

ADDITIONAL MATERIALS TOWARD A MONOGRAPH OF THE GENUS *CALLICARPA*.
XXVIII

Harold N. Moldenke

Herbarium acronyms used in this paper are the same as used in the original monograph (1936) and in all the subsequent supplements and as most recently listed in *PHYTOLOGIA MEMOIRS* 2: 463--469 (1980).

CALLICARPA L.

Additional & emended synonymy: *Tomex* L., Nov. Pl. Gen. Diss. Dassow 5. 1747; Sp. Pl., ed. 1, imp. 1, 1: 118. 1753; Gen. Pl., ed. 5, imp. 1, 54. 1754 [not *Tomex* Forsk., 1775, nor Thunb., 1783]. *Porphyria* Lour. ex Meisn., Pl. Vasc. Gen. 2: 200, in syn. 1840. *Spondylococcum* Mitchell ex Meisn., Pl. Vasc. Gen. 2: 200, in syn. 1840. *Callicarpus* L. apud Hassk., Cat. Pl. Hort. Bot. Bogor. Cult. Alt. 136. 1844. *Callicaepa* Rehd. ex Mold., Phytol. Mem. 2: 377, sphalm. 1981. *Collicarpa* L., in herb.

Additional & emended bibliography: L., Amoen. Acad., ed. 3. 1751; L., Phil. Bot., ed. 1, 29. 1751; L., Gen. Pl., ed. 5, imp. 1, 50, 54, [519], & [520]. 1754; B. Juss., Hort. Trian. 1759; L., Gen. Pl., ed. 5, imp. 2, 50, 54, [519], & [520]. 1760; Gled., Syst. 168. 1764; L., Gen. Pl., ed. 6, Ord. Nat. 1764; Gis., Carl. Linn. Prael. Ord. Nat. 499. 1792; Pers., Syst. 159. 1797; Vent., Tabl. 2: 318. 1799; Duchesne, Dict. 5 (6): 246. 1805; St.-Hil., Expos. 1: 247. 1805; Hedw., Gen. 55 & 367. 1806; Roxb., Hort. Beng., imp. 1, [10], [36], & [83]. 1814; Spreng., Anleit. 2 (1): 426. 1817; Nutt., Gen. 1: 100. 1818; Nees, Flora 8: 107--109. 1825; Link, Handb. 1: 447. 1829; Bartl., Ord. 180. 1830; Loud., Hort. Brit., ed. 1, 529. 1830; Schlecht. & Cham., Linnaea 5: 97 (1830) and 6: 372. 1831; Loud., Hort. Brit., ed. 2, 529. 1832; Endl., Gen. Pl. 1: 637. 1838; G. Don in Loud., Hort. Brit., ed. 3, 529. 1839; G. Don in Sweet, Hort. Brit., ed. 3, 550. 1839; Meisn., Gen. 292 (200). 1840; Endl., Enchirid. Bot. 312. 1841; Hook. & Arn., Bot. Beech. Voy. pl. 46. 1841; Reichenb., Nom. 108. 1841; Hassk., Flora 25: Beibl. 26. 1842; Brongn., Enum. Gen. Pl., ed. 1, 64. 1843; Lindl., Veg. Kingd., ed. 1, 663 & 664. 1846; Walp., Repert. Bot. Syst. 6: 690 & 692. 1847; Walp., Ann. Bot. Syst. 1: 543--544. 1849; A. L. Juss. in Orbigny, Dict. Univ. Hist. Nat. 13: 185. 1849; Lemr. in Orbigny, Dict. Univ. Hist. Nat. 3: 50. 1849; Wight, Icon. Pl. Ind. Orient. 4 (3): 15--16, pl. 1480. 1849; Brongn., Enum. Gen. Pl., ed. 2, 120. 1850; W. Griff., Icon. Pl. Asiat. 4: pl. 147 & 148, fig. 2. 1854; W. Griff., Notul. Pl. Asiat. 4: 173. 1854; Miq., Ind. Bat. 2: 884. 1857; Turcz., Bull. Soc. Imp. Nat. Mosc. 36 (3): 217--218. 1863; Beddome, Forest. Man. Bot. S. India clxxiii. 1870; Ulrich, Internat. Wörterb., ed. 1, 40. 1871; Pfeiffer, Nom. Bot. 1 (1): 64, 502, 535, 536, & 1853 (1873), 1 (2): 818, 1232, 1244, 1425, 1442, 1742, & 1788 (1874), 2 (1): 6 (1874), and 2 (2): 818, 1244,

