoto (1938) has described a mint, Taitonia callicarpoides Yamamoto, from Formosa, which he says has much the aspect of a species of Callicarpa.

CALLICARPA ACULEOLATA Schau.

Additional bibliography: E. J. Salisb., Ind. Kew. Suppl. 10: 38. 1947; Moldenke, Phytologia 13: 430--431. 1966.

CALLICARPA ACUMINATA H.B.K.

Additional bibliography: Sieb. & Zucc., Abhandl. Math.-phys. Cl. König. Baier. Akad. Wiss. München 4 (3): 156. 1846; Moldenke, Phytologia 13: 466 & 475 (1966) and 14: 142. 1966.

Recent collectors describe this plant as a shrub and found it growing in the remains of rainforests highly disturbed by cutting and burning and now mostly secondary growth thickets. The flowers are described as "white" on Roe, Roe, & Mori 1353.

According to Siebold & Zuccarini (1846) Hasskarl claims that C. acuminata H.B.K. was introduced into Java from Japan! It seems most probable, however, that he is referring here to C. acuminata Roxb., a synonymous designation for what we now call C. mudiflora Hook. & Arn.

Additional citations: MEXICO: Hidalgo: H. E.Moore Jr. 3392 (Ws). Quintana Roo: Roe, Roe, & Mori 1339 (Ac), 1353 (Rf). Vera Cruz: Cavender s.n. [Alazam, Dec. 19, 1963] (Ws).

CALLICARPA ACUTIDENS Schau.

Additional bibliography: A. W. Hill, Ind. Kew. Suppl. 9: 45. 1938; Moldenke, Phytologia 13: 466--467 (1966) and 14: 142. 1966.

CALLICARPA AMERICANA L.

Additional bibliography: Thunb., Nov. Act. Reg. Soc. Sci. Upsal. 4: 31. 1783; P. Henderson, Handb. Pl., ed. 1, 34--35. 1881; O. A. Reade, Pl. Bermud. 62. 1883; Lefroy, Bull. U. S. Nat. Mus. 25: 97. 1884; P. Henderson, Handb. Pl., ed. 2, 64 (1890) and ed. 3, 65. 1910; H. B. Small, Bot. Bermud. 48--49. 1913; Harvill, Rhodora 67: 394. 1965; Moldenke, Phytologia 13: 467--497 & 502 (1966) and 14: 37, 53, 57, 107, 111--113, 115, 118, 126, 167, 186, & 191. 1966.

Brown thrashers are said to enjoy feeding in these fruits in the southeastern United States. The plant is misidentified as C. ferruginea Sw. by O. A. Reade (1883), Lefroy (1884), and H. B.

Small (1913), but the "C. americana L." of Thunberg (1783) is really C. japonica Thunb.

Additional citations: LOCALITY OF COLLECTION UNDETERMINED: Herb. F. J. Young s.n. [ex N. America] (Ws).

CALLICARPA ANGUSTA Schau.

Additional bibliography: Moldenke, Phytologia 13: 498--500. 1966.

Merrill (1912) cites, in addition, an unnumbered Hallier collection from Luzon.

The Ahern 811Q, distributed as C. angusta, is actually C. formosana Rolfe, while Kollmann s.n. [Java, 1838] is C. longifolia Lam.

CALLICARPA ANGUSTIFOLIA King & Gamble

Additional bibliography: Fletcher, Kew Bull. Misc. Inf. 1938: 412 & 413. 1938; Anon., Kew Bull. Gen. Index 1929-1956, 59. 1959. Moldenke, Phytologia 13: 500--501. 1966.

CALLICARPA ARBOREA Roxb.

Additional bibliography: H. N. Ridl., Journ. Fed. Malay States Mus. 10: 110 & 150. 1920; Fletcher, Kew Bull. Misc. Inf. 1938: 411--413. 1938; Anon., Kew Bull. Gen. Index 1929-1956, 59. 1959; Moldenke, Phytologia 13: 501--506 (1966) and 14: 36--42, 107, & 111. 1966.

Fletcher (1938) places C. villosissima Ridl. in the synonymy of C. arborea. He places C. villosa Roxb. and C. lanata H. J. Lam in the synonymy of what he calls C. arborea var. villosa. I regard Lam's name as applying to C. arborea var. psilocalyx (H. J. Lam) Moldenke.

The W. T. Tsang 23914, distributed as C. arborea and so cited by me in Phytologia 14: 39 (1966), is actually C. integerrima Champ.

CALLICARPA BICOLOR A. L. Juss.

Additional bibliography: Moldenke, Phytologia 14: 46--49, 108, 111, 112, 114, 121, 179, 183, & 191. 1966.

The P. T. Barnes s.n. [Herb. Philip. Forest. Bur. 55], distributed as C. bicolor, is actually C. formosana Rolfe.

CALLICARPA BODINIERI Léveillé

Additional & emended bibliography: Moldenke, Known Geogr. Distrib. Verbenac., ed. 1, 56, 71, 86, & 87. 1942; Moldenke, Résumé 167, 168, 174, 213, 241, 243--245, 247, 443, & 444. 1959; Moldenke, Phytologia 14: 49--62 & 167. 1966.

CALLICARPA BODINIERI var. GIRALDII (Hesse) Rehd.

Additional synonymy: Callicarpa arnoldiana Hort. ex Moldenke in Fedde, Repert. Spec. Nov. 40: 88, in syn. 1936.

Additional bibliography: Metc., Lingnan Sci. Journ. 11: 407.

1932; L. H. & E. Z. Bailey, Hortus Suppl. 670. 1935; A. W. Hill, Ind. Kew. Suppl. 9: 45. 1938; E. J. Salisb., Ind. Kew. Suppl. 10: 38. 1947; Moldenke, Phytologia 14: 50--60, 62, 99, 102, 127, & 167. 1966.

The Baileys (1935) and Salisbury (1947) regard C. arnoldiana Hort. as a synonym of C. japonica Thunb., as I also did in my 1936 work. It seems to me now, however, that this name belongs more likely in the synonymy of C. bodinieri var. giraldii, a taxon with whose introduction into American gardens the Arnold Arboretum was so closely associated.

The Tsang 850 [Herb. Lingnan Univ. 16349], distributed as this variety, is actually C. formosana Rolfe.

CALLICARPA BRACTEATA Dop

Additional bibliography: A. W. Hill, Ind. Kew. Suppl. 9: 45. 1938; Moldenke, Phytologia 14: 63 & 99. 1966.

CALLICARPA BREVIPES (Benth.) Hance

Additional bibliography: Moldenke, Phytologia 14: 55, 58, 99--104, 106, 147, & 148. 1966.

CALLICARPA BREVIPES f. ANNAMENSIS Moldenke

Additional bibliography: Moldenke, Phytologia 14: 102 & 103. 1966.

CALLICARPA BREVIPETIOLATA Merr.

Additional bibliography: Moldenke, Phytologia 14: 102, 104--106. & 121. 1966.

CALLICARPA BUCHERI Moldenke

Additional bibliography: E. J. Salisb., Ind. Kew. Suppl. 10: 38. 1947; Moldenke, Phytologia 14: 106--107. 1966.

CALLICARPA CANDICANS (Burm. f.) Hochr.

Additional synonymy: Callicarpa cana var. typica Bakh. ex Fletcher, Kew Bull. Misc. Inf. 1938: 413. 1938.

Additional bibliography: Fletcher, Kew Bull. Misc. Inf. 1938: 412--414. 1938; A. W. Hill, Ind. Kew. Suppl. 9: 45 & 46. 1938; Moldenke, Phytologia 14: 37, 46, 48, 59, 107--128, 140, 142, 174, 175, 178, 179, 182, 183, & 191. 1966.

The Ahern 156Q, A. Castillo s.n. [College campus, January 3, 1931], and Quisumbing 2281, distributed as this species, are all actually C. formosana Rolfe.

CALLICARPA CANDICANS var. SUMATRANA (Miq.) Moldenke

Additional bibliography: Moldenke, Phytologia 14: 59, 112, 119, 121, 122, 125--128, & 140. 1966.

CALLICARPA CAUDATA Maxim.

Additional bibliography: Moldenke, Phytologia 14: 140--144 & 170--173. 1966.

The R. S. Williams 1158, distributed as this species, is actually C. formosana f. angustata Moldenke.

CALLICARPA CRASSINERVIS Urb.

Additional synonymy: Callicarpa rugifolia C. Wright ex E. J. Salisb., Ind. Kew. Suppl. 10: 38, in syn. 1947.

Additional bibliography: E. J. Salisb., Ind. Kew. Suppl. 10: 38. 1947; Moldenke, Phytologia 14: 148--149. 1966.

CALLICARPA CUNEIFOLIA Britton & P. Wils.

Additional bibliography: Moldenke, Phytologia 14: 155. 1966.

The Morton & Alain 9122 cited by me as C. fulva A. Rich. has much of the aspect of C. cuneifolia and may represent a hybrid between these two taxa.

CALLICARPA DICHOTOMA (Lour.) K. Koch

Emended synonymy: Callicarpa purpurea A. L. Juss., Ann. Mus. Hist. Nat. Paris 7: 67. 1806 [not C. purpurea Hort. ex Lem., 1859, nor Hort. ex Moldenke, 1941, nor Nakai, 1923, nor Van Houtte, 1932].

Additional & emended bibliography: Miq., Cat. Mus. Bot. Lugd.-Bat. 70. 1870; H. N. Ridl., Journ. Fed. Malay States Mus. 10: 150. 1920; Nakai, Fl. Sylv. Kor. 14: 28--30 & 133, pl. 5. 1923; Metc., Lingnan Sci. Journ. 11: 407. 1932; A. W. Hill, Ind. Kew. Suppl. 9: 45 & 46. 1938; Moldenke, Phytologia 14: 156--170, 173, 174, 184, & 186. 1966.

The C. purpurea Nakai, referred to above, is a synonym of C. japonica Thunb., that ascribed to "Hort. ex Moldenke" is C. longifolia Lam., and that ascribed to "Hort. ex Lem." and to Van Houtte is C. rubella Lindl.

The Chiao 1612 [Herb. Univ. Nanking 18601], Sawada s.n. [17. VII.1926], and Takamatsu 1635, distributed as C. dichotoma, are all actually C. japonica Thunb.

Miquel (1870) cites 4 unnumbered Siebold specimens, 3 Bürger specimens, 2 Mohnike specimens, and 1 Maximowicz specimen from Japan.

CALLICARPA ELEGANS Hayek

Additional bibliography: A. W. Hill, Ind. Kew. Suppl. 9: 46. 1938; Moldenke, Phytologia 14: 172--175. 1966.

CALLICARPA ERIOCLONA var. PAUCINERVIA (Merr.) Moldenke

Additional bibliography: Moldenke, Phytologia 14: 174, 179, & 182--184. 1966.

CALLICARPA FERRUGINEA Sw.

Additional bibliography: Moldenke, Phytologia 14: 155, 167, & 185--187. 1966.

The Alain & Morton 5078 and C. Wright 430 [1860], distributed as this species, are actually C. fulva A. Rich.

CALLICARPA FORMOSANA Rolfe

Additional bibliography: Metc., Lingnan Sci. Journ. 11: 407 & 408. 1932; Suzuki, Trans. Nat. Hist. Soc. Formos. 25: 130. 1935; E. J. Salisb., Ind. Kew. Suppl. 10: 38. 1947; Moldenke, Phytologia 14: 142, 167, 173, 174, & 187--192. 1966.

Matsuda's original description (1913) of C. ningpoensis continues as follows: "According to Hemsley this is the case with C. formosana Rolfe, C. japonica Thunb., C. longifolia Lam., and C. purpurea Juss., all of which are closely allied. My plant is allied to the species of this group, but as I can not satisfactorily identify it with any of them, I have to propose a new name."

Handel-Mazzetti's original description (1922) of C. aspera is: "Frutex 1.7 m. ramis petiolis inflorescentiis pilis brevissimis dendroideis brunneis hirto-velutinis. Folia elliptica 11--13 cm. lg. 6--7 cm. lt. paulum acuminata basi obtusa, crebre repando-denticulata, crasse herbacea subtus paulo pallidiora supra setulis simplicibus subtus etiam stellatis et dendroideis asprella et hic minute aureo-glandulosa et lepidibus maioribus spadiceis membranaceis scutellatis sparsis induta; costa nervique 9--12 ni oblique ante marginem anastomosantes et venulae laxiusculae supra tenuissime subtus argute prominuli; petiolus 9--12 cm. lg. crassus supra anguste salcatus. Corymbi supra gemmas axillares, pedunculis crassiusculis 3 cm. lgis. 15--18 mm. supra basin ter vel quater dichotomis, densissimi 3--4.5 cm. diam. Bracteae minutae subulatae. Pedicelli 1--1.5 mm. lg. tenues. Calyx ad 1 mm. lg. ad 12 in lobos semiorbiculares fissus pilis fasciculatis asper. Bacca 2 mm. diam. viridiflava. Prov. Kwangtung. Sept.; Ad vias montis Lunghaotung montium Lungtou-schan, 900 m.?, leg. cur. 18. IX. 1917 Mell (Nr. 920). Calycis lobis praeter indumentum ceteraque insignis."

Lam's description (1919) of C. blancoi follows: "A shrub with tomentose texture on innovations, cymes and petioles; leaves opposite, membranous, ovate or oblong-ovate, base acute or somewhat rounded to truncate, margins more or less irregularly crenato-dentate; nerves, not very distinct, 7--9 pairs; 5 1/2 — 9 cM. long, 2.2--5 cM. wide, petioles 0.5--1 cM.; texture varying on upper side, from stellate-hairy in youth, and glabrous when adult, to a covering with simple hairs, which are densier on the midrib and on lower side, from yellowy stellate-tomentose to almost glabrous; cymes on short peduncles, 1.3--2.5 cM. long and wide; peduncles 0.7--2 cM.; calyx 4-toothed, more or less stellate-hairy, glandular, 0.1 cM.; corolla glabrous with 4 short, glabrous or somewhat hairy, lobes, and 4 lines of little glands, 0.25--0.3 cM.; stamens exserted, anthers glandular on both sides, filaments 0.5 cM.; style 0.6 cM.; ovary glandular; fruits globose, 0.15--0.3 cM. in diam., glabrous.....Distrib.: Philippine Islands!, Banda.? The species has an affinity with C. cana, but the simple hairs sometimes present on the upper side of its leaves, and the peduncles, which are generally longer than the petioles, form differences, which, with the different form of the leaves, separate it from that species." He cites Teijsmann s.n. (Le--

908.265-307) from Banda with a question, and Lilles 42 and C. B. Robinson 9695 from Luzon and Elmer 10985 & 13441 from Mindanao. He keeps C. formosana Rolfe separate from C. blancoi in his key and text, but makes the comment "There were no specimina of this species within our reach, but from the descriptions we should say that it is identical with C. Blancoi."

P'ei (1932) sums it all up in the following statement: "Distribution: Formosa and the Philippines, its other distribution in Malaysia uncertain. Callicarpa formosana Rolfe differs from its allies by its longer peduncle and the harsh character of its leaves. A shrub densely pubescent with stellate hairs. Leaves ovate, serrate, base cuneate or sometimes somewhat rounded, apex acuminate, usually 6 to 15 cm. long, 2.5 to 7 cm. wide, the upper surface rough due to falling off of the stellate hairs, glandular and densely pubescent beneath; glands shining, yellow; petioles about 1 cm. or more in length; lateral nerves 5 to 9 on each side of the midrib. Flowers pedicelled; pedicels about 1.5 mm. in length. Peduncles 1.5 to 2.5 cm. long. Calyx small, less than 1 mm. in length, densely pubescent and glandular with stellate hairs without, glabrous within. Corolla-lobes wide spreading about 2 mm. in diameter, sparsely pubescent and glandular without. Stamens 4, equal, exserted; anthers oblong, 6 mm. in length. Style exserted. Ovary glandular. Fruit globose, 2 mm. in diameter." he cites the following specimens: CHINA: Chekiang: Chiao 828, Ching 1838, Keng 141. Fukien: Chang & Metcalf 197 & 216, Cheng 103-1 & 1439, Chung 1204, 2145, 2314, 3021, 3795, & 6677, En 2607, Fong 212 & 218, Ging 5326 & 6766, Po 12120, and Tai 11793. Kiangsu: Au 905. Kwangtung: Chun 5706, 5707, 5715, 5828, & 7555, Herb. Canton Chr. Coll. 32, Mell 920 (A), E. D. Merrill 10838, Peng s.n. [Shiu chow region, April 1919], Peng, Tak, & Kin 9, Tak & Chow 2221 & 2434, Tsiang 2158, Tso 20315, and Ying 1342. CHINESE COASTAL ISLANDS: Lantau: Chun 4874. HONGKONG: Chun 5147 and Ying 347.

