

ADDITIONAL MATERIALS TOWARD A MONOGRAPH OF THE GENUS
CALLICARPA. XI

Harold N. Moldenke

CALLICARPA L.

Additional & emended synonymy: Tomex L., Nov. Pl. Gen. Diss. Dassow 5. 1747; Sp. Pl., ed. 1, pr. 1, 1: 118. 1753; Gen. Pl., ed. 5, 54. 1753 [not Tomex Forsk., 1775, nor Thunb., 1783]. Illa Adans., Fam. Pl. 2: 446 & 565. 1763. Callicarpus Beckm., Lex. Bot. 44. 1801. Jonsonia Garden in L., Corresp. 1: 364. 1821. Spondylococcum Wittst. apud Pfeiffer, Nom. Bot. 2 (2): 1244. 1874. Calocarpus L. apud Post & Kuntze, Lexicon 91. 1904. Calocarpus P. & K. apud Airy Shaw in Willis, Dict. Flow. Pl., ed. 7, 179, in syn. 1966. ?Rodschiedia Dennst. apud Airy Shaw in Willis, Dict. Flow. Pl., ed. 7, 975, in syn. 1966 [not Rodschiedia Gaertn., Mey., & Scherb., 1800].

Additional & emended bibliography: Rheede, Hort. Ind. Malab. 5: 111, pl. 56. 1685; L., Gen. Pl., ed. 5, pr. 1, 50, 54, [504], & [509] (1754) and pr. 2, 50. 1760; Adans., Fam. Pl. 2: 226, 446, 530, & 565. 1763; Planer, Gatt. Pfl. 1: 87 (1775) and 2: 1054. 1775; Scop., Introd. Hist. Nat. 197 & 236. 1777; Reichard in L., Gen. Pl., ed. 8, 56. 1778; Jacq., Select. Stirp. Amer. Hist. Picta, ed. 2, 13, pl. 259, fig. 6. 1780; J. F. Gmel. in L., Syst. Nat., ed. 13, pr. 1, 2: 246. 1789; Schreb. in L., Gen. Pl., ed. 8 [9], 1: 73 (1789) and 2: 846. 1791; Haenke in L., Gen. Pl., ed. 8 [10], 1: 105 (1791) and 2: 792. 1791; W. Bartram, Travels, ed. 1, 436 (1791) and ed. 2, 434. 1794; J. F. Gmel. in L., Syst. Nat., ed. 13, pr. 2, 2: 246. 1796; Beckm., Lex. Bot. 44. 1801; Dennst., Schlüs. Hort. Malab. 31. 1818; L., Corresp. 1: 364. 1821; E. Twining, Ill. Nat. Ord. Pl. 2: 104, fig. 6. 1855; A. Gray, Man. Bot., ed. 2, pr. 1, 299 & 709 (1856), pr. 2, 299 & [611] (1858), and pr. 3, 299 & [709]. 1859; A. Wood, Class-book, [ed. 42], pr. 1, 537, 538, [825], & 831. 1861; A. Gray, Man. Bot., ed. 3, 299 & [611] (1862) and ed. 4, pr. 1, 299 & [707]. 1863; A. Wood, Class-book, [ed. 42], pr. 2, 537, 538, [825], & 831. 1863; A. Gray, Man. Bot., ed. 4, pr. 2, 299 & [611]. 1864; A. Wood, Class-book, [ed. 42], pr. 3, 537, 538, [825], & 831. 1865; Miq., Prol. Fl. Jap. 30—31. 1866; A. Wood, Class-book, [ed. 42], pr. 4, 537, 538, [825], & 831. 1867; A. Gray, Man. Bot., ed. 5, pr. 1, 339, 341, & 683 (1867) and ed. 5, pr. 2, 339, 341, & 685. 1868; A. Gray, Field For. & Gard. Bot., ed. 1, pr. 1, 241, 243, & 376. 1868; A. Wood, Class-book, [ed. 42], pr. 5, 537, 538, [825], & 831 (1868) and pr. 6, 537, 538, [825], & 831. 1869; A. Gray, Field For. & Gard. Bot., ed. 1, pr. 2, 241, 243, 342, & 376. 1869; A. Gray, Man. Bot., ed. 4, pr. 3, 299 & [611]. 1870; A. Wood, Class-book, [ed. 42], pr. 7, 537, 538, [825], & 831. 1870; A. Wood, Am. Bot. & Flor., ed. 1, pr. 1, 235—237, 376, & 388 (1870), pr. 2, 235—237, 376, & 428

(1871), and pr. 3, 235--237, 376, & 428. 1872; A. Wood, Class-book, [ed. 42], pr. 8, 537, 538, [825], & 831. 1872; A. Wood, Am. Bot. & Flor., ed. 1, pr. 4, 235--237, 376, & 428. 1873; Pfeiffer, Nom. Bot. 1 (1): 502, 535, & 536 (1873) and 1 (2): 818, 1232, 1244, 1425, 1442, 1742, & 1788. 1874; A. Wood, Am. Bot. & Flor., ed. 1, pr. 5, 235--237, 376, & 428 (1874) and pr. 6, 235--237, 376, & 428. 1875; A. Wood, Class-book, [ed. 42], pr. 9, 537, 538, [825], & 831. 1876; S. Kurz, Journ. Asiat. Soc. Beng. 45: 105--164. 1876; S. Kurz, Forest Fl. Brit. Burma 2: 273--275 & 589. 1877; A. Gray, Man. Bot., ed. 5, pr. 8, 339, 341, & 685. 1878; A. Gray, Field For. & Gard. Bot., ed. 1, pr. 3, 241, 243, & 376. 1880; A. Gray, Man. Bot., ed. 5, pr. 8 [9], 339, 341, & 685. 1880; Gamble, Man. Ind. Timb., ed. 1, 282--283 & 525. 1881; A. Wood, Class-book, [ed. 42], pr. 10, 537, 538, [825], & [836]. 1881; Vidal y Soler, Phan. Cuming. Philip. 133--134 & 187--188. 1885; Vesque, Ann. Sci. Nat. Paris, sér. 7, 1: 335, 336, & 340--343. 1885; Maxim., Bull. Acad. St. Pétersb. 31: 80. 1887; Maxim., Mém. Biol. 12: 513. 1887; O. R. Willis in A. Wood, New Am. Bot. & Flor., ed. 2, 235--237, 376, & 428. 1889; S. Wats. & Coult. in A. Gray, Man. Bot., ed. 6, pr. 1, 401, 403, & 751. 1889; Forbes & Hemsl., Journ. Linn. Soc. Lond. Bot. 26: [Ind. Fl. Sin. 2:] 252--257. 1890; Shirasawa, Bull. Coll. Agr. Tokyo Imp. Univ. 2: [Jap. Laubh. Winterzust.] 269, pl. 10, fig. 8--10, & pl. 14, fig. 8. 1895; L. H. Bailey in A. Gray, Field For. & Gard. Bot., ed. 2, 339, 342, & 509. 1895; B. F. Bush, Garden & Forest 10: 515. 1897; Koord., Meded. Lands Plant-tuin. Buitenz. 19: 558 & 561. 1898; J. Matsum., Bot. Mag. Tokyo 13: 114--115. 1899; Kuriowa, Bot. Mag. Tokyo 14: 126. 1900; Durand & Jacks., Ind. Kew. Suppl. 1, pr. 1, 473 & 480. 1901; Gamble, Man. Ind. Timb., ed. 2, 525. 1902; Prain, Bengal Fl., pr. 1, 823 & 827. 1903; D. H. Scott in Sole-reder, Syst. Anat. Dicot., transl. Boodle & Fritsch, 1: 630, 631, & 633. 1908; Nakai, Fl. Kor. 2: 134--135. 1909; J. Matsum., Ind. Pl. Jap. 2 (2): 528--530. 1912; Diels, Notes Roy. Bot. Gard. Edinb. 7: 332 & 344. 1913; Kawag., Bull. Kag. 1: 124 & 175. 1915; Simada, Trans. Nat. Hist. Soc. Formos. 31: 12. 1917; Gibbs, Contrib. Phytogeogr. & Fl. Arfak Mts. 218. 1917; E. H. Wils., Journ. Arnold Arb. 1: 186. 1920; Troup, Silvicult. Indian Trees 2: 697 & 778--779. 1921; Nakai, Trees & Shrubs Indig. Jap., ed. 1, 336--338. 1922; Sakaguchi, Gen. Ind. Fl. Okin. 18. 1924; S. Sasaki, List Pl. Formos. 349--350 & 424. 1928; Masam., Prel. Rep. Veg. Yak. 115. 1929; Mak. & Nemoto, Fl. Jap., ed. 2, 994 & 995. 1931; Silva Tarouca & Schneid., Unsere Freiland-Laubgehölz., ed. 3, 111. 1931; Roys, Ethno-bot. Maya [Tulane Univ. Mid. Am. Res. Ser. Publ. 2:] 306 & 319. 1931; Terasaki, Nippon Shokubutsu Zufu [Jap. Bot. Illustr. Album] 1592--1594. 1933; McLean, Torreya 33: 21. 1933; Masam., Fl. & Geo. Yakus. 387. 1934; H. F. MacMillan, Trop. Plant. & Gard., ed. 4, 104 & 511. 1935; Masam., Trans. Nat. Hist. Soc. Formos. 25: 251 & 254. 1935; Takenouchi, Journ. Nat. Hist. Fukuoka 2: 15. 1936; Kanehira, Formos. Trees, ed. 2, 642--648 & 716, fig. 599--604. 1936; Nemoto, Fl. Jap. Suppl. 622. 1936; H. P. Parks, Tex. Agr. Exp. Sta. Bull. 551: 110--111. 1937; Nakai in Shirasawa,