1569, 1570, & 1593. 1874; Firminger, Man. Gard. India, ed. 3, 531 & 608. 1874; F. Muell., Descr. Notes Pap. Pl., imp. 1, 1: 91 & 110. 1875; Ulrich, Internat. Wörterb., ed. 2, 40. 1875; Kurz, Forest Fl. Brit. Burma 2: 252, 273--275, & 589. 1877; A. Gray, Synop. Fl. N. Am., ed. 1, 2: 333. 1878; Fern.-Villar in Blanco, Fl. Filip., ed. 3, 4: Nov. App. 158. 1880; Vidal, Sin. Fam. Gen. Pl. Leñ. Filip. [Introd. Fl. For. Filip.] 1: 201--203 & 338 (1883) and 2: 35, pl. 74, fig. C. 1883; Vidal y Soler, Phan. Cuming. Philip. 7, 34, 53, 68, & 134. 1885; A. Gray, Synop. Fl. N. Am., ed. 2, 2: 333. 1886; K. Schum., Engl. Bot. Jahrb. 9: 220. 1887; Durand, Ind. Gen. Phan. 321. 1888; Stahl, Estud. Fl. Puerto Rico, ed. 1, 3: 287, 299--300, & 340. 1888; F. Muell., Sec. Syst. Census Austr. Pl. 1: 173. 1889; F. M. Bailey, Cat. Indig. Nat. Pl. Queensl. 35. 1890; Warb., Engl. Bot. Jahrb. 13: [Pl. Pap.] 426. 1890; Baill., Hist. Pl. 11: 88, 95, 112, 118, & 119. 1891; Briq. in Engl. & Prantl, Nat. Pflanzenfam., ed. 1, 4 (3a): 134--140, 142--144, & 164--166, fig. 62 B. 1895; Bull. Coll. Agric. Tokyo 2: pl. 14, fig. 8--10. 1895; Burkill, Proc. Cambr. Phil. Soc. 9: 96. 1896; Briq. in Engl. & Prantl, Nat. Pflanzenfam., ed. 1, 4 (3a): [381]. 1897; Engl., Syllab. Pflanzenfam., ed. 2, 178 & 199. 1898; K. Schum. & Warb., Notizbl. Bot. Gart. Berl. 2: [Fl. Neu-Pomm.] 144. 1898; Lindl., Treas. Bot., ed. 5, 1: 195. 1899; Quaintance, Canad. Ent. 31: 4. 1899; Koord. & Valet., Meded. Lands Plant. Bat. 42 [Bijd. Booms. Java 7]: 164 & 175--177. 1900; Durand & Jacks., Ind. Kew. Suppl. 1, imp. 1, 182. 1901; Engl., Syllab. Pflanzenfam., ed. 3, 188 & 217. 1903; J. C. Willis, Dict. Flow. Pl., ed. 2, 279 & 604. 1903; Engl., Syllab. Pflanzenfam., ed. 4, 189 & 221. 1904; Post & Kuntze, Lexicon 90 & 688. 1904; Durand & Jacks., Ind. Kew. Suppl. 1, imp. 1, 471, 473, & 480. 1906; Engl., Syllab. Pflanzenfam., ed. 5, 192 & 226. 1907; J. C. Willis, Dict. Flow. Pl., ed. 3, 283 & 621. 1908; Engl., Syllab. Pflanzenfam., ed. 6, 198 & 232. 1909; Hayata, Journ. Coll. Sci. Imp. Univ. Tokyo 30 (1): 218--223. 1911; Lévl., Feddes Repert. Sp. Nov. 9: 455--456. 1911; C. K. Schneid., Illustr. Handb. Laubholz. 2: 590--594, fig 384 c--g & 385 b--m. 1911; Urb., Symb. Antill. 4: 536. 1911; Gilg in Engl., Syllab. Pflanzenfam., ed. 7, 314 & 363. 1912; Koord., Excursionsfl. 3: 132, 134, & 381--382. 1912; W. & J. Leeuwen-Reijnvaan, Marcellia 11: 49--55. 1912; E. D. Merr., Philip. Journ. Sci. Bot. 7: 165 & 338--341. 1912; Petch, Ann. Roy. Bot. Gard. Perad. 5: 251. 1912; Urb., Symb. Antill. 7: 355--357. 1912; Fedde & Schust., Justs Bot. Jahresber. 39 (2): 319. 1913; Sydow, Justs Bot. Jahresber. 40 (1): 402 & 438. 1913; Wangerin, Justs Bot. Jahresber. 39 (1): 493 (1913) and 40 (1): 511 & 519. 1913; Fedde & Schust., Justs Bot Jahresber. 40 (2): 334. 1915; Thonner, Flow. Pl. Afr. 469. 1915; Fedde, Justs Bot. Jahresber. 39 (2): 1331. 1916; Nienburg, Justs Bot. Jahresber. 39 (2): 1051. 1916; Dalla Torre, Justs Bot. Jahresber. 40 (1): 777. 1917; Fedde & Schust., Justs Bot. Jahresber. 41: 387. 1918; Firminger, Man. Gard. India, ed. 6, 2: 388. 1918; E. D. Merr., Sp. Blanc. 330. 1918; Gilg in Engl., Syllab. Pflanzenfam., ed. 8, 319 & 369. 1919; Fedde & Schust., Justs Bot. Jahresber. 42: 252. 1930; E. D. Merr., Bibl. Enum. Born. Pl. 512. 1921; Haines, Bot. Bihar Orissa, ed. 1, 4: 704 & 709--710. 1922; Gilg in Engl., Syllab. Pflanzenfam., ed. 9

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North. La. Univ. 1: 64. 1980; Vogel, Seedl. Dicot. 13, 26, & 92. 1980; Diaconescu, Act. Bot. Hort. Bucurest. 1979/1980: 111--114. 1981; Duncan & Kortesz, Vasc. Fl. Ga. 14 & 111. 1981; Hu, Enum. Chin. Mat. Med. 12, 117, 152, & 218. 1981; Thomas & Allen, Contrib. Herb. North. La. Univ. 2: 6, 38, & 44. 1981.

Mound & Halsey (1978) report that members of this genus are often host to the whitefly, *Bemisia tabaci* (Gennadius) Takahashi, while Pirone (1978) reports them attacked by the leaf-spots, *Atractilina callicarpae* and *Cercospora callicarpae* and a black-mold, *Meliola cookeana*, as well as by the fungi, *Botryosphaeria dothidea*, *Coniothyrium callicarpae*, *Nectria cinnabarica*, and *Physalospora obtusa*.

Merrill (1917) asserts that the *Frutex ceramicus* Rumpf is probably a species of *Callicarpa*, and that it has been suggested that *Perlarius alter silvestris* Rumpf may also belong here, although this is more doubtful.

It should be noted that the "L. Gen. Pl. 140", often cited in bibliographies of this genus, actually refers to genus number 140 (*Tomex*) on page 54 of Linnaeus' work. A "Vol. 2, fig. 191" is sometimes cited for this genus in C. K. Schneider's *Illustr. Handb. Laubholz.*, but this figure depicts a *Rhamnus*, in the *Rhamnaceae*, not a *Callicarpa*.

In passing, it is of interest to note that Reichenbach (1828) classified *Callicarpa* in the *Lamiaceae*. It is also worth noting that Briquet's work (1895) in Engler & Prantl's *Die Natürlichen Pflanzenfamilien* is dated "1894" by Durand & Jackson (1901) in the *Index Kewensis*, as is also the cover page of the part of the volume herein involved, but Stafleu (1967) asserts that pages 97--224 were not actually published until 1895.