Henry (1896) reports the species from Lambay Island. Matsumura (1899) cites Hiraoka s.n. [Shinchiku], Kawai s.n., Makino s.n. [Kelung, Pikoh, Shalyootoo, Taipe], Owatari s.n. [Panlyau & Tooseikaku], and Yokoyama s.n. [Nanshoo] from Formosa. Matsumura & Hayata (1906) cite, also from Formosa, Faurie 304, Hiraoka s.n. [Shintiku], Makino s.n. [Kelung, Sharyōtō, Hikaku, 1896], Miyaki s.n. [Kōtōshō et Girancho; Tensonhi, XI.1899], Miyaki s.n. [Kusshaku et Shintengai, 1899], Yano s.n. [in monte Taiton, Mart. 1897], and Yokoyama 48. Li (1963) cites, also from Formosa, Chen s.n., Faurie 305, 393, 395, & 8019, Gressitt 6, Hayata & al. s.n., A. Henry 78, 287, 435, 741, & 1947, Ito s.n., Kanehira 21154, Keng 1021, Mori & Sai s.n., Morimoto & Hayashi s.n., Oldham 388 & 389, Price 237, Sasaki 21435, Tanaka 89, Tanaka & Shimada 10988, Watters 82, Wilford 493, and E. H. Wilson 9934, 10235, 10770, 11012, & 11141, as well as A. Henry 1048 from Lambay Island and Tanaka

10397 from Lanyu Island.

Material of C. formosana has been misidentified and distributed in herbaria under the names C. angusta Schua., C. bicolor A. L. Juss., C. cana L., C. dichotoma (Lour.) K. Koch, C. giraldiana Hesse, C. giraldiana Pamp., C. japonica Thunb., C. macrophylla Vahl, C. micrantha Vidal, C. pedunculata R. Br., C. reevesii Wall., C. reveesi Wall., C. siongsaiensis Metc., C. tomentosa Willd., and even Phyllanthus sp.

On the other hand, the Lizardo 30, McClure 3038 [Herb. Canton Chr. Coll. 9591], and Tsang 21989, distributed as C. formosana, are actually f. albiflora Yamamoto; Keng & Kao K.1273, E. D. Merrill 1718, and E. H. Wilson 9934 & 11141 are f. angustata Moldenke; M. Ramos s.n. [Herb. Philip. Bur. Sci. 46442] and Ramos & Edaño s.n. [Herb. Philip. Bur. Sci. 45203 & 47223] are var. glabrescens Moldenke; W. Y. Chun 5828 is the type collection of var. chinensis P'ei; Ching 5922 and Tai 11793 are C. bodinieri var. giraldii (Hesse) Rehd.; M. S. Clemens 16800 & 17073 are C. elegans Hayek; and Ching 5922 is C. rubella Lindl. [a cotype collection of C. rubella f. crenata P'ei].

In all, 294 herbarium specimens and 5 mounted photographs, including type or phototype material of some of the names involved, have been examined by me.

Additional citations: CHINA: Chekiang: Chiao 828 [Herb. Univ. Nanking 14128] (Ca—325125, W—1426628), 1838 (W—1246706), 14128 (Go, N); R. C. Ching 1838 (Ca—281204, S). Fukien: T. C. Chang 197 (Vi), 4645 (Du—200031); Chang & Metcalf 197 (Ca—249096), 216 (Ca—249173); C. H. Cheng 1031 (Ca—286996), 1088 (Ca—286958), 1298 (Ca—563676), 1418 (Ca—563776), 1439 (Ca—286958), 3004 (Bz—17602); H. H. Chung 881 (Ph), 1204 (Ca—224680), 2145 (Bz—18168), 2314 (Ca—232945), 2677 (Ca—232857), 3021 (Ca—243634, Ca—420297), 7727 (N), 7865 (N), 8284 (N); En 2607 (Ca—299582); Fong 212 (Ca—300065), 218 (Ca—300042); Ging 5326 (Ca—322196), 5838 (Mi), 6766 (Ca—322328); Po 12120 (Ca—325772, Um—84). Kiangsi: S. K. Lau 3924 (S, W—1752677, W—1941418), 4469 (S, W—1753137). Kwangsi: W. T. Tsang 23820 (N), 24642 (N). Kwangtung: Herb. Canton Chr. Coll. 12008 (S, W—1247385); S. K. Lau 696 (N); C. O. Levine s.n. [Herb. Canton Chr. Coll. 32] (W—778523); Mell 920 (N—photo); E. D. Merrill 10838 (Ca—300797, Gg—31973, Gg—237836); P'eng & Groff 2802 (Gg—31972, N), s.n. [Herb. Canton Chr. Coll. 2802] (Ca—301022); Peng, Tak, & Kin 9 [Herb. Canton Chr. Coll. 12008] (Ca—274877); Sin 9804 (N); Tak & Chow 2434 [Herb. Canton Chr. Coll. 14295] (Ca—318962), 2821 [Herb. Canton Chr. Coll. 14682] (Ca—319357); To & Tsang 12008 (N); W. T. Tsang 20496 (Ba, Bz—17599, W—1753685), 20596 (Ca—611373, N), 21152

(Ca—11185, I, N, N, S), 21388 (Bz—17601, Ca—11246, I, N, N, S), 21586 (Bz—17600, Ca—11127, I, N, N, S); Tsiang 2158 (N); Tso 20315 (N), 21315 (N), 21460 (N); Tsui 118 (W—1754503), 119 (Ba, Bz—17598, N), 211 (N, W—1754555), 613 (Ba, N, W—1754765); Ying 1342 (Ca—360133, W—1513175), 2158 (Bz—18166, Bz—18167). Province undetermined: Gaudichaud s.n. [Chine, juillet 1839] (Du—166511). CHINESE COASTAL ISLANDS: Hainan: Chun & Tso 44757 (B, N); Gressitt 721 (I); S. K. Lau 96 (B, Ca—525179, I, Mi, N, W—1629076), 3706 (Bi, S); W. T. Tsang 850 [Herb. Lingnan Univ. 16349] (N, S); Wang 33688 (N). Lantau: W. Y. Chun 4874 (Ca—357970, Ca—374136). HONGKONG: N. K. Chun 40774 (Gg—237830); W. Y. Chun 5147 (Ca—357918); Ying 347 (Ca—358380). WESTERN PACIFIC ISLANDS: FORMOSA: Cheun & al. s.n. [April 13, 1961] (Lb—48707); Faurie 305 (Du—14020, V—8254); Gressitt 6 (N), 215 (N); Hayata, Kanehira, & Tanaka 283 (Ca—345488); A. Henry 435 (N, W—455346), 741 (N, W—455423), 1048 (N), 1947 (N, N); Hosokawa 9905 (Bi); Kanehira 21154 (Ca—344599); Keng K.1021 (W—2035741); Kuntz 028 (W—2336832); L. L. Liu s.n. [April 10, 1961] (Lb—49424, Mi); Mori s.n. [Aug. 10, 1936] (W—2063359); H. W. Ream s.n. [May 14, 1958] (Ws); Sasaki 21435 (Ca—344430, N), s.n. [Herb. Govt. Formosa 20962] (W—photo), s.n. [Herb. Govt. Formosa 21435] (La, W—1372498); T. Tanaka 89 (La, S, W—1528108), 10397 (Ca—477015, N), 10988 (N); Tanaka & Shimada 10988 (B, B, Go, La, Mi, S, W—1577461); E. H. Wilson 10770 (Ph, W—1053010), 10850 (W—1053033); Yamamoto 2387 (N). PHILIPPINE ISLANDS: Babuyan: R. C. McGregor s.n. [Herb. Philip. Bur. Sci. 10108] (Bi). Batan: M. Ramos s.n. [Herb. Philip. Bur. Sci. 80655] (Bz—17597). Bohol: R. C. McGregor s.n. [Herb. Philip. Bur. Sci. 1239] (Bz—18136, N); M. Ramos s.n. [Herb. Philip. Bur. Sci. 42808 (Ca—242440), s.n. [Herb. Philip. Bur. Sci. 43346] (Ca—242441). Catanduanes: Ramos & Edaño s.n. [Herb. Philip. Bur. Sci. 75187] (N), s.n. [Herb. Philip. Bur. Sci. 75283] (Ca—449260, N). Dinagat: Ramos & Pascasio s.n. [Herb. Philip. Bur. Sci. 35239] (Ca—212252). Leyte: Elmer 7366 (Bz—18149, N); Glassman 427 (Ur), 476 (Ur), 579 (Ur); Kruckeberg & Brown s.n. [Vic. of Abuyog, September 9, 1945] (N). Luzon: Ahern 156Q (Bz—18156), 198Q (Bz—18155), 811Q (Bz—18154); Bacani s.n. [Herb. Philip. Forest. Bur. 16674] (Bz—18146); P. T. Barnes s.n. [Herb. Philip. Forest. Bur. 55] (Bz—18152, N); Bartolomé 34 (Mi); Buen s.n. [Herb. Philip. Forest. Bur. 29136] (Ca—268042, S); M. S. Clemens 5881 (Ca—252508), 7212 (Ca—274174), 17400 (Ca—304358, N), s.n. [Iligan, Dec. 22, 1923] (Ca—244061); Edaño s.n. [Herb. Philip. Bur. Sci. 48766] (Ca—321810, N); Elmer 5629 (Bz—18141, N), 8151 (Bz—18144, N), 14352 (Bz—18132, Ca—272332, N, S, Ut—67399), 17611 (Bz—18133, Ca—271431, N, S, Ut—67247), 22211 (Bz—17293, Ca—

7817, N); Fénix s.n. [Herb. Philip. Bur. Sci. 12642] (Cm); F. C. Gates 5270 (Ws), 6286 (Ka--64615), 6600 (Mi); Haenke 79 (Ca--280936); Juliano 9 (Ca--308171); Lete 87 (Ca--304811); Lizardo s. n. [Herb. Philip. Forest. Bur. 29935] (Ca--268043, N); Loher s.n. [Rizal province] (Ca--229195); Madrid s.n. [San Quintin, Sept. 1925] (Ca--291946); R. C. McGregor s.n. [Herb. Philip. Bur. Sci. 11307] (Cm); E. D. Merrill 145 (Bz--18153), 2522 (N), 2688 (N), Sp. Blanc. 637 (Bz--18134, N); R. Meyer s.n. [Herb. Philip. Forest. Bur. 2520] (Bz--18145, N, Po--64815); Paraiso s.n. [Herb. Philip. Forest. Bur. 30917] (N); Quisumbing 2281 (Ok--17136), 7884 (Mi); M. Ramos 1863 (Bz--18131, N), s.n. [Herb. Philip. Bur. Sci. 13281] (Bz--18142), s.n. [Herb. Philip. Bur. Sci. 13950] (Cm), s.n. [Herb. Philip. Bur. Sci. 33019] (N); Ramos & Edaño s. n. [Herb. Philip. Bur. Sci. 29051] (Bz--18130), s.n. [Herb. Philip. Bur. Sci. 44573] (Ca--257639, N), s.n. [Herb. Philip. Bur. Sci. 44745] (Bz--18137, Ca--257640, N, S), s.n. [Herb. Philip. Bur. Sci. 45067] (Bz--18139, Ca--257641, N), s.n. [Herb. Philip. Bur. Sci. 45203] (N), s.n. [Herb. Philip. Bur. Sci. 75712] (Ca--449195, N); C. B. Robinson s.n. [Herb. Philip. Bur. Sci. 6808] (Bz--18143); F. L. Stevens 225 (Ur), 537 (Ur); Vanoverbergh 17743 (Ca--359365); Weiss 3630 (Bz--18157); Whitford 404 (N); R. S. Williams 115 (N). Masbate: E. D. Merrill 3375 (N). Mindanao: Ahern 662Q (Bz--18151); M. S. Clemens 190 (W--619268); Elmer 10985 (Bi, Bz--18150, N, Ut--27643, Vt), 13441 (Bi, Bz--18148, Ca--272084, N, Ut--33524); Fénix s.n. [Herb. Philip. Bur. Sci. 26058] (Ca--238490); C. M. Weber 1055 (Ca--239439, Cm); R. S. Williams 2577 (N, N). Mindoro: Abaca 1 [Herb. Philip. Forest. Bur. 29933] (Ca--268044); Conklin 186 [Philip. Nat. Herb. 17535] (Mi); Kienholz 327 [Herb. Philip. Bur. Sci. 15310] (Ca--263014), 344 [Herb. Philip. Bur. Sci. 15324] (Ca--263008); Mangubert s.n. [Herb. Philip. Bur. Sci. 937] (Mi--photo, N); R. C. McGregor 113 (N); E. D. Merrill 892 (N, W--435860), 1214 (N); M. Ramos s.n. [Herb. Philip. Bur. Sci. 46383] (Ca--309140); Velasquez 10 (Bi). Samar: R. G. Smith s.n. [Aug. 1945] (Ur). Island undetermined: Née 25 (Q), 28 (Q), 32 (Q). CULTIVATED: Formosa: Keng K.1052 (W--2035769). Martinique: Duss 4442 (B), s.n. (B). Philippine Islands: A. Castillo s.n. [College campus, January 3, 1931] (Hp).

CALLICARPA FORMOSANA f. ALBIFLORA Yamamoto ex Li, Woody Pl. Taiwan 821 & 944, nom. nud. 1963.

Bibliography: Li, Woody Pl. Taiwan 821 & 944. 1963; Moldenke, Résumé Suppl. 8: 3. 1964.

As yet I have not been able to ascertain the original place of publication of this trinomial, if, indeed, it was ever validly published. I assume that the taxon differs from the typical

form of the species in having white corollas. If so, then it is most probable that Lizardo 30 and the specimens cited below belong here, since they are described as having had white flowers.

In all, only 2 herbarium specimens have been examined by me.

Citations: CHINA: Kwangtung: McClure 3038 [Herb. Canton Chr. Coll. 9591] (Ph); W. T. Tsang 21989 (S).

CALLICARPA FORMOSANA f. ANGUSTATA Moldenke, Phytologia 4: 125. 1952.

Synonymy: Callicarpa formosana f. angustata (Rehd.) Moldenke ex Li, Woody Pl. Taiwan 823, sphalm. 1963.

Bibliography: Moldenke, Phytologia 4: 121, 122, & 125. 1952; Moldenke, Biol. Abstr. 27: 984. 1953; Moldenke, Résumé 172, 182, & 444. 1959; Li, Woody Pl. Taiwan 823. 1963; Moldenke, Phytologia 14: 189 & 190. 1966.

This form differs from the typical form of the species in having its leaf-blades uniformly lanceolate.

The type of the form was collected by Harley Harris Bartlett (no. 6082) at Taiheisan, Formosa, at an altitude of 3500--4000 feet, in September, 1936, and is deposited in the Britton Herbarium at the New York Botanical Garden.

It seems very probably to me that Suzuki's C. formosana var. longifolia Suzuki is the same as the form here under discussion, but not having seen any type material of Suzuki's plant, I hesitate to make the reduction. If the taxon is to be regarded as a mere form, rather than a variety, my epithet remains the valid one in any case. The Sasaki s.n. [Herb. Govt. Formosa 21435], Mori s.n. [August 10, 1936], and S. K. Lau 96, cited by me under C. formosana Rolfe, may actually represent f. angustata instead. Li (1963) is in error when he regards my f. angustata as a new combination for Rehder's C. japonica var. angustata (1916). The name proposed by me has nothing whatever to do with the one proposed by Rehder and is based upon an entirely different type, as is plainly stated in the original description! The two taxa are abundantly distinct.

The present plant is described by collectors as a bush or shrub, 3--15 feet tall, the stems 1 inch in diameter, and the fruit purple, growing among bushes and in roadside thickets at 800 meters altitude, flowering in June and November, and fruiting in March and June. Wilson refers to it as "common in open forests" on Formosa. The flowers are described as "pink" on R. S. Williams 1158

Material has been misidentified and distributed in herbaria under the names C. blancoi Rolfe, C. caudata Maxim., C. formosana Rolfe, C. micrantha Vidal, C. pedunculata R. Br., and C. stenophylla Merr.

In all, 11 herbarium specimens, including the type, have been examined by me.

