

## 2. SARCOCOCCA Lindley, Edwards's Bot. Reg. 1012. 1826.

野扇花属 *ye shan hua shu*

Shrubs, evergreen, monoecious; branches erect. Leaves alternate, shortly petiolate, leathery, margin entire, venation pinnate or palmately triplinerved. Inflorescences axillary or terminal, capitate or racemose, bracteate; male flowers several, inserted laterally in apical part; female flowers several, inserted basally; sometimes male or female flowers solitary in inflorescence. Flowers small, white or rose. Male flowers mostly with 2 bracteoles; tepals 4, divided into inner and outer series; stamens 4, opposite to tepals; filaments exerted, slightly compressed; sterile pistil 1, oblong, 4-ribbed, apex depressed. Female flowers pedicellate; bracteoles several, imbricate; tepals 4–6, decussate or 3 segments verticillate; interstylar nectaries or nectariferous tissue lacking; ovary 2- or 3-locular; styles 2 or 3, short, erect initially, later curved; stigma decurrent. Drupe ovoid or globose; exocarp fleshy or subdry; endocarp fragile; persistent style short, ca. 2 mm. Seeds 1 or 2, subglobose; testa membranous; endosperm fleshy.

About 20 species: Asia, one species in Central and North America (Guatemala, Mexico); nine species (five endemic) in China.

- 1a. Young branches distinctly pubescent.
  - 2a. Inflorescence racemose or shortly racemose.
    - 3a. Plants with fibrous roots; leaves ovate, ovate-lanceolate, or lanceolate, basal lateral veins a pair to triplinerved; capsule scarlet or black-brown ..... 6. *S. ruscifolia*
    - 3b. Plants with rhizome; leaves lanceolate or oblanceolate, lateral veins pinnate; capsule black or blue-black ..... 7. *S. hookeriana*
  - 2b. Inflorescence subcapitate or globose, ca. 1 cm.
    - 4a. Leaf blade oblong-lanceolate or oblong-oblanceolate, 6–9 × 2–3 cm; inflorescence subcapitate, ca. 1 cm; male flower sessile ..... 8. *S. orientalis*
    - 4b. Leaf blade elliptic, (5.5–)7–8.5 × 2–2.9 cm; inflorescence globose, 1–1.5 cm; male flower shortly pedicellate ..... 9. *S. confertiflora*
- 1b. Young branches glabrous or slightly puberulent only under microscope.
  - 5a. Leaf blade wider, usually elliptic, elliptic-oblong, or elliptic-lanceolate, length:width ratio 2.5–3:1, venation distinctly triplinerved.
    - 6a. Leaf blade 6–10(–12) × 2–3.5(–5) cm, triplinerved and distance from base 2–5 mm; tepals 3–4 mm in male flower; styles 2 or 3 ..... 4. *S. wallichii*
    - 6b. Leaf blade 8–16(–20) × 4–6 cm, triplinerved and distance from base 1.5–2 mm; tepals ca. 2 mm in male flower; styles 2 ..... 5. *S. vagans*
  - 5b. Leaf blade narrow and long, usually lanceolate or oblong-lanceolate, length:width ratio 4–5:1, venation indistinctly triplinerved or pinnate.
    - 7a. Petiole 5–8 mm; styles 3; young branches glabrous ..... 1. *S. saligna*
    - 7b. Petiole 10–18 mm; styles 2; young branches glabrous or slightly puberulent under microscope.
      - 8a. Young branches slightly puberulent under microscope; leaf blade thinly leathery, 1.5–2.5 cm wide, venation triplinerved; male flower with 2 bracteoles ..... 2. *S. longipetiolata*
      - 8b. Young branches glabrous; leaf blade papery, 2.5–3.7 cm wide, venation pinnate; male flower bracteoles absent ..... 3. *S. longifolia*

**1. *Sarcococca saligna*** (D. Don) Müller Argoviensis in A. Candolle, Prodr. 16(1): 11. 1869.

柳叶野扇花 *liu ye ye shan hua*

*Buxus saligna* D. Don, Prodr. Fl. Nepal. 63. 1825; *Sarcococca pruniformis* Lindley var. *angustifolia* Lindley; *S. salicifolia* Baillon.