Icon. Essenc. Forest. Jap. 2: [Terasaki, Zoku Nipp. Syokubutzuhu] fig. 2481--2488. 1938; Mak., Ill. Fl. Nipp. fig. 560--562. 1940; Durand & Jacks., Ind. Kew. Suppl. 1, pr. 2, 480. 1941; T. H. Everett, Cat. Hardy Trees & Shrubs 16. 1942; H. F. MacMillan, Trop. Plant. & Gard., ed. 5, pr. 1, 104 & 511 (1943) and pr. 2, 104 & 511. 1946; R. R. Tatnall, Fl. Del. 218. 1946; H. F. MacMillan, Trop. Plant. & Gard., ed. 5, pr. 3, 104 & 511 (1948) and pr. 4, 104 & 511. 1949; Hottes, Book of Shrubs, ed. 5, 167--168. 1950; Metcalfe & Chalk, Anat. Dicot. 1031--1037, 1040, & 1041, fig. 247 G & 248 D & F. 1950; H.-T. Chang, Act. Phytotax. Sin. 1: [269]--312. 1951; Hottes, Book of Shrubs, [ed. 6, pr. 1], 167--168. 1952; Sonohara, Tawada, & Amano, ed. E. H. Walker, Fl. Okin. 131. 1952; H. F. MacMillan, Trop. Plant. & Gard., ed. 5, 104 & 511. 1952; B. C. Blackburn, Trees & Shrubs East. N. Am. 10, 21, 103, & 329. 1952; Naito, Sc. Rep. Kag. 2: 60. 1953; H. F. MacMillan, Trop. Plant. & Gard., ed. 5, pr. 6, 104 & 511. 1954; Masam., Sci. Rep. Kanazawa Univ. 4: 46--47. 1955; Oka, Hokuriku Journ. Bot. 4: 83. 1955; Core, Pl. Tax. 402. 1955; H. F. MacMillan, Trop. Plant. & Gard., ed. 5, pr. 7, 104 & 511. 1956; Anon., Commonw. Mycol. Inst. Ind. Fungi Petrak Cum. Ind. 2: 279. 1957; Samigulina, Tr. Gorn.-geol. Inst. Oralskij Fil. Akad. Wiss. Wyp. 28: 37--61. 1957; Petrides, Field Guide Trees & Shrubs 62. 1958; Hottes, Book of Shrubs, [ed. 6, pr. 2], 167--168 (1958) and [pr. 3], 167--168. 1959; Hocking, Excerpt. Bot. A.1: 429. 1959; Durand & Jacks., Ind. Kew. Suppl. 1, pr. 3, 480. 1959; Zaugg & Coaz, Dec. Trees & Shrubs [transl. Edlin] pl. 11. 1960; Jedemskaja, Excerpt. Bot. A.2: 90. 1960; L., Gen. Pl., ed. 5, pr. 2 [Cramer & Swann, Hist. Nat. Class. 3:], 50, [504], & [519]. 1960; J. F. Macbr., Field Mus. Publ. Bot. 13 (5): 611, 700--701, & 711. 1960; Puri, Indian Forest Ecol. 1: 37, 154, 165, 214, 223, 237, 260, & 290 (1960) and 2: 641. 1960; Martin & Bradley, Seed Ident. Man. 115 & 195, pl. 132, fig. 261 & 792. 1961; C.-W. Wang, Forests China 98 & 151. 1961; H. F. MacMillan, Trop. Plant. & Gard., ed. 5, pr. 8, 104 & 511. 1962; Hocking, Excerpt. Bot. A.4: 332 & 592 (1962) and A.6: 92, 455, 523, & 535. 1963; J. Bush-Brown, Shrubs & Trees Home Landsc. 72 & [205]. 1963; J. K. Maheshwari, Fl. Delhi 276 & 280--281. 1963; E. L. D. Seymour, Wise Gard. Encycl., ed. 6, 211. 1963; Deb, Bull. Bot. Surv. India 5: 53 & 54. 1963; Balakrishnan, Bull. Bot. Surv. India 6: 81, 82, 86, & 87. 1964; R. Good, Geogr. Flow. Pl. 442. 1964; Melchior in Engl., Syllab. Pflanzenfam., ed. 12, 2: 435. 1964; Santapau, Excerpt. Bot. A.7: 16 & 18. 1964; Radford, Ahles, & Bell, Guide Vasc. Fl. Carol. 281--283. 1964; Padmanabhan, Phytomorph. 14: 449. 1964; Quisumbing, Govt. Sarawak Sympos. Ecol. Res. Humid Trop. Veg. 34 & 35. 1965; Halls & Alcaniz, U. S. Forest Serv. Res. Note SO.28: 1--2. 1965; Bhatnagar, Trop. Ecol. 7: 12. 1966; J. Rzedowski, Act. Cientif. Potos. 6: 16, 17, & 43. 1966; Hara, Fl. East. Himal. 16 & 18. 1966; Yamazaki in Hara, Fl. East. Himal. 268. 1966; Subramanian, Indian Forest. 92: 47. 1966; Hirata, Host Range & Geogr. Distrib. Powd. Mild. 276. 1966; Griffith & Hyland, U. S. Dept. Agr. Pl. Inventory 164: 197 & 229. 1966; W. C. Grimm, Recog. Nat. Shrubs 254 & 255. 1966; Thornberry, U. S. Dept. Agr.