Citations: WESTERN PACIFIC ISLANDS: FORMOSA: H. H. Bartlett 6082 (N--type); Keng & Kao K.1273 (W--2036017); E. H. Wilson 9934 (W--1052891, W--1052892), 11141 (W--1053114, W--1092623). PHIL-

IPPINE ISLANDS: Luzon: E. D. Merrill 1718 (Bz--18147); Ramos & Edaño s.n. [Herb. Philip. Bur. Sci. 46955] (Bz--18138, N); R. S. Williams 1158 (N, W--707432).

CALLICARPA FORMOSANA var. CHINENSIS P'ei, Mem. Sci. Soc. China 1 (3): [Verbenac. China] 30. 1932.

Synonymy: Callicarpa pedunculata var. chinensis (P'ei) Metc., Lingnan Sci. Journ. 11: 405--406. 1932.

Bibliography: P'ei, Mem. Sci. Soc. China 1 (3): [Verbenac. China] 15 & 30. 1932; Metc., Lingnan Sci. Journ. 11: 405--406. 1932; Moldenke, Known Geogr. Distrib. Verbenac., ed. 1, 56 & 86 (1942) and ed. 2, 130 & 177. 1949; Moldenke, Résumé 168 & 444. 1959; Moldenke, Résumé Suppl. 14: 7. 1966.

This variety differs from the typical form of the species in having its leaf-blades oblong to elliptic and entire or subentire and the inflorescences lax and diffuse.

P'ei (1932) describes the plant as a shrub, about 2.5 m. tall; branches and branchlets densely pubescent when young; leaves decussate-opposite; petioles about 2 cm. long; leaf-blades subcoriaceous, oblong or elliptic, 8--15 cm. long, 3--6 cm. wide, shortly acuminate at the apex, entire or subentire, usually acute or subrotund at the base, subglabrous above, densely pubescent and glandular beneath; secondaries about 8 on each side of the midrib; inflorescence axillary or sometimes subterminal, lax and diffuse; peduncles 2--5 cm. long; fruiting-calyx glandular; fruit globose, 2.5 mm. wide, glandular, orange when dry.

The type of this variety was collected by Woon-Young Chun (no. 5828) in open brush between Changkiang and Chengkou, Kwangtung, China, in December, 1927, and is deposited in the Arnold Arboretum herbarium at Cambridge, Massachusetts, where Metcalf states that there are two sheets of this collection. The taxon is known thus far only from the original collection.

In all, 2 herbarium specimens and one photograph of the type collection have been examined by me.

Citations: CHINA: Kwangtung: W. Y. Chun 5828 (Ca--347284--isotype, N--isotype, N--photo of type).

CALLICARPA FORMOSANA var. GLABRESCENS Moldenke, Phytologia 4: 41--42. 1952.

Synonymy: Callicarpa caudatifolia Merr. ex Moldenke, Résumé Suppl. 4: 11, in syn. 1962 [not C. caudatifolia Koidz., 1925, nor Max., 1962].

Bibliography: Moldenke, Phytologia 4: 41--42 & 77. 1952; Moldenke, Biol. Abstr. 26: 1471. 1952; Moldenke, Résumé 182 & 444. 1959; Moldenke, Résumé Suppl. 4: 11. 1962; Moldenke, Phytologia 14: 142. 1966.

This variety differs from the typical form of the species in having the lower leaf-surfaces entirely glabrous or else sparsely stellate only on the midrib and larger veins.

The type of the variety was collected by Maximo Ramos and Gregorio E. Edaño [Herb. Philippine Bureau of Science 29137] on Mount

Tulaog, in the province of Tayabasi, Luzon, Philippine Islands, in May, 1917, and is deposited in the Britton Herbarium at the New York Botanical Garden. The type of C. caudatifolia Merr. was collected by Richard Crittenden McGregor [Herb. Philippine Bureau of Science 22919] in the province of Laguna, Luzon, between June and August, 1915, and was deposited in the herbarium of the Philippine Bureau of Science at Manila, but is now destroyed. The C. caudatifolia of Koidzumi is a synonym of C. japonica var. angustata Rehd., while that of Maximowicz is C. caudata Maxim.

Collectors describe this variety as a plant 2 m. tall, the stems 3 cm. in diameter, growing in thickets and forests, in open places, and along streams, at "low altitudes" or to 2000 feet altitude, flowering in March, May, and November. The flowers are described as "pink" on Ramos & Edaño s.n. [Herb. Philip. Bur. Sci. 45203 & 47223].

Material has been misidentified and distributed in herbaria as C. formosana Rolfe, C. longifolia Lam., C. micrantha Vidal, and C. pedunculata R. Br.

In all, 15 herbarium specimens, including type material of both names involved, have been examined by me.

Citations: WESTERN PACIFIC ISLANDS: PHILIPPINE ISLANDS: Luzon: Edaño s.n. [Herb. Philip. Bur. Sci. 48817] (N); R. C. McGregor s.n. [Herb. Philip. Bur. Sci. 22919] (W—898252); M. Ramos s.n. [Herb. Philip. Bur. Sci. 27662] (Bz—17660), s.n. [Herb. Philip. Bur. Sci. 47223] (N); Ramos & Edaño s.n. [Herb. Philip. Bur. Sci. 28513] (Bz—18135), s.n. [Herb. Philip. Bur. Sci. 29137] (N—type), s.n. [Herb. Philip. Bur. Sci. 45203] (Ca—308530), s.n. [Herb. Philip. Bur. Sci. 45614] (Bz—18140, N), s.n. [Herb. Philip. Bur. Sci. 47223] (Ca—310116), s.n. [Herb. Philip. Bur. Sci. 49011] (Bz—17656, Bz—17657, N). Mindoro: M. Ramos s.n. [Herb. Philip. Bur. Sci. 46442] (Ca—308873, N).

CALLICARPA FORMOSANA var. LONGIFOLIA Suzuki, Trans. Nat. Hist. Soc. Formos. 25: 130. 1935.

Bibliography: Suzuki, Trans. Nat. Hist. Soc. Formos. 25: 130. 1935; Li, Woody Pl. Taiwan 821 & 944. 1963; Moldenke, Résumé Suppl. 8: 3. 1964; Moldenke, Phytologia 14: 190. 1966.

This variety differs from the typical form of the species in having the leaf-blades thin-membranous, oblong-lanceolate to ovate-oblong-lanceolate, caudate-acuminate at the apex, cuneate at the base, minutely mucronate-dentate along the margins, 13—17 cm. long, 2—3 cm. wide, glabrous beneath except for the puberulous midrib and venation.

The type of the variety was collected by Sigetaka Suzuki (no. 1105) at Doba, Formosa, on July 28, 1929. In his original description the collector notes that "The distinguishing characters between the species and the present variety seem to be found in the shape of the leaves; viz. the latter has longer and more cuneate ones. Moreover, the species and the variety show different

mode of oecological adaptation. The present variety has been rarely found in the shady environment of mountainous regions at medium altitude, while Callicarpa formosana Rolfe is commonly found in low altitudes of Formosa as a chief element of secondary forests."

It seems highly likely that C. formosana f. angustata Moldenke is the same plant as Suzuki's variety, but not having as yet seen any type material of Suzuki's plant, I hesitate to make the reduction. If the taxon is to be regarded as a variety, Suzuki's epithet must be adopted, but if its status is to be that of a mere form, then my epithet remains valid.

CALLICARPA FULVA A. Rich. in Sagra, Hist Cuba 11 (2): 145. 1850 [not C. fulva Griseb., 1911].

Additional & emended synonymy: Callicarpa ferruginea Griseb. apud Urb., Symb. Ant. 7: 356, in syn. 1911 [not C. ferruginea Sw., 1788]. Callicarpa apiculata Urb., Symb. Antil. 7: 356. 1911. Callicarpa suffruticosa C. Wright ex Moldenke in Fedde, Repert. Spec. Nov. 40: 57, in syn. 1936. Callicarpa fulva var. fulva Alain in León & Alain, Fl. Cuba 4: 307. 1957. Callicarpa filigrana Sw., in herb.

Bibliography: Sw., Prodr. 31. 1788; A. Rich. in Sagra, Hist. Cuba 11 (2): 145. 1850; C. Muell. in Walp., Ann. Bot. 5: 709. 1860; Griseb., Pl. Wright. 2: 529. 1862; Griseb., Cat. Pl. Cub. 216. 1866; Sauv., Fl. Cub. 113. 1868; Jacks. in Hook. f. & Jacks., Ind. Kew. 1: 386. 1893; Millsp., Field Columb. Mus. Publ. Bot. 2: 180—181 (1906) and 2: 313. 1909; Urb., Symb. Antil. 7: 356 & 357. 1911; Britton & Millsp., Bahama Fl. 373. 1920; Prain, Ind. Kew. Suppl. 5: 43. 1921; Urb. in Fedde, Repert. Spec. Nov. 20: 346. 1924; Moldenke in Fedde, Repert. Spec. Nov. 33: 141 (1933), 39: 299 (1936), and 40: 53, 56—59, 61, 64, 65, 67, 68, 73, 78, 82, 119, 122, 123, 125, 126, 128, 129, & 131. 1936; Moldenke, Geogr. Distrib. Avicenn. 4. 1939; Moldenke, Prelim. Alph. List Invalid Names 9, 10, & 13. 1940; Moldenke, Known Geogr. Distrib. Verbenac., ed. 1, 24 & 86. 1942; Moldenke, Alph. List Invalid Names 8, 9, & 11. 1942; Moldenke, Alph. List Cit. 1: 75, 76, 184, 185, 187, 273, & 313. 1946; E. J. Salisb., Ind. Kew. Suppl. 10: 38. 1947; Moldenke, Alph. List Cit. 2: 420, 487, 647, & 649—651 (1948), 3: 664, 713, 867, & 929 (1949), and 4: 1085, 1094, 1143, 1144, 1157, 1158, & 1206. 1949; Moldenke, Known Geogr. Distrib. Verbenac., ed. 2, 42 & 177. 1949; H. N. & A. L. Moldenke, Anal. Inst. Biol. Mex. 20: 4. 1950; Moldenke, Inform. Mold. Set 51 Spec. 2. 1956; Alain in León & Alain, Fl. Cuba 4: 305 & 307. 1957; Moldenke, Résumé 50, 241, 243, 247, & 444. 1959; Moldenke, Phytologia 14: 148, 149, 186, & 187. 1966; J. A. Clark, Card Ind. Gen. Sp. Pl. n.d.

Richard's original (1850) description is worth repeating in full here because of the differences in interpretation given his species by various workers in the past: "Callicarpa tota tomentosa-floccosa, fulva; foliis oppositis ovali-lanceolatis aut ob-

ovali-lanceolatis acutis, basi sensim attenuatis margine subcrenulatis, superne glabriusculis, subtus ferrugineo-tomentosis, tomento denso stellato, valde reticulato-venosis; cymis axillaribus ferrugineis folio multo brevioribus ramoso-dichotomis; calyce campanulato glabriusculo, ore dilatato et subtruncato; drupa minima glabra, magnitudinem seminis Sinapeos nigrae vix excedente. Crescit in montosis insulae Cubae, in cacumine montium Sierra maestra et Pinal de los Hondones, in provincia de Cuba, ubi detexit clar. J. Linden, no. 1969 et 2006. Observaciones: Este bello arbusto de flores rosadas ó color de lila, está caracterizado por el color del vello que le recubre casi en totalidad. Se aproxima algo, por la figura de sus hojas, á la Callicarpa ferruginea, pero pronto se la distingue por los pelos estrellados que cubren la cara inferior de sus hojas y por la carencia completa de glandulas."

Recent collectors describe the plant as a shrub, 4--6 feet tall, called "filigrana", growing on limestone rocks and cliffs, wet or dry hillsides, in charrascales and wet woods, at altitudes of 400 to 1000 meters, flowering also in April and December, and fruiting in July. The flowers are described as "pink" on R. A. Howard 6053, "white" on León 12015, and "white or slightly purplish" on León, Clément, & Roca 10019.

Morton & Alain 9122 has much the aspect of C. cuneifolia Britton & P. Wils. and may possibly represent a hybrid. The Acuña 13327 specimens cited below are almost as glabrescent as material which is typical of var. glabrescens Moldenke, while his 13326 is very pubescent. Clément 3396 has extremely large and very tomentose leaves.

The C. fulva ascribed to Grisebach, referred to in the synonymy above, is in part C. crassinervis Urb. and in part C. grisebachii Urb., that of "A. Rich. apud Millsp." is C. hitchcockii Millsp., and the C. fulva f. foliis lanceolatis Griseb. is C. lancifolia Millsp.

Millspaugh (1906) makes some extremely interesting comments about what he then called C. fulva but later re-named C. hitchcockii Millsp.: "Mr. Hitchcock's plant [from scrub land and coppice, Cat Island, Bahamas], while having (on account of its greatly reduced leaves) a quite distinct general appearance of difference from C. fulva (as well represented by C. Wright's 1357 Monte Verde, Cuba, May 30, 1859) nevertheless has no other characters of differentiation. It is fairly well connected in leaf size and form with the Wright plant through Mr. Wright's other 1357 collected at the base of Farallones, Sept. 29, 1860, which is in the same fruiting stage as the Hitchcock plant. Of this Farallones plant Mr. Wright says, 'A slender bush 6 to 10 feet high: in thick woods.' Sauvalle .....considers this species synonymous with the Jamaican C. ferruginea Swartz, this however is not the case, the differences are broad and evident. Grisebach in his Catalogus Plantarum Cubensium includes under C. fulva Rich. Mr. Wright's Majanabajo, Cuba 3173 with the remark 'forma foliis lanceolatis'. The sheet of this num-

ber in Herb. Gray, Cambridge (one of Mr. Wright's original series), proves to be an entirely different species" which he then proceeds to name C. lancifolia Millsp.

Material of C. fulva has often been misidentified and distributed in herbaria as C. ferruginea Sw. On the other hand, the Acuña 9868, 10208, & 13327 (in part), Mrs. G. C. Bucher 59, and León & Victorin 20764, distributed as C. fulva, are actually C. ferruginea Sw., while Clément, Alain, & Chrysogone 6698 is C. floccosa Urb. R. A. Howard 6053 is a mixture with C. fulva var. glabrescens Moldenke.

In all, 71 herbarium specimens, including type material of all the names involved, and 22 mounted photographs have been examined by me.

Additional & emended citations: CUBA: Oriente: Acuña 12690 (Es), 13326 (Es, N), 13327, in part (Es, N); Alain & Acuña 7686 (Bm); Alain & López Figueiras 7150 (Bm), 7229 (Bm); Alain & Morton 5078 (Ss), 5114 (Z); G. C. Bucher 113 (Rg--8153); Mrs. G. C. Bucher 128 (N, Rg--8152), 728 (Ha); Clément 3396 (Ha, N); Clément & Alain 3945 (Ha, Ha, N); Clément & Chrysogone 3396 (Mv); Ekman 8773 (N); R. A. Howard 6053, in part (N); León 12015 (Ha), 12328 (Ha), 20186 (N), 20276 (N); León & Clément 20276 (Ha, N), 23029 (N); León, Clément, & Roca 10019 (Ha); León & Victorin 17295 (Ha); Linden 1969 (P--isotype); Matos s.n. [León 18551] (N); Morton & Alain 8993 (W--2285112), 9112 (W--2285210); Van Hermann 11766 (Es); Victorin & Alain 21730 (Ha, N); G. L. Webster 3764 (Mi); C. Wright 430 [Jan.--Jul. 1859] (E--photo, F--244613, S--photo, W--photo), 430 [1860] (Ca--936794), 430 [1860--64; Herb. Sauvalle 1774] (Hv), 3170 [Herb. Sauvalle 1774] (E--119142, F--244615, Hv).

CALLICARPA FULVA var. GLABRESCENS Moldenke in Fedde, Repert. Spec. Nov. 33: 141. 1933.

Bibliography: Moldenke in Fedde, Repert. Spec. Nov. 33: 141 (1933), 39: 299 (1936), and 40: 59, 119, 126, & 131. 1936; Moldenke, Geogr. Distrib. Avicenn. 5. 1939; Moldenke, Known Geogr. Distrib. Verbenac., ed. 1, 24 & 86. 1942; Moldenke, Alph. List Cit. 1: 273 & 310 (1946), 2: 420 & 647 (1948), 3: 664 (1949), and 4: 1143 & 1158. 1949; Moldenke, Known Geogr. Distrib. Verbenac., ed. 2, 42 & 177. 1949; Alain in León & Alain, Fl. Cuba 4: 307. 1957; Moldenke, Résumé 50 & 444. 1959; J. A. Clark, Card Ind. Gen. Sp. Pl. n.d.