Shrubs, 3–5 m tall; rhizome ramified from base; young branches light green, longitudinally ribbed, glabrous. Petiole slender, 5–8 mm; leaf blade lanceolate or oblong-lanceolate, usually 6–8 × 1.2–2 cm, papery, deep green adaxially, lucid, light green abaxially, densely and very minutely punctate, base cuneate, apex long acuminate, obtuse, or slightly mucronate at tip; midrib elevated on both surfaces, lateral veins pinnate, basal a subtriplinerved pair, distance 6–8 mm from base. Inflorescences short racemes, erect, ca. 1 cm; rachis pubescent. Flowers light yellow. Male flowers 5 or 6, inserted apically; pedicels

short; bracteoles 2, or apical part ebracteolate; tepals long ovate, ca. 3 mm, acute. Female flowers 2 or 3, inserted basally; bracteoles several, ovate, densely imbricate, acute; tepals similar to bracteoles in shape. Fruit globose or subellipsoid, ca. 6 mm in diam., darkly purple when mature; persistent styles 3, ca. 1.5 mm, apices recurved; carpodium 4–5 mm. Fl. Sep–Dec.

Evergreen forests; 1200–2300 m. Taiwan, S Xizang (Gyirong, Nyalam) [Afghanistan, India, Nepal, Pakistan].

**2. *Sarcococca longipetiolata*** M. Cheng, Acta Phytotax. Sin. 17(3): 99. 1979.

长叶柄野扇花 *chang ye bing ye shan hua*

Shrubs, 1–3 m tall; young branches longitudinally ribbed, glabrous or puberulent under microscope. Petiole 1–1.5 cm; leaf blade lanceolate, oblong-lanceolate, or narrowly lanceolate, rarely ovate-lanceolate, 5–12 × 1.5–2.5 cm,

leathery or thinly leathery, base attenuate or cuneate, apex long acuminate; midrib visible, puberulent toward base, basal lateral veins a pair to triplinerved, distance 1–5 mm from base. Inflorescences axillary and terminal, racemes or subcapitate to compound racemes, 1–1.5 cm; rachis puberulent; bracts ovate, ca. 1.5 mm, acuminate. Male flowers 4–8, inserted apically in rachis; pedicels ca. 1 mm; bracteoles 2, broadly ovate, ca. 2 mm; tepals broadly ovate or elliptic, ca. 3 mm; filaments ca. 5 mm; anthers ca. 1 mm. Female flowers 2–4, inserted basally in rachis; bracteoles ovate, 1.5–2 mm, imbricate; tepals similar to bracteoles. Drupe globose, ca. 8 mm in diam., brown, red, or purplish; persistent styles 2. Fl. Sep, fr. Dec.

• Streamsides in forests; 300–800 m. N Guangdong (Ruyuan, Yangshan), S Hunan (Yizhang).

**3. *Sarcococca longifolia*** M. Cheng & K. F. Wu, Acta Phytotax. Sin. 17(3): 99. 1979.

长叶野扇花 chang ye ye shan hua

Shrubs, ca. 2 m tall; young branches longitudinally ribbed; internode 1.5–2 cm. Petiole thickset, 1.5–1.8 cm; leaf blade oblong-lanceolate, 12–16 × 2.5–3.7 cm, papery, base attenuate or acute, apex long acuminate; veins pinnate, elevated along midrib adaxially, midrib slender and impressed, lateral veins visible on both surfaces. Inflorescences compound racemes, ca. 2 cm; bracts ovate, ca. 1 mm. Male flowers usually 3, inserted on rachis or ramified; pedicels ca. 1 mm, ebracteolate; inner tepals broadly elliptic, ca. 3 mm; outer tepals slightly short, broadly ovate, ± small cymbiform; filaments ca. 6 mm; anthers ca. 1 mm. Female flowers inserted basally; styles 2. Drupe not seen. Fl. Sep.

• Dense forests in mountain valleys. SE Guangxi (Rongxian).

**4. *Sarcococca wallichii*** Stapf, Bull. Misc. Inform. Kew 1916: 34. 1916.

云南野扇花 yun nan ye shan hua

*Sarcococca coriacea* Müller Argoviensis.

