

4. EMBELIA N. L. Burman, Fl. Ind. 62. pl. 23. 1768.

酸藤子属 *suan teng zi shu*

Shrubs, becoming lianous at maturity, or lianas. Leaves alternate, distichous, or pseudovercillate. Inflorescences racemose, panicle, umbellate or corymbose, bracteate at base. Pedicel subtended by one persistent floral bract. Flowers 4- or 5-merous, bisexual or functionally unisexual and plants dioecious, polygamous, or monoecious. Sepals united at base. Petals free or united at base, glandular granulose inside and often along margin. Stamens adnate to base of petals, rarely free, normally exerted in staminate flowers, reduced in pistillate ones; filaments free; anthers dehiscing longitudinally, connectives usually punctate abaxially. Pistillode reduced and style included in staminate flowers; ovary globose or ovoid; ovules ca. 4, uniseriate. Style exerted; stigma discoid or capitate, sometimes slightly lobed. Fruit drupes, prominently punctate, 1-seeded; endocarp crusty or rarely bony. Seeds subglobose, covered by membranous remnants of placenta; endosperm ruminant; embryo terete, transverse.

About 140 species: Africa, SE Asia, Australia, Pacific Islands; 14 species in China.

- 1a. Inflorescences pendent, corymbose umbellate.
 - 2a. Leaf margin entire.
 - 3a. Leaf blade oblanceolate or obovate, base cuneate; petiole 5–7 mm 5. *E. laeta*
 - 3b. Leaf blade broadly ovate or ovate, base truncate or subcordate; petiole 0.5–1 mm 6. *E. parviflora*
 - 2b. Leaf margin sharply serrate or crenate, with spiny or acute to obtuse teeth.
 - 4a. Leaf apex mucronate, obtuse or acute.
 - 5a. Leaf blade glossy, base cordate; petiole subterete, (2–)2.5–3.5(–5) mm 1. *E. polyodioides*
 - 5b. Leaf blade dull, base obtuse or acute; petiole deeply canaliculate, 4–5 mm 2. *E. procumbens*
 - 4b. Leaf apex not mucronate, caudate to acuminate.
 - 6a. Branchlets glandular papillose-tomentose; leaf blade teeth spinose; perianth leathery; sepals broadly ovate, apex acute or obtuse; petals involute, margin glabrous 3. *E. pauciflora*
 - 6b. Branchlets glandular puberulent; leaf blade teeth obtuse to acute; perianth papery; sepals narrowly ovate, apex acuminate or attenuate; petals flat, margin glandular granulose 4. *E. henryi*
- 1b. Inflorescences erect, racemose or panicle.
 - 7a. Inflorescences paniculate; petiole marginate.
 - 8a. Branchlets and inflorescence rachis reddish glandular papillose-puberulent, early glabrescent; sepals prominently black punctate, margin glabrous, acute to obtuse; petals prominently pellucid punctate-lineate, margin glandular granulose 9. *E. floribunda*
 - 8b. Branchlets and inflorescence rachis tawny papillose-tomentose; perianth inconspicuously pellucid punctate, margin long glandular papillose; sepals acuminate.
 - 9a. Inflorescence branches spicate; leaf margin prominently black punctate 7. *E. sessiliflora*
 - 9b. Inflorescence branches racemose; leaf margin punctate 8. *E. ribes*
 - 7b. Inflorescences racemose; petiole canaliculate.
 - 10a. Branchlets 5–7 mm in diam.; leaf blade leathery to cartilaginous, margin entire.
 - 11a. Branchlets and leaf midrib rusty stellate tomentose; abaxial leaf surface with numerous small reddish scales, prominently red and black punctate 13. *E. gamblei*
 - 11b. Branchlets and leaf midrib glabrous; abaxial leaf surface glabrous, sparsely and inconspicuously black punctate 14. *E. carnosisperma*
 - 10b. Branchlets 2–4.5 mm in diam.; leaf blade papery to subleathery, margin serrate or subentire.
 - 12a. Leaf blade glossy, margin regular, serrate or serrulate throughout; sepals erose, inconspicuously pellucid or brown punctate, apex obtuse to acutish 10. *E. vestita*
 - 12b. Leaf blade dull, margin irregular, subentire or roughly serrulate-dentate distally; sepals entire, prominently black punctate, apex acuminate.
 - 13a. Branchlets glabrous; leaf base cuneate; fruit longitudinally ribbed, 1–1.5 cm in diam. 11. *E. undulata*
 - 13b. Branchlets minutely reddish papillate-puberulent; leaf base obtuse to rounded; fruit smooth, 0.3–0.5 cm in diam. 12. *E. scandens*

1. *Embelia polyodioides* Hemsley & Mez. in Mez, Notizbl. Königl. Bot. Gart. Berlin 3: 108. 1901.