The Baileys (1976) comment that "Callicarpas can be grown in a light place in the greenhouse in a compost of loam and peat. Propagated by cuttings, layers, and seeds. They are raised for both the ornamental flowers and clusters of colored fruits. Those from northerly regions may be hardy in Zone 5 [in North America], and if the tops die back, new shoots usually bloom and fruit."

The *Gibot* SAN.30558, distributed as *Callicarpa* sp., actually is *Geunsia cumingiana* (Schau.) Rolfe, while *Dewol*, *Leopold*, & *Shea* SAN.71163 and *Sundaling* SAN.80243 are *G. farinosa* Blume, *Shea* SAN.75611 is *G. furfuracea* (Bakh.) Mold., *Fedilis* & *Sumbing* SAN.88279 is *G. pentandra* (Roxb.) Merr., *Kinted* SAN.19065 is *Premna foetida* Reinw., *Sinanggol* SAN.57292 is the type collection of *P. oblongifolia* var. *angustata* Mold., *Meijer* & *Singh* SAN.24797 is *P. odorata* Blanco, *Cockburn* SAN.83974 and *Muroh* SAN.71082 are *P. rotundifolia* Koord. & Val., and *Niyomdham*, *Suangtho*, & *Sangkachand* 117 is *P. flavescens* Hamilt.

Additional excluded taxa:

Callicarpa basilanensis Merr. ex Bakh. in Lam & Bakh., Bull. Jard. Bot. Buitenz., ser. 3, 3: 16, in syn. 1921 = *Geunsia cumingiana* (Schau.) Rolfe.

Callicarpa bastlanensis Merr. ex Bakh. in Lam & Bakh., Bull. Jard. Bot. Buitenz., ser. 3, 3: 16, in syn. 1921 = *Geunsia cumingiana* (Schau.) Rolfe.

CALLICARPA ACULEOLATA Schau.

Additional bibliography: Mold., *Phytologia* 40: 425. 1978; Hocking, Excerpt, Bot. A.33: 90. 1979; Mold., *Phytol. Mem.* 2: 94 & 525. 1980.

CALLICARPA ACUMINATA H.B.K.

Additional bibliography: Schlecht. & Cham., *Linnaea* 5: 97 (1830) and 6: 372. 1831; Baill., *Hist. Pl.* 11: 95. 1891; Mold., *Phytologia* 40: 425--427 & 474. 1978; Mukherjee & Chanda, *Trans. Bose Res. Inst.* 41: 50. 1978; Puig, *Trav. Sect. Scient. Techn. Inst. Franç. Pond. Hors* 16: 38 & 126. 1979; Mold., *Phytol. Mem.* 2: 60, 69, 70, 73, 75, 77, 78, 80, 83, 85, 104, 107, 114, 127, 132, 173, 345, 376, 378, & 525. 1980; F. C. Seymour, *Phytol. Mem.* 1: 242. 1980.

Recent collectors describe this plant as growing in disturbed areas in secondgrowth scrub, along fencerows of wet roadsides, and in disturbed tropical moist forests with mesquite and *Scheelea*, at 50--1200 m. altitude, describing it as a shrub, 1.5 to 6 m. tall, with "stems in a clump...from a 10 cm. diameter stump, the fruit juicy, turning various shades of purple", and as a weak tree, 8 m. tall, or even as a "tree, 10 m. tall, near edge of stream, the lower branches overhanging the stream", the stems scurfy-tan, the leaves subrugulose above and shiny, and the fruit dark-purple, an anthesis in March, May, November, and December, and in fruit in March, June, and September. They report the vernacular name, "xpuçuy". The corollas are said to have been "pale yellowish-white" on *Burger & Gentry 8839* and "white" on *Neill 4176* and *Stevens 4913*. Schlechtendal & Chamisso (1831) describe the corollas as white and the fruit black.

The *Cowan 1919* and *Molina R. & Molina 24733*; distributed as typical *C. acuminata*, actually represent var. *argutedentata* Mold., while *Cavalcante 3018* is *Aegiphila lhotzkiana* Cham.

Additional citations: MEXICO: Veracruz: *Ventura A. 4624* (Ws). Yucatán: *Enriquez 617* (Me--120717). NICARAGUA: Zelaya: *Neill 4176* (Ld); *W. D. Stevens 4913* (Ld). COSTA RICA: Cartago: *Croat 36568* (W--2845848). Puntarenas: *Burger & Gentry 8839* (Go). PANAMA: Colón: *M. Nees 6991* (Au). COLOMBIA: Cundinamarca: *Gentry, Daly, Leon, & Barbosa 18092* (Ld, N). ECUADOR: Esmeraldas: *Madison, Plowman, Kennedy, & Besse 5019* (N).

CALLICARPA ACUMINATA var. *ARGUTEDENTATA* Mold.

Additional bibliography: Mold., *Phytologia* 40: 426--427. 1978; Mold., *Phytol. Mem.* 2: 60, 70, 73, 75, & 525. 1980.

Recent collectors describe this plant as a shrub, 2--4 m. tall, and have encountered it as "common" in cutover pine forests and thickets, at 700 m. altitude, in flower in November. The corollas are said to have been "white" on *Cowan 1919* and *Molina R. & Molina 24733*.

Additional citations: MEXICO: Tabasco: *C. Cowan 1919* (Au, N). GUATEMALA: El Petén: *Contreras 2213* (Au). HONDURAS: Copán: *Molina R. & Molina 24733* (W--2865093).

CALLICARPA ACUMINATA var. *PRINGLEI* (Briq.) Mold.

Additional bibliography: Mold., *Phytologia* 40: 427. 1978; Mold., *Phytol. Mem.* 2: 60, 69, 376, 378, & 525. 1980.

CALLICARPA ACUTIDENS Schau.