Shrubs, 0.6–3 m tall; branchlets erect or recurved toward left or right, sometimes longer and slender, trailing, longitudinally ribbed, glabrous. Petiole 0.8–1.2(–2) cm; leaf blade thinly leathery, elliptic, oblong-lanceolate, or lanceolate, 6–10 × 2–3.5(–5) cm, lucid green adaxially, light green abaxially, glabrous on both surfaces, base rounded or broadly cuneate, apex acuminate or shortly caudate; midrib elevated on both surfaces, basal lateral veins a pair, distance 2–5 mm from base, to distinctly triplinerved. Inflorescences subcapitate or shortly spicate, often upper part elongate, 1–2 cm; rachis glabrous; bracts ovate or lanceolate, 1–2 mm. Flowers white, fragrant. Male flowers 3–6(–10), inserted on major part of rachis, sessile and ebracteolate, or male flowers in middle to apical part shortly pedicellate and ebracteolate, in basal part pedicellate and 2 bracteoles, in lowest part shortly ramified, apical male flowers 2, sessile; tepals usually 4 or 5 at upper part of ebracteolate male flowers, ovate, long ovate, broadly ovate, or broadly elliptic, 3–4 mm, apex acute or mucronate; filaments

6–8 mm; anthers ca. 1.5 mm. Female flowers 2–3 inserted basally on rachis; bracteoles 4 or 5 pairs, broadly ovate or ovate-lanceolate, 1–2 mm; tepals 4–6, ovate, 1.5–2.5 mm, acute or acuminate. Drupe subglobose or ellipsoid, 9–10 mm; persistent styles 2 or 3, ca. 2 mm, recurved; carpopodium 6–10 mm. Fl. and fr. Sep–Dec.

Forests on mountain slopes or in valleys; 1300–2700 m. Xizang, S and W Yunnan (Dali, Jingdong, Tengchong, Zhenkang) [Bhutan, NE India, Myanmar, Nepal].

**5. *Sarcococca vagans*** Stapf, Bull. Misc. Inform. Kew 1914: 230. 1914.

海南野扇花 hai nan ye shan hua

*Sarcococca balansae* Gagnepain; *S. euphlebica* Merrill.

Shrubs, 1–3 m tall; branchlets long and slender, recurved toward left or right, longitudinally ribbed, glabrous. Petiole 1–2 cm; leaf blade elliptic-lanceolate, ovate-lanceolate, or elliptic-oblong, 8–16(–20) × 4–6 cm, papery, glabrous on both surfaces, base broadly cuneate, apex acuminate; basal lateral veins a pair to triplinerved, distance 5–7 mm from base, other lateral veins 2 or 3(–5) pairs, midrib and lateral veins impressed adaxially, prominent abaxially. Inflorescences short racemes or subcapitate, 1–1.3 cm; rachis glabrous; bracts ovate, ca. 1.3 mm. Male flowers 7–10, inserted on major part of rachis, flower distance 1–2 mm; male flowers in basal part with pedicels ca. 1.2 mm, bracteoles 2, ovate, 0.8–1 mm, apex obtuse, tepals 4, outer tepals broadly ovate or elliptic, inner tepals ca. 2 mm, apex rounded, mucronate; male flowers in apical part with very short pedicels, ebracteolate, tepals 4 or 5; sterile pistil oblong, ca. 0.5 mm, ca. 1 mm in diam. Female flowers 1 or 2(–5), inserted basally on rachis; bracteoles ovate or ovate-triangular; tepals similar to apical bracteoles. Drupe globose, 8–10 mm in diam.; persistent sepals broadly ovate, 1.5–2(–3) mm; persistent styles 2, recurved; carpopodium 4–6(–10) mm. Fl. and fr. Sep–Mar.

Forests, mountain valleys; 500–800 m. Hainan, S and W Yunnan [Myanmar, Vietnam].

**6. *Sarcococca ruscifolia*** Stapf, Bull. Misc. Inform. Kew 1910: 394. 1910.

野扇花 ye shan hua

*Sarcococca pauciflora* C. Y. Wu ex S. Y. Bao; *S. ruscifolia* Stapf var. *chinensis* (Franchet) Rehder & E. H. Wilson; *S. saligna* (D. Don) Müller Argoviensis var. *chinensis* Franchet.