龙骨酸藤子 *long gu suan teng zi*

Vines or shrubs, reddish hirtellous-tomentose on branchlets, petioles, and inflorescences. Branchlets terete, 2–3 mm in diam. Petiole subterete, somewhat canaliculate at blade,

(2–)2.5–3.5(–5) mm; leaf blade oblong or lanceolate, (1.2–)2–3.5(–4.4) × (0.8–)1–1.2(–1.8) cm, membranous, glossy, sparsely glandular papillate and red-black punctate toward apex, base subcordate or truncate, margin crenate with spinose teeth, apex mucronulate, acute to acuminate, sometimes emarginate; midrib prominent at both surfaces, reddish hirsute; lateral veins below, (12–)14–20 on each side of midrib, submarginal vein present. Inflorescences axillary, umbel-

late, subsessile, 8–10 mm, 1–3-flowered, pendulous; bracts oblong, 0.8–1 × 0.3–0.5 mm, margin entire, regular, glandular ciliate. Flowers pink, 5-merous, staminate and bisexual, 3–4 mm, pistillate unknown. Pedicel 1–2.5 mm. Sepals triangular-ovate or ovate, red and black punctate, glabrous, margin entire, glandular ciliate, apex acute. Petals free, oblong or oblanceolate, papery, glabrous outside, densely yellow glandular granulate inside except near filaments, black punctate and punctate-lineate, margin entire, glandular ciliate, apex rounded or obtuse. Stamens slightly longer than petals in staminate flowers, subequal to petals in bisexual; anthers in staminate lanceolate, in bisexual ovate, base deeply cordate, apex apiculate, black punctate. Style glabrous; stigma punctiform. Fruit red, globose, 3–5 mm in diam., densely red and black punctate. Fl. Dec–Feb, fr. Jan–Mar.

Mixed forests, hillsides, valleys; 1000–2400 m. Guangxi, Yunnan [Vietnam].

2. *Embelia procumbens* Hemsley in Hooker, Icon. Pl. 28: t. 2724. 1901.

葡萄酸藤子 pu fu suan teng zi

Embelia saxatilis Hemsley.

Vines, reddish glandular villous-tomentose on branchlets and petioles, glandular granulate on leaf blades, peduncles, pedicels, and perianth. Branchlets terete, 1–2 mm in diam., glabrescent. Petiole deeply canaliculate, 4–5 mm; leaf blade elliptic, ovate, or obovate, 1.3–3 × 0.5–1.2(–1.7) cm, membranous, dull, sparsely red and black punctate and punctate-lineate, base cuneate or obtuse, margin crenate-serrate with spinose teeth, densely red punctate, apex mucronate, acute or obtuse; midrib flat or slightly raised and glabrous adaxially, prominent abaxially; lateral veins 4–8 on each side of midrib, submarginal vein present. Inflorescences axillary, subcorymbose or subumbellate, 1–2 cm, 5–10-flowered, pendulous; peduncle 4–10 mm, red punctate; bracts linear or rarely subulate, 1–1.5 mm, apex attenuate, glandular ciliate. Flowers unisexual or bisexual, white or greenish, 5-merous, staminate 4.5–5 mm, pistillate 2.5–3 mm, bisexual 3–3.5 mm. Pedicel 3–6 mm, minutely glandular granulate. Sepals lanceolate or narrowly ovate, densely red or black punctate medially, margin erose-fimbriate, glandular ciliate, apex acuminate. Petals oblong or ovate, free or united to ca. 1/2 length, papery, glabrous inside, red punctate apically, margin entire, apex obtuse to acute. Stamens exerted 1–2 mm in staminate flowers, ca. 2/3 petal length in bisexual, ca. 1/2 petal length in pistillate; anthers narrowly lanceolate in staminate, ovate in bisexual, deltate in pistillate, base truncate, apex acutely rounded, connective red punctate. Style sparsely red punctate-lineate; stigma subcapitate, 3- or 4-lobed. Fruit red, globose, 4–5 mm in diam., densely red punctate. Fl. Oct–Jan, fr. Dec–Apr.

* Dense broad-leaved forests, bamboo woods, hillsides; 1300–2600 m. Sichuan, Yunnan.

3. *Embelia pauciflora* Diels, Bot. Jahrb. Syst. 29: 517. 1900.

疏花酸藤子 shu hua suan teng zi

Embelia blinii H. Léveillé; *E. dielsii* H. Léveillé; *E. kaopoensis* H. Léveillé; *E. pauciflora* var. *blinii* (H. Léveillé) E. Walker; *E. schlechteri* H. Léveillé.