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It should be noted that Airy Shaw (1966) still regards Aganon Raf. as a synonym of Callicarpa -- actually it does not even belong in the Verbenaceae. Also, although he accredits the name Calocarpus to Post & Kuntze, these authors plainly credit it to Linnaeus. On page 975 of his work he suggests that the genus Rodschiedia Dennst. (1818) [not Rodschiedia Gaertn., Mey., & Scherb., 1800] may actually belong in the synonymy of Callicarpa. This genus and the only species proposed in it, R. serrata Dennst., published in the same place as the genus, were based on the Tsjerou Poëam of Rheede in his Hort. Ind. Malab. 5: 111, pl. 56 (1685) and which is described there as follows: "Tsjerou Poëam Malabarensibus, Patarola Brachmanis, Nilha Lusitanis, Quelbessen Belgis, Arbuscula humilis est, caudice tenui, albicante, cortice cincta nigricante, intus viridi, multisque geniculatis ramulis donato. Radix flavescens, rufo cortice tecta, odoris ac saporis sylvestris, & ingrati. Folia oblongo-rotunda, acuminata, in ambitu leviter crenata, lenia, supernè atro-viridia & splendentia, infernè subviridia ac lanuginosa; Nervis aliquot è media costa albicante, & in adversa parte ex tuberante in latera excurrentibus: odor & sapor sylvestris, ac ingratus. Flores inodori, viridi-albicanes, racematim ad foliorum alas in surculis proveniunt, calicique viridi tripartito inhaerent, tripetali; è tribus viz. oblongo-rotundis, acuminatis, expansisque foliolis constantes, medium occupante globulo viridi; è quo exsurgit atilus tenuis, oblongus, viridi-flavescentes, capitulo rotundo. Floribus pari modo succedunt Bacca oblongo-rotundae, tricoccae, virides, calycibus exceptae, tria intus continentes. Semina viridi-albicantia, amara, membranaceis pelliculis sejuncta, ita ut singula in singulis latitent loculamentis. Provenit variis Regni Malabarici locis, praesertim circa Repolyn, semper vivet, floret, fruguetque. Caeterum ex arboris floribus, fructibus, & cortice in oleo coctis linimentum paratur, quod capiti inunctum cephalalgiam sanare fertur. Folia recentia contusa, & parti erysipellate laboranti imposita id tollere dicunt." Jackson, in the Index Kewensis, suggests that this plant is a species of Croton in the Euphorbiaceae, and it is thus regarded by subsequent monographers of that family. The description and illustration certainly seem to exclude the Verbenaceae as even a possibility and point much more

strongly to the Euphorbiaceae. If Airy Shaw is correct in his disposition of the genus, then the original description and illustration must both be very faulty indeed! The Rodschiedia of Gaertner, Meyer, & Scherbius, by the way, is a synonym of Capsella Medic. in the Brassicaceae.

According to de Wit (1967) the members of this genus as a whole are reputed to possess aphrodisiac properties. Planer (1775) coins the German common name of "Burchardien" for members of the genus, while Rzedowski (1966) calls the Mexican members "elte" and "frute de chachalaca". A recent list of hosts for fungi records the fungi Aschersonia philippinensis, Atractilina callicarpae, Irenina callicarpae, and Kuehneola callicarpae as attacking members of the genus Callicarpa.

Chang (1951), in a very rare publication, proposes an entirely new division of the genus: Sect. 1. Eucallicarpa Chang -- "Cymae pedunculatae, pedunculis 0.6--8 cm longis; flores parvi, absque staminibus circ. 2--3 mm longi; filamenta corolla saltem duplo longiora, antheris ovalibus 0.5--0.8 mm longis, longitudinaliter dehiscentibus; fructus vix ultra 2 mm diametro". Subsect. 1. Tubulosae Briq, emend. Chang, stat. nov. -- "Calyx tubulatus vel cupulatus profunde dentatus, dentibus circ. 1--2 mm longis vel longioribus". Subsect. 2. Cyathimorphae (Briq.) Chang, stat. nov. -- "Calyx cupulato-truncatus vel brevissime denticulatus, dentibus triangularibus vix ultra 0.3 mm longis". Sect. 2. Verticirima Chang, sect. nov. -- "Folia breviter petiolata; cymae brevissime pedunculatae; flores majores circ. 3--6 mm longi, filamentis corollam subaequantibus, antheris oblongis 1.5--2 mm longis poro apicali dehiscentibus; fructus 2--4 mm diametro".

Vidal y Soler (1885) cite Cuming 526, 1095, 1460, & 1778 as unidentified species of this genus. The Koelz 24567, distributed as Callicarpa sp., is actually Caryopteris grata Benth., Sayers N.G.F. 21559 is Geunsia cumingiana (Schau.) Rolfe, while Degener & Degener 28976 is not verbenaceous.

CALLICARPA ACULEOLATA Schau.

Additional bibliography: Hocking, Excerpt. Bot. A.12: 424. 1967; Moldenke, Phytologia 16: 358. 1968; Moldenke, Biol. Abstr. 49: 1325, 2769, & 7688. 1968.

Liogier describes this plant as a shrub, 1 m. tall, with white flowers in June, common on dry hillsides among rocks on limestone hills, at 150 m. altitude.

Additional citations: HISPANIOLA: Dominican Republic: Liogier 11815 (N, N, N, N, N, Rf).

CALLICARPA ACUMINATA H.B.K.

Additional synonymy: Callicarpa acummunata H.B.K. ex Moldenke, Résumé Suppl. 16: 17, in syn. 1968.

Additional bibliography: Roys, Tulane Univ. Mid. Am. Res. Ser. Publ. 2: [Ethno-bot. Maya] 306 & 319. 1931; H.-T. Chang,

Act. Phytotax. Sin. 1: 272 & 308. 1951; Moldenke, Phytologia 16: 358 & 452. 1968; Hocking, Excerpt. Bot. A. 13: 569 & 571. 1968; Moldenke, Résumé Suppl. 16: 3 & 17 (1968) and 17: 2. 1968; Moldenke, Biol. Abstr. 49: 1325, 2769, & 5713. 1968.

Recent collectors describe this plant as a bush, shrub, or small tree, 4--30 feet tall, or even as a "vine", the stems 2--3 inches in diameter, the buds cream-colored or greenish-brown, the flowers small, white or whitish to creamy, and the fruit small, juicy, borne in clusters, at first green or yellow, then red or fuchsia, finally purplish-red or purple to black, flowering also in January and February and fruiting also in March, October, and December (in addition to the months previously reported), growing even at sealevel, inhabiting gravel bars, thickets, forests, rain forests, marshy rainforests, "often by native plantations", stabilized sand-dunes, salt-spray areas, old clearings, low forests, Quercus-Liquidambar woods, slopes with Heliocarpus, Croton, and Erythrina, cultivated land, low land near sealevel, and even the seacoast itself. It has been found in secondary forest vegetation, along rivers and along small rivers in barrios. Roys says that it is "abundant in forest and brush lands", while Molina reports it as "frequent in pinewoods and wet matorral" and "a common shrub 3 m. tall in wet thickets". Johnston reports it as an "abundant shrub in thickets" on San José island, while Duke describes it as a "common shrub even in roadways" on that island. The latter collector also comments that "this is fairly common in the lowlands [of Darién] but I have not seen it in the interior before".

The corollas are described as "white" by most collectors, as, for instance, on J. A. Duke 8515 & 12515, I. M. Johnston 6, Lewis, Escobar, MacBryde, Oliver, & Ridgway 2017, and H. von Wedel 2641 & 2980, as "whitish" on Bristan 1015 and H. von Wedel 1627, and as "greenish-yellow" on J. A. Duke 14612. Duke reports that this species is a very common shrub on Soskatupu island, where it produces fruits that are "at first whitish-lavender and erect, later black and pendulous like an elderberry" [Sambucus].

Additional vernacular names reported are "zacpucim", "zac-pucim", and "zac-puc-yim".

Material has been misidentified and distributed in herbaria as Solanum verbascifolium var. adulterinum (Ham.) Don. The R. Mc Vaugh 10489, cited below, may possibly better be regarded as C. pringlei Briq. The Burger & Liesner 6878, distributed as C. acuminata, actually is Aegiphila falcata Donn. Sm.