Shrubs, 1–4 m tall, densely ramified; young branches densely or slightly pubescent; main root and developed fibrous roots present. Petiole 3–6 mm; leaf blade usually ovate or elliptic-lanceolate, 3.5–5.5 × 1–2.5 cm, variable in shape and size, sometimes elliptic-ovate, lanceolate, or narrowly lanceolate, smaller 2–3 × 0.7–1.2 cm, narrower 4–7 × 0.7–1.4 cm, larger 6–7 × 2.5–3 cm, thinly leathery, lucid green adaxially, light green abaxially, base cuneate or rounded, apex acute or acuminate; midrib elevated adaxially, puberulent near base, basal lateral veins a pair to triplinerved. Inflorescences short ra-

comes, 1–2 cm; rachis puberulent; bracts lanceolate or ovate-lanceolate. Flowers white, fragrant. Male flowers 2–7, inserted on major part of rachis; male flowers in basal part pedicellate, pedicels ca. 2 mm, bracteoles 2, ovate, 1–2 mm; male flowers in apical part subsessile, sometimes ebracteolate; tepals usually 4, rarely 3 or 5, ca. 3 mm, outer tepals ovate, acuminate, inner tepals broadly elliptic or broadly ovate, rounded, mucronate; stamens ca. 7 mm. Female flowers 2–5, inserted in basal part of rachis, flower and pedicel 6–8 mm; bracteoles several, imbricate, narrowly ovate; tepals 1.5–2 mm. Capsule globose, 7–8 mm in diam., scarlet or black-brown; persistent styles 2 or 3, ca. 2 mm. Fl. and fr. Oct–Feb.

• Forests on mountain slopes, streamsides; 200–2600 m. Gansu, Guangxi, Guizhou, Hubei, Hunan, Shanxi, Sichuan, C, NW, and SE Yunnan.

**7. *Sarcococca hookeriana*** Baillon, Monogr. Buxac. 53. 1859.

羽脉野扇花 yu mai ye shan hua

Shrubs or small trees, up to 3 m tall; young branches longitudinally ribbed, pubescent. Petiole slender, 6–8 mm; leaf blade lanceolate, oblanceolate, elliptic-lanceolate, oblong-lanceolate, or narrowly lanceolate, rarely elliptic or elliptic-oblong, (3–)5–8(–11) × (0.7–)1.3–1.8(–3) cm, deep green adaxially, puberulent along midrib, base attenuate, apex acuminate or acute; midrib impressed or plane adaxially, elevated abaxially, lateral veins pinnate, obscure on both surfaces. Inflorescences racemes, ca. 1 cm; rachis puberulent; bracts ovate or ovate-lanceolate, apex subulate-apiculate, puberulent abaxially. Male flowers 5–8, inserted in apical part of rachis, shortly pedicellate or sessile, ebracteolate or 2 bracteoles on basal flowers; tepals 4, inner tepals broadly elliptic or suborbicular, 3–3.5 mm, outer tepals shorter, puberulent abaxially. Female flowers 1 or 2, inserted on base of rachis, flower and pedicel 6–7 mm; bracteoles several, ovate, imbricate; tepals similar to bracteoles, ca. 2 mm. Fruit globose, capsule black or blue-black; persistent styles 2 or 3, ca. 2 mm, erect, apices recurved.

Forests; 1000–3500 m. Chongqing, W Hubei, S Shaanxi, Sichuan, E Xizang, Yunnan [Afghanistan, Bhutan, NE India, Nepal].

- 1a. Leaves alternate, leaf blade lanceolate or nearly oblanceolate, 5–8 × 1.3–1.8 cm; styles 3 ..... 7a. var. *hookeriana*
- 1b. Leaves opposite or subopposite at apex of branchlets, leaf blade more variable in shape and size, elliptic-lanceolate, oblong-lanceolate, lanceolate, narrowly lanceolate, or oblanceolate, 3–11 × 0.7–3 cm; styles 2 ..... 7b. var. *digyna*

**7a. *Sarcococca hookeriana*** var. *hookeriana*

羽脉野扇花(原变种) yu mai ye shan hua (yuan bian zhong)

*Sarcococca pruniformis* Lindley var. *hookeriana* J. D. Hooker.

Leaves alternate; leaf blade lanceolate or nearly oblanceolate, 5–8 × 1.3–1.8 cm. Persistent styles 3. Fl. and fr. Oct–Feb.

E Xizang (Qamdo) [Afghanistan, Bhutan, NE India, Nepal].