This plant has been collected in anthesis in July. R. A. Howard 6053 appears to be a mixture of the typical form of C. fulva and var. glabrescens, at least insofar as the Britton Herbarium material is concerned. Acuña 13327, cited by me under typical C. fulva, is almost as glabrescent and typical material of this variety and may be better placed here.

In all, 18 herbarium specimens, including the type, and 7 moun-

ted photographs have been examined by me.

Additional & emended citations: CUBA: Oriente: Acuña 14117 (Es); Mrs. G. C. Bucher 11456 (Es); R. A. Howard 6053, in part (N, S); León & Clément 23106 (N), 23308 (N); Linden 2087 (Br); C. Wright 430 [1856--7] (Br--isotype, D--612063--isotype, E--119139--type, F--244612--isotype).

CALLICARPA FULVOHIRSUTA Merr., Journ. Straits Br. Roy. Asiat. Soc. 76: 113--114. 1917.

Synonymy: Callicarpa fulvo-hirsuta Merr., in herb.

Bibliography: E. D. Merr., Journ. Straits Br. Roy. Asiat. Soc. 76: 113--114. 1917; A. W. Hill, Ind. Kew. Suppl. 6: 34. 1926; Moldenke, Known Geogr. Distrib. Verbenac., ed. 1, 64 & 86 (1942) and ed. 2, 145 & 177. 1949; Moldenke, Alph. List Cit. 4: 1204. 1949; Moldenke, Résumé 192 & 444. 1959.

Shrub; branches terete, densely fulvous stellate-pubescent with intermixed simple hirsute hairs; branchlets with similar pubescence as the branches; principal internodes 4--7 cm. long; leaves decussate-opposite, dark-brown when dry; petioles 1--1.4 cm. long, densely fulvous stellate-pubescent with intermixed simple hirsute hairs; leaf-blades paler beneath, chartaceous, in general oblong-elliptic, 12--14 cm. long, 5--6.5 cm. wide, subequally narrowed to the sharply acuminate apex, sharply dentate along the margins except for the entire or subentire basal portions, subequally narrowed to the acute base, the upper surface densely hirsute on the midrib and with short scattered hairs on the lamina, the midrib beneath stellate-pubescent and hirsute, the lateral veins and primary reticulation sparingly hirsute with short hairs, the whole surface with pale, shiny, small, waxy glands; secondaries about 12 on each side of the midrib, prominent, curved, anastomosing, and with the reticulation dark-brown in contrast to the paler lamina surface; inflorescence densely fulvous stellate-tomentose or -pubescent with intermixed simple hirsute hairs, the cymes axillary, short-pedunculate, dichotomous, about as long as the petioles, rather lax; bracts linear-lanceolate, 1--3 mm. long; pedicels 1--1.5 mm. long, hirsute; flowers 4-merous; calyx cupuliform, about 1.4 mm. long, the rim subtruncate, obscurely 4-denticulate, sparingly hirsute and with scattered shiny glands on the outer surface; corolla white, 3.5--4 mm. long, externally glandular, subequally 4-lobed, the lobes oblong, about 1.5 mm. long, obtuse at the apex; stamens 4; anthers glandular on the back; fruit depressed-globose, red when mature, about 3 mm. in diameter, sparingly glandular.

The type of this species was collected by Mary Knapp Clemens (no. 9846) between Kibaya and Keung, Mount Kinabalu, British North Borneo, below an altitude of 1000 meters, in flower and fruit on October 29, 1915, and was deposited in the herbarium of the Bureau of Science at Manila, but is now lamentably destroyed. Merrill (1917) comments that this is "A characteristic species readily distinguishable by its brown leaves, its fulvous indumentum composed of stellate hairs with which are mixed simple hirsute ones, and its short, rather lax, inflorescences. It is similar in very many re-

spects to Geunsia havilandii King & Gamble, but the indumentum on its leaves is less dense, while its flowers are smaller and with five, not four stamens, and is hence a true Callicarpa." The taxon is known thus far only from the original collection. It is unfortunate that Merrill obviously accidentally transposed the words "four" and "five" in the comparison quoted above.

In all, 2 herbarium specimens, including the type, and 2 mounted photographs have been examined by me.

Citations: INDONESIA: GREATER SUNDA ISLANDS: British North Borneo: M. K. Clemens 9846 (Ca--214826--isotype, N--photo of type, Ph--type, Z--photo of type).

CALLICARPA FURFURACEA Ridl., Journ. Fed. Malay States Mus. 10: 150. 1920.

Bibliography: H. N. Ridl., Journ. Fed. Malay States Mus. 10: 150. 1920; H. N. Ridl., Fl. Malay Penins. 2: 614--616. 1923; A. W. Hill, Ind. Kew. Suppl. 6: 34 (1926) and 7: 36. 1929; Moldenke, Known Geogr. Distrib. Verbenac., ed. 1, 60 & 86 (1942) and ed. 2, 138 & 177. 1949; Moldenke, Résumé 179 & 444. 1959.

Branches brown-scurfy; leaves decussate-opposite; petioles 12.5 mm. long; leaf-blades membranous, oblong, 12.7 cm. long, 7 cm. wide, acuminate at the apex, dentate along the upper parts of the margins, truncate at the base, smooth above with sunken venation, pale beneath, with whitish veins, the veinlets and reticulation brown-scurfy, the midrib scurfy above; cymes paniculate, terminal, 2.5 cm. long or longer, many-flowered, brown-scurfy; pedicels 1.25 mm. long, white-tomentose; calyx cupuliform, white-tomentose, the rim entire; corolla 2.5 mm. long, regular, white-tomentose, the lobes 4, short, ovate, much shorter than the tube, blunt at the apex; stamens 4; filaments slender, inserted at the base of the corolla-tube and shorter than it; anthers large, oblong, slightly exserted.

The type of this little-known species was collected by Evans at Gunong Senyum, Pahang, Malaya. Ridley (1920) comments that "This is of the section of C. arborea, but distinguished by its brown fur and leaves white beneath with brown, scurfy reticulations." I know nothing of the plant except what is stated in the bibliography listed above.

CALLICARPA GLABRA Koidz., Bot. Mag. Tokyo 32: 56. 1918 [not C. glabra H. J. Lam, 1919].

Synonymy: Callicarpa subpubescens Maxim. ex Koidz., Bot. Mag. Tokyo 32: 56, in syn. 1918 [not C. subpubescens Hook. & Arn., 1838].

Bibliography: J. Matsum., Bot. Mag. Tokyo 3: 318. 1889; Hattori, Journ. Coll. Sci. Univ. Tokyo 23 (10): 34. 1908; J. Matsum., Ind. Pl. Jap. 2 (2): 530. 1912; Koidz., Bot. Mag. Tokyo 32: 56. 1918; A. W. Hill, Ind. Kew. Suppl. 6: 34. 1926; Moldenke in Fedde, Repert. Spec. Nov. 40: 84. 1936; Koidz. in Shirasawa, Icon. Essenc. Forest. Jap. 2: fig. 2487. 1938; Moldenke, Prelim. Alph. List In-

valid Names 13. 1940; Moldenke, Known Geogr. Distrib. Verbenac., ed. 1, 58, 61, & 86. 1942; Moldenke, Alph. List Invalid Names 11. 1942; Hara, Enum. Sperm. Jap. 1: 183. 1948; Moldenke, Known Geogr. Distrib. Verbenac., ed. 2, 133, 140, & 177. 1949; Moldenke, Inform. Mold. Set 48 Spec. [2]. 1954; Moldenke, Phytologia 5: 28. 1954; Moldenke, Résumé 172, 181, 182, 247, & 444. 1959; Hara, Outline Phytogeog. Japan 87. 1959; Moldenke, Résumé Suppl. 4: 8. 1962; Moldenke, Phytologia 14: 163. 1966.

Illustrations: Koidz. in Shirasawa, Icon, Essenc. Forest. Jap. 2: fig. 2487. 1938.

An almost completely glabrous shrub; branchlets terete, at first sparsely stellate-farinose but the pubescence soon evanescent, those of this year dark-purplish or black, those of last year dark-green, the older ones grayish; leaves decussate-opposite, deciduous; petioles 1—2.5 cm. long, at first laxly stellate-pilose, finally completely glabrous; leaf-blades coriaceous or chartaceous, oblong or narrowly oblong, rarely sublinear-oblong, 3—13 cm. long, 1—4.5 cm. wide, obtuse at the apex, remotely denticulate or obscurely repand along the margins, acute or broadly cuneate (rarely obtuse to very obtuse) at the base, sparsely resinous-punctate above and laxly stellate-pilose beneath when young but soon glabrous on both surfaces, drying dark-nigrescent above and brown or rarely yellowish-brown beneath; secondaries 4—7 on each side of the midrib, slightly elevated on both surfaces; cymes many-flowered, pedunculate, 1—3 cm. wide, dense; peduncles subequaling or slightly shorter than the petioles, at first loosely farinose-stellate and resinous-punctate but soon glabrous; pedicels 1—2 mm. long, loosely farinose-stellate-pilose when young and resinous-punctate, soon glabrous; bracts linear-filiform, 3—4 mm. long; bractlets 1 mm. long, persistent; calyx turbinate, about 1.8 mm. long, resinous-punctate on both surfaces, the rim slightly 4-dentate, the teeth very short and obtuse or very obtuse; corolla 4 mm. long, resinous-punctate on the outside, 4-lobed above the middle, the lobes broadly oblong, rounded at the apex; stamens surpassing the corolla; filaments glabrous; anthers oblong, resinous-punctate on both sides; style long-exserted, glabrous; fruit globose, borne in dense cymes, 3—4 mm. wide.

Koidzumi does not actually designate a type for this species, but it appears obvious that he bases the name on a specimen in the herbarium of Tokyo University annotated by Maximowicz as C. subpubescens Hook. & Arn. and which he designates as "Herb. Sci. Coll. Imp. Univ. Tokyo. No. 40" and which was collected in the Bonin Islands. He records the common name "shima-murasaki".

Recent collectors describe the plant as a shrub or bush, 5—12 feet tall, growing on hillsides and in open villages, at 75 meters altitude, flowering in April, August, and September. The flowers are described as "pale-lavender" on Walker, Tawada, & Amano 6507. Wilson reports that the species is "common" on Mukojima. The C. glabra of H. J. Lam, referred to in the synonymy above, is now known as C. lamii Hosokawa.

In all, 6 herbarium specimens have been examined by me.

Citations: WESTERN PACIFIC ISLANDS: RYUKYU ISLAND ARCHIPELAGO: Okinawan Islands: Okinawa: Field & Loew 6m (Mi, W--1942588). Sakishima Islands: Iriomote: Walker, Tawada, & Amano 6507 (Le, W--2093795, Z). BONIN ISLANDS: Mukojima: E. H. Wilson 8332 (W--1051813).

CALLICARPA GLANDULOSA Fletcher, Kew Bull. Misc. Inf. 1938: 199. 1938.

Bibliography: Fletcher, Kew Bull. Misc. Inf. 1938: 199, 412, & 414. 1938; Moldenke, Known Geogr. Distrib. Verbenac., ed. 1, 59 & 87. 1942; E. J. Salisb., Ind. Kew. Suppl. 10: 38. 1947; Moldenke, Known Geogr. Distrib. Verbenac., ed. 2, 137 & 177. 1949; Anon., Kew Bull. Gen. Index 1929-1956, 59. 1959; Moldenke, Résumé 177 & 444. 1959.

A shrub, of diffuse habit, about 2 m. tall; branchlets obtusely tetragonal, often terete, brownish-gray, glabrous; leaves decussate-opposite; petioles 5--15 mm. long, canaliculate above, sparsely stellate-pubescent; leaf-blades chartaceous, elliptic or oblong-elliptic, 9--17 cm. long, 4.5--5 cm. wide, acuminate at the apex, dentate along the margins, cuneate at the base, brownish-green above and sparsely stellate-pubescent, with numerous round red sessile glands, gray-green beneath; midrib conspicuous above, prominent beneath; secondaries 4--6 pairs, conspicuous above, prominulous beneath, parallel, arcuately joined at the margins; tertiaries transverse, slender, more or less parallel; inflorescence composed of axillary cymes; primary peduncles 3--5 cm. long, somewhat pubescent; pedicels 2 mm. long, glabrous; bractlets small, linear, to 2 mm. long; flowers not seen; fruit purple, globose, 3--4 mm. wide, glabrous, with sessile yellow glands at the apex.

The type of this little-known species was collected by Arthur Francis George Kerr (no. 11469) at Chumpawn, Ta Ngaw, Surat, Thailand, by streams in an evergreen forest at an altitude of about 50 meters. I know nothing of it except what is stated in the literature listed above. Fletcher (1938) notes "C. longifoliae Lamk. affinis sed foliis glandulis rubris nec flavis praeditis, nervis lateralibus paucioribus differt."

CALLICARPA GRACILIPES Rehd. in C. S. Sarg., Pl. Wils. 3: 371. 1916.

Bibliography: Rehd. in C. S. Sarg., Pl. Wils. 3: 371. 1916; H. H. Chung, Mem. Sci. Soc. China 1 (1): 226. 1924; A. W. Hill, Ind. Kew. Suppl. 6: 34. 1926; P'ei, Mem. Sci. Soc. China 1 (3): [Verbenac. China] 15 & 26. 1932; Moldenke, Known Geogr. Distrib. Verbenac., ed. 1, 56 & 87 (1942) and ed. 2, 130 & 177. 1949; Moldenke, Résumé 168 & 444. 1959.

Apparently a shrub; branchlets terete, the younger parts covered with a yellowish farinose-stellate tomentum; principal internodes abbreviated; leaves decussate-opposite, apparently persistent; petioles 6--8 mm. long, flavescent-tomentose; leaf-blades chartaceous, rather shiny and dark-green above, elliptic-ovate or ovate-oblong, 4--7.5 cm. wide, plainly acuminate at the apex, sinuate-dentate or

remotely denticulate along the margins except on the lower one-third, sometimes almost entire, at first sparsely farinose-stellate-pilose above, later glabrous or almost glabrous, canescent beneath, with the veins flavescent, densely covered with stellate many-branched hairs and scattered glands under the tomentum; secondaries 6 or 7 on each side of the midrib, slightly impressed above, elevated and distinct beneath with a flavescent color; cymes few-flowered, small, 1—1.5 cm. in diameter, yellowish farinose-tomentose; pedicels slender, surpassing the petiole by 1 cm.; flowers not seen; fruiting-calyx sparsely stellate-pilose, glabrescent, the rim obsoletely 4-denticulate; fruit apparently purple, subglobose, scarcely 3 mm. in diameter.

The type of this distinctive species was collected by Augustine Henry (no. 7690) somewhere in western Hupeh, China, and is deposited in the Gray Herbarium of Harvard University. Rehder (1916) comments that "This species does not seem to be closely related to any other Chinese species; it is characterized by its comparatively small, generally elliptic-ovate leaves, dark green above, whitish tomentose beneath, and by its small inflorescence and slender petioles and peduncles, the latter slightly exceeding the former." P'ei (1932) adds that "The plant as a whole is more leafy than its allies, because of its short internodes. It is allied to Callicarpa cana L. from which it differs by its smaller leaves which are shining above."

Only one herbarium specimen of this species has been examined by me.

Citations: CHINA: Hupeh: H. C. Chow 769 (N).

CALLICARPA GRISEBACHII Urb., Symb. Antil. 7: 356—357. 1911.

Emended synonymy: Callicarpa fulva Griseb. (in part) apud Urb., Symb. Antil. 7: 357, in syn. 1911 [not C. fulva A. Rich., 1850].

Bibliography: A. Rich. in Sagra, Hist Cuba 11 (2): 145. 1850; Griseb., Pl. Wright. 2: 529. 1862; Griseb., Cat. Cub. 216. 1866; Urb., Symb. Antil. 7: 356—357. 1911; Prain, Ind. Kew. Suppl. 5: 43. 1921; Urb. in Fedde, Repert. Soec. Nov. 20: 346. 1924; Moldenke in Fedde, Repert. Spec. Nov. 39: 300 (1936) and 40: 57, 59, 63—65, 67, 119, 122, 123, 125, & 131. 1936; Moldenke, Geogr. Distrib. Avicenn. 6. 1939; Moldenke, Prelim. Alph. List Invalid Names 10. 1940; Moldenke, Known Geogr. Distrib. Verbenac., ed. 1, 24 & 87. 1942; Moldenke, Alph. List Invalid Names 9. 1942; Moldenke, Alph. List Cit. 1: 75, 185—187, & 306. 1946; H. N. & A. L. Moldenke, Pl. Life 2: 62. 1948; Moldenke, Alph. List Cit. 2: 420 & 487 (1948), 3: 867 (1949), and 4: 1143. 1949; Moldenke, Known Geogr. Distrib. Verbenac., ed. 2, 42 & 177. 1949; Alain in León & Alain, Fl. Cuba 4: 305 & 309. 1957; Moldenke, Résumé 50, 243, & 444. 1959; Moldenke, Phytologia 14: 42 & 149. 1966.