Additional bibliography: Mold., *Phytologia* 40: 427. 1978; Mold., *Phytol. Mem.* 2: 290 & 525. 1980.

CALLICARPA ACUTIFOLIA Chang

Additional bibliography: Mold., *Phytologia* 33: 382. 1976; Mold., *Phytol. Mem.* 2: 275 & 525. 1980.

CALLICARPA ALBIDO-TOMENTELLA Merr.

Additional bibliography: Mold., *Phytologia* 40: 427. 1978; Mold., *Phytol. Mem.* 2: 305 & 525. 1980.

Merrill (1923) cites only the type collection, stating that this endemic Philippine species grows in forests along small streams at low altitudes.

CALLICARPA ALONGENSIS Dop

Additional bibliography: Mold., *Phytologia* 33: 383. 1976; Mold., *Phytol. Mem.* 2: 291 & 525. 1980.

CALLICARPA AMERICANA L.

Additional synonymy: *Callicarpa americanus* L., in herb.
Collicarpa americana L., in herb.

Additional & emended bibliography: G. Don in Sweet, *Hort. Brit.*, ed. 3, 550. 1839; A. Gray, *Synop. Fl. N. Am.*, ed. 1, 2: 340 (1878) and ed. 2, 2: 340. 1886; Baill., *Hist. Pl.* 11: 95. 1891; Briq. in Engl. & Prantl, *Nat. Pflanzenfam.*, ed. 1, 4 (3a): 134 & 166. 1895; Quaintance, *Canad. Ent.* 31: 4. 1899; C. K. Schneid., *Illustr. Handb. Laubholz.* 591 & 592, fig. 384 f & g. 1911; E. D. Merr., *Sp. Blanc.* 330. 1918; Stapf, *Ind. Lond.* 1: 525 (1929) and 6: 539. 1931; Bedevian, *Illustr. Polyglott. Dict.* 132. 1936; Alain in León & Alain, *Fl. Cuba. imp.* 1, 4: 304 & 306. 1957; Russell, *Ann. Ent. Soc. Am.* 56: 151. 1963; Serbanescu-Jitariu & Mitroiu, *Act. Bot. Hort. Bucurest.* 1972-73: 106--109, pl. 1, fig. 1. 1973; Marx & Thomas, *Proc. La. Acad. Sci.* 38: 85. 1975; L. H. & E. Z. Bailey, *Hortus Third* 201. 1976; Austin, Coleman-Marois, & Richardson, *Fla. Sci.* 40: 352. 1977; Batson, *Gen. East. Pl.* 147. 1977; Clay & Hubbard, *Haw. Gard. Trop. Shrubs* 186, [187], & 288. 1977; Poppeton, Shuey, & Sweet, *Fla. Scient.* 40: 384. 1977; Richardson, *Fla. Scient.* 40: 307, 310, & 319. 1977; Terrell, U. S. Dept. Agr. *Agric. Handb.* 505: 24 & 130. 1977; Hicks, Stephenson, Fountain, Grimes, & Cox, *Woody Pl. West. Gulf Reg.* 316--317. 1978; Mold., *Phytologia* 40: 427--429. 1978; Mound & Halsey, *Whitefly World* 200 & 216. 1978; Peacock, *Exxon USA* 17 (3): 5. 1978; Van den Berghe, Ieven, Mertens, & Vlietinck, *Lloydia* 41: 464. 1978; Cronquist, *How Know Seed Pl.* 100, fig. 213C. 1979; Holm, Pancho, Herberger, & Plucknett, *Geogr. Atlas World Weeds* 60. 1979; Jones & Luchsinger, *Pl. System.* 302. 1979; A. L. Mold., *Phytologia* 41: 302. 1979; Avery & Loope, *S. Fla. Res. Cent. Rep.* T-574: 33. 1980;

Craig & Sm., Soil Crop. Sci. Soc. Fla. Proc. 39: 84. 1980; Mohlenbrock, Castanea 45: 268. 1980; Mold., Phytol. Mem. 2: 13--15, 17, 19, 21, 25, 26, 32, 38, 40, 41, 46, 48, 60, 85, 87, 91, 345, & 525. 1980; Olmsted, Loope, & Hilsenbeck, S. Fla. Res. Cent. Rep. T-604: 48. 1980; Duncan & Kortesz, Vasc. Fl. Ga. 111. 1981; Thomas & Allen, Contrib. Herb. North. La. Univ. 2: 6 & 44. 1981.

Additional & emended illustrations: C. K. Schneid., Illustr. Handb. Laubholz. 592, fig. 384 f & g. 1911; Bedevian, Illustr. Polyglott. Dict. 132. 1936; Serbanescu-Jitariu & Mitroiu, Act. Bot. Hort. Bucurest. 1972-73: 109, pl. 1, fig. 1. 1973; Batson, Gen. East. Pl. 147. 1977; Clay & Hubbard, Haw. Gard. Trop. Shrubs [187] (in color). 1977; Hicks, Stephenson, Fountain, Grimes, & Cox, Woody Pl. West. Gulf Reg. 316 & 317. 1978; Peacock, Exxon USA 17 (3): 5 (in color). 1978; Cronquist, How Know Seed Pl. 100, fig. 213C. 1979.

Recent collectors describe this species as a small shrub, "after 6 years less than 1 m. tall", with medium branching, the fruit violet, lavender, or purple. They have encountered it in moist upland soil, at the edges of granite outcrops, in sandy soil of moist woods, and in the pine-hickory-oak ecologic community, flowering in June and September, fruiting in September and October. Some leaves on Thomas & Bot. 451 Class 8916 measure 26 by 14.5 cm. Mohlenbrock (1980) lists it from Berkeley and Charleston Counties in South Carolina.