Shrubs scandent, reddish glandular papillose-tomentose on branchlets, petioles, inflorescences, and sepals. Branchlets straight, terete, 1–1.5 mm in diam., glabrescent. Petiole subterete, somewhat canaliculate at blade, 2–2.5 mm; leaf blade ovate to linear-lanceolate, 3–9 × 0.8–2 cm, papery, glabrous above, sparsely glandular papillate and densely black punctate-lineate abaxially, base rounded, margin revolute, crenate-serrate with spinose teeth, apex acuminate or caudate; midrib impressed above, prominently raised below, lateral veins inconspicuous. Inflorescences axillary, subumbellate, 8–10 mm, 3–5(–7)-flowered, pendulous; bracts lanceolate, 0.8–1 × 0.2–0.3 mm, prominently red punctate, glandular ciliate. Flowers unisexual and plants dioecious, 5-merous, staminate 3–3.5 mm, pistillate 2.5–3 mm. Pedicel 3–5 mm, densely glandular papillose-puberulent. Sepals broadly ovate, densely red and black punctate, rugose basally, margin entire, glandular ciliate, apex obtuse or acute. Petals free, oblong or lanceolate, leathery, glabrous outside, yellow glandular granulate inside, densely black punctate-lineate, margin irregular, scarious, glabrous, apex obtuse to acute. Stamens as long as petals or ca. 0.5 mm longer; anthers lanceolate, base cordate, apex apiculate, in pistillate ovate, base truncate, apex apiculate, connective black punctate dorsally. Ovary glabrous. Style slender, exerted, red punctate-lineate; stigma subcapitate, sometimes 2–4-lobed. Fruit red, globose, ca. 5 mm in diam., red punctate. Fl. Sep–Oct.

* Mixed forests, valleys, hillsides, moist places, stony soil; 1300–1500 m. Guizhou, Sichuan.

4. *Embelia henryi* E. Walker, J. Wash. Acad. Sci. 27: 200. 1939.

毛果酸藤子 mao guo suan teng zi

Shrubs scandent, reddish glandular puberulent on branchlets, petioles, and inflorescences. Branchlets straight, terete, 1–1.5 mm in diam., glabrescent. Petiole deeply canaliculate, 3–5 mm; leaf blade ovate or lanceolate, 1.5–3 × 1–3 cm, membranous, glabrous and glossy, sparsely red punctate and punctate-lineate, base broadly rounded and often slightly asymmetrical, margin flat, crenate-serrate with obtuse to acute teeth, apex acuminate or caudate; midrib impressed and minutely reddish puberulent adaxially; lateral veins numerous, conspicuous. Inflorescences axillary, subcorymbose, 0.5–1.9 cm, 2–5(–9)-flowered, pendulous; peduncle 0.5–2 mm; bracts linear, 0.6–1 × 0.1–0.2 mm, black punctate, margin entire, glandular ciliate. Flowers unisexual, 5-merous, staminate unknown, pistillate 1.4–1.9 mm. Pedicel 2–3 mm, densely glandular puberulent. Sepals narrowly ovate, densely black punctate, rugose basally, essentially glabrous, margin entire, glandular ciliate, apex acuminate or attenuate. Petals free, oblong or ovate, papery, glabrous outside, densely yellow glandular granulate inside, densely black punctate, margin regular, apex obtuse to acute. Stamens unknown; staminodes subequalling base of style; anthers ovate, base truncate, apex apiculate, connective black punctate dorsally. Ovary densely glandular granulate.

Style slender, exserted; stigma subcapitate. Fruit purple, globose, 3–4 mm in diam., ribbed and black punctate-lineate. Fl. Nov–Feb, fr. Sep–Dec.

Mixed forests, hillsides; 800–1700 m. Guangxi, Yunnan [Vietnam].

5. *Embelia laeta* (Linnaeus) Mez in Engler, Pflanzn. IV. 236(Heft 9): 326. 1902.

酸藤子 suan teng zi

Shrubs scandent. Branchlets straight, flexuous, or geniculate, terete, 1.5–2 mm in diam., glabrous or densely reddish glandular papillose-tomentose. Petiole canaliculate and marginate, 5–9 mm, indument as in branchlets; leaf blade obovate or oblanceolate, (1.7–)3–6(–7.5) × (0.6–)1.5–2(–3) cm, papery, dull, glabrous, base cuneate, margin flat or revolute, entire, apex acute or rounded to obtuse, usually minutely emarginate; midrib impressed adaxially; lateral veins inconspicuous, 6–10 on each side of midrib. Inflorescences axillary, subcorymbose subumbellate, to puberulent, 3–15-flowered, with 1 or 2 series of scales at base; bracts ovate, cucullate, subulate or oblong, 1–1.3 mm, sparsely glandular granulate, margin entire, glandular ciliate, apex obtuse. Flowers white or yellowish, 4-merous, staminate 2–2.5(–3) mm, pistillate 1.5–2 mm. Pedicel 2–4 mm in staminate, 1.5–2 in pistillate, glabrous or glandular puberulent. Sepals ovate or triangular, glabrous or glandular puberulent, red punctate, margin subentire, apex acute. Petals free, ovate or oblong, membranous, glabrous outside, densely glandular granulate inside, entire, glandular ciliate, apex obtuse or rounded. Stamens exserted 1–1.5 mm in staminate flowers, ca. 1/3 petal length in pistillate; anthers broadly cordate, apex acute. Ovary glabrous. Style straight, punctate; stigma subcapitate, 2- or 3-lobed. Fruit globose, 5–8 mm in diam., densely pellucid punctate.

