

1. STYRAX Linnaeus, Sp. Pl. 1: 444. 1753.

安息香属 an xi xiang shu

Cyrta Loureiro.

Trees or shrubs, stellate pubescent or scaly, rarely glabrous. Leaves usually alternate. Inflorescences axillary or terminal, racemes, panicles, or cymes, sometimes 1-flowered or in several-flowered fascicles; bracteoles small, early deciduous. Flowers bisexual. Calyx cupular, 5-toothed, rarely truncate or 2–6-lobed. Corolla campanulate; lobes 5(–7), imbricate or valvate. Stamens (8–)10(–13), equal or rarely unequal in length; filaments flattened, free, sometimes basally adnate to corolla; anthers oblong. Ovary superior, 3-locular when young, becoming 1-locular; ovules 1–4 per locule; placentation parietal. Style subulate or filiform; stigma capitate or 3-lobed. Fruit indehiscent or 3-valved dehiscent, exocarp fleshy to dry. Seeds 1(or 2); seed coat almost bony, with a large basal hilum; endosperm fleshy or almost bony; embryo straight.

About 130 species: E Asia, North and South America, Mediterranean; 31 species in China.

- 1a. Corolla lobe margin usually narrowly involute, valvate or induplicate.
- 2a. Calyx and pedicel glabrous 19. *S. wuyuanensis*
- 2b. Calyx and pedicel densely scaly or stellate pubescent.
- 3a. Leaf blade abaxially densely covered with silvery gray or brownish glossy scales 20. *S. argentifolius*
- 3b. Leaf blade abaxially glabrous or stellate tomentose.
- 4a. Leaf blade abaxially densely stellate tomentose.
- 5a. Petiole 1–3 mm; leaf blade abaxially densely grayish stellate tomentose, tertiary veins reticulate; fruit obovoid, ca. 6 mm in diam. 21. *S. calvescens*
- 5b. Petiole 10–30 mm; leaf blade abaxially densely brown or brownish stellate tomentose, tertiary veins subparallel; fruit ovoid-globose, globose, or subglobose, 10–22 mm in diam.
- 6a. Calyx teeth ovate-deltate, ca. 2 mm; leaf blade abaxially densely stellate tomentose but stellate pubescent on veins 22. *S. chinensis*
- 6b. Calyx teeth ± rudimentary, limb undulate, truncate, or subtruncate and less than 2 mm; leaf blade abaxially stellate tomentose.
- 7a. Leaf blade twice or more as long as wide, base cuneate; fruit ovoid-globose 25. *S. suberifolius*
- 7b. Leaf blade less than twice as long as wide, base rounded or broadly cuneate; fruit globose or compressed globose.
- 8a. Petiole 2–3 cm; leaf blade thick leathery, apex short acuminate 23. *S. hainanensis*
- 8b. Petiole 1–1.5 cm; leaf blade leathery, apex acuminate 24. *S. benzoides*
- 4b. Leaf blade abaxially glabrous or sparsely stellate pubescent.
- 9a. Fruit cylindrical to oblique ovoid or ellipsoid to ellipsoid-ovoid; filaments flexuous.
- 10a. Fruit cylindrical to oblique ovoid, 1.2–3 × 8–16 mm, apex rostrate to short pointed; leaf blade elliptic, oblong, or elliptic lanceolate, margin entire or irregularly denticulate 26. *S. agrestis*
- 10b. Fruit ellipsoid to ellipsoid-ovoid, 8–16 × 6–8 mm, apex acute or apiculate; leaf blade ovate, oblong, or ovate-lanceolate, margin serrate or rarely entire 27. *S. serrulatus*
- 9b. Fruit subglobose, globose, ovoid, or obovoid; filaments straight.
- 11a. Trees; leaf blade leathery or subleathery; inflorescences (3–)5-flowered or more.
- 12a. Inflorescences racemose; fruit 8–15 mm in diam. 28. *S. confusus*
- 12b. Inflorescences paniculate; fruit 5–7 mm in diam. 29. *S. dasyanthus*
- 11b. Shrubs; leaf blade papery; inflorescences to 5-flowered.
- 13a. Calyx 2.5–3 mm; fruit irregularly rugose 30. *S. formosanus*
- 13b. Calyx 4–5 mm; fruit smooth 31. *S. faberi*
- 1b. Corolla lobe margin plane, imbricate.
- 14a. Leaf blade abaxially densely stellate tomentose.
- 15a. Branchlets with a pair of opposite leaves at base; inflorescences well-defined 6–15 cm racemes, sometimes with 1–3 lateral racemes from near base.
- 16a. Petiole forming a broad sheath at base to enclose winter buds; leaf blade subrounded to broadly elliptic 1. *S. obassis*
- 16b. Petiole without a broad sheath at base; leaf blade elliptic to elliptic-oblong 2. *S. huanus*
- 15b. Leaves never opposite; inflorescences irregular panicles with cymose branches or if unbranched and racemelike then 6 cm or less (sometimes to 10 cm in *S. tonkinensis*).
- 17a. Seeds densely tuberculate, stellate pubescent; inflorescences racemes, 3–10 cm 3. *S. tonkinensis*
- 17b. Seeds smooth or rugose, glabrous; inflorescences often paniculate, to 6 cm.
- 18a. Leaf blade 1–2.5(–4) × 0.7–2(–2.6) cm, margin 2–4-lobed or apically coarsely