Additional citations: MEXICO: Chiapas: Breedlove 6488 (Ip); Ton 1396 (Mi, N). Quintana Roo: Roe, Roe, & Mori 1229 (Ac), 1339 (Ip), 1353 (Ip). San Luis Potosí: Kenoyer C.365 (Au--120853); R. Mc Vaugh 10489 (N); J. Rzedowski 10689a (Ip), 11067 (Ip). Tamaulipas: Barkley, Webster, & Paxson 864 (Au--169010); Martin & Harrell 6b (Ip); H. Puig 2875 (Ip); J. Rzedowski 10345 (Ip). Veracruz: Holguín s.n. [26/VI/1965] (Ip); Paxson, Webster, & Barkley 17M631 (Au--

169009). Yucatán: Arrington s.n. [27.IX.1964] (Au--243814); Steere 1004 (N). GUATEMALA: El Petén: Contreras 2705 (N), 5856 (W--2510401), 6128 (W--2558714). HONDURAS: Comayagua: A. Molina R. 8069 (N), 13016 (N), 13023 (N, W--2568205). Lempira: A. Molina R. 12959 (N, W--2567826). Olancha: A. Molina R. 13238 (N). Santa Bárbara: A. Molina R. 22052 (N). NICARAGUA: Bluefields: Proctor, Jones, & Facey 27272 (N). Zelaya: Bunting & Licht 1294 (N, W--2542895). COSTA RICA: Alajuela: A. Jiménez M. 755 (N), 3297 (N). PANAMA: Bocas del Toro: Lewis, Escobar, MacBryde, Oliver, & Ridgway 2017 (E--1887599, W--2545862); Wedel 167 (E--1218024), 218 (E--1217992), 1627 (E--1227544), 2641 (E--1240174), 2666 (E--1240124), 2980 (E--1244987). Coclé: J. A. Duke 13236 (E--1908619, E--1925851). Darién: Bristan 1015 (E--1908107, N); J. A. Duke 10152 (E--1887209), 14120 (E--1908122), 14240 (E--1925909), 14612 (E--1909161). Panamá: J. A. Duke 14512 (E--1908631). San Blas: Lewis, Dwyer, Elias, & Solís 115 (E--1881957, W--2589475). SAN BLAS ISLANDS: Colon: Wedel 71 (E--1218092). Columbus: Wedel 31 (E--1191581). Nakka: J. D. Dwyer 6877 (E--1824726, Ft--3197). Old Bank: Wedel 1895 (E--1232483). Soskatupu: J. A. Duke 8515 (E--1836331, Oh); T. S. Elias 1663 (E--1925954). PEARL ISLANDS: Saboga: Tyson 5580 (E--1980033). San José: J. A. Duke 12515 (E--1908633); I. M. Johnston 6 (E--1590823). COLOMBIA: Tolima: King, Guevara, & Forero G. 6018 (N). ECUADOR: Esmeraldas: Sparre 15330 (S). PERU: San Martín: Belshaw 3148 (N).

CALLICARPA ACUTIDENS Schau.

Additional bibliography: H.-T. Chang, Act. Phytotax. Sin. 1: 272. 1951; Moldenke, Phytologia 14: 219. 1967.

CALLICARPA ACUTIFOLIA Chang, Act. Phytotax. Sin. 1: 284--285. 1951.

Additional & emended bibliography: H.-T. Chang, Act. Phytotax. Sin. 1: 272, 279, 284--285, 310, & 311. 1951; Moldenke, Phytologia 13: 467. 1966.

Because of the rarity (in libraries) of the journal in which this taxon was described, the original description is repeated herewith: "Frutex. Ramuli hornotini angulares sparse stellato-puberuli, annotini teretes brunneoli glabrescentes. Folia oblonga vel lanceolata 11--16 cm longa, 2--4 cm lata, apice acuminata, basi acuta, margine in parte $\frac{3}{4}$ superiore minutissime crenato-denticulata, supra viridia glabra minutissime fulvo-glandulosa ad costam nervosque laterales utrinsecus 9--13 subtus elevatos prope marginem arcuato-anastomosantes simpliciter albido-puberula, subtus fulvo-viridia sparse stellato-puberula et luteo-glandulosa; petioli 1--1.5 cm longi, supra simpliciter pubescentes subtus glabri. Cymae supra-axillares 7--9 cm longae, 6--7 cm latae, septies dichotomae, pedunculis 3.5--5 cm longis minutissime

stellato-puberulis; bracteae lineari-lanceolatae parcissime puberuli circ. 5 mm longae; calyx 1 mm longus truncatus glaber, lobis inconspicuis; corolla glabra, tubo 2 mm longo, lobis 0.6 mm longis; stamina exserta, filamentis 4 mm longis, antheris 0.6 mm longis, longitudinaliter dehiscentibus; ovarium glabrum punctatum, stylo 5 mm longo. Fructus 1.5 mm diametro in sicco nigrescens farinoso-punctatus."

The species is based on C. Wang 37254 from Kwangtung, China, deposited in the herbarium of the Botanical Institute, Sunyatsen University, Canton, China. The author cites also H.-T. Chang 4727 and W. Y. Chun 7619 from the same province and claims that the species is related to C. longifolia Lam. and C. longissima Merr.

CALLICARPA AMERICANA L.

Additional synonymy: Callicarpa americana var. americana Bur-lage, Ind. Pl. Tex. 182. 1968.

Additional & emended bibliography: J. F. Gmel. in L., Syst. Nat., ed. 13, pr. 1, 2: 246. 1789; W. Bartram, Travels, ed. 1, 436 (1791) and ed. 2, 434. 1794; J. F. Gmel. in L., Syst. Nat., ed. 13, pr. 2, 2: 246. 1796; A. Gray, Man. Bot., ed. 2, pr. 1, 299 (1856), pr. 2, 299 (1858), and pr. 3, 299. 1859; A. Wood, Class-book, [ed. 42], pr. 1, 538. 1861; A. Gray, Man. Bot., ed. 3, 299 (1862) and ed. 4, pr. 1, 299. 1863; A. Wood, Class-book, [ed. 42], pr. 2, 538. 1863; A. Gray, Man. Bot., ed. 4, pr. 2, 299. 1864; A. Wood, Class-book, [ed. 42], pr. 3, 538 (1865) and pr. 4, 538. 1867; A. Gray, Man. Bot., ed. 5, pr. 1, 341 (1867) and pr. 2, 341. 1868; A. Wood, Class-book, [ed. 42], pr. 5, 538. 1868; A. Gray, Field For. & Gard. Bot., ed. 1, pr. 1, 243 (1868) and pr. 2, 243. 1869; A. Wood, Class-book, [ed. 42], pr. 6, 538 (1869) and pr. 7, 538. 1870; A. Gray, Man. Bot., ed. 4, pr. 3, 299. 1870; A. Wood, Am. Bot. & Flor., ed. 1, pr. 1, 237 (1870), pr. 2, 237 (1871), and pr. 3, 237. 1872; A. Wood, Class-book, [ed. 42], pr. 8, 539. 1872; A. Wood, Am. Bot. & Flor., ed. 1, pr. 4, 237 (1873), pr. 5, 237 (1874), and pr. 6, 237. 1875; A. Wood, Class-book, [ed. 42], pr. 9, 539. 1876; A. Gray, Man. Bot., ed. 5, pr. 8, 341 (1878) and pr. 9 ["8"], 341. 1880; A. Gray, Field For. & Gard. Bot., ed. 1, pr. 3, 243. 1880; A. Wood, Class-book, [ed. 42], pr. 10, 539. 1881; Vesque, Ann. Sci. Nat. Paris, sér. 7, 1: 336, 340, 341, & 343. 1885; O. R. Willis in A. Wood, Am. Bot. & Flor., ed. 2, 237. 1889; S. Wats. & Coult. in A. Gray, Man. Bot., ed. 6, pr. 1, 403 (1889) and pr. 2, 403. 1890; L. H. Bailey in A. Gray, Field For. & Gard. Bot., ed. 2, 342. 1895; B. F. Bush, Garden & Forest 10: 515. 1897; Robinson & Fern. in A. Gray, Man. Bot., ed. 7, 690 & 891, fig. 883. 1908; D. H. Scott in Solereder, Syst. Anat. Dicot., transl. Boodle & Fritsch, 1: 631 & 633. 1908; Hottes, Book of Shrubs, ed. 1, 147 & 148. 1928; Parks, Tex. Agr. Exp. Sta. Bull. 551: 110--111. 1937; Hottes, Book of Shrubs, ed. 5, 168. 1950; H.-T. Chang, Act. Phytotax. Sin. 1: 270 & 272. 1951; Hottes, Book of Shrubs, [ed. 6, pr. 1], 168. 1952; Core, Pl. Tax. 402. 1955; Petrides, Field Guide Trees & Shrubs 62. 1958; Hottes, Book of Shrubs, [ed. 6, pr. 2], 168 (1958) and [pr. 3], 168. 1959; Martin & Brad-