The flowers are described as "pale rose-violet" on Ekman 8672. The Alain & Morton 5222, distributed as this species, is actually C. areolata Urb.

In all, 29 herbarium specimens, including type material of all

the names involved, and 20 mounted photographs have been examined by me.

Additional & emended citations: CUBA: Oriente: Clément 5930 (N); Ekman 8672 (Go--photo, N), 8926 (Br--photo), 9217 (I--photo, N), 15633 (Mi, Mi--photo, N); C. Wright 1357, in part [Sept. 1859 --Jan. 1860] (Br--isotype, E--119141--isotype, E--photo of type, F--183673--isotype, Mi--photo of isotype, S--photo of type, W--photo of type).

CALLICARPA HAVILANDII (King & Gamble) H. J. Lam, Verbenac. Malay. Arch. 52. 1919.

Synonymy: Geunsia beccariana Briq. in Engl. & Prantl, Nat. Pflanzenfam. 4 (3a): 165, nom. nud. 1895. Geunsia havilandii King & Gamble, Kew Bull. Misc. Inf. 1908: 105. 1908. Callicarpa havilandii var. pentamera H. J. Lam, Verbenac. Malay. Arch. 52. 1919. Callicarpa havilandii var. tetramera H. J. Lam, Verbenac. Malay. Arch. 52. 1919. Callicarpa havilandii H. J. Lam apud A. W. Hill, Ind. Kew. Suppl. 6: 34. 1926. Callicarpa ferox Bakh. ex Moldenke, Résumé 243, in syn. 1959.

Bibliography: King & Gamble, Kew Bull. Misc. Inf. 1908: 105. 1908; King & Gamble, Journ. Roy. Asiat. Soc. Bengal 74 (2), extra no., 801--802. 1908; King & Gamble, Mat. Fl. Malay. Penins. 21: 1011. 1909; H. J. Lam, Verbenac. Malay. Arch. 46, 52, & 362. 1919; Bakh., Bull. Jard. Bot. Buitenz., ser. 3, 3: 10 & 17--18. 1921; A. W. Hill, Ind. Kew. Suppl. 6: 34. 1926; Moldenke, Prelim. Alph. List Invalid Names 10 & 26. 1940; Moldenke, Known Geogr. Distrib. Verbenac., ed. 1, 65 & 87. 1942; Moldenke, Alph. List Invalid Names 9, 24, & 25. 1942; Moldenke, Alph. List Cit. 1: 266 & 267. 1946; H. N. & A. L. Moldenke, Pl. Life 2: 63. 1948; Moldenke, Alph. List Cit. 3: 751 & 763 (1949) and 4: 1173. 1949; Moldenke, Known Geogr. Distrib. Verbenac., ed. 2, 145 & 177. 1949; Moldenke, Phytologia 4: 81 & 82. 1952; Moldenke, Résumé 192, 193, 243, & 444. 1959.

Shrub or tree, about 3.3 m. tall; branchlets densely and rugosely stellate-pubescent with tawny or ferruginous hairs; leaves decussate-opposite, short-petiolate, not anisophyllous; petioles thick, 1--2.5 cm. long, densely and rugosely stellate-pubescent, fulvous-hispid, or rugose-hairy, with long tawny or ferruginous hairs; leaf-blades chartaceous or subchartaceous, ovate or ovate-oblong to elliptic or oblong, often subobovate, 6--20 cm. long, 3--7 cm. wide, acuminate or subabruptly short-acuminate and mucronate at the apex, denticulate along the margins except at the base, acute or acuminate to cuneate and entire at the base, densely and permanently rugose-pubescent with long ferruginous simple hairs (especially on the midrib) above, rather softly and densely or rugosely stellate-hairy and glandular beneath with simple and ferruginous permanent hairs on the venation only, the resin-glands large and peltate; midrib coarsely prominent; secondaries 7--15 pairs; veinlet reticulation conspicuous; cymes small, axillary, subsessile, few-flowered, 1.5--3 cm. long, 3--4 cm. wide, scarcely equal-

ing the subtending petioles, densely and rugosely stellate-hairy with tawny or ferruginous hairs; peduncles 3--10 mm. long, rugosely stellate-pubescent; bractlets minute, subulate; pedicels short, slender; calyx campanulate, 1--2 mm. long, 1--1.5 mm. wide, glabrous on the inner surface, strigose-hispid or densely and rugosely stellate-hairy with ferruginous hair and glandular with large resin-glands on the outer surface, its rim shortly 4- or 5-toothed or subentire, the teeth sometimes large and deltoid, 1--1.5 mm. long; corolla white, campanulate, 3.5--5 mm. long, glabrous, glandulose with large peltate and shiny resin-glands on the outer surface, the tube 2--2.5 mm. long, 1 1/2 -- 2 times as long as the calyx, the lobes 4 or 5, half as long as the tube, ovate or oblong, rounded at the apex, finally recurved; stamens 4 or 5, 6 mm. long, exserted; filaments slender, glabrous; anthers broad, oblong, 1.5--2 mm. long, fulvous-glandular on both sides (especially on the back) with small dense resin-glands; style filiform, 5--8 mm. long; stigma capitate or subpeltate, more or less obscurely 5-lobed; ovary glabrous, densely glandulose with large bright-yellowish resin-glands, 4- or 5-lobed, the cells 1- or 2-ovulate; fruiting-calyx somewhat enlarged, persistent, flattened; fruit drupaceous, red when fresh, globose, rather large, 3--5 mm. wide, somewhat depressed at the apex, glabrous when mature, with sparse resin-glands, purple-black when dry, with 4--8 [--12] 1-seeded pyrenes.

King & Gamble (1908) based this species on four collections from Sarawak: Beccari 3240 and Haviland 889, 3549K, & 3549L, the second of these having been collected near Kuching and the others with no specific locality mentioned. The type of C. ferox is Teijsmann 8500 from Borneo, deposited in the Herbarium Bogoriense at Buitenzorg.

Lam (1919) says "Without any doubt King & Gamble's species is a Callicarpa (only opposite leaves, leaves denticulate, cymes sessile, fruit with 4--5 (not 7--12) pyrenes). As in some other species of this genus there is a pentamerous form." His var. pentamera is merely a new name and status for the original King & Gamble taxon and is therefore based on the same cotypes. His var. tetramera is based on Haviland & Hose 3549E from near Kuching, Sarawak, collected in flower and young fruit in November, 1894. It is worth noting that Lam is emphatic in stating that this plant has only 4 or 5 pyrenes in its fruit, but Bakhuizen van den Brink (1921) says that the pyrenes are "4--8 [--12]", the larger number, according to Lam, being characteristic of Geunsia. It seems obvious that this species forms a connecting link between the two genera.

The original publication of Geunsia beccariana is dated "1897" by Lam (1919) and by Bakhuizen van den Brink (1921), but actually appeared in 1895. The latter author comments that it "is a doubtful species.....Its relation with the C. Havilandii (King/Gamble) H. J. L. is not yet certain."

Callicarpa havilandii has been found growing in forests. The flowers are reported as "white" on Clemens & Clemens 21784, Moul-

ton 79, and Native collector 2827. Haviland & Hose mistakenly refer to the fruits as "berries".

In all, 11 herbarium specimens and 4 mounted photographs have been examined by me.

Citations: INDONESIA: GREATER SUNDA ISLANDS: Borneo: Jaheri 1734 (Bz--17607, Bz--17608); Teijsmann 8500 (Bz--17604, Bz--17605, Bz--17606, N). Sarawak: Clemens & Clemens 21784 [field no. 6161] (Bz--17609, N); Haviland & Hose 3549 (V); Moulton 79 [Native collector 2827] (N--photo, N--photo, Ph, Ph, Z--photo, Z--photo).

CALLICARPA HITCHCOCKII Millsp., Field Columb. Mus. Publ. Bot. 2: 312--313. 1909.

Emended synonymy: Callicarpa fulva "A. Rich." apud Millsp., Field Columb. Mus. Publ. Bot. 2: 180--181. 1906 [not C. fulva Griseb., 1911, nor A. Rich., 1850]. Callicarpa hitchcockiana Millsp. ex Moldenke in Fedde, Repert. Spec. Nov. 40: 59, in syn. 1936.

Bibliography: A. Rich. in Sagra, Hist Cuba 11 (2): 145. 1850; Millsp., Field Columb. Mus. Publ. Bot. 2: 180--181 (1906) and 2: 312--313. 1909; Prain, Ind. Kew. Suppl. 4: 34. 1913; Britton & Millsp., Bahama Fl. 373. 1920; Moldenke in Fedde, Repert. Spec. Nov. 39: 301 (1936) and 40: 59--62, 119, 121, 123, 125, & 129. 1936; Moldenke, Alph. List Common Vern. Names 5. 1939; Moldenke, Geogr. Distrib. Avicenn. 4 & 5. 1939; Moldenke, Prelim. Alph. List Invalid Names 10 & 11. 1940; Moldenke, Known Geogr. Distrib. Verbenac., ed. 1, 24 & 87. 1942; Moldenke, Alph. List Invalid Names 9. 1942; Moldenke, Phytologia 2: 94. 1945; Moldenke, Alph. List Cit. 1: 56, 65, 179, 272, 305, 307, 308, & 311. 1946; H. N. & A. L. Moldenke, Pl. Life 2: 64. 1948; Moldenke, Alph. List Cit. 2: 415 & 549 (1948), 3: 928 & 929 (1949), and 4: 1038 & 1039. 1949; Moldenke, Known Geogr. Distrib. Verbenac., ed. 2, 42 & 177. 1949; Alain in León & Alain, Fl. Cuba 4: 305 & 308. 1957; Moldenke, Résumé 49, 50, 243, & 444. 1959; Moldenke, Phytologia 14: 149. 1966; J. A. Clark, Card Ind. Gen. Sp. Pl. n.d.

In all, 38 herbarium specimens, including type material of all the names involved, and 15 mounted photographs have been examined by me.

Additional & emended citations: BAHAMA ISLANDS: Andros: L. J. K. Brace 6965 (F--214369), 7100 (F--214495). Cat: Britton & Millspaugh 5819 (D--532333, F--198620, F--198621, 01, W--845021), 5913 (F--198707--type), 5946 (F--198726); A. S. Hitchcock s.n. [Port Howe] (E--47342, F--175149). New Providence: Eggers 4469 (B, K, N, S). CUBA: Camagüey: Shafer 2456 (F--250995, W--848702), 2791 (F--251258, W--848931).

CALLICARPA INAEQUALIS Teijsm. & Binn. ex H. J. Lam, Verbenac. Malay. Arch. 77--78, in syn. 1919; Bakh., Bull. Jard. Bot. Buitenz., ser. 3, 3: 18--19. 1921.

Synonymy: Callicarpa erioclona var. latifolia H. J. Lam, Ver-

benac. Malay. Arch. 77--78. 1919. Callicarpa backeriana Bakh. ex Moldenke, Résumé 241, in syn. 1959. Callicarpa inaequalis "T. & B. ex Bakh." apud Backer & Bakh., Fl. Java 2: 600. 1965.

Bibliography: H. J. Lam, Verbenac. Malay. Arch. 77--78 & 362. 1919; Bakh., Bull. Jard. Bot. Buitenz., ser. 3, 3: 10 & 18--19. 1921; A. W. Hill, Ind. Kew. Suppl. 7: 36. 1929; Moldenke, Prelim. Alph. List Invalid Names 10. 1940; Moldenke, Alph. List Invalid Names 9. 1942; Moldenke, Known Geogr. Distrib. Verbenac., ed. 1, 64 & 87 (1942) and ed. 2, 144 & 177. 1949; Moldenke, Phytologia 4: 79, 80, & 83. 1952; Moldenke, Résumé 187, 189, 194, 241, 242, & 444. 1959; Backer & Bakh., Fl. Java 2: 600. 1965; Moldenke, Phytologia 14: 178. 1966.

An erect shrub, 2--3 m. tall; branchlets obtusely tetragonal, rugose, very densely stellate-farinose with subferruginous, brown or white hairs, resinous-punctate beneath the tomentum, sparsely lenticellate; leaves decussate-opposite, long-petiolate; petioles 3--5 cm. long, distinctly callose-connate at the base, sulcate above, densely appressed-farinose; leaf-blades coriaceous or chartaceous, rather large, broadly ovate-oblong or subobovate to subovate, ovate, or oblong-ovate, 10--29 cm. long, 5--12 cm. wide, acuminate to subabruptly and obtusely short-acuminate or obtuse at the apex, unequally repand- or coarsely serrate-dentate or coarsely dentate along the margins except at the base, rarely only denticulate, the teeth usually with deep sinuses, obtuse or rounded to truncate (rarely cordate, subcordate, or even acute) at the base, glabrous above when mature, densely and permanently incanous-subfarinose-tomentose beneath, resinous-punctate and with scattered peltate glands on both surfaces, reticulate-veined; secondaries 7--10 on each side of the midrib; cymes small, solitary, 2--3 cm. long, 3--5 cm. wide, loosely few-flowered, short-pedunculate, very densely appressed-farinose; pedicels 1--1.5 cm. long, 1--1.5 mm. wide, very densely incanous- or ferruginous-farinose or appressed-pubescent, the margin glabrescent, resinous-punctate on both surfaces, the rim very shortly 4-dentate or -denticulate to subtruncate; corolla pink, 4--5 mm. long, glabrous inside, very densely appressed-tomentose or appressed-pubescent outside, resinous-punctate on both surfaces, its tube cupuliform, 2.5--3 mm. long, 1 1/2 -- 2 times as long as the calyx, the lobes 4, 1.5--2 mm. long, 1--1.2 mm. wide, subuniform, oblong, obtuse or rounded at the apex; stamens 4, 4--5 mm. long, shortly or hardly at all exserted; filaments filiform, terete, glabrous; anthers oblong, 2--2.5 mm. long, dorsifixed below the middle, opening by longitudinal slits, resinous-punctate; style terete, filiform, 6--8 mm. long, short-exserted; stigma peltate, obscurely lobed; ovary globose, densely stellate-pilose with white hairs and resinous-punctate, 4-celled, the cells 2-ovulate; fruiting-calyx scarcely enlarged; fruit drupaceous, rather large, depressed-globose, 2.5--3.5 mm. wide, dark-purple or black when mature, sparsely stellate-pilose and resinous-punctate; seed 4--8, laterally compressed.

The type of this species was not clearly designated by Bakhuizen van den Brink (1921) when he formally and validly published

the name which Lam (1919) had merely taken up in synonymy. However, it seems clear that sheet no. 17613 in the Herbarium Bogoriense, collected at Tjiampea, Bogor [Buitenzorg], by an undesignated collector, is intended to be the type, and I have so designated it [=lectotype]. Callicarpa backeriana is based on an unnumbered collection made by Cornelis Andries Backer -- in whose honor it was named -- at Bandjar, Java, on December 27, 1910, and is also deposited in the Herbarium Bogoriense at Buitenzorg.

Lam (1919) regarded this taxon as a mere variety of C. erioclona Schau., from which he distinguished it by the following characters: "folia chartacea, ovata vel oblongo-ovata, basi cuneata, plerumque subrotundata, abrupte attenuata, apice acuminata, margine, praeter basin, grosse dentata, dentibus simubus profundis, nervis utrinque 8, 7--17 cM. longa, 4 1/2 — 11 1/2 cM. lata, petiolo 0.7--3.2 cM. longo." He based his var. latifolia on Forbes 1355 and De Vriese s.n. (Le--908.267-1091, Le--908.267-1092) from Java. He gives as the basis for C. inaequalis "3 specimina in Herb. var. botan. in Acad. Lugd.-Bat., in H. L.-B. sub nos. 908.265-1104, 1110 and 1446."

The species has been found growing in light forests and is said to bloom all through the year at altitudes of 50 to 500 meters. The flowers are described as "pink" on Iboet 221. The leaf-blades are merely denticulate on Lörzing & Jochems 7427, and this specimen may not be correctly placed here.