- serrate; calyx 2–3 mm 4. *S. wilsonii*
- 18b. Leaf blade 3.5–8.5(–9.5) × 2–4.5 cm, margin entire or finely serrate to serrulate, never lobed; calyx 4.5–7 mm.
- 19a. Bracteoles linear, 6–12 mm; leaf blade adaxially usually rugose; fruit ca. 8 mm in diam. 5. *S. rugosus*
- 19b. Bracteoles subulate, 3–4 mm; leaf blade adaxially not rugose or sometimes slightly rugose when young (adaxially rugose in *S. perkinsiae*); fruit 10–15 mm in diam.
- 20a. Branchlets and abaxial surface of leaves including veins densely brownish stellate tomentose and short pubescent; leaf blade elliptic to obovate 6. *S. limprichtii*
- 20b. Branchlets and abaxial surface of leaves densely gray stellate tomentose but not short pubescent; leaf blade ovate, ovate-elliptic, or elliptic-lanceolate 7. *S. perkinsiae*
- 14b. Leaf blade abaxially glabrous or sparsely stellate pubescent.
- 21a. Leaves at least some subopposite, either a pair at base of each new shoot or near apex of branchlets.
- 22a. Leaf blade coarsely serrate to 3–5-lobed; calyx teeth 4–5 mm, lanceolate; stamens alternately differing in length 10. *S. supaii*
- 22b. Leaf blade entire, subentire, denticulate, or serrate; calyx teeth less than 3 mm, triangular or subulate; stamens ± equal in length.
- 23a. Inflorescences 8–10-flowered; petiole 7–15 mm 11. *S. hemsleyanus*
- 23b. Inflorescences 1-flowered; petiole less than 7 mm or absent.
- 24a. Fruit 2–2.5 cm in diam.; seeds glabrous 12. *S. macrocarpus*
- 24b. Fruit 1–1.2 cm in diam.; seeds sparsely stellate pubescent 13. *S. zhejiangensis*
- 21b. Leaves always alternate.
- 25a. Fruit densely golden-yellow stellate tomentose; leaf blade sparsely hirsute with both simple and stellate hairs 14. *S. chrysocarpus*
- 25b. Fruit densely gray, gray-yellow, or brownish stellate pubescent; leaf blade glabrous to stellate (mixed with simple hairs in *S. roseus*).
- 26a. Pedicel 2.5–5 cm, equal to or longer than subtended flower.
- 27a. Pedicel and calyx glabrous or (*S. japonicus* var. *calyconthrix*) sparsely stellate pubescent 8. *S. japonicus*
- 27b. Pedicel and calyx densely stellate tomentose 9. *S. grandiflorus*
- 26b. Pedicel 0.2–1.8 cm, often shorter than subtended flower.
- 28a. Seeds with scales; leaves yellowish when dried; filaments slightly flexuous at middle 15. *S. odoratissimus*
- 28b. Seeds glabrous; leaves brownish to dark green when dried; filaments not flexuous.
- 29a. Leaf blade base narrowly cuneate; fruit smooth when mature 16. *S. bashanensis*
- 29b. Leaf blade base rounded or broadly cuneate; fruit rugose when mature.
- 30a. Leaf blade ovate-lanceolate to oblong; petiole 5–10 mm; calyx yellow tomentose; corolla tube 3–4 mm; fruit obovoid-cylindric 17. *S. macranthus*
- 30b. Leaf blade elliptic to ovate-elliptic; petiole 3–5 mm; calyx yellow-brown to orange-red and tomentose to short pubescent; corolla tube ca. 2 mm; fruit subglobose 18. *S. roseus*