Serbanescu-Jitariu & Mitroiu (1973) describe the pollen of this species, on the basis of *Herb. Univ. Cluj 147196*, as follows: "prolat; 3-colporat; vazut apical 39--54 mu in diam., din profil înalt 46,8--57,2 mu, lat 31,2--36,4 mu. Polênul scuturat din antere și văzut cu ochiul liber este galben, în apă, la microscop este galben portocaliu, în chloralhidrat, galben verzui. Sporoderma cu o grosime de 2,6 mu prezintă exina crassisexinată cu o structură simpilată în sectiune optică respectiv retipilată; suprafața sporodermei reticulata cu muri (peretii) groși."

Bedevian (1936) lists several additional common or vernacular names for this species: "callicarpa d'America", "callicarpe", "fenk tutu", "porphyra", and "tât fransă".

Van den Berghe and his associates (1978) found this species to contain principles with antiviral activity against polio, coxsackie, semliki-forest, adeno, herpes, and measles.

Russell (1963) reports this species often infested by the whitefly, *Trialeurodes packardi* (Morrill) Quaint. & Bak., while Quaintance (1899) adds another species, *Tetraleurodes mori* (Quaint.) Quaint. & Bak.

Material of *Callicarpa americana* has been misidentified and distributed in some herbaria as *Symphoricarpos vulgaris* Michx. and as *Viburnum dentatum* L. Thomas & Rhodes 38892 is identified by the collectors as f. *lactea* (F. J. Muller) Rehd., but since the specimen was collected during only anthesis, it is not evident how the collectors knew that it was this white-fruited form, unless, of course, they had marked the individual plant during the previous season while it was in fruit. In this case it would be most interesting to compare the flowers with those of the normal form for

signs of albinism.

Additional citations: VIRGINIA: York Co.: *Kirkman* 265 (Ne--144021). NORTH CAROLINA: Jones Co.: *Sears C.375* (Ne--33479). New Hanover Co.: *Sieren* 341 (Ne--88342). Pender Co.: *Sieren* 1389 (Ne--124966). SOUTH CAROLINA: Florence Co.: *Rodgers, Compton, Green, & Hudson* 73434 (Ne--83608). Jasper Co.: *Leonard & Radford* 1931 (Ne--33484). GEORGIA: Cobb Co.: *Piehl* 64126 (Ne--79205). DeKalb Co.: *Pyron & McVaugh* 373 (Au). Houston Co.: *Dixon* 1449 (Ne--161849). McIntosh Co.: *D. S. Correll* 5442 (Au). Oglethorpe Co.: *Blake & Montgomery* 179 (Ne--144448), 217 (Au, Ne--144449). FLORIDA: Calhoun Co.: *Pearman & Odenwelder* 73-433 (Ne--82287). Dade Co.: *M. J. Murray s.n.* [Cutler, June 21, 1937] (Ne--119020, Ne--119031). Palm Beach Co.: *Cassen* 419 (Ne--59934); *Guzman* 31 (Ne--172771, Ne--175619). Polk Co.: *Jennings & Jennings s.n.* [July 5--31, 1934] (Go). Key Largo: *Lassetter* 2230 (Ne--167511). ALABAMA: Lee Co.: *Hayden* 74 (Ne--172961). Randolph Co.: *R. Kral* 28828 (Ne--107011). Dauphin Island: *Taylor & Taylor* 13526 (Ne--104579). MISSISSIPPI: Holmes Co.: *Whitam* 669 (Ne--461). Simpson Co.: *Painter* 326 (Ne--92325); *Wallus & Heard s.n.* [2 September 1971] (Ne--69869); *Wallus & Wallus s.n.* [12 Sept. 1971] (Ne--72022). Warren Co.: *Thomas & al.* 24134 (Ne--59577). ARKANSAS: Ashley Co.: *Barrett s.n.* [3 August 1969] (Ne--59549). Cleburne Co.: *Lawson & Bio.* 451 *Class* 1051 (Ne--74756). Columbia Co.: *Knesel & Knesel s.n.* [August 4, 1972] (Ne--62223). Hempstead Co.: *Lawson* 1758 (Ne--90568). Howard Co.: *Lawson* 1568 (Ne--917650), 1837 (Ne--90356). Independence Co.: *Thomas & Bio* 451 *Class* 8916 (Ne--33482), 8985 (Ne--33483), 15912 (Ne--56259). Izard Co.: *Lawson & Pate* 727 (Ne--75689); *Thomas & Bio.* 451 *Class* 8668 (Ne--33481), 16247 (Ne--33486); *Thomas & family* 45978 (Ne--110766); *Thomas & Gray* 9187 (Ne--33487). Jefferson Co.: *Thoma, Click, & Click* 44040 (Ne--110105). Montgomery Co.: *Lawson & Henze s.n.* [24. Sept. 1977] (Ne--138797). Ouachita Co.: *Spencer & Spencer* 93 (Ne--78879). Prairie Co.: *J. Gray s.n.* [7.7.68] (Ne--33489). Sevier Co.: *Demaree* 54083 (Ne--66221). Stone Co.: *Thomas & Bio.* 451 *Class* 10531 (Ne--33488), 15519 (Ne--33485). Union Co.: *Scarborough & Hux* 688 (Ne--28862). LOUISIANA: Allen Par.: *Thomas & al.* 29946 (Ne--63815). Beauregard Par.: *Roper & Seale* 181 (Ne--33470). Bienville Par.: *Moreland* 247 (Ne--117927); *Thomas & al.* 23554 (Ne--33425). Bossier Par.: *Darwin & Sundell* 1739 (Ne--177816); *Leggett & Leggett* 5 (Ne--123021); *Thomas, Leggett, & Balogh* 48658 & 1220 (Ne--119680). Caddo Par.: *Overby* 4 (Ne--77087), 232 (Ne--81171); *Raymond* 148 (Ne--117619). Calcasieu Par.: *Hendershot* 6 (Ne--123681); *Mistretta* 73 (Ne--33424); *Rope & Seale* 161 (Ne--33467); *Thomas & al.* 14410 (Ne--33468), 14443 (Ne--33464). Caldwell Par.: *Marx & Raymond* 130 (Ne--110887); *Scarborough & Scarborough* 521 (Ne--33473); *Shell* 2 (Ne--33472); *Thomas & Bot.* 311 *Class* 49337 (Ne--122468); *Thomas, Thomas, & Gilliam* 2937 (Ne--33446). Catahoula Par.: *French* 394 (Ne--104413); *French & Laird* 263 (Ne--122592); *R. D. Thomas* 44653 (Ne--109502); *Thomas & Bot.* 311 *Class* 10934 (Ne--33434); *Thomas, DePoe, Barrett, & Stegall* 1993 (Ne--33449); *Thomas, Montgomery, Barrett, & Cicala* 3928 (Ne--33438); *Thomas & Overby* 18975 (Ne--33428). Claiborne Par.: *L. Lewis* 2760