**7b. *Sarcococca hookeriana*** var. *digyna* Franchet, Pl. Delavay. 135. 1889.

双蕊野扇花 shuang rui ye shan hua

*Myrsine chevalieri* H. Léveillé; *Pachysandra mairei* H. Léveillé; *Sarcococca hookeriana* var. *humilis* Rehder & E. H. Wilson; *S. humilis* Stapf.

Leaves opposite or subopposite at apex of branchlets; leaf blade elliptic-lanceolate, oblong-lanceolate, lanceolate, narrowly lanceolate, or oblanceolate, rarely elliptic or elliptic-oblong, larger 7–11 × 2–3 cm, narrower 3–7 × 0.7–1 cm, smaller 3–3.5 × 1–1.8 cm. Persistent styles 2. Fl. Jan, fr. Sep.

• Forests; 1000–3500 m. Chongqing, W Hubei, S Shaanxi, Sichuan, Yunnan.

**8. *Sarcococca orientalis*** C. Y. Wu ex M. Cheng, Acta Phytotax. Sin. 17(3): 99. 1979.

东方野扇花 dong fang ye shan hua

Shrubs, 0.6–3 m tall, with rhizome; young branches longitudinally ribbed, pubescent. Petiole 5–8 mm; leaf blade oblong-lanceolate or oblong-oblanceolate, rarely elliptic or elliptic-oblong, 6–9 × 2–3 cm, thinly leathery, base cuneate or broadly cuneate, margin revolute, apex acuminate; midrib plane or slightly elevated adaxially, puberulent, elevated abaxially, basal lateral veins a pair to triplinerved, visible on both surfaces, other lateral veins slightly visible adaxially. Inflorescences subcapitate, ca. 1 cm; rachis puberulent; bracts ovate, 1–2.5 mm. Male flowers 3–5 or more, clustered in apical part of rachis, sessile; bracteoles 2, broadly ovate, 1–1.5 mm; tepals broadly ovate or suborbicular, to 3 mm; filaments ca. 5 mm; anthers ca. 1.5 mm. Female flowers 1–3 or more, in basal part of rachis, flower and pedicel 3–5 mm; bracteoles ovate, imbricate; tepals similar to apical bracteoles. Drupe ovoid or globose, ca. 7 mm in diam., black when mature; persistent styles 2, ca. 1.5 mm, erect, apices recurved; carpodium 3–5 mm. Fl. Mar or Sep, fr. May–Jun or Nov–Dec.

• Forests, streamsides; 200–1000 m. W Fujian, N Guangdong, Jiangxi, S Zhejiang.

**9. *Sarcococca confertiflora*** Sealy, Hooker's Icon. Pl. 36: 3559. 1956.

聚花野扇花 ju hua ye shan hua

Shrubs; branchlets densely papillate-pubescent. Petiole 6–8 mm, densely pubescent; leaf blade elliptic, (5.5–)7–8.5 × 2–2.9 cm, thinly leathery, deep green adaxially, papillate-pubescent along midrib, light green abaxially, midrib pubescent near base or glabrescent, base cuneate, apex long acute or acuminate. Inflorescences densely clustered to globose, 1–1.5 cm in diam., decumbent or pendulous, male and female flowers variable in number: 6 male and 2 female flowers or 7–13 male and 3–4 female flowers, rarely 4 male flowers with 1 female or male

Fl. China 11: 328–331. 2008.

flowers, sometimes lowest branchlets 2 flowers (1 female, 1 male) in 2 bracts or only 6 male flowers in 1 bract; rachis and pedicels densely pubescent; bracts ovate, 2–3 mm, margin ciliate, papillate-pubescent abaxially, apex acuminate. Male flowers shortly pedicellate; bracteoles 2, ovate or broadly ovate, 2.5–3 mm, acute, margin ciliate; tepals 4, broadly ovate, elliptic, or suborbicular, 3–3.5 mm, with mucronate tip, incurved, carinate, margin ciliate; stamens ca. 5 mm; filaments broad, narrowly elliptic, ca. 4 mm; anthers ca. 2 mm. Female flowers: pedicels 4.5–5 mm; bracteoles 10–12, ovate, 1–1.7 mm, imbricate, acuminate, ciliate; tepals 6, ovate, ca. 2 mm, obtuse-acute or cucullate, ciliate; pistil ca. 2 mm; styles 2, ca. 0.5 mm, spreading. Fruit not seen.

- NE Yunnan (Yanjin).

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