1. *Styrax obassis* Siebold & Zuccarini, Fl. Jap. 1: 93. 1839.

玉铃花 *yu ling hua*

Trees or shrubs 10–14 m tall. Trunk to 15 cm d.b.h. Branchlets slightly flattened, brown stellate pubescent, glabrescent. Leaves of 2 forms; basal 2 leaves of each branchlet opposite, petiole 3–5 mm, blade elliptic to ovate, 4.5–10 × 3–5 cm, apex rounded to acute; other leaves alternate, petiole 1–1.5 cm and forming a broad basal sheath enclosing winter buds, blade broadly elliptic, ovate, or rounded, 5–15 × 4–20

cm, base subrounded to broadly cuneate, apex acute to acuminate; all leaf blades papery, abaxially densely grayish stellate tomentose, adaxially glabrous except veins, margin coarsely serrate; secondary veins 5–8 per side, tertiary veins subparallel. Racemes terminal or axillary, 10–20-flowered, 6–15 cm, sometimes with 1 or 2 lateral racemes from base. Flowers slightly pendulous. Pedicel 3–5 mm. Calyx 4–5 mm, densely gray-yellow tomentose; teeth 5 or 6, lanceolate to deltoid. Corolla white or rose, tube ca. 4 mm; lobes elliptic, 1.3–1.6 cm × 4–5 mm. Stamens shorter than corolla; fila-

ments sparsely stellate villose, glabrescent. Style longer than stamens, glabrous. Fruit ovoid to subovoid, 1–1.5 cm in diam., densely yellow stellate tomentose. Seeds dark brown, oblong, smooth. Fl. Apr–Jul, fr. Aug–Nov.

Low wet forest on mountain slopes; 700–1500 m. Anhui, Hubei, Jiangxi, SE Liaoning, Shandong, Zhejiang [Japan, Korea].

2. *Styrax huanus* Rehder, J. Arnold Arbor. 11: 167. 1930.

墨泡 mo pao

Trees 6–15 m tall. Bark brown, irregularly fissured. Branchlets densely grayish yellow stellate pubescent. Winter buds conical, densely dark brown stellate pubescent. Petiole 1–2 cm; leaves of 2 forms; basal 2 leaves of each branchlet opposite, blade oblong to oblong-ovate, 8–12 × 5.5–10 cm; other leaves alternate, blade elliptic to elliptic-oblong, 5–15 × 5.5–10 cm; all leaf blades abaxially densely gray stellate tomentose, adaxially glabrous except veins, base cuneate to broadly cuneate, margin serrate, apex acute; secondary veins 7–9 per side, tertiary veins subparallel. Racemes terminal or axillary, 6–15 cm, sometimes with 2 or 3 lateral racemes from near base. Flowers fragrant, pendulous. Pedicel 2–5 mm. Calyx campanulate, 4–6 mm, densely stellate tomentose; teeth 5 or 6, subulate, unequal. Corolla tube shorter than lobes; lobes obovate-elliptic to elliptic, 1–1.5 cm × 4.5–5 mm. Filaments slender, sparsely stellate pubescent. Style equal to corolla. Fruit ovoid, ca. 8 mm in diam., densely gray stellate tomentose, rugose, apex short pointed. Seeds brown, smooth. Fl. Apr–Jul, fr. Nov–Oct.