Two subspecies: 100–2000(–3000) m. Fujian, Guangdong, Guangxi, Hainan, Jiangxi, Taiwan, Yunnan [Cambodia, Laos, Thailand, Vietnam].

- 1a. Branchlets straight to somewhat flexuous, glabrous; pedicels and calyx glabrous; petals glandular ciliate along margin 5a. subsp. *laeta*
- 1b. Branchlets geniculate, minutely and densely reddish glandular papillose-tomentose; pedicels and calyx glandular puberulent; petals glabrous along margin 5b. subsp. *papilligera*

5a. *Embelia laeta* subsp. *laeta*

酸藤子(原亚种) suan teng zi (yuan ya zhong)

Samara laeta Linnaeus, Mant. Pl. ed. 2: 199. 1771; *Choripetalum obovatum* Benth; *Embelia obovata* (Benth) Hemsley; *Myrsine laeta* (Linnaeus) A. de Candolle; *Ribesiodes obovatum* (Benth) Kuntze; *S. obovata* Benth.

Branchlets straight to somewhat flexuous, glabrous. Leaf blade papery, margin flat. Pedicel and calyx glabrous. Petals glandular ciliate along margin. Fl. Dec–Mar, fr. Apr–Jun.

Mixed forests, open slopes of grasslands, shrubby areas, hillsides; 100–1900 m. Fujian, Guangdong, Guangxi, Hainan, Jiangxi, Taiwan, Yunnan [Cambodia, Laos, Thailand, Vietnam].

5b. *Embelia laeta* (Linnaeus) Mez subsp. ***papilligera*** (Nakai) Pipoly & C. Chen, Novon 5: 358. 1995.

腺毛酸藤子 xian mao suan teng zi

Samara laeta var. *papilligera* Nakai in Nakai & Honda, Nov. Fl. Formos. 5: 84. 1943; *Embelia laeta* var. *papilligera* (Nakai) E. Walker; *Embelia penduliramula* Hayata.

Branchlets geniculate, minutely and densely reddish glandular papillose-tomentose. Pedicel and calyx glandular puberulent. Petals glabrous along margin. Fr. May.

* Margins of mixed forests and swamps; 800–2000(–3000) m. Jiangxi, Taiwan.

6. *Embelia parviflora* Wallich ex A. de Candolle, Trans. Linn. Soc. London 17: 130. 1834.

当归藤 dang gui teng

Embelia myrtifolia Hemsley & Mez; *Embelia pulchella* Mez; *Ribesiodes parviflorum* (Wallich ex A. de Candolle) Kuntze; *Samara parviflora* (Wallich ex A. de Candolle) Kurz.

Shrubs scandent, villous-tomentose on branchlets, petioles, pedicels, and inflorescences, otherwise villous. Branchlets terete, 2.5–3 mm in diam., sparsely lenticellate, glandular. Petiole canaliculate, 0.5–1 mm; leaf blade ovate or broadly so, 1–1.5(–2.5) × 0.6–1(–1.3) cm, papery, glossy, glabrous, sparsely red punctate near apex, villous or scaly abaxially, base broadly rounded to truncate or cordate, margin entire, apex obtuse or rounded; midrib impressed adaxially; lateral veins inconspicuous. Inflorescences axillary, staminate usually cymose, 7–10(–15) mm, (1–)2–4(–6)-flowered; pistillate usually subumbellate, 4–7(–10) mm, (2–)3–5-flowered; bisexual fascicled, 3–5(–7) mm, 3–8-flowered, pendulous; bracts lanceolate to subulate, 0.6–1 mm, red punctate, densely villous. Flowers white or greenish white, 5-merous, membranous, staminate 2.5–3 mm, pistillate 1.8–2.3 mm, bisexual 2–2.5 mm. Pedicel 3–8 mm in staminate, 2–5 in pistillate, 0.5–1.5 mm in bisexual. Sepals ovate, subdelatate, or oblong, densely red punctate, glabrous except sparsely villous basally, margin entire, glandular ciliate. Petals free, ovate, lanceolate, or oblong, papery, glabrous outside, red or black punctate, densely red glandular granulate inside, margin glandular ciliate, apex obtuse or emarginate. Stamens slightly longer than petals in staminate flowers, ca. 3/4 petal length in bisexual flowers; anthers broadly ovate in staminate, ovate in bisexual, and lanceolate in pistillate flowers, base cordate, apex acute or slightly emarginate, connective densely black punctate. Style sparsely glandular papillate basally; stigma capitate, 4-lobed. Fruit dull red, globose, 3–5 mm in diam., red punctate-lineate. Fl. Dec–May, fr. Jan–Nov.