ley, Seed Ident. Man. 115 & 195, pl. 132, fig. 261 & 792. 1961; W. H. Lewis, Southw. Nat. 6: 47—48. 1961; Hocking, Excerpt. Bot. A.4: 332 (1962) and A.6: 92. 1963; E. L. D. Seymour, Wise Gard. Encycl., ed. 6, 211. 1963; Radford, Ahles, & Bell, Guide Vasc. Fl. Carol. 282 & 283. 1964; Halls & Alcaniz, U. S. Forest Serv. Res. Note SO.28: 1—2. 1965; S. A. Manning, Syst. Guide Flow. Pl. 18 & 142. 1965; Thornberry, Agric. Handb. 165: 478. 1966; Justice & Bell, Wild Fls. N. C. 161 & 208. 1966; W. C. Grimm, Recog. Nat. Shrubs 254 & 255. 1966; Halls & Alcaniz, Bioreserch Index 1967: 246. 1967; Ornduff, Reg. Veg. 50: 86 & 124. 1967; E. Lawrence, South. Gard., ed. 2, 186. 1967; Bostick, Castanea 32: 150. 1967; Johnson & Little, U. S. Forest Serv. Res. Paper SO.26: 13. 1967; de Wit, Pl. World High. Pl. 2: 185. 1967; Hocking, Excerpt. Bot. A.11: 205 & 505. 1967; Burlage, Ind. Pl. Tex. 182, 193, 209, 210, 219, 224, & 231. 1968; Carter & Jones, Castanea 33: 203. 1968; Uphof, Dict. Econ. Pl., ed. 2, 96 & 352. 1968; Moldenke, Biol. Abstr. 49: 2769 & 7688. 1968; Moldenke, Résumé Suppl. 16: 2 & 17 (1968) and 17: [1]. 1968; Moldenke, Phytologia 16: 358—359, 366, 367, 384, 385, 388, 447, & 454. 1968; A. L. Moldenke, Phytologia 18: 114. 1969; J. V. Watkins, Fla. Landsc. Pl. [advertisement]. 1970; Amerson, Outdoor World 3 (5): 24. 1970.

Additional & emended illustrations: Martin & Bradley, Seed Ident. Man. 195, pl. 132, fig. 261 & 792. 1961; W. C. Grimm, Recog. Nat. Shrubs 254. 1966; Justice & Bell, Wild Fls. N. C. 161 [in color]. 1966; Amerson, Outdoor World 3 (5): 24 [in color]. 1970; J. V. Watkins, Fla. Landsc. Pl. [advertisement] [in color]. 1970.

G. T. Robbins describes this plant as having "stems 3—4 feet long, trailing over other vegetation in shady woods". The corollas are described as "pink" on Gillis 7114, "light-pink" on G. T. Robbins 2660, "pale lavender-pinkish" on Cronquist 5323, and "white" on C. H. Muller 8028. Cronquist describes the fruit (called "berries" by him, but they are drupes) as "brilliant wine-purple". Collectors have found the plant growing on sand dunes, in open pinewoods, at the edges of granite outcrops and at the edges of woods bordering granite outcrops. Tatnall refers to it as "frequent in pinewoods in the southern half of Northampton County, Virginia", while Voss found it "in [the] Austro-riparian Biotic Province, in sandy loam soil in pine-oak forest association, frequent to common in [this] area [San Jacinto County, Texas] and also to [the] east". Manning (1925) tells us that it grows in moist woods or thickets, is pollinated by insects, especially bees, and is cultivated in Europe. Lawrence (1967) points out again that the fruits of this species are more attractive than those of the commonly cultivated C. dichotoma (Lour.) K. Koch and C. japonica Thunb. It will grow well in gardens in wet or dry places, in open sunlight or in partial shade, and in any soil in our southern states. Radford, Ahles, & Bell (1964) record it from sandy or rocky woodlands, usually moist, throughout South Carolina and the central parts of North Carolina, infrequent in the piedmont of North Carolina, and rare in the mountains, flowering there

in June and July, fruiting from August to October.

Burlage says that "The berries [drupes!] are acidulous and astringent yet edible. The juice is slightly aromatic and has been used in dropsical conditions. It is also used as a fish poison." Uphof adds that the leaves are employed in the treatment of edema. Sturtevant records that the Seminole Amerinds use the root as a medicine and call the plant "*kalá:ci:lá:pi*". Bostick records it from Saint Clair County, Alabama. L. H. Lewis says that the chromosome number is $n = 18$, $2n = 36$ and that the plant is apparently a tetraploid with the basic number of 9.

Thornberry (1966) lists the following fungi as attacking this plant: *Atractilina callicarpae* Dearn. & Barth. [leaves, Florida], *Botryosphaeria callicarpae* Cke. (?*B. ribis* Gross. & Dug.) [stems, Georgia & South Carolina], *Cercospora callicarpae* Cke. [leaves, South Carolina to Texas], *Coniothyrium callicarpae* Cke. [stems, South Carolina], *Meliola cookeana* Speg. [a black mildew, Florida, Louisiana, & Texas], *Nectria cinnabarina* Tode [stems, Alabama], and *Physalospora obtusa* (Schw.) Cke. [stems, South Carolina].

Additional citations: VIRGINIA: Princess Anne Co.: Sudworth s.n. [26 July 1890] (Mi). NORTH CAROLINA: Brunswick Co.: Flanders 1 (N). Carteret Co.: D. H. Nicholson 1769 (W--2440937). Harnett Co.: Radford & Stewart 630 (N). SOUTH CAROLINA: Aiken Co.: Radford 543 (N). Colleton Co.: Ahles & Bell 17859 (Se--199298). Fairfield Co.: C. R. Bell 9419 (N). GEORGIA: DeKalb Co.: Nunan s.n. [South. App. Bot. Club 19: 1830] (W--2433752). Rockdale Co.: Cronquist 4850 (Mi), 5323 (Mi). Thomas Co.: G. H. Morton 2673 (N). Wayne Co.: W. H. Duncan 7655 (N). FLORIDA: Broward Co.: Sturtevant 96 (W--2524664). Dade Co.: Gillis 7114 (Ft--2667); Stimson & Shafer 577 (W--2526663). Franklin Co.: Collector undetermined 55811 (Se--223416). Holmes Co.: G. H. Morton 2804 (N). Levy Co.: Janish & Janish 339 (Se--187170). Seminole Co.: P. O. Schallert 64 (Se--197241). ALABAMA: Jefferson Co.: E. L. Reed 1538 (Lk). MISSISSIPPI: Hancock Co.: Jones & Jones 12668 (N). TENNESSEE: County undetermined: A. Ruth s.n. [Kum, Sept. 1893] (Se--95714). MISSOURI: Taney Co.: J. A. Steyermark 69453 (N). OKLAHOMA: McCurtain Co.: Nelson, Nelson, & Goodman 5419 (Se--119728); G. T. Robbins 2648 (Se--153534), 2660 (N). TEXAS: Brazos Co.: H. B. Parks s.n. [Sept. 7, 1946] (Se--122696). DeWitt Co.: C. H. Muller 8028 (Mi). Jasper Co.: Cory 49833 (Mi). San Jacinto Co.: W. J. Voss 95 (Lk). CUBA: Pinar del Río: León 5106 (W--2289130). CULTIVATED: California: Jerabek s.n. [April 1945] (Sd--36093).