In all, 37 herbarium specimens, including type material of all the names involved, and 2 mounted photographs have been examined by me.

Citations: INDONESIA: GREATER SUNDA ISLANDS: Celebes: Zijll de Jong 7/V.2 [Boschbouwproefst. bb.20215] (Bz--18703). Java: Backer 5936 (Bz--17625, Bz--17626), 33426 (Bz--17627, Bz--17628), s.n. [Bandjar, 27.12.1910] (Bz--25467); Bakhuizen van den Brink 1798 (Bz--17617), 1833 (Bz--17619, Bz--17620, Bz--17621, Bz--17622, Ca--235073, Ca--265995, Ut--24876a, Ut--25468, Ut--67004), 5933 (Bz--17623, Bz--17624, Ca--236614, N, Ut--80253), 7209 (B, Bz--17614, Bz--17615); Collector undetermined s.n. [Tjiampea, Bogor] (Bz--17612--isotype, Bz--17613--type, N--photo of type, Z--photo of type); d'Arnaud Gerkens 361 (Bz--17618, Ca--234994); Docters van Leeuwen-Reijnvaan 7691 (Bz--17616, Ca--301563); Van Steenis 2697 (Bz--17610, Bz--17611, N). Sumatra: Iboet 221 (Bz--17629, Bz--17630); Lörzing & Jochems 7427 (Bz--17631, Bz--17632).

CALLICARPA INTEGERRIMA Champ. ex Benth. in Hook., Journ. Bot. & Kew Gard. Misc. 5: 135. 1853.

Additional & emended synonymy: Callicarpa integrifolia Champ. ex Forbes & Hemsl., Journ. Linn. Soc. Lond. Bot. 26: 353. 1890 [not C. integrifolia Jacq., 1780]. Callicarpa integrifolia Forbes & Hemsl. apud P'ei, Mem. Sci. Soc. China 1 (3): [Verbenac. China] 22, in syn. 1932. Callicarpa tomentosa Bakh. (in part) apud P'ei, Mem. Sci.

Soc. China 1 (3): [Verbenac. China] 22, in syn. 1932 [not C. tomentosa Auct., 1962, nor Hook. & Arn., 1918, nor König, 1893, nor L., 1959, nor "L. [ex Spreng.]", 1825, nor "L. [ex Willd.]", 1966, nor (L.) Murr., 1774, nor Lam., 1783, nor Murr., 1774, nor Thunb., 1959, nor Vahl, 1794, nor Willd., 1808, nor "sensu Matsum.", 1906]. Callicarpa integerrima Lindl. ex Moldenke in Fedde, Repert. Spec. Nov. 40: 107, in syn. 1936; Prelim. Alph. List Invalid Names 11, in syn. 1940. Callicarpa integerrima var. diffusa P'ei ex Moldenke, Résumé Suppl. 3: 30, in syn. 1962.

Bibliography: J. A. Murr. in L., Syst. Veg., ed. 13, 130. 1774; Jacq., Select. Stirp. Amer. Hist. Picta, ed. 2, 13, pl. 259, fig. 6. 1780; Champ. ex Benth. in Hook., Journ. Bot. & Kew Gard. Misc. 5: 135. 1853; C. Muell. in Walp., Ann. 5: 709. 1860; Benth., Fl. Hongk. 270. 1861; Maxim., Bull. Acad. Imp. Sci. St.-Pétersb. 31: 75. 1886; Maxim., Mél. Biol. 12: 505. 1886; Forbes & Hemsl., Journ. Linn. Soc. Lond. Bot. 26: 353. 1890; Jacks. in Hook. f. & Jacks., Ind. Kew. 1: 386. 1893; Dunn & Tutcher, Kew Bull. Misc. Inf. Addit. Ser. 10: 202. 1912; Bakh., Bull. Jard. Bot. Buitenz., ser. 3, 3: 21. 1921; H. H. Chung, Mem. Sci. Soc. China 1 (1): 226. 1924; P'ei, Mem. Sci. Soc. China 1 (3): [Verbenac. China] 22--23. 1932; Moldenke in Fedde, Repert. Spec. Nov. 39: 300 (1936) and 40: 107—109, 120, & 123. 1936; A. W. Hill, Ind. Kew. Suppl. 9: 45. 1938; Moldenke, Geogr. Distrib. Avicenn. 36. 1939; Moldenke, Prelim. Alph. List Invalid Names 11 & 13. 1940; Moldenke, Known Geogr. Distrib. Verbenac., ed. 1, 56, 58, 71, & 87. 1942; Moldenke, Alph. List Invalid Names 9 & 11. 1942; Moldenke, Alph. List Cit. 1: 207. 1946; Moldenke, Phytologia 2: 343 (1947) and 3: 139. 1949; Moldenke, Alph. List Cit. 3: 771 (1949) and 4: 1011. 1949; Moldenke, Known Geogr. Distrib. Verbenac., ed. 2, 130, 134, 157, & 177. 1949; H. N. & A. L. Moldenke, Anal. Inst. Biol. Mex. 20: 4. 1950; Moldenke, Résumé 168, 173, 213, 243, 247, & 444. 1959; Moldenke, Résumé Suppl. 3: 30 (1962) and 14: 3. 1966; Moldenke, Phytologia 13: 502 (1966) and 14: 37, 107, & 111. 1966.

Recent collectors describe this plant as "semi-woody", a "climber", a "tall strong climber", or an "entangled coarse woody vine", 5--30 feet long, the bark gray or grayish-green, the shoots grayish-tawny or tawny-green, the leaves light-green or deep lustrous-green above, greenish-tawny or grayish beneath, the flowers fragrant, the young fruit round and green or greenish, and the mature fruit "gray" or purple. It has been found growing in thickets and open thickets, at altitudes of 300--800 meters, flowering from July to October, fruiting in August and October. Tsang calls it fairly common as scattered shrubs in clay of roadsides or "fairly common in dry clay" in Kwangtung, while Ching refers to it both as "common" and as "rare" in Kwangsi.

The type of C. integerrima var. diffusa was collected by Ren-Chang Ching (no. 2425) in the region of Kingyuan, at an altitude of 300 to 800 meters, Chekiang, China, in August or September, 1924, and is deposited in the United States National Herbarium at Washington.

It should be noted here that the species is reduced to synonymy

under C. tomentosa (L.) Murr. by Bakhuizen van den Brink (1921). The C. tomentosa of Bakhuizen van den Brink is in part C. integerrima and in part C. arborea Roxb.; that ascribed to "Auct.", to Hooker & Arnott, to Willdenow, and "sensu Matsum." is C. loureiri Hook. & Arn.; that ascribed to König is C. macrophylla Vahl; that ascribed to Linnaeus is C. erioclona Schau., but the C. tomentosa L. [ex Spreng.] is C. candicans (Burm. f.) Hochr. as is also C. tomentosa Lam.; C. tomentosa (L.) Murr. is a valid species, with the homonym ascribed to Murray along and to "L. [ex Willd.]" as synonyms; that ascribed to Thunberg is C. longifolia Lam., while the C. tomentosa Vahl has not yet been satisfactorily placed. The C. integrifolia of Jacquin is Aegiphila integrifolia (Jacq.) Jacks.

The flowers of C. integerrima have been described as "white" on T. W. Tsang 21107, "pink" on W. T. Tsang 23914, and "purplish-red" on W. T. Tsang 21650. The vernacular names "lo hai ngan" and "lo hai ngan muk" have been recorded for it.

Champion's original (1853) description of the species is worth repeating here in view of differences of opinion on the validity of the taxon: "ramulis cum cymis foliorumque pagina inferiore tomento stellato flavicante dense lanatis, foliis petiolatis late ovatis acuminatis integerrimis supra pube stellata conspersis, cymis folia subaequantibus, floribus parvis numerosissimis, calyce lanato minute 4-dentato. — Folia 3—4 poll. longa, 2 — 2 1/2 poll. lata (inferiora mihi desunt), supra viridia v. subflavescentia, mollia, punctis glandulosis inconspicuis sub lana reconditis, petiolo semipollicari. Cymae amplae, laxae, pedunculo 1 — 1 1/2-pollicari, ramis primariis elongatis. Flores magnitudine C. macrophyllae. Hongkong. The broad entire leaves and the dense golden-coloured tomentum readily distinguish this species from the C. macrophylla, C. lanata, and others to which it is allied."

P'ei (1932) amplifies the description as follows: "A shrub of about 10 feet tall; with branches, branchlets, petioles and inflorescences clothed with a dense floccose golden-colored tomentum or wool. Leaves broadly ovate-oblong, to nearly oblong or ovate, shortly acuminate to obtuse, base rounded, 8 to 14 cm. long, 4.2 to 10 cm. wide, thickly chartaceous, entire or slightly undulate, glabrous or nearly so above, densely tomentose or woolly and golden colored beneath, lateral nerves 7 or 8 on each side of the midrib. Petioles densely tomentose, about 1 cm. long, channelled. Cymes axillary, loose, with very numerous small flowers. Calyx tomentose, truncate or with rudimentary teeth, about 0.8 mm. long. Corolla glabrous, 4-lobed; corolla-tube slightly longer than the calyx-tube; corolla-lobes as long as the tube. Stamens 4, exserted, filaments 4 times as long as the corolla, glabrous. Style glabrous, exceeding the stamens. Ovary densely pubescent. Fruit pubescent, becoming subglabrous at maturity, 2 to 3 mm. in diameter, subglobose."

Material has been misidentified and distributed in herbaria as C. arborea Roxb. and as C. siongsaiensis Metc.

Forbes & Hemsley (1890) cite Millett s.n. from somewhere in China and Champion s.n., C. Ford s.n., and C. Wright s.n. from Hongkong. Maximowicz (1886) cites the same Ford and Wright collections and adds Bentham s.n. from southern China and Forbes s.n. from Hongkong. P'ei (1932) cites the same Ford and Wright collections and adds Ching 2425 from Chekiang and Sargent s.n. [Nov. 5, 1903] from Hongkong. The Ford and Wright collections are often referred to as topotypes of the species.

In all, 28 herbarium specimens and 2 mounted photographs have been examined by me.

Additional & emended citations: CHINA: Chekiang: R. C. Ching 2425 (Ca--281468, N, W--1247246). Kiangsi: S. K. Lau 4054 (S, W--1752793). Kwangsi: R. C. Ching 6993 (N), 8034 (N); W. T. Tsang 23914 (N). Kwangtung: W. T. Tsang 21107 (Bz--17633, Ca--11418, I, N, N, S), 21650 (Ca--11676, I, N, N, S). Province undetermined: A. Henry s.n. [Wongneuchung] (N). HONGKONG: C. Ford s.n. [Hongkong] (N); C. Wright s.n. [Hong Kong] (T, W--44907). CULTIVATED: New York: N. Taylor s.n. [New York Bot. Gard. Cult. Pl. 14244] (Mi--photo).

CALLICARPA INTEGERRIMA var. SERRULATA Li, Journ. Arnold Arb. 25: 425. 1944.

Bibliography: Li, Journ. Arnold Arb. 25: 425. 1944; Moldenke, Phytologia 2: 343. 1947; Moldenke, Known Geogr. Distrib. Verbenac., ed. 2, 130 & 177. 1949; Moldenke, Résumé 168 & 444. 1959; Moldenke, Résumé Suppl. 14: 3. 1966.

This variety differs from the typical form of the species in having the leaf-blades serrulate along the margins.

The type of the variety was collected by Wai-Tak Tsang (no. 25228) at Ch'an Woh Tung village, T'sung-hwa district, Sam Kok Shan, Kwangtung, China, between May 1 and 25, 1935, and is deposited in the Arnold Arboretum herbarium at Cambridge, Massachusetts.

Material has been misidentified and distributed in herbaria as C. macrophylla Vahl. Only one herbarium specimen has been examined by me.

Citations: HONGKONG: C. Wright s.n. [Hong Kong] (W--44914).

CALLICARPA INVOLUCRATA Merr., Journ. Malay. Br. Roy. Asiat. Soc. 1: 31--32. 1923.

Synonymy: Callicarpa involucrata f. clemensae Bakh. ex Moldenke, Résumé 243, in syn. 1959.

Bibliography: E. D. Merr., Journ. Malay. Br. Roy. Asiat. Soc. 1: 31--32. 1923; A. W. Hill, Ind. Kew. Suppl. 7: 36. 1929; Moldenke, Known Geogr. Distrib. Verbenac., ed. 1, 64 & 87 (1942) and ed. 2, 145 & 177. 1949; Moldenke, Alph. List Cit. 3: 840. 1949; Moldenke, Phytologia 4: 81 & 82. 1952; Moldenke, Résumé 192, 193, 243, & 444. 1959; Moldenke, Résumé Suppl. 3: 24. 1962.

Nearly glabrous shrub, about 3 m. tall; branchlets obscurely tetragonal, the younger ones sometimes minutely puberulent, the ultimate ones about 3 mm. in diameter; leaves decussate-opposite; petioles 1.5--2 cm. long; leaf-blades chartaceous, subolivaceous, oblong-elliptic, 20--35 cm. long, 8--14 cm. wide, narrowed to the shortly but sharply acuminate apex, distantly undulate-dentate along the margins or entire at the lower part, narrowed to the acute base, shiny, glabrous and conspicuously pitted-glandular on both surfaces, with a few widely scattered disk-like and sessile glands beneath which are 0.5 mm. or less in diameter, the upper surface with numerous similar crowded glands at the very base; inflorescence cauline, sparingly pubescent, sessile during anthesis and 2--3.5 cm. wide, the flowers densely crowded, fascicled or depauperate-cymose, subtended by several suborbicular to obovate bracts, which are subcoriaceous, 8--9 mm. long, deciduous, rounded, with numerous sessile discoid glands on the outer surface; flowers 4-merous; pedicels about 5 mm. long, slightly pubescent; calyx cupuliform, 4 mm. long, subacute at the base, obscurely pubescent, the rim with 4 triangular obtuse teeth about 0.5 mm. long, usually with a few distant discoid glands near the rim; corolla white, milk-white, or cream-white, its tube 5 mm. long, glabrous, the lobes orbicular-ovate, subequal, about 3 mm. wide, rounded or obtuse at the apex; stamens 4; anthers oblong, 3 mm. long, slightly exserted, obscurely waxy-glandular; fruiting-peduncles distinct, stout, to 2.5 cm. long; fruiting-pedicels to 7 mm. long; fruiting-calyx cupuliform, membranous, glabrous; fruits ovoid, 5 mm. wide, glabrous, the lower 2/3 or 3/4 included by the fruiting-calyx.

The type of this species was collected by Maximo Ramos (no. 1395) on forested slopes at low altitudes, Batu Lima, near Sandakan, British North Borneo, and was deposited in the herbarium of the Bureau of Science at Manila, but is now destroyed. The type of f. clemensae was collected by Joseph and Mary Knapp Clemens (no. 29965) -- in whose honor it was named -- at the margin of a jungle, altitude 5000 feet, also in British North Borneo, flowering and fruiting in June, and is deposited in the Herbarium Bogoriense at Buitenzorg. The form looks quite distinct and may be worthy of nomenclatural recognition, but I have not yet been able to ascertain if or where it was formally described and published by Bakhuizen van den Brink.

Merrill (1923) says "A remarkable species remote from all hitherto described forms, but somewhat resembling Callicarpa cauliflora Merr. It is strongly characterized by its cauline, fascicled or depauperate-cymose, crowded flowers, the uniformly pitted upper and lower surfaces of its leaves, and the peculiar disciform glands widely scattered on the lower surface, crowded on the upper surface at the base of the leaf, and similar ones on the bracts (many) and on the calyces (few). The bracts are deciduous, but form a distinct involucre subtending the younger inflorescences."

Recent collectors describe the plant as a shrub or small tree, or as a "recumbent subtreelet", 5--20 feet tall, the trunk 1--12 inches in diameter, buds cream-colored, flowers borne on the trunk,

and fruit light-green or green to cream-green or cream-colored when immature, later pink, and finally red when mature, cauline. It has been found growing in open places and damp forests, at jungle margins, on flat land, banks, and jungle-covered hillsides, and along small streams and forest trails on hills, at 3000 to 5000 feet altitude, flowering in February, June, August, November, and December, and fruiting in January, March, June, and December. The flowers are said to have been "cream-white" on Clemens & Clemens 29965, "milk-white" on Endert 3651, and "white" on Boden-Kloss 19173, Clemens & Clemens 27651 & 28285, Pascual 1090, and M. Ramos 1395 & 1927.