* Forests; 1200–1700 m. E Sichuan.

3. *Styrax tonkinensis* (Pierre) Craib ex Hartwich, Apotheker-Zeitung 28: 698. 1913.

越南安息香 yue nan an xi xiang

Anthostyrax tonkinensis Pierre, Fl. Forest. Cochinch. 4: t. 260. 1892; *Styrax hypoglaucus* Perkins; *S. macrothyrsus* Perkins; *S. subniveus* Merrill & Chun.

Trees 6–30 m tall. Trunk 8–60 cm d.b.h.; bark dark gray, irregularly divided. Branchlets stellate tomentose, glabrescent. Leaves alternate; petiole 0.5–1.5 cm; leaf blade elliptic to ovate, 5–18 × 4–10 cm, papery to leathery, abaxially densely gray to glaucous stellate pubescent, adaxially glabrous except for veins, base rounded to cuneate, margin entire or apically serrate, apex short acuminate; secondary veins 5 or 6 per side, tertiary veins subparallel. Racemes or panicles 3–10 cm. Flowers 1.2–2.5 cm. Pedicel 5–10 mm. Calyx cupular, 3–5 mm, truncate to 5-toothed. Corolla tube 3–4 mm; lobes ovate-lanceolate, 1–1.6 cm × 3–4 mm, membranous. Filaments sparsely white stellate pubescent; anthers narrowly oblong. Style ca. 1.5 cm, glabrous. Fruit subglobose, 1–1.2 cm in diam., densely gray stellate tomentose, apex apiculate to obtuse. Seeds chestnut brown, ovoid, densely tuberculate, stellate tomentose and pubescent. Fl. May–Jun, fr. Aug–Oct.

Mixed forests; 100–2000 m. Fujian, Guangdong, Guangxi, Guizhou, Hunan, Jiangxi, Yunnan [Cambodia, Laos, Thailand, Vietnam].

4. *Styrax wilsonii* Rehder in Sargent, Pl. Wilson. 1: 293. 1912.

小叶安息香 xiao ye an xi xiang

Shrubs 1–2 m tall, many branched. Branchlets densely chestnut brown stellate pubescent, glabrescent. Leaves alternate; petiole 1–2 mm; leaf blade obovate, rhomboid, or rarely elliptic-ovate, 1–2.5(–4) × 0.7–2(–2.6) cm, papery, abaxially densely grayish stellate tomentose, adaxially rugose and glabrous except veins, base rounded to broadly cuneate, margin 2–4-lobed or apically coarsely serrate, apex acute; secondary veins 4–6 per side. Racemes terminal, 3–5-flowered, 2–3 cm. Flowers 1–1.3 cm. Pedicel 2–3 mm. Calyx cupular, 2–3 × ca. 3.5 mm, densely stellate tomentose. Corolla 6–7 × 3.5–4 mm; lobes 5(or 6), oblong, yellowish stellate pubescent. Stamens 10(–12), included; filaments apically stellate pubescent; anthers linear-oblong, glabrous or stellate pubescent. Style slightly exerted. Fruit subglobose, 5–7 mm in diam., densely tomentose, apex short pointed. Seeds brown, ovoid to globose, glabrous. Fl. Apr–Jul, fr. Aug–Oct.

* Openings in forests or scrub; 1300–1700 m. Sichuan (Baoping Xian).

5. *Styrax rugosus* Kurz, J. Asiat. Soc. Bengal, Pt. 2, Nat. Hist. 40(2): 61. 1871.