Dense mixed forests, evergreen broad-leaved forests, shrubby areas, hillsides, humus-rich soil, shady places; 300–1800(–2200) m. Fujian, Guangdong, Guangxi, Guizhou, Hainan, Xizang, Yunnan, Zhejiang [India, Indonesia, Malaysia, Myanmar, Thailand, Vietnam].

Embelia pulchella is tentatively placed in the synonymy of *E. parviflora*. It differs in being red punctate and hairy on the petals, ovary, and fruit, and in having hirsute leaf midrib. It might represent an infraspecific taxon of *E. parviflora*.

7. *Embelia sessiliflora* Kurz, J. Asiat. Soc. Bengal, Pt. 2, Nat. Hist. 40: 66. 1871.

短梗酸藤子 duan geng suan teng zi

Embelia stricta Craib; *Ribesiodes sessiliflorum* (Kurz) Kuntze; *Samara sessiliflora* (Kurz) Kurz.

Shrubs scandent, glandular papillose-tomentose on branchlets, inflorescences, and petals. Branchlets angled, longitudinally sharply ridged, 2–3(–4) mm in diam. Petiole 5–10 mm, narrowly marginate, glabrous; leaf blade elliptic or oblong, 5–12 × 2.2–4.5 cm, papery, glabrous, inconspicuously pellucid punctate below, base rounded and decurrent on petiole, margin entire, apex subacuminate, rarely acute; midrib impressed adaxially, red punctate-lineate abaxially; lateral veins 18–27 on each side of midrib, inconspicuous. Inflorescences terminal, pinnately pyramidal paniculate, 5–15(–30) cm, branches spicate; peduncle 1.3–2.5 cm; bracts ovate to subulate, 0.8–1.2 mm, sparsely papillose-puberulent abaxially, margin entire, ciliate, apex acute or attenuate. Flowers greenish or white, (4 or)5-merous, papery, staminate 2.7–3.5 mm, pistillate 1.5–2 mm. Pedicel obsolete or conic to 0.5 mm. Sepals deltate, prominently black punctate, moderately papillose puberulent, margin long glandular papillose, apex acuminate. Petals free, elliptic or oblong, papery, pellucid punctate-lineate medially, margin long glandular papillose, apex obtuse to rounded. Stamens subequalling petals; anthers oblong, base sagittate, apex obtuse or acute, connective red punctate or pellucid punctate. Ovary globose, glabrous. Stigma subcapitate, 2- or 3-lobed. Fruit red, globose, 3–4 mm in diam. Fl. Feb–Apr, fr. May.

Sparse mixed forests, scrub, hillsides, wasteland, roadsides; 1400–2800 m. Guizhou, Yunnan [India, Myanmar, Thailand].

8. *Embelia ribes* N. L. Burman, Fl. Indica 62. pl. 23. 1768.

白花酸藤果 bai hua suan teng guo

Shrubs scandent. Branchlets angled, longitudinally ridged, densely tawny or rusty papillose-tomentose. Petiole 5–10 mm, marginate to base; leaf blade elliptic, oblong, or narrowly obovate, (3.5–)5–8(–10) × (1.5–)3–3.5 cm, papery, leathery or rarely cartilaginous, glabrous, pellucid or black punctate, base cuneate or rounded, margin revolute, entire, apex acuminate, rarely subacute; lateral veins inconspicuous. Inflorescences terminal, pinnately pyramidal paniculate, (6–)10–15(–30) cm; bracts subulate or lanceolate, 1–1.5 mm, sparsely puberulent abaxially, black punctate-lineate, margin entire, sparsely glandular puberulent, apex subulate. Flowers greenish or white, (4 or)5-merous, papery, staminate 2–2.5 mm, pistillate 1.5–2 mm. Pedicel (2–)3–3.5 mm in staminate, 1.5–2.5 mm in pistillate, sparsely to densely papillose puberulent. Sepals deltate, pellucid-punctate, glandular papillose adaxially and on margin, apex acuminate. Petals free, elliptic or oblong, papery, pellucid punctate, densely glandular granulose inside, margin entire, long glandular papillose, apex

acute to obtuse. Stamens subequalling petals or slightly exerted to 1 mm in staminate and 2/3 petal length in pistillate; anthers ovate or oblong, base sagittate, apex rounded, connective black punctate. Ovary glabrous. Stigma capitate or 2- or 3-lobed. Fruit red or scarlet, globose or ovoid, (2–)3–4 (–5) mm in diam., smooth, wrinkled when dry, densely black punctate.

Two subspecies: Below 100–2000 m. Fujian, Guangdong, Guangxi, Guizhou, Hainan, Xizang, Yunnan [Cambodia, India, Indonesia, Laos, Malaysia, Myanmar, New Guinea, Philippines, Sri Lanka, Thailand, Vietnam].