CALLICARPA AMERICANA var. *LACTEA* F. J. Muller

Additional & emended bibliography: Hocking, Excerpt. Bot. A. 11: 505. 1967; Moldenke, Phytologia 16: 359. 1968; Burlage, Ind. Pl. Tex. 182. 1968.

Rhieret describes this as a rare plant, with "ivory-white" fruits in October, growing in woods with the typical form.

Additional citations: LOUISIANA: Jefferson Island: Rhieret 16579 (W--2433196).

CALLICARPA AMPLA Schau.

Additional bibliography: H.-T. Chang, Act. Phytotax. Sin. 1: 272. 1951; Moldenke, Phytologia 13: 497--498. 1966.

CALLICARPA ANGUSTA Schau.

Additional bibliography: Vidal y Soler, Phan. Cuming. Philip. 134. 1885; Moldenke, Phytologia 16: 359. 1968.

Additional citations: WESTERN PACIFIC ISLANDS: PHILIPPINE ISLANDS: Culi6n: H. H. Bartlett 15516 (Mi).

CALLICARPA ANGUSTIFOLIA King & Gamble

Additional bibliography: Moldenke, Phytologia 14: 220. 1967.

Additional citations: MALAYA: Perak: Scortechini 1596 (Se--198153--cotype).

CALLICARPA ARBOREA Roxb.

Additional synonymy: Callicarpa tomentosa Lam & Bakh. apud H.-T. Chang, Act. Phytotax. Sin. 1: 281, in syn. 1951. Calycarpha arborea Roxb., in herb.

Additional & emended bibliography: S. Kurz, Forest Fl. Brit. Burma 2: 274 & 589. 1877; Gamble, Man. Ind. Timb., ed. 1, 282. 1881; Diels in Engl., Bot. Jahrb. 29: 547. 1900; Gamble, Man. Ind. Timb., ed. 2, 525. 1902; Prain, Bengal Pl., pr. 1, 827. 1903; Troup, Silvicult. Indian Trees 2: 778--779. 1921; P'ei, Mem. Sci. Soc. China 1 (3): [Verbenac. China] 14 & 21--22. 1932; P. Dop in Lecomte, Fl. G6n. Indo-Chine 4: 792. 1935; Metcalfe & Chalk, Anat. Dicot. 1036, fig. 248 D. 1950; H.-T. Chang, Act. Phytotax. Sin. 1: 270, 278, 281, & 311. 1951; Puri, Indian Forest Ecol. 1: 37, 165, 214, 223, 237, 260, & 290. 1960; Rolla, Bull. Bot. Surv. India 5: 188. 1963; Bhatnagar, Trop. Ecol. 7: 12. 1966; Panigrahi, Bull. Bot. Surv. India 8: 3 & 11. 1966; Subramanyam & Henry, Bull. Bot. Surv. India 8: 208 & 212. 1966; Hara, Fl. East. Himal. 16, 18, & 268. 1966; Hocking, Excerpt. Bot. A.11: 505 (1967) and A.12: 423. 1967; D. K. Das, Pakist. Journ. Forest. 18: 308 & 311. 1968; Moldenke, R6sum6 Suppl. 16: 9. 1968; Moldenke, Phytologia 16: 359--360, 364, 381, & 383. 1968; Moldenke, Biol. Abstr. 49: 2769 & 4199. 1968; Uphof, Dict. Econ. Pl., ed. 2, 96. 1968; K. C. Sahni, Indian Forest. 95: 333 & 346. 1969; Sawyer & Chermisrivathana, Nat. Hist. Bull. Siam Soc. 23: 126. 1969; M. A. Rau, Bot. Surv. India 10, Suppl. 2: 61. 1969.

King tells us that this species is a tree about 6 m. tall, with lavender flowers, growing in redbrown gravelly sandy-clay soil, in open sunlight in semidense dipterocarp forests with some trees to 20 m. tall, in Thailand; King 5458 is represented by a wood voucher. Sawyer & Chermisrivathana (1969) report it as "infrequent in phytocenose". Sahni (1969) calls it a "small tree, bark light or

sand-colored, very common from 608 to 612 m. altitude, growing gregariously", and cites Sahni 5065. Das (1968) reports the vernacular name "dhalahuza" and found the species growing along streams in association with Dendrocalamus hamiltonii, Imperata cylindrica, and Macaranga denticulata. Bhatnagar (1966) refers to it as a pioneer tree in open areas in Assam, growing along with Eupatorium odoratum, Macaranga denticulata, Mallotus albus, etc. Kingdon-Ward calls the species a small tree with violet flowers, growing "in forests and in second growth where it is common, and in thickets generally", at altitudes of 4000 to 6000 feet, in Manipur. Beusekom & Phengkhilai call it a "treelet a few m. tall, scattered, leaves pale-green beneath, flowers violet-pink, slightly scented, stigma white, anthers purplish", growing in poor sandy soil in open shrubby forests at 1000 m. altitude in Thailand. Troup (1921) describes the species as "A small or moderate sized tree with the branchlets, under sides of leaves, and inflorescences densely tomentose with soft stellate hairs. Wood moderately hard, even-grained, resembling that of Gmelina

(Gamble). The tree is a familiar one in the eastern sub-Himalayan tract, where it springs up readily on burnt savannah lands when they first come under fire-protection; being a strong light-demander it soon becomes ousted by other trees. In Burma it comes up frequently in deserted taungya lands. The corymbose cymes of small lilac or purple flowers appear from April to June, and the fruit, a small drupe, ripens from August to November or sometimes later. Growth, according to Gamble, 5 rings per inch of radius, giving a mean annual girth increment of 1.26 in."

Hara (1966) gives the distribution of C. arborea as "Himalaya (Kumaon to Assam), Burma, Malaya, Indo-China, and S. China". Recent collectors give its height as 6 to 13 meters, record the vernacular name "bormalla", and have found it growing at altitudes of 608--2000 m. Puri (1960) claims that it reached Chota Nagpur through the Bengal plains, that an associate species in grassy areas is Pinus insularis, that it is fire-resistant, that it grows simultaneously with Acanthocephalus indicus in the Khair-sissu forests and along all the large rivers of northern India on new sandy or gravelly alluvium, but is short-lived, later being replaced by mixed forests, that it is very common on the Barren Islands in edaphic forests, that it grows in the second story of edaphic moist east Himalayan deciduous forests in Bengal and Assam, under Bombax malabaricum, Gmelina arborea, etc., in the North Indian Lower Alluvial Savannahs, and that in temperate grasslands vegetation it and Careya arborea form a loose association with the grass Sehima wallichii on the Shillong plateau otherwise almost devoid of trees. Uphof (1968) informs us that "In Hindu medicine a decoction of the bark is applied to cutaneous ailments; it is bitter, aromatic, tonic, and carminative".

Rolla (1963) reports the species as common in Sikkim; Panigrahi (1966) tells us that it is scarce in the forests of Bihar; while Subramanyam & Henry (1966) found it in the evergreen forests

on the higher slopes in Madhya Pradesh, India. Panigrahi cites Panigrahi 11898 from Bihar, while Subramanyam & Henry cite 12138 from Madhya Pradesh. Balakrishnan (1964) describes the drupes as "purplish-black". Panigrahi and his associates (1964) speak of a Xylia xylocarpa - Callicarpa arborea - Polyalthia cerasoides association in the semi-evergreen forests of Orissa, where, they aver, Callicarpa arborea is abundant.

Chang (1951) cites A. Henry 12093 as C. arborea and also nos. 5231, 55169, 60404, 60846, 61029, 61166, & 65995 of collectors or herbaria named by him, unfortunately, only in Chinese characters. The Callicarpa vastifolia Diels, cited by him as a synonym of C. arborea, is actually in the synonymy of Viburnum rhytidophyllum Hemsl. in the Caprifoliaceae. The Degener & Degener 28448, distributed as C. arborea and so previously cited by me, is actually C. macrophylla Vahl.