Clemens & Clemens 27651 has a secondary fungus on the scale insects infesting the lower leaf-surfaces of this plant. Pascual 1090 exhibits especially narrow leaf-blades. Concerning Boden-Kloss 19173 Merrill comments: "in type the infl. (anthesis) is sessile. The axis elongates as the fls. are produced. See C. woodii Merr. which is probably involucrata."

Material has been misidentified and distributed in herbaria under the name Premna caulifera Stapf.

In all, 35 herbarium specimens, including the types of all the names involved, and 4 mounted photographs have been examined by me.

Citations: INDONESIA: GREATER SUNDA ISLANDS: British North Borneo: Boden-Kloss 19173 (Bz--17635, Ca--345867); Clemens & Clemens 27520 (Bz--17640, Ca--541964, N), 27651 (Bz--17638, Bz--17639, N), 28285 (Bz--17641, N), 28671 (Bz--17642), 29965 (Bz--17637, Ca--541963), 30541 (Bz--17643), 30711 (Bz--17646, N), 30711a (Bz--17646), 31306 (Bz--17645, Ca--559766, N), s.n. [Penibukan, Jan. 4, '33] (Ca--559765, N); Endert 3651 (A, Bz--72604, Bz--72892), 3742 (A, Bz--72602), 3836 (Bz--72603, N); Pascual 1090 (N); M. Ramos 1395 [field no. 324] (Bz--17636--isotype, N--photo of type, Ph--type, Z--photo of type), 1927 (Bz--17634, N, N--photo, Ph, Z--photo).

CALLICARPA IRIOMOTENSIS Masam., Trans. Nat. Hist. Soc. Formos. 25: 254. 1935.

Bibliography: Masam., Trans. Nat. Hist. Soc. Formos. 25: 254. 1935; A. W. Hill, Ind. Kew. Suppl. 9: 45. 1938; Moldenke, Phytologia 4: 451. 1953; Moldenke, Résumé 181 & 444. 1959; Moldenke, Résumé Suppl. 5: 6. 1962.

Shrub; branches spreading horizontally, ashy-gray, glabrate, scarcely lenticellate; branchlets dark, stellate-tomentose; leaves decussate-opposite; petioles about 3 mm. long, fuscous, stellate-tomentose, exstipulate; leaf-blades membranous, ovate or ovate-lanceolate, 4--10 cm. long, 2--3.5 cm. wide, acuminate or cuspidate-acuminate at the apex, dentate-serrate with apiculate teeth along the margins, cuneate at the base, stellate-tomentose on the midrib and venation, minutely glandular-punctate on the lamina, the dots red-purple when dry; cymes axillary, their branches slender, stellate-pubescent, and bracteate; bracts ovate, 1--1.5 mm. long; fruit

drupaceous, globose, 3--4 mm. long.

The type of this species was collected by Genkei Masamune on the island or Iriomote, Ryukyu Islands, on July 2, 1933. Recent collectors have found the species growing in the shade of large trees, in dense low scrubby forests, in wet gulch bottoms, and "occasional" in ravines at the sides of wet wooded gulches, at 120 to 175 meters altitude, fruiting in August.

In all, only 3 herbarium specimens have been examined by me.

Citations: WESTERN PACIFIC ISLANDS: RYUKYU ISLAND ARCHIPELAGO: Sakishima Islands: Iriomote: Walker & Tawada 6654 (N). Miyako: F. R. Fosberg 37191 (Z), 37289 (Sm).

CALLICARPA JAPONICA Thunb., Fl. Jap. 60--61 [as "iaponica"]. 1784; J. A. Murr. in L., Syst. Veg., ed. 14, 153. 1784 [not C. japonica Hort. ex Fritzel, 1866, nor "Thunb. auct." ex Raf., 1838].

Additional & emended synonymy: Callicarpa fol. serratis glabris Thunb. apud J. A. Murr. in L., Syst. Veg., ed. 14, 153, in syn. 1784. Callicarpa foliis oblongis acuminatis medio serratis glabris Willd., Linn. Sp. Pl. 1: 621, in syn. 1797. Callicarpa (japonica) foliis serratis glabris Thunb. apud Willd., Linn. Sp. Pl. 1: 621, in syn. 1797. Callicarpus japonica Thunb. apud Hassk., Cat. Pl. Hort. Bot. Bogor. Alt. 136. 1844. Callicarpus mimurazaki Hort. apud Hassk., Cat. Pl. Hort. Bot. Bogor. Alt. 136, nom. mud. 1844. Callicarpa murasaki Sieb., Jaarb. Konink. Nederl. Maatsch. Tuinb. [Ann. Hort. Pays-Bas] 1844: 25, nom. mud. 1844; Sieb. & Zucc., Abhand. Math.-phys. Cl. Köngl. Baier. Akad. Wiss. München 4 (3): 156. 1846. Callicarpa mimurasaki Hassk. apud Sieb. & Zucc., Abhand. Math.-phys. Cl. Köngl. Baier. Akad. Wiss. München 4 (3): 156, in syn. 1846. Callicarpa japonica f. parvifolia Miq., Cat. Mus. Bot. Lugd.-Bat. 70, nom. mud. 1870. Callicarpa longifolia var. japonica (Thunb.) Kuntze, Rev. Gen. Pl. 2: 503. 1891. Callicarpa mimurazaki Hassk. apud Jacks. in Hook. f. & Jacks., Ind. Kew. 1: 386, in syn. 1893. Callicarpa japonica var. typica H. J. Lam, Verbenac. Malay. Arch. 85. 1919. Callicarpa japonica var. typica Bakh., Bull. Jard. Bot. Buitenz., ser. 3, 3: 25. 1921. Callicarpa purpurea Nakai, Fl. Sylv. Kor. 14: 30, in syn. 1923 [not C. purpurea Hort. ex Lem., 1859, nor Hort. ex Moldenke, 1941, nor A. L. Juss., 1806, nor Van Houtte, 1932]. Callicarpa japonica f. glabra P'ei, Mem. Sci. Soc. China 1 (3): [Verbenac. China] 54. 1932. Callicarpa japonica Hort. (in part) ex Moldenke in Fedde, Repert. Spec. Nov. 40: 87, in syn. 1936; Prelim. Alph. List Invalid Names 11, in syn. 1940. Callicarpa murosaki Sieb. ex Moldenke in Fedde, Repert. Spec. Nov. 40: 88, in syn. 1936; Prelim. Alph. List Invalid Names 12, in syn. 1940. Callicarpa dichotoma var. koreana Hort. ex Moldenke. Prelim. Alph. List Invalid Names 10, in syn. 1940. Callicarpa shirasawana

Hort. ex Moldenke, Prelim. Alph. List Invalid Names 13, in syn. 1940 [not xC. shirasawana Mak., 1910]. Callicarpa japonica α subglabra Schau. ex Moldenke, Résumé 244, in syn. 1959. Callicarpa japonica var. japonica Kobayashi ex Moldenke, Résumé Suppl. 3: 30, in syn. 1962. Callicarpa japonica L. f. ex Moldenke, Résumé Suppl. 14: 7, in syn. 1966.

Bibliography: Thunb., Nov. Act. Reg. Soc. Sci. Upsal. 4: 31. 1783; Thunb., Fl. Jap. 60—61. 1784; J. A. Murr. in L., Syst. Veg., ed. 14, 153. 1784; Jacq., Ind. Pl. Linn. Syst., ed. 14, 32. 1785; Vitm., Sum. Pl. 1: 307. 1789; Lam., Tabl. Encycl. Méth. [Illustr. Gen.] 1: 293. 1791; J. F. Gmel., Linn. Syst. Nat., ed. 13, 2: 246. 1791; Vahl, Symb. Bot. 3: 14. 1794; Willd., Linn. Sp. Pl. 1: 621. 1797; Raeusch., Nom. Bot. 37. 1797; Murr. & Pers., Linn. Syst. Veg., ed. 15 [14 rev.], 159. 1797; J. A. Murr., Linn. Syst. Veg., ed. 15, 127. 1798; Pers., Syn. Pl. 1: 133. 1805; Poir. in Lam., Encycl. Méth. Suppl. 2: 34. 1811; Roem. & Schult., Linn. Syst. Veg. 3: 96 & 97. 1818; Wall. in Roxb., Fl. Ind., ed. 1 [Carey & Wall.], 1: 410—411. 1820; Steud., Nom. Bot., ed. 1, 137. 1821; W. J. Hook., Exot. Fl. 2: pl. 133. 1825; Spreng. in L., Syst. Veg., ed. 16, 1: 420. 1825; J. A. & J. H. Schult., Mant. 3: 53 & 54. 1827; Spreng. in L., Syst. Veg., ed. 16, 5: 126. 1828; Raf., Sylv. Tellur. 161. 1838; Steud., Nom. Bot., ed. 2, 1: 257. 1840; Pers., Syn. Pl. 1: 343. 1842; Hassk., Cat. Pl. Hort. Bot. Bogor. Alt. 136. 1844; Sieb., Jaarb. Konink. Nederl. Maatsch. Tuinb. [Ann. Hort. Pays-Bas] 1844: 25 (1844) and 1845: 71 & 72, pl. 5 & 6. 1845; Walp., Repert. 4: 129. 1845; Sieb. & Zucc., Abhand. Math.-phys. Cl. Königl. Baier. Akad. Wiss. München 4 (3): 154 & 156. 1846; Schau. in A. DC., Prodr. 11: 645. 1847; Regel, Gartenfl. 1: 120. 1852; Lindl. & Paxt. in Paxt., Flow. Gard. 2: 165—166, fig. 221. 1853; Miq., Fl. Ind. Bat. 2: 888. 1856; Hérincq, Hort. Franç., ser. 2, 3: 11, pl. 4. 1861; Miq., Ann. Mus. Bot. Lugd.-Bat. 2: 98. 1865; Pritz., Icon. Bot. Ind. 2: 55. 1866; Regel, Gartenfl. 18: 164. 1869; Miq., Cat. Mus. Bot. Lugd.-Bat. 70. 1870; M. T. Masters, Gard. Chron. 1871: 173, fig. 39. 1871; Savatier in Yonan-Si, Liv. Kwa-wi 78. 1873; Franch. & Savatier, Enum. Pl. Jap. 1: 358. 1875; Regel, Gartenfl. 25: 182 & 186 (1876) and 30: 42. 1881; P. Henderson, Handb. Pl., ed. 1, 35. 1881; Nichols., Ill. Dict. Gard., pr. 1, 1: 242. 1884; Maxim., Mél. Biol. 12: 504 & 508—509. 1886; G. W. Johnson, Gard. Dict. 891. 1890; Forbes & Hemsl., Journ. Linn. Soc. Lond. Bot. 26 [Ind. Fl. Sin. 2]: 252 & 253. 1890; P. Henderson, Handb. Pl., ed. 2, 64. 1890; Kuntze, Rev. Gen. Pl. 2: 503. 1891; Jacks. in Hook. f. & Jacks., Ind. Kew, 1: 386. 1893; Bois, Dict. Hort. 1: 232. 1893—1899; Shirasawa, Bull. Coll. Agric. Tokyo Imp. Univ. 2: [Jap. Laubh. Winterzust.] 269, pl. 14, fig. 10. 1895; Usef. Pl. Jap. 2: pl. 656. 1895; J. Matsum., Bot, Mag. Tokyo 13: 115. 1899; Ichimura, Bot. Mag. Tokyo 13: 116. 1899; Diels in Engl., Bot. Jahrb. 29: 548. 1900; W. P. Wright in Cassell, Dict. Pract. Gard., ed. 1, 156. 1902; C. K. Schneid., Dendrol. Winterstud. 188, 198, & 267. 1903; Gilg & Loes. in Engl., Bot. Jahrb. 34, Beibl. 75: 61. 1904; Rehd. in Bailey & Mill., Cycl. Am. Hort. 1: 217. 1906; W. P. Wright in Cassell, Dict. Pract. Gard., ed. 2, 156. 1907; Shirasawa,

Nippon Shinrin Jumoku Dzufu [Icon. Ess. Forest. Jap.] 2: pl. 70, fig. 1—10. 1908; Nakai, Fl. Kor. 2: 135. 1909; P. Henderson, Handb. Pl., ed. 3, 65. 1910; Kawakami, List Pl. Formos. 84. 1910; Apgar, Ornament. Shrubs U. S. 289. 1910; C. K. Schneid., Illust. Handb. Laubholzk. 2: 591--594, fig. 384c--e & 385h--l. 1911; Hayata, Veget. Mt. Fuji 67. 1911; J. Matsum., Ind. Pl. Jap. 2 (2): 529. 1912; Hickel, Bull. Soc. Dendrol. France 28: 111. 1913; A. H. Graves, Winter Key Woody Pl. 8 & 30. 1913; Rehd. in L. H. Bailey, Stand. Cycl. Hort. 2: 628. 1914; Nakai, Fl. Quelp. Isls. 76. 1915; Nakai, Fl. Mt. Chirisan 43. 1915; Rehd. in C. S. Sarg., Pl. Wils. 3: 367, 368, & 370. 1916; Nakai, Rep. Veg. Diamond Mts. 183. 1917; G. V. Nash, Addisonia 3: 45, pl. 103. 1918; W. Trelease, Wint. Bot., ed. 1, 331. 1918; Yabe, Indust. Mat. Bur. Agr. S. Wanch. Ry. Co. 12: [Prelim. Rep. Fl. Tsing-tao] 96. 1919; H. J. Lam, Verbenac. Malay. Arch. 51, 84--85, & 362. 1919; Bakh., Bull. Jard. Bot. Buitenz., ser. 3, 3: 11 & 25—26. 1921; Nakai, Fl. Sylv. Kor. 14: 30—32 & 133, pl. 6—8. 1923; Olmstead, Coville, & Kelsey, Stand. Pl. Names, ed. 1, 61. 1924; W. Trelease, Wint. Bot., ed. 2, 333. 1925; W. J. Bean, Trees & Shrubs Hardy Brit. Isles, ed. 14, 1: 280. 1925; Rehd., Man. Cult. Trees, ed. 1, 775 & 776. 1927; Cloud, Cult. Shrubs 120 & 121. 1927; Nakai, Trees & Shrubs Indig. Jap., ed. 2, 1: 452, 454, & 456, fig. 214. 1927; Hottes, Book Shrubs, ed. 1, 147. 1928; S. Sasaki, List Pl. Formos. 350. 1928; Pammel & King, Proc. Iowa Acad. Sci. 35: 185 & 196, fig. 32. 1928; Stapf, Icon. Bot. Ind. Lond. 1: 526. 1929; W. J. Bean, Trees & Shrubs Hardy Brit. Isles, ed. 5, 1: 280. 1929; L. H. & E. Z. Bailey, Hortus 111. 1930; Schwencke, Zytol. Untersuch. Verbenac. 17—20 & 33, fig. 12—14. 1931; Hottes, Book Shrubs, ed. 2. 168. 1931; Macself, Sanders Encycl. Gard., ed. 21, pr. 1, 71. 1931; P'ei, Mem. Sci. Soc. China 1 (3): [Verbenac. China] 17, 28, 30, 46, & 52—55, pl. 7. 1932; Metc., Lingnan Sci. Journ. 11: 407. 1932; Mak., Gensyoku Yagai-Shokubutu [Nature-Col. Wild Pl.] 4: 309. 1933; Svenson, Brooklyn Bot. Gard. Record 22: 7. 1933; Macself, Sanders Encycl. Gard., ed. 21, pr. 2, 71. 1934; Junell, Symb. Bot. Upsal. 4: 81 & 82, fig. 127. 1934; Crevost & Pételot, Bull. Econom. Indo-chine 37: 1290. 1934; Hand.-Mazz., Ann. Hort. Gothenb. 9: [67]. 1934; L. H. Bailey, List Florists Handl. Verbenac. mss. 1935; Patermann, Beitr. Zytol. Verbenac. 10, 30—31, 43, & [56], pl. 5, fig. 8. 1935; Masamune, Short Fl. Formos. 179. 1936; Moldenke in Fedde, Repert. Spec. Nov. 39: 297, 304, & 309 (1936) and 40: 84--92, 96, 98, 102, 115, 120, 122—128, & 130. 1936; Moldenke, Decorat. Pl. Wint. Months [1]. 1936; Sugiura, Cytologia 7: 544. 1936; T. W. Sanders, Encycl. Gard., ed. 22, 71. 1936; Hara, Bot. Mag. Tokyo 51: 52. 1937; Hottes, Book Shrubs, ed. 3, 168. 1937; Moldenke, Cult. Pl. 35. 1938; A. W. Hill, Ind. Kew. Suppl. 9: 46. 1938; Macself, Sanders Encycl. Gard., ed. 21, pr. 3, 71. 1938; Nakai, Journ. Jap. Bot. 14: 639--641. 1938; Moldenke, Alph. List Common Vern. Names 14, 16, 18, 21, 22, 29, & 33. 1939; Moldenke, Geogr. Distrib. Avicenn. 36. 1939; Moldenke, Annot. & Classif. List 108. 1939; Anon., N. Y. World-Telegram 17, January 21. 1939; Masamune, Trans. Nat. Hist. Soc. Formos. 30: 63—64. 1940; Rehd., Man. Cult. Trees, ed. 2, pr. 1, 804. 1940;