- 1a. Branchlets lenticellate; leaf blade papery, dull adaxially; petals erect at anthesis; anthers longer than wide; fruit 3–4(–5) mm in diam. 8a. subsp. *ribes*
- 1b. Branchlets without lenticels; leaf blade leathery to cartilaginous, glossy adaxially; petals reflexed at anthesis; anthers wider than long; fruit 2–3 mm in diam. 8b. subsp. *pachyphylla*

8a. *Embelia ribes* subsp. *ribes*

白花酸藤果(原亚种) bai hua suan teng guo (yuan ya zhong)

Ribesiodes ribes (N. L. Burman) Kuntze; *Samara ribes* (N. L. Burman) Kurz.

Branchlets lenticellate. Leaf blade papery, dull adaxially. Bracts subulate. Petals erect at anthesis. Stamens and staminodes equal in size, subequalling petals; anthers longer than wide. Fruit 3–4(–5) mm in diam. Fl. Jan–Jul, fr. May–Dec.

Mixed forests, bushes, roadsides, scrub, on well-drained soils, sand, sandy loam; below 100–2000 m. Fujian, Guangdong, Guangxi, Guizhou, Hainan, Xizang, Yunnan [Cambodia, India, Indonesia, Laos, Malaysia, Myanmar, New Guinea, Sri Lanka, Thailand, Vietnam].

8b. *Embelia ribes* subsp. *pachyphylla* (Chun ex C. Y. Wu & C. Chen) Pipoly & C. Chen, Novon 5: 358. 1995.

厚叶白花酸藤果 hou ye bai hua suan teng guo

Embelia ribes var. *pachyphylla* Chun ex C. Y. Wu & C. Chen in C. Chen, Fl. Yunnan. 1: 364. 1977; *Embelia tenuis* Mez.

Branchlets without lenticels. Leaf blade leathery to cartilaginous, glossy adaxially. Bracts lanceolate. Petals reflexed at anthesis. Stamens slightly exerted ca. 1 mm, staminodes ca. 2/3 petal length; anthers wider than long. Fruit 2–3 mm in diam. Fl. Mar–Apr, fr. Oct–Dec.

Sparse or dense forests, shrubby areas, in poorly drained areas, swamps, clay soils; 700–1800 m. Guangdong, Guangxi, Hainan, Yunnan [Indonesia, Philippines, Vietnam].

9. *Embelia floribunda* Wallich in Roxburgh, Fl. Ind. 2: 291. 1824.

多花酸藤子 duo hua suan teng zi

Ribesiodes floribundum (Wallich) Kuntze; *Samara floribunda* (Wallich) Kurz.

Shrubs scandent, glabrous. Branchlets slightly flexuous, terete, 2–3 mm in diam., lenticellate. Petiole (0.3–)1–1.2 (–1.5) cm, narrowly marginate; leaf blade lanceolate or oblong, (6–)7–13(–17) × 2–3.5(–5) cm, papery to subleathery, black punctate-lineate abaxially, glossy adaxially, dull below, base rounded, margin entire, slightly revolute and black punctate, apex long acuminate; lateral veins numerous, inconspicuous. Inflorescences axillary or rarely terminal, pinnately pyramidal panicle, (6–)7–11(–18) cm; bracts subulate, 0.8–1 mm, black punctate medially, margin erose, apex long acuminate. Flowers green or greenish yellow, 5-merous, staminate 2.7–3.2 mm, pistillate 2–2.5 mm. Pedicel ca. 1.5–3(–4) mm, black punctate-lineate, sparsely puberulent, glabrescent. Sepals deltate to subdeltate, rugose basally, black punctate medially, margin erose, glandular ciliate, apex acute. Petals free, papery, lanceolate or oblanceolate, pellucid punctate-lineate, densely glandular granulate inside and along thickened margin, apex acute. Stamens exerted ca. 0.5 mm in staminate, ca. 3/4 petal length in pistillate; anthers ovate, base deeply cordate, apex truncate to emarginate. Stigma subcapitate to capitate, sometimes 2-lobed. Fruit red, globose, 4–5 mm in diam., somewhat fleshy, reticulate-wrinkled when dry, pellucid-punctate. Fl. Feb–Mar, fr. Oct–Dec.

Broad-leaved forests, shrubby areas, hillsides, roadsides; 1500–2800 m. Xizang, Yunnan [Bhutan, India, Myanmar, Nepal].

10. *Embelia vestita* Roxburgh, Fl. Ind. 2: 288. 1824.

密齿酸藤子 mi chi suan teng zi

Calispermum oblongifolium (Hemsley) Nakai; *C. rude* (Handel-Mazzetti) Nakai; *Embelia bodinieri* H. Léveillé; *E. lenticellata* Hayata; *E. nigroviridis* C. Chen; *E. oblongifolia* Hemsley; *E. prunifolia* Mez; *E. rudis* Handel-Mazzetti; *E. vestita* var. *lenticellata* (Hayata) C. Y. Wu & C. Chen; *Ribesoides oblongifolium* (Hemsley) Kuntze; *R. vestitum* (Roxburgh) Kuntze; *Samara vestita* (Roxburgh) Kurz.