Additional citations: INDIA: Manipur: Kingdon-Ward 17465 (N). THAILAND: Beusekom & Phengkhilai 1252 (Ac); R. M. King 5458 (W--2435994).

CALLICARPA ARBOREA var. PSILOCALYX (H. J. Lam) Moldenke

Additional bibliography: Vidal & Soler, Phan. Cuming. Philip. 134. 1885; Moldenke, Phytologia 15: 16. 1967.

CALLICARPA AUSTRALIS Koidz.

Additional bibliography: Masam., Sci. Rep. Kanazawa Univ. 4: 46. 1955; Moldenke, Phytologia 16: 360 & 373. 1968.

Masamune (1955) joins Nakai, Hara, and Ohwi (as previously noted in this series of papers) in reducing this taxon to synonymy under C. japonica var. luxurians Rehd.

CALLICARPA BARBATA Ridl.

Additional bibliography: Moldenke, Phytologia 16: 360. 1968; B. L. Burtt, Notes Roy. Bot. Gard. Edinb. 29: 141--155. 1969; Brentzel, Biol. Abstr. 51: 1571. 1970.

Van Steenis (1967) states that this species is related to C. fulvohirsuta Merr., C. havilandii (King & Gamble) H. J. Lam, C. involucrata Merr., C. saccata Steen., and C. superposita Merr.

CALLICARPA BICOLOR A. L. Juss.

Additional bibliography: Hocking, Excerpt. Bot. A. 12: 425. 1967; Moldenke, Phytologia 16: 360--361. 1968; Moldenke, Biol. Abstr. 49: 2290. 1968.

Material of this species has been misidentified and distributed in herbaria as C. candicans (Burm. f.) Hochr. The Elmer 18086, previously reported by me in this series of notes as C. erioclona Schau., is, in part at least, C. bicolor. Kjellberg reports the fruit of C. bicolor as violet-black in color when fresh. The species has been collected in anthesis in September.

Additional citations: WESTERN PACIFIC ISLANDS: PHILIPPINE IS-

LANDS: Luzon: H. H. Bartlett 14711 (Mi); Elmer 18086, in part (Ca—270774). INDONESIA: GREATER SUNDA ISLANDS: Buton: Kjellberg 96 (S, S).

CALLICARPA BICOLOR var. *BERMEJOSI* Moldenke

Additional bibliography: Hocking, Excerpt. Bot. A.12: 425. 1967; Moldenke, Phytologia 16: 361. 1968; Moldenke, Biol. Abstr. 49: 2290. 1968.

CALLICARPA BICOLOR var. *SUBINTEGRIFOLIA* Moldenke

Additional bibliography: Hocking, Excerpt. Bot. A.12: 425. 1967; Moldenke, Phytologia 16: 361. 1968; Moldenke, Biol. Abstr. 49: 2290. 1968.

CALLICARPA BODINIERI Lévêillé

Additional synonymy: *Callicarpa sequent* Lévl. apud H.-T. Chang, Act. Phytotax. Sin. 1: 288, sphalm. 1951. *Callicarpa bodnieri* (Hesse) Rehd. ex Glasau, Sommergr. Ziergeh. 64, sphalm. 1967.

Additional bibliography: Lévl., Fl. Kouy-Tchéou 439--440. 1915; Dop, Trav. Lab. For. Toulouse 1 (21): 12. 1932; Worsdell, Ind. Lond. Suppl. 1: 160. 1941; T. H. Everett, Cat. Hardy Trees & Shrubs 16. 1942; H.-T. Chang, Act. Phytotax. Sin. 1: 270, 271, 279, 288, 292, 305, 310, & 311. 1951; Zaugg & Coaz, Dec. Trees & Shrubs [transl. Edlin] pl. 11. 1960; Hocking, Excerpt. Bot. A.12: 423. 1967; Glasau, Sommergr. Ziergeh. 64. 1967; de Wit, Pl. World High. Pl. 2: 185 & 186, fig. 161. 1967; Moldenke, Phytologia 16: 361--362 & 367. 1968; Moldenke, Résumé Suppl. 16: 17 (1968) and 17: 7. 1968; Uphof, Dict. Econ. Pl., ed. 2, 96. 1968.

Additional illustrations: de Wit, Pl. World High. Pl. 2: 186, fig. 161. 1967.

Recent collectors describe this plant as a medium-sized shrub, 2--7 feet tall, with fragrant flowers and glossy-purple fruit. It has been collected in flower in January and in fruit in March (in addition to the months previously reported). The corollas are described as "pink" on Tsang 27835 and as "mauve" on Sykes 7/65. Tsang reports the plant as "fairly common" in clay soil in thickets and in meadows. Uphof (1968) informs us that it is used in Chinese medicine as an emenagogue and in the treatment of blenorhoea.

Material has been misidentified and distributed in herbaria as *C. bodinieri* var. *giraldii* (Hesse) Rehd. and as *C. japonica* var. *rhombifolia* H. J. Lam. Sykes 7/65 bears a notation "cultivated as var. *giraldii* but seemingly too hairy for it", presumably by the collector.

Chang (1951) regards *C. tonkinensis* Dop as conspecific with and a synonym of *C. bodinieri*. He cites A. Henry 3107 and E. H. Wilson 1528, as well as nos. 22, 159, 847, 1112, 1301, 1338, 1350, 2258, 4471, 4570, 5596, 10081, 10342, 13530, 22634, 27740, 27835,

27963, 45459, 50269, 50734, 51236, 52017, 81789, 83645, & 130327 of collectors or herbaria whose names, unfortunately, are given only in Chinese characters.

Additional citations: CHINA: Kwangsi: W. T. Tsang 27835 (Ca--1286196), 27963 (Ca--1286201). Yunnan: J. F. Rock 9195 (Ca--327974). CULTIVATED: New Zealand: W. R. Sykes 7/65 [Herb. Bot. Div. D.S.I.R. 156005] (Rf, Z), 636/65 (Nz--157632a).

CALLICARPA BODINIERI var. GIRALDII (Hesse) Rehd.

Additional synonymy: Callicarpa bodinieri var. giraldii Rehd. ex H.-T. Chang, Act. Phytotax. Sin. 1: 271. 1951. Callicarpa bodinieri giraldii Blackburn, Trees & Shrubs East. N. Am. 103. 1952. Callicarpa geraldii Hesse ex Hirata, Host Range & Geogr. Distrib. Powd. Mild. 276. 1966. Callicarpa bodnieri var. giraldii (Hesse) Rehd. ex Glasau, Sommergr. Ziergeh. 64, sphalm. 1967.

Additional bibliography: Worsdell, Ind. Lond. Suppl. 1: 160. 1941; Hottes, Book of Shrubs, ed. 5, 168. 1950; H.-T. Chang, Act. Phytotax. Sin. 1: 271, 280, 289--290, 292, 305, 310, & 311. 1951; Hottes, Book of Shrubs, [ed. 6, pr. 1], 168 (1952), [pr. 2], 168 (1958), and [pr. 3], 168. 1959; Zaugg & Coaz, Dec. Trees & Shrubs [transl. Edlin] pl. 11. 1960; E. L. D. Seymour, Wise Gard. Encycl., ed. 6, 211. 1963; Hirata, Host Range & Geogr. Distrib. Powd. Mild. 276. 1966; Glasau, Sommergr. Ziergeh. 64. 1967; Moldenke, Phytologia 16: 361--362, 367, 371, & 377. 1968; Moldenke, Résumé Suppl. 16: 17. 1968.

Additional illustrations: Zaugg & Coaz, Dec. Trees & Shrubs [transl. Edlin] pl. 11 [in color]. 1960.

Zaugg & Coaz (1960) tell us that this plant is only hardy in sheltered districts, requires a warm sheltered spot and deep rich well-worked soil, and produces mauve waxy fruits all winter.