(Ne--174911); *L. G. Lewis* 459 (Ne--130465); *Lewis & Rich* 767 (Ne-133150); *Thomas, Brode, Smith, & Renfrow* 4811 (Ne--33455). DeSoto Par.: *R. D. Thomas* 45471 (Ne--109666); *Thomas & Dixon* 61303 & 207 (Ne--148604). East Baton Rouge Par.: *C. A. Brown* 808 (Ne--118790). East Carroll Par.: *Thomas & McCoy* 68068 & 380 (Ne--168972). East Feliciana Par.: *Thomas & al.* 11477 (Ne--33432), 61966 (Ne--150737). Evangeline Par.: *Cormier* 569 (Ne--153012); *Hamlin* 101 (Ne--74786); *Thomas, Cormier, & Pias* 55480 & 65 & 1999 (Ne--134615); *Thomas & Rhodes* 38721 (Ne--89295). Franklin Par.: *Fletcher & Fletcher* 52 (Ne--147374); *Thomas, Jones, & Stegall* 2207 (Ne--33442). Grant Par.: *J. W. Parker* 77 (Ne--66475); *Thomas, Barrett, Gremillion, & Cicala* 3074 (Ne--33445); *Thomas, Barrett, & Jones* 1035 (Ne--33443). Iberia Par.: *Thomas & al.* 31022 (Ne--64125). Jackson Par.: *Reid & al.* 1583 (Ne--69576); *Reid & Reid* 1454 (Ne--33462), 1834 (Ne--33426), 1902 (Ne--33427), 2100 (Ne--69575); *Reid, Reid, & Scarbrough* 977 (Ne--33475); *Thomas & Bot.* 311 Class 10709 (Ne--33433); *Thomas & Jones* 3429 (Ne--33447); *Thomas & Reid* 16685 (Ne--33463). Lafayette Par.: *Lasseigne & Lackey* 4737 (Ne--118817). LaSalle Par.: *Laird* 894 (Ne--126923). Lincoln Par.: *Thomas, Pias, & Dawson* 58411 (Ne--142474). Livingston Par.: *Montz* 1822 (Ne--2766); *Thomas & al.* 11865 (Ne--33429). Madison Par.: *R. Jones* 236 (Ne--86585); *Thomas & Rich* 58822 & 945 (Ne--143672); *Thomas, Rich, & Dawson* 56167 & 542 (Ne--137433). Morehouse Par.: *R. D. Thomas* 16858 (Ne--33469); *Thomas & al.* 28800 (Ne); *Thomas & Pias* 49730 & 210 (Ne--124268), 58115 & 3190 (Ne--141381), 59044 & 3620 (Ne--143301); *Thomas & Scarbrough* 16816 (Ne--33461); *Thomas, Thomas, & Thomas* 1447 (Ne--33453). Natchitoches Par.: *Nixon* s.n. [Sept. 1968] (Ne--33421). Ouachita Par.: *Colvin & Colvin* 1 (Ne--90836); *Scarbrough & Scarbrough* 504 (Ne--33474); *C. Smith* 1438 (Ne--30708); *R. D. Thomas* 33 (Ne--33451, Ne--33452), 2836 (Ne--33448); *Thomas & al.* 45927 (Ne--111999); *Thomas & Bot.* 311 Class 11272 (Ne--33435), 29703 (Ne--60121); *Thomas, Thomas, & Thomas* 729 (Ne--33444); *Whitam* T.110 (Ne--33465), T.137 (Ne--33457), T.238 (Ne--33458); *Whitam, Thomas, Barrett, & Gremillion* 3 (Ne--3345). Rapides Par.: *S. Schutz* 1553 (Ne--154835); *S. E. Schutz* 1745 (Ne-156757); *Schutz & Schutz* 554 (Ne--134699), 696 (Ne--132134), 1481 (Ne--154957); *Schutz, Schutz, Talbot, & McCoy* 163 (Ne); *R. D. Thomas* 5333 (Ne--33440), 5353 (Ne--33441); *Thomas & Rhodes* 38892 (Ne--114435). Red River Par.: *R. D. Thomas* 5742 (Ne--33436); *Thomas & Kee* 44962 (Ne--110622). Richland Par.: *Dawson & Dawson* 595 (Ne--133255); *Thomas & Dawson* 58556 & 1424 (Ne--142035); *P. White* 18 (Ne--82932), 102 (Ne--80777). Sabine Par.: *Carroll & Hutchinson* 26 (Ne--165787); *K. Scarbrough* s.n. [June 20, 1970] (Ne--33476); *R. D. Thomas* 5648 (Ne--33437), 25816 (Ne--33423). Saint Helena Par.: *Thomas & al.* 11587 (Ne--33431), 32690 (Ne--64090). Saint Martin Par.: *Lewis, Rich, & McCoy* 2358 (Ne--162955). Saint Mary Par.: *Dooley* 152 (Ne--73647, Ne--74648), 229 (Ne--69513), 390 (Ne--70220); *Thomas, Reid, Smith, & Dooley* 27001 (Ne--69701). Saint Tammany Par.: *R. D. Thomas* 46318 (Ne--112948); *Thomas & al.* 35601 (Ne--78685), 49552 (Ne--124425). Tangipahoa Par.: *Thomas & al.* 32642 (Ne--63416), 40363 (Ne--90860), 66378 (Ne--161392). Tensas Par.: *Briley & Rich* 801 (Ne--