Shrubs scandent, glandular granulate on branchlets, bracts, sepals bases, and petals inside. Branchlets flexuous, terete, 1.5–2(–2.5) mm in diam., lenticellate, glabrescent. Petiole canaliculate and marginate, margin often developing cork warts, 4–8 mm; leaf blade oblong or lanceolate to ovate, (3.5–)7–11(–18) × (1.3–)2–4(–7.5) cm, papery to thin leathery, glossy, glabrous, red or black punctate, base obtuse, rounded or truncate, margin serrate or serrulate, apex acute to acuminate; lateral veins numerous. Inflorescences racemose or rarely panicle of 2 racemes, (1–)2–4 cm, densely glandular papillate; bracts subulate, 1–1.5 mm, glabrous, red punctate, margin roughly serrulate. Flowers unisexual or bisexual, white or pinkish, 5-merous, 1.8–3 mm. Pedicel cylindrical, 2–5 mm, sparsely papillate. Sepals ovate, pellucid or brown punctate, margin erose, glandular ciliate; apex obtuse to acutish. Petals narrowly oblong, elliptic, ligulate, or spatulate, glabrous outside, orange punctate, apex rounded or emarginate. Stamens ca. as long as or longer than petals in staminate flowers, ca. 2/3 as long as petals in bisexual flowers; anthers connective pellucid to red-punctate. Style usually curved;

stigma subcapitate. Fruit red, globose 5–10 mm in diam., red punctate. Fl. Oct–Dec, fr. Oct–Jul.

Mixed forests, evergreen, broad-leaved forests, shrubby areas, limestone hillsides; 200–1900(–2300) m. Fujian, Guangdong, Guangxi, Guizhou, Hainan, Hunan, Sichuan, Taiwan, Xizang, Yunnan, Zhejiang [India, Myanmar, Nepal, Vietnam].

11. *Embelia undulata* (Wallich) Mez in Engler, Pflanzenr. IV. 236(Heft 9): 327. 1902.

平叶酸藤子 ping ye suan teng zi

Myrsine undulata Wallich in Roxburgh, Fl. Ind. 2: 299. 1824; *Choripetalum undulatum* (Wallich) A. de Candolle; *Embelia longifolia* (Benth) Hemsley; *E. nagushia* D. Don var. *subcoriacea* C. B. Clarke; *Embelia subcoriacea* (C. B. Clarke) Mez; *Ribesiodes longifolium* (Benth) Kuntze; *Samara longifolia* Benth; *S. undulata* (Wallich) Arnott.

Shrubs scandent, glabrous. Branchlets straight, often twisted, terete, 2–4.5 cm in diam., lenticellate. Petiole (0.8–)1–1.5(–2) cm, deeply canaliculate, black punctate; leaf blade elliptic, oblong, or rarely obovate (4–)7.5–11.5(–18) × (1.8–)3–5(–8) cm, papery to subleathery, black punctate-lineate, base acute or cuneate, decurrent on petiole, margin entire, apex acute or acuminate, rarely rounded; midrib prominent at both surfaces, black and red punctate-lineate abaxially; lateral veins numerous, prominent. Inflorescences lateral or axillary racemes 1–2(–6) cm, black punctate-lineate, glabrous; bracts deltate, 0.8–1.1 mm, sparsely glandular ciliate, apex acute. Flowers yellowish or greenish, 4-merous, staminate 2.5–3; pistillate 1–1.5 mm. Pedicel 1.5–3 mm, puberulent. Sepals subdeltate, glandular granulate, black punctate-lineate, margin entire, glandular ciliate, apex acute. Petals free, elliptic to ovate, red punctate outside, glandular granulate inside, margin entire, reflexed at anthesis, apex obtuse or acute. Stamens exerted up to 1 mm, staminodes ca. 2/3 petal length; anthers narrowly oblong, ca. 1 mm, base subcordate, apex truncate, connective black punctate. Ovary globose, glabrous. Style straight, epunctate; stigma capitate. Fruit globose or subglobose, (8–)1–1.5 cm in diam., longitudinally ribbed, black punctate. Fl. Apr–Aug, fr. Nov–Jan.

Dense evergreen broad-leaved forests, mixed forests, damp places, shrubby areas, valleys, hillsides; (300–)1200–2500(–2800) m. Fujian, Guangdong, Guangxi, Guizhou, Hainan, Hunan, Jiangxi, Sichuan, Yunnan [Cambodia, India, Laos, Nepal, Thailand, Vietnam].

12. *Embelia scandens* (Loureiro) Mez in Engler, Pflanzenr. IV. 236(Heft 9): 317. 1902.

瘤皮孔酸藤子 liu pi kong suan teng zi

Calispermum scandens Loureiro, Fl. Cochinch. 1: 156. 1790; *Embelia hainanensis* Merrill.