Chang (1951) cites Lévl., Cat. Pl. Yunn. (1917) and "p. 297". He cites M. Chan 1060, G. Forrest 7556, Handel-Mazzetti 6317, 8691, & 9045, L. Y. Lin 4129, C. Y. Luh 1093, E. E. Maire 133, T. P. Wang 900 & 2154, and E. H. Wilson s.n., as well as nos. 23, 116, 223, 598, 682, 914, 923, 1652, 1887, 1963, 2761, 2990, 3204, 4082, 4648, 5265, 5453, 5719, 6394, 7653, 7918, 8402, 10115, 12095, 12180, 12836, 13273, 15711, 18036, 20717, 40920, 43372, 52221, 58931, & 59184 of collector or herbaria whose names are given only in Chinese characters.

The E. D. Merrill 11112, distributed as this variety, is actually C. japonica var. angustata Rehd.

Additional citations: CHINA: Kiangsu: Herb. Univ. Nanking 1095 (Ca--230385).

CALLICARPA BODINIERI var. LYI (Lévl.) Rehd.

Additional bibliography: Hand.-Mazz., Anzeig. Akad. Wiss. Math.-nat. Wien 58: 230. 1921; H.-T. Chang, Act. Phytotax. Sin. 1: 279, 289, & 311. 1951; Moldenke, Phytologia 15: 18--19. 1967.

Chang (1951) agrees with Rehder in placing C. grisea Hand.-Mazz.

in the synonymy of this variety. He cites Courtois 23509 as well as nos. 179, 1012, 1235, 1531, 3385, 3388, & 3415 of collectors and/or herbaria whose names are given only in Chinese characters.

CALLICARPA BODINIERI var. *ROSTHORNII* (Diels) Rehd.

Additional bibliography: H.-T. Chang, Act. Phytotax. Sin. 1: 279, 289, & 311. 1951; Moldenke, Phytologia 15: 19 & 39. 1967.

Chang (1951) cites only a no. 10129 of a collector or herbarium whose name he gives only in Chinese characters.

CALLICARPA BRACTEATA Dop

Additional bibliography: Hocking, Excerpt. Bot. A.12: 423. 1967; Moldenke, Phytologia 14: 221. 1967; Moldenke, Biol. Abstr. 49: 4199. 1968.

CALLICARPA BREVIPES (Benth.) Hance

Additional bibliography: H.-T. Chang, Act. Phytotax. Sin. 1: 271, 272, 299, 300, 302, 303, 306, 307, 311, & 312. 1951; Tingle, Check List Hong Kong Pl. 37. 1967; Moldenke, Phytologia 16: 362, 371, & 453. 1968.

Chang (1951) cites the Forbes & Hemsley (1890) reference as page "252" and the Hance (1873) reference as volume "8". He also cites the following numbered specimens: 151, 199, 6803, 8626, 9901, 20166, 21643, 21713, 22495, 22579, 25123, 27262, 28853, 31032, 33985, 36848, 38085, 41191, 62467, 64235, 72825, 74230, & 81075, but the collector and/or herbarium names are given only in Chinese characters, as are also the localities of collection. He reduces C. brevipes f. serrulata P'ei to synonymy here.

CALLICARPA BREVIPES var. *DENTOSA* Chang, Act. Phytotax. Sin. 1: 300--301. 1951.

Synonymy: Callicarpa dentosa Chun ex H.-T. Chang, Act. Phytotax. Sin. 1: 300 & 301, in syn. 1951. Callicarpa dentonsa Chang ex Moldenke, Résumé Suppl. 18: 8, in syn. 1969. Callicarpa brevipes var. dentonsa Chang ex Moldenke, Résumé Suppl. 18: 7, sphalm. 1969.

Bibliography: H.-T. Chang, Act. Phytotax. Sin. 1: 299--301 & 312. 1951; Moldenke, Résumé Suppl. 18: 7 & 8. 1969.

Because the original is found in so few libraries, it is worth repeating Chang's original description here: "Frutex 1--2 m altus. Ramuli sparse stellato-pubescentes. Folia oblongo-elliptica 16 x 6 cm, interdum oblonga 25 x 7.5 cm, apice acuta basi late cuneata, subtus costis nervisque exceptis glabra, petiolis 6--15 mm longis. Cymae brevissime pedunculatae, pedunculis circ. 4 mm longis, pedicellis in flore 1.5 mm longis, in fructu 3 mm longis. Flores albi; calyx glaber truncatus; corolla 3.5 mm longa; filamenta corolla subaequilonga, antheris 1.5 mm longis poro apicali dehiscentibus; ovarium glabrum. Fructus 3 mm diametro."

The variety is based on C. Wang 30615b from Canton, Kwangtung, China, and is deposited in the herbarium of the Botanical Insti-

tute, Sunyatsen University, Canton. He cites also M. Chun 3557, H. Y. Liang 60877, P. H. Liang 84462, and L. Teng 8396 from the same province and compares the variety with the typical form of C. brevipes (Benth.) Hance and with C. tingwuensis Chang, to which species it is apparently related.

CALLICARPA BREVIPES var. OBOVATA Chang, Act. Phytotax. Sin. 1: 301--302. 1951.

Bibliography: H.-T. Chang, Act. Phytotax. Sin. 1: 299, 301--302, & 312. 1951.

The original description of this taxon as given by Chang (1951) reads as follows: "Frutex 3 m altus. Ramuli juveniles stellato-pubescentes. Folia chartacea subsessilia obovata 7--12 cm longa, 3.5--5.5 cm lata, apice abrupte acuminata vel acuta, basi subcordata, utrinque glabra, subtus glandulosa ad costam stellato-pubescentia, margine prope apicem denticulata; nervi laterales utrinsecus 7--9. Cymae brevissime pedunculatae; calyx 2.5--3 mm longus, parce stellato-pubescent, lobis subtruncatis; tubus corollae calice paulo longior, lobis circ. 1 mm longis; stamina paulo exserta, filamentis corolla subaequilongis, antheris 1.5 mm longis, poro apicali dehiscentibus. Fructus circ. 4 mm diametro".

The variety is based on S. K. Lau 28117 from Hainan Island and is deposited in the herbarium of the Botanical Institute, Sunyatsen University, Canton, China.

CALLICARPA BREVIPES f. SERRULATA P'ei

Additional bibliography: H.-T. Chang, Act. Phytotax. Sin. 1: 300. 1951; Moldenke, Phytologia 14: 102--104. 1966.

Chang (1951) reduces this taxon to synonymy under typical C. brevipes (Benth.) Hance.

CALLICARPA BREVIPETIOLATA Merr.

Additional bibliography: Moldenke, Phytologia 16: 362. 1968.

The corollas are described as "purple" on Kingdon-Ward 17640. The plant has been collected in anthesis in November (in addition to the months previously reported) and in fruit in June and November. Another vernacular name recorded for it [from Sumatra] is "doehoet hapoer-hapoer".

Additional citations: INDIA: Manipur: Kingdon-Ward 17640 (N). INDONESIA: GREATER SUNDA ISLANDS: Sumatra: Boeea 6049 (N); Hamel 424 (M1).

CALLICARPA CANDICANS (Burm. f.) Hochr.

Additional & emended bibliography: Gamble, Man. Ind. Timb., ed. 1, 283. 1881; Vidal y Soler, Phan. Cuming. Philip. 134. 1885; Dop in Lecomte, Fl. Gén. Indo-Chine 4: 793. 1935; H.-T. Chang, Act. Phytotax. Sin. 1: 276, 279, 285, & 311. 1951; Hocking, Excerpt. Bot. A. 12: 423 & 424. 1967; Moldenke, Biol. Abstr. 49: 4199. 1968; Uphof, Dict. Econ. Pl., ed. 2, 96. 1968; Moldenke, Résumé Suppl. 16: 11 & 17. 1968; Moldenke, Phytologia 16: 362--364, 367, 381, 384, 385, 387, 388, 447, 449, & 454. 1968.



Moldenke, Harold N. 1971. "Additional materials toward a monograph of the genus *Callicarpa*. XI." *Phytologia* 20, 482–499.

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