168636); James 59 (Ne--33466); Thomas & Briley 69633 & 854 (Ne--168814). Terrebonne Par.: Guidroz 78 (Ne--80276). Vernon Par.: R. D. Thomas 5570 (Ne--33439), 74012 (Ne--180362); Thomas & Green 17871 (Ne--175848). Washington Par.: C. Smith 616 (Ne--76621); R. D. Thomas 63426 (Ne--157353); Thomas & al. 12462 (Ne--33460), 14183 (Ne--33459). Webster Par.: Braley & Braley s.n. [21 Sept. 1968] (Ne--33471); Knesel & Pope s.n. [7 Aug. 1971] (Ne--33420); R. D. Thomas 72038 (Ne--173343); Thomas, Smith, Vrode, & Renfrow 5052 (Ne--33454). West Carroll Par.: Crews s.n. [24 September 1972] (Ne--63053); Gough 410 (Ne--156053); Thomas & Gough 51277 & 152 (Ne--156054); Thomas & Spencer 35042 (Ne--81630). West Feliciana Par.: Thomas & al. 11420 (Ne--33430), 35718 (Ne--78799), 61897 (Ne--151551). Winn Par.: Hutchinson & Carroll 32 (Ne--168479); Middlebrooks 3 (Ne--13466); R. D. Thomas 60331 (Ne--151617); Thomas, Kessler, & Ricks 72607 & 316 (Ne--178240). Cote Blanche Island: Thomas, Dooley, & al. 28331 (Ne--67131). TEXAS: Cass Co.: Marx 1385 (Ne--85279). Galveston Co.: Waller & Bauml 2982 (Au). Gonzales Co.: D. S. Correll 20462 (N). Gregg Co.: R. D. Thomas 24939 (Ne--72949). Harris Co.: Reid & Scarbrough 2048 (Ne--61359). San Jacinto Co.: Higgins 5497 (Au). Smith Co.: Wilkinson 337 (N), 851 (N). Travis Co.: McKinney 34 (Ld). Trinity Co.: Thomas & Barrett 4446 (Ne--33480). Walker Co.: Kessler 3773 (Ne--184566); Thomas, Marx, & Allen 39638 (Ne--92683). CULTIVATED: Zimbabwe: J. Scott s.n. [South. Rhodes. Govt. Herb. 263464] (N).

CALLICARPA AMERICANA f. *LACTEA* (F. J. Muller) Rehd.

Additional bibliography: L. H. & E. Z. Bailey, Hortus Third 201. 1976; Clay & Hubbard, Haw. Gard. Trop. Shrubs 186 & 288. 1977; Mold., Phytologia 40: 429. 1978; Duncan & Kortes, Vasc. Fl. Ga. 111. 1981; Thomas & Allen, Contrib. Herb. North. La. Univ. 2: 6. 1981

The Thomas & Rhodes 38892, cited under typical *C. americana* L., was identified by the collectors as *f. lactea*, but since it is only in flower the evidence for this identification is not obvious, unless, of course, the collection was made from a bush tagged the previous year when it was in fruit. In this case, it would be of interest to examine for evidence of floral albinism.

Lars Johnson, in the summer of 1980, found this white-fruited form of the species growing along with the normal form, with no evidence of intergradation, at Alligator Lake, Osceola County, Florida, and has kindly given me a splendid color photograph of the plant *in situ*.

Additional citations: LOUISIANA: DeSoto Par.: Thomas, Dixon, & Briley 68222 & 1892 (Ne--164317). LaSalle Par.: Wroten 767 (Ne--33477). Natchitoches Par.: Nixon s.n. [Sept. 1968] (Ne--33422), s.n. [11-1-68] (Ne--33456). Saint Tammany Par.: Thomas & Botany 403 Class 46216 (Ne--113038). Union Par.: Dixon, Briley, & Bot. 414 Class 4604 (Ne--179939). Winn Par.: R. D. Thomas 74460 (Ne--181154).

CALLICARPA AMPLA Schau.

Additional bibliography: Stahl, Estud. Pl. Puerto Rico, ed. 1,

3: 299--300 & 340. 1888; Urb., *Symb. Antil.* 4: 536. 1911; Stahl, *Estud. Fl. Puerto Rico*, ed. 2, 3: 299--300. 1937; Mold., *Phytologia* 40: 429. 1978; Mold., *Phytol. Mem.* 2: 97, 99, & 525. 1980.

Urban (1911) cites for this species from Puerto Rico the following collections in the Berlin herbarium (now destroyed): *Schwanecke s.n.*, *Sintenis 2066, 2143, 2165, 4530, & 4583*, *Stahl 269*, and *Wydler s.n.*

Additional citations: PUERTO RICO: *Woodbury s.n.* [Oct. 15, 1968] (N).

CALLICARPA ANGUSTA Schau.

Additional & emended bibliography: Fern.-Villar in Blanco, *Fl. Filip.*, ed. 3, 4: 158. 1880; Vidal y Soler, *Phan. Cuming. Philip.* 51 & 134. 1885; E. D. Merr., *Philip. Journ. Sci.* 7: 340 & 341. 1912; E. D. Merr., *Enum. Philip. Flow. Pl.* 3: 382 & 387. 1923; Mold., *Phytologia* 40: 429. 1978; Mold., *Phytol. Mem.* 2: 305 & 525. 1980.

Merrill (1912, 1923) cites from the Philippine Islands the following collections: Luzon: *Ahern's Collector PFB.1888*, *Cuming 1425*, *Hallier s.n.*, *Ramos PBS.1030, 39455, & 39497*, *Ramos & Fdaño PBS. 26367 & 34051*. Mindoro: *Merritt PFB.8878*. He states that the species inhabits thickets and secondary forests at low altitudes and that it is there endemic.