Moldenke, Prelim. Alph. List Invalid Names 10--13. 1940; Doney, Brooklyn Bot. Gard. Record 30: 23. 1941; Worsdell, Ind. Lond. Suppl. 1: 160. 1941; Hottes, Book Shrubs, ed. 4, 168. 1942; Van Melle, Journ. N. Y. Bot. Gard. 43: 36 & 42. 1942; Macself, Sanders Encycl. Gard., ed. 21, pr. 4, 71. 1942; Moldenke, Known Geogr. Distrib. Verbenac., ed. 1, 56--59, 61, 62, 71, & 87. 1942; Moldenke, Alph. List Invalid Names 9--11. 1942; Wisler, Swarthmore Pl. Notes 1: 217. 1942--1943; Moldenke, Known Geogr. Distrib. Verbenac. Suppl. 1: 4. 1943; Van Melle, Shrubs & Trees Small Place 73. 1943; Darlington & Janaki Ammal, Chromosome Atl. 271. 1945; Moldenke, Phytologia 2: 94. 1945; Moldenke, Castanea 10: 36. 1945; Macself, Sanders Encycl. Gard., ed. 21, pr. 5, 71 (1945) and ed. 21, pr. 6, 71. 1946; Moldenke, Alph. List Cit. 1: 13, 25, 46, 52, 101, 102, 112, 128, 197, 257, 275, & 295. 1946; Moldenke, Bol. Soc. Venez. Cienc. Nat. 11: 49. 1947; Van Melle, Phytologia 2: 225. 1947; E. J. Salisb., Ind. Kew. Suppl. 10: 38. 1947; Moldenke, Castanea 13: 120 & 121. 1948; N. Y. Bot. Gard. Seed Exch. List 1948: 2. 1948; Hara, Enum. Sperm. Jap. 1: 183. 1948; Moldenke, Alph. List Cit. 2: 392, 398, 422, 473, 488, 490, 503, 514, 561, 563, 572, 577, 594, 608, & 617 (1948), 3: 697, 728, 742, 743, 753, 760, 770, 771, 847, 895, 918, 939, 946, & 947 (1949), and 4: 988, 1081, 1104, 1115, 1136, 1147, 1168, 1169, 1224, 1253, 1254, & 1289. 1949; Moldenke, Phytologia 3: 78 & 139. 1949; Moldenke, Known Geogr. Distrib. Verbenac., ed. 2, 7, 130, 133--135, 140, 157, & 177. 1949; Matsum., List Seed Exch. 2. 1949; E. D. Merr., Ind. Raf. 204. 1949; Rehd., Bibl. Cult. Trees 583--584. 1949; H. N. & A. L. Moldenke, Anal. Inst. Biol. Mex. 20: 4. 1950; Moldenke, Phytologia 3: 295 & 380. 1950; W. J. Bean, Trees & Shrubs Hardy Brit. Isles, ed. 7, 1: 334. 1950; Anon., N. Y. Times Spring Gard. Sect. 42, March 19. 1950; T. H. Everett, N. Y. Bot. Gard. Seed Exch. List 1951: 5 (1950) and 1952: 2. 1951; W. J. Bean in Chittenden, Roy. Hort. Soc. Dict. Gard. 1: 358 & 359. 1951; B. C. Blackburn, Trees & Shrubs East. N. Am. 103. 1952; Moldenke, Phytologia 4: 75, 82, & 88 (1952), 4: 451 (1953), and 5: 28, 31, 100, & 101. 1954; Moldenke, Journ. Calif. Hort. Soc. 15: 86. 1954; Mizushima, Misc. Rep. Research Inst. Nat. Res. 38: 123. 1955; Darlington & Wylie, Chromosome Atl., pr. 1, 323 & 503. 1955; Spector, Handb. Biolog. Data 142. 1956; Mattoon, Pl. Buyers Guide, ed. 6, 83. 1958; J. & L. Bush-Brown, Am. Gard. Book, new rev. ed., 269. 1958; Mizushima & Mori, Misc. Rep. Research Inst. Nat. Res. 48: 77. 1958; Moldenke, Am. Midl. Nat. 59: 335. 1958; Moldenke, Résumé 9, 168, 171--173, 175, 181, 182, 193, 213, 242--247, 427, & 444. 1959; Hara, Outline Phytogeog. Japan 7. 1959; Krüssmann, Handb. Laubgeh. 1: 253--255. 1959; Moldenke, Résumé Suppl. 1: 12 & 13. 1959; Rehd., Man. Cult. Trees, ed. 2, pr. 9, 803, 804, & 932. 1960; T. H. Everett, New Illustr. Encycl. Gard. 2: 296. 1960; Darlington & Wylie, Chromosome Atl., pr. 2, 323 & 503. 1961; Moldenke, Résumé Suppl. 3: 17--23 & 30 (1962), 4: 8 (1962), 5: 6 (1962), and 7: 7. 1963; Sharma & Mukhopadhyay, Journ. Genet. 58: 358, 375, & 376. 1963; Li, Morris Arb. Bull. 14: 4--6, fig. 1--6. 1963; Li, Woody Pl. Taiwan 818, 819, 822--823, & 944. 1963; Harkness, Phytologia 9: 434. 1964; Moldenke, Résumé Suppl. 8: 3 (1964), 10: 5 (1964), and 11: 5. 1964; Backer & Bakh.,

Fl. Java 2: 601. 1965; Santamour, Morris Arb. Bull. 16: 52. 1965; G. Grimm, N. Y. Herald Trib., sec. 2, 20, February 6. 1966; Moldenke, Résumé Suppl. 13: 5 (1966) and 14: 3, 4, 6, & 7. 1966; Moldenke, Phytologia 13: 472 (1966) and 14: 43, 53, 54, 57, 59, 101, 142, 156, 157, & 162--167. 1966.

Illustrations: Sieb., Jaarb. Konink. Nederl. Maatsch. Tuinb. [Ann. Hort. Pays-Bas] 1845: pl. 5 & 6 [in color]. 1845; Lindl. & Paxt. in Paxt., Flow. Gard. 2: 165, fig. 221. 1853; Hérincq, Hort. Franç., ser. 2, 3: pl. 4. 1861; M. T. Masters, Gard. Chron. 1871: 173, fig. 39. 1871; Shirasawa, Bull. Coll. Agric. Tokyo Imp. Univ. 2: pl. 14, fig. 10. 1895; Usef. Pl. Jap. 2: pl. 656 [in color]. 1895; C. K. Schneid., Dendrol. Winterst. 188. 1903; Shirasawa, Nippon Shinrin Jumoku Dzufu [Icon. Ess. Forest. Jap.] 2: pl. 70, fig. 1--10 [in color]. 1908; C. K. Schneid., Illustr. Handb. Laubholzk. 2: fig. 384c--e & 385h--l. 1911; Rehd. in L. H. Bailey, Stand. Cycl. Hort. 2: 628. 1914; G. V. Nash, Addisonia 3: pl. 103 [in color]. 1918; Nakai, Fl. Sylv. Kor. 14: pl. 6. 1923; Nakai, Trees & Shrubs Indig. Jap., ed. 2, 1: 452, fig. 214. 1927; Pammel & King, Proc. Iowa Acad. Sci. 35: 196, fig. 32. 1928; Schwencke, Zytol. Untersuch. Verbenac. fig. 12--14. 1931; Junell, Symb. Bot. Upsal. 4: 82, fig. 127. 1934; Patermann, Beitr. Zytol. Verbenac. pl. 5, fig. 8. 1935; Anon., N. Y. Times Spring Gard. Sect. 42, March 19. 1950; T. H. Everett, New Illustr. Encycl. Gard. 2: 296. 1960; Li, Morris Arb. Bull. 14: 4 & 6, fig. 1--6. 1963.

Recent collectors describe this as a shrub or low shrub, 0.6--3 m. tall, with a 1--1.7 m. spread and moderate relative growth rate, the stem 0.1--0.6 inches in diameter at breast height, the buds lavender, the flowers fragrant or odorless, and the fruit small, green when immature, then lilac, deep-lavender, or purple when ripe. The chromosome number is given as 2n = 16 or 18 [or even as "haploid chromosome number 18"]. The flowers are described as "lilac" on F. R. Fosberg 38215 & 38546, "deep-pink" on Dorsett & Morse 787, "pinkish-lavender" on F. R. Fosberg 38180, "reddish-purple" on Chung & Sun 204, "purplish" on Hurusawa 14-I, "light-purple" on Takenchi 14-C, "purple" on Chun & Sun 176 & 406, Hiroe 13906, Y. Kimura 14-B, Suzuki UC.699, E. H. Wilson 10411, and Yin 102, and "white" on Chiao 2617.

The plant has been found by recent collectors growing in shade or half-shade, in clay soil or in humus on mountainsides, in woods, on hilly ground and hillsides, coral rocks and rock cliffs, on seashores, at the edge of deciduous forests, and along roadsides in valleys, at altitudes from sealevel to 1500 meters, flowering from June to November, and fruiting from July to November. The Bakers make the interesting comment "anthers apparently splitting lengthwise in dehiscing, although a terminal pore may start it." Takenchi, Hottes, Van Melle, and others call the fruits "berries", but they are drupes; Yin calls the plant a "tree", while Chung & Sun refer to it as an "herb". Yin also refers to the flowers as being in a "spike". I feel that all these statements are errors in observation or terminology. E. H. Wilson reports the species as "common in thickets", while Fosberg found it to be "occasional" in

the undergrowth of scrub forests, in Pandanus scrub on limestone, in hedgerows between cultivated patches, and in rocky grassland with shrubs on the Ryukyu Islands.

It should be noted here that the C. japonica of "Hort. ex Pritzel", referred to in the synonymy above, is a synonym of C. rubella Lindl., while that on "Thunb. auct. ex Raf." is C. longifolia Lam. The C. purpurea of A. L. Jussieu is C. dichotoma (Lour.) K. Koch, that of "Hort. ex Moldenke" is C. longifolia Lam., while that ascribed to Van Houtte and to "Hort. ex Lem." is C. rubella Lindl.

The C. japonica angustifolia Kwa-wi, C. japonica f. angustata (Rehd.) Mizushima, C. japonica f. angustata (Rehd.) Ohwi, and C. japonica angustata Mattoon are all synonyms of C. japonica var. angustata Rehd., which see; C. japonica leucocarpa Aul, C. japonica f. leucocarpa (Sieb.) Rehd., C. japonica var. leucocarpa Nakai, C. japonica var. leucocarpa Sieb., and "C. japonica β C. leucocarpa Sieb." are all synonyms of C. japonica f. albibacca Hara; C. japonica var. angustifolia Savatier, C. japonica var. dichotoma Bakh., and C. japonica var. dichotoma (Lour.) Bakh. are C. dichotoma (Lour.) K. Koch; C. japonica f. latifolia Miq., C. japonica f. rugosior Miq., C. japonica subsp. luxurians (Rehd.) Masamune, and C. japonica var. kotoensis (Hayata) Masamune are all synonyms of C. japonica var. luxurians Rehd.; C. japonica var. luxurians f. leucocarpa Nakai is a synonym of C. japonica f. albifructa Hara; C. japonica f. rhombifolia Miq. is C. japonica var. rhombifolia H. J. Lam; C. japonica var. taquetii Nakai is a synonym of C. japonica var. taquetii (Léveillé) Nakai; and "C. japonica α C. erythrocarpa Sieb." is a synonym of C. japonica var. erythrocarpa Sieb. The hybrid between C. japonica Thunb. and C. mollis Sieb. & Zucc. (C. japonica x mollis Mak.) is known as xC. shirasawana Mak.

P'ei's C. japonica f. glabra was based by him on En 2505 from Diongloh and vicinity, on hilly ground, Fukien, China, collected in July, 1925, and on Tai 11793, collected in August, 1926, on rocky hillsides on Siongsai Island, 20 miles seaward from the mouth of the river Min, in the same province. He says of it "A typo differt, foliis ovato-lanceolatis, serrulatis, glabris....A nearly glabrous shrub, with a few stellate hairs when young. Leaves glabrous, glandular beneath, ovate-lanceolate, crenately toothed, shortly acuminate at both ends, about 11 x 3.2 cm., margins revolute, thickly chartaceous, lateral nerves about 8 on each side of the midrib. Petiole about 1.7 cm. long. Peduncle about 1.5 cm. in length; cymes lax. Calyx glabrous, with few glands, truncate. Anthers exserted. Corolla subglabrous, about 3 mm. long; corolla-tube twice as long as the calyx, filaments as long as the corolla-tube. Style subglabrous. Ovary subglabrous." Miquel (1870) based his f. parvifolia on one unnumbered specimen collected by Bürger and one collected by Siebold in Japan.

Hara (1948) and Merrill (1949) maintain that Amictonis japonica Raf. is a synonym of C. japonica Thunb., but I place it under C. longifolia Lam. Bakhuizen van den Brink (1921) includes C. brevipes (Benth.) Hance, C. dichotoma (Lour.) Raeusch., C. elegans Hayek, C. glabra H. J. Lam, C. gracilis Sieb. & Zucc,, C. jamamurasaki Sieb., C. longifolia var. brevipes Benth., C. oligantha Merr., C. purpurea A. L. Juss., C. serrulata Zipp., C. sieboldii Zipp., and Porphyra dichotoma Lour. in the overall synonymy of C. japonica, albeit not in the typical form of the species (which he calls C. japonica var. typica Bakh.), where he places only C. mimurazaki Hassk. and C. murasaki Sieb.

The Baileys (1935), Moldenke (1936), and Salisbury (1947) give C. arnoldiana Hort. as one of the synonyms of C. japonica, but it seems to me now that this is only another homonymous designation for the C. arnoldiana of Kelsey (1932), which, in turn, is a name that clearly applies to the C. bodinieri var. giraldii (Hesse) Rehd. introduced into our country through the Arnold Arboretum.

Numerous authors, including Nakai (1923), Moldenke (1936), and Hara (1948) reduce C. longifolia var. subglabrata Schau. (in part) to synonymy under C. japonica, but this trinomial was applied by Schauer to the typical form of C. longifolia Lam. and therefore belongs in the synonymy of that species regardless of what specimens he cited as representing it. Sprengel, on the other hand, in his 1825 work reduces C. japonica to synonymy under C. longifolia, but in his 1828 work he reinstates it as a valid species.

Lindley & Paxton (1853) make the following comments: "Siebold & Zuccarini have pointed out (Florae Japonicae familiae naturales, part 2, p. 30) the error committed by M. Schauer in referring this species to C. longifolia, a still less attractive plant, figured in the Botanical Register, t. 864, and now apparently lost in gardens. The form of the leaves is quite different, as are their serratures, which in fact are apt to disappear altogether in C. longifolia, whose cymes of flowers are smaller, with more conspicuous teeth to a firm and fleshy, not as in this case thin and membranous, calyx. C. longifolia is a southern plant, much more tender than this, which we believe occurs exclusively in Japan, whence we have wild specimens from Zuccarini, differing only in a looser and longer inflorescence and larger leaves."

Callicarpa japonica was actually first described by Thunberg in 1783 as "C. americana L.", a clear case of misidentification, later corrected by him. Nakai (1923) gives its general distribution as "Corea media et austr. Archipelago Koreano, Quelpaert et Dagelet... Yeso austr., Hondo, Shikoku ey Kiusiu." The specific name is often uppercased. Kawakami (1910) misspells the abbreviation for Thunberg's surname "Thumb." probably due to a typographic error.

Vernacular and common names recorded for C. japonica are "French mulberry", "guiou-saô-si", "jama-murasaki", "jama mura saki", "Japanese beautyberry", "japanische Schönbeere", "ko-mourassaki",