Shrubs scandent. Branchlets terete, 1.5–3 mm in diam., puberulent, glabrescent. Petiole deeply canaliculate, (5–)7–9 mm, glabrous; leaf blade elliptic or ovate, (4–)5–9(–12) × 2.5–4(–5) cm, papery to subleathery, pellucid punctate, base obtuse to rounded, margin entire or obscurely serrate distally, apex rounded, obtuse, or rarely acute; midrib impressed adaxially, red punctate-lineate abaxially; lateral veins 7–9 on each

side of midrib, slightly raised on both surfaces. Inflorescences axillary, racemose, 1–3(–5) cm, reddish glandular puberulent; bracts subulate, staminate 1.5–2 mm, pistillate 0.8–1.2 mm, puberulent abaxially, margin entire, densely glandular ciliate, apex subulate. Flowers white or greenish, (4 or)5-merous, staminate 1.5–2 mm, pistillate ca. 1 mm. Pedicel 1.5–2.5 mm in staminate flowers, 0.8–1.2 mm in pistillate, puberulent. Sepals ovate, puberulent basally outside, red punctate medially, margin erose apically. Petals elliptic or oblong to obovate, free, erect, red and black punctate, glabrous outside, glandular granulate inside, margin entire, glabrous, apex obtuse to rounded. Stamens exerted to 0.7 mm, staminodes ca. 3/4 petal length; filaments puberulent at base; anthers ± square, base subcordate, apex truncate, red punctate dorsally. Style persistent; stigma capitate or 2-lobed. Fruit red, globose, ca. 5 mm in diam., black punctate. Fl. Nov–Jan, fr. Mar–May.

Mixed forests, shrubby areas, hillsides, valleys; 200–900 m. Guangdong, Guangxi, Hainan, Yunnan [Cambodia, Laos, Thailand, Vietnam].

13. *Embelia gamblei* Kurz ex C. B. Clarke in J. D. Hooker, Fl. Brit. India 3: 516. 1882.

皱叶酸藤子 *zhou ye suan teng zi*

Ribesiodes gamblei (Kurz ex C. B. Clarke) Kuntze.

Shrubs scandent, rusty stellate tomentose on branchlets and leaves abaxially. Branchlets angled, 5–7 mm in diam., glabrescent. Petiole deeply canaliculate, (1.5–)2–3 cm, glabrescent; leaf blade elliptic, lanceolate, or obovate, (7–) 15–30 × (3–)5.5–9 cm, leathery, black punctate abaxially, glabrescent, base subrounded or obtuse, margin entire, apex acute, rarely acuminate or rounded; lateral veins 15–25 on each side of midrib, impressed adaxially. Inflorescences racemose, (2–) 2.5–4(–5) cm, puberulent, glabrescent; bracts narrowly lanceolate, 2–3.5 mm. Flowers dull yellowish green, (4 or)5-merous, staminate 3.5–4 mm, pistillate 2–3 mm. Pedicel (1.8–) 2–4(–6) mm, puberulent. Sepals ovate to oblong, glandular, black punctate, margin subentire, minutely ciliolate apically. Petals free, elliptic or obovate, papery, glabrous outside, glandular granulate inside, margin entire, glandular ciliate, apex obtuse to rounded. Stamens exerted to 0.5 mm, staminodes equaling petal length; anthers lanceolate, base sagittate, apex apiculate. Ovary glabrous. Style curved, pellucid punctate-lineate, persistent; stigma 2- or 3-lobed. Fruit red, globose, 3–4 mm in diam., black punctate and punctate-lineate. Fl. May–Jun, fr. Oct–Dec.

Evergreen broad-leaved forests, shrubby areas, valleys, hillsides; 2000–2700 m. Xizang, Yunnan [Myanmar, Sikkim].

14. *Embelia carnosisperma* C. Y. Wu & C. Chen in C. Chen, Fl. Yunnan. 1: 374. 1977.

肉果酸藤子 *rou guo suan teng zi*

Shrubs, lianous at maturity. Branchlets terete, straight, 5–6 mm in diam., glabrous. Petiole canaliculate, 1.7–2.8 cm, red punctate, glabrous; leaf blade elliptic to oblanceolate, rarely obovate, 8–10.5(–14) × 3.5–6.3 cm, leathery, glabrous, black punctate-lineate especially toward apex, base cuneate,

margin entire, apex short acute; midrib somewhat impressed above; lateral veins 18–28 on each side of midrib, raised at both surfaces. Inflorescences racemose, 2–3 mm, glandular granulate. Flowers 4-merous, staminate ca. 3 mm, pistillate unknown. Pedicel 2–2.5 mm in staminate flowers, to 1 cm and ca. 3 mm thick in fruit. Sepals subdeltate, glabrous, rugose basally, prominently but sparsely black punctate, margin entire, glabrous, apex acute. Fruit subglobose, ca. 2.7 cm in diam. (immature), fleshy, densely black punctate-lineate, glabrous. Fl. May, fr. Jul–Aug.

* Evergreen broad-leaved forests, valleys, shady damp places; 1200–1400 m. SE Yunnan.

Flora of China 15: 29–34. 1996.