CALLICARPA ANGUSTIFOLIA King & Gamble

Additional & emended bibliography: Fletcher, *Kew Bull. Misc. Inf.* 1938: 404, 407, 412, & 413. 1938; Mold., *Phytologia* 40: 429. 1978; Mold., *Phytol. Mem.* 2: 284, 295, 298, 311, 320, & 525. 1980.

Maxwell describes this plant as a shrub, 1--2 m. tall, the calyx greenish, the petals pinkish, and the fruit at first green, later turning maroon, and encountered it in open areas on limestone talus, flowering and fruiting in April.

Additional citations: MALAYA: Perak: *Maxwell 78-122* (Ac).

CALLICARPA ARBOREA Roxb.

Additional & emended bibliography: Roxb., *Hort. Beng.*, imp. 1, [10]. 1814; Pers., *Sp. Pl.* 1: 343. 1817; G. Don in Sweet, *Hort. Brit.*, ed. 3, 550. 1839; Brandis, *Forest Fl. N.W. Cent. India* 3: 368--369. 1874; K. Schum. & Hollr., *Fl. Kais. Wilhelmsl.* 119. 1889; K. Schum. & Lauterb., *Fl. Deutsch. Südsee Schutzgeb.* 521. 1900; Haines, *Bot. Bihar Orissa*, ed. 1, 4: 709. 1922; E. D. Merr., *Enum. Philip. Flow. Pl.* 3: 386. 1923; Kirtikar & Basu, *Indian Med. Pl.*, ed. 2, imp. 1, 3: 1920, pl. 732a. 1935; Fletcher, *Kew Bull. Misc. Inf.* 1938: 401 & 411--413. 1938; Metcalfe & Chalk, *Anat. Dicot.* 2: 1036, fig. 248 D. 1950; Haines, *Bot. Bihar Orissa*, ed. 2, 2: 743--744. 1961; Kirtikar & Basu, *Indian Med. Pl.*, ed. 2, imp. 2, 3: pl. 732a. 1975; Mold., *Phytologia* 40: 429--431 & 473. 1978; Biswas & Maheshwari, *Journ. Bomb. Nat. Hist. Soc.* 77: 225. 1980; Jiang Han-qiao, *Act. Bot. Yun.* 2: 29. 1980; Mold., *Phytol. Mem.* 2: 257, 258, 270, 271, 274, 275, 284. 288, 291. 295, 298, 305, 311, 325, 345, 378, 379, & 525. 1980; Roxb., *Hort. Beng.*, imp. 2, [10]. 1980.

Additional illustrations: Kirtikar & Basu, *Indian Med. Pl.*, ed. 2, imp. 1, 3: pl. 732a. 1935; Metcalfe & Chalk, *Anat. Dicot.* 2: 1036, fig. 248 D. 1950; Kirtikar & Basu, *Indian Med. Pl.*, ed. 2, imp. 2, 3: pl. 732a. 1975.

Recent collectors have found this plant growing on savannas, in deciduous forests, and in scrub, at 10--900 m. altitude.

Schumann & Hollrung (1889) cite *Hollrung 525* from New Guinea, commenting that the species is found "Auf der Ostseite des Himalaya im Terai hüfug, dann in Malacca, bis nach Sumatra... Bisher ist dieser Art weder von Australien noch von Neu Guinea bekannt geworden. Sie ist von den Verwandten gut zu unterscheiden." Schumann & Lauterbach (1900) also cite *Hollrung 525*, but add *Lauterbach 1200*, *Lewandowsky 10*, and *Rodatz & Klink 188*, describing the corollas as red. They report finding it in flower in February and August, in fruit in February.

Fletcher (1938) notes that the type collection of the species is from Chittagong in Bangladesh and lists the species from India, Yunnan, Indochina, and Malaya, citing *Collins 1251*, *Haniff & Nur 3824*, *Kerr 182*, *691*, *7887*, *11326*, *13887*, & *16419*, *Kloss 6851*, *Put 48* & *4112*, and *Vanpruk 321* & *745* from Thailand. For the so-called var. *villosa* (Roxb.) King & Gamble he notes that the type is from Silhet and that the variety grows also in Malaya, citing *Hosseus 618* and *Lakshnakara 838* from Thailand. He distinguishes the variety as follows: Leaves at least 2 1/2 times as long as wide, apically tapering-acuminate, basally long-acute or cuneate..... *C. arborea*; leaves generally 1 1/2 times or at most twice as long as wide, apically caudate-acuminate, basally almost round and then slightly decurrent into the petiole..... *C. arborea* var. *villosa*.

CALLICARPA ARBOREA var. *OBLONGIFOLIA* Kanjilal

Additional bibliography: Mold., *Phytologia* 33: 391. 1976; Mold., *Phytol. Mem.* 2: 258 & 525. 1980.

CALLICARPA ARBOREA var. *PSILOCALYX* (H. J. Lam) Mold.

Additional & emended bibliography: Fern.-Villar in Blanco, *Fl. Filip.*, ed. 3, 4: Nov. App. 158. 1880; Vidal y Soler, Phan. Cuming. Philip. 43 & 134. 1885; Mold., *Phytologia* 40: 430--431. 1978; Mold., *Phytol. Mem.* 2: 305, 379, & 525. 1980.

CALLICARPA AREOLATA Urb.

Additional & emended bibliography: Alain in León & Alain, *Fl. Cuba*, imp. 1, 4: 305 & 309. 1957; Mold., *Phytologia* 33: 391. 1976; Mold., *Phytol. Mem.* 2: 87 & 525. 1980.

CALLICARPA AUSTRALIS Koidz.

Additional bibliography: Mold., *Phytologia* 40: 431. 1978; Mold., *Phytol. Mem.* 2: 300, 302, & 525. 1980.

CALLICARPA BARBATA Ridl.

Additional bibliography: Steenis, *Blumea* 15: 149. 1967; Mold., *Phytologia* 33: 392 & 481. 1976; Mold., *Phytol. Mem.* 2: 311 & 525. 1980.

[to be continued]