皱叶安息香 zhou ye an xi xiang

Trees or shrubs, 1.5–6 m tall. Trunk to 18 cm d.b.h. Branchlets terete, densely stellate tomentose, becoming purple and glabrescent. Leaves alternate; petiole 2–3 mm; leaf blade ovate-oblong, ovate, or elliptic, 3.5–8.5 × 2–4.5 cm, papery, abaxially densely gray-yellow stellate tomentose and pubescent, adaxially rugose and with simple and 2- or 3-rayed to stellate hairs but glabrescent, base rounded to broadly cuneate, margin serrate or apically with unequal deltoid serrations, apex acuminate to rarely acute; secondary veins 4–7 per side, tertiary veins parallel. Racemes terminal, 3–6-flowered, 5–6 cm; bracteoles linear, 6–12 mm. Flowers ca. 1.6 cm. Pedicel 3–4 mm. Calyx ca. 4.5 × 3.5–5 mm, tube densely yellow-brown stellate tomentose; teeth lanceolate to subulate, 1.2–3 mm. Corolla tube 4–5 mm; lobes elliptic to obovate, 5–10 × 4–5 mm. Filaments white stellate villose. Fruit ovoid, ca. 8 mm in diam., irregularly rugose, densely yellow-brown stellate pubescent. Seeds 1 or 2, brown, ribbed, glabrous. Fl. Apr–Jun, fr. Sep–Nov.

Forests; 1000–1500 m. S Yunnan [India, Myanmar].

6. *Styrax limprichtii* Lingelsheim & Borza, Repert. Spec. Nov. Regni Veg. 13: 386. 1914.

楚雄安息香 chu xiong an xi xiang

Styrax langkongensis W.W. Smith.

Shrubs 1–2.5 m tall. Branchlets densely grayish stellate tomentose. Leaves alternate; petiole 1–3 mm; leaf blade elliptic to obovate, 3.5–7(–9.5) × 2–4.5 cm, papery, abaxially densely brownish stellate tomentose and short pubescent, adaxially stellate pubescent when young, base rounded to

broadly cuneate, margin apically serrulate, apex acute to short acuminate; secondary veins 5 or 6 per side, tertiary veins reticulate. Racemes terminal, 3–6-flowered, 3–4 cm; bracteoles subulate. Flowers ca. 1.5 cm. Pedicel 3–4 mm. Calyx ca. 5 × 7 mm, densely yellow-brown stellate tomentose and villose; teeth subulate to deltoid, unequal, 1–1.5 mm. Corolla tube ca. 4 mm; lobes elliptic to ovate-elliptic, 0.9–1.1 cm × 4–6 mm. Filaments apical free parts densely white stellate villose. Fruit globose, 1–1.5 cm in diam., irregularly splitting into 3-valves, rugose, densely grayish stellate pubescent, apex short pointed. Seeds brown, ovoid, glabrous. Fl. Mar–Apr, fr. Aug–Oct.

* Forests; 1700–2400 m. SY Sichuan, NW Yunnan.

7. *Styrax perkinsiae* Rehder in Sargent, Pl. Wilson. 1: 292. 1912.

瓦山安息香 wa shan an xi xiang

Styrax shweliensis W.W. Smith.

Trees or shrubs, 2–6(–10) m tall. Trunk to 25 cm d.b.h. Branchlets terete, purple-brown. Leaves alternate; petiole 3–5 mm; leaf blade ovate, ovate-elliptic, or elliptic-lanceolate, 5–8 × 3–5 cm, papery, abaxially densely pale gray stellate tomentose and with sparse yellow-brown stellate hairs on veins, adaxially rugose and with simple or 2- or 3-rayed to stellate hairs or glabrescent, base rounded to broadly cuneate, margin entire or serrulate, apex short acuminate to acute; secondary veins 5 or 6 per side, tertiary veins subparallel. Racemes terminal, 3- or 4-flowered, 4–6 cm; bracteoles subulate. Flowers ca. 2 cm. Pedicel 5–9 mm. Calyx ca. 5 mm, densely yellow-brown to chestnut brown tomentose; teeth 5, irregularly subulate, ca. 1.5 mm. Corolla tube ca. 3 mm; lobes elliptic to obovate-elliptic, 1.4–1.6 cm × 5–6 mm. Filaments white stellate villose. Fruit ovoid, ca. 1.2 × 1 cm, apex short pointed. Seeds 1 or 2, brown, smooth. Fl. Mar–Apr, fr. Jul–Aug.

* Moist slopes in evergreen broad-leaved forests; 500–2500 m. S Sichuan, N Yunnan.

8. *Styrax japonicus* Siebold & Zuccarini, Fl. Jap. 1: 53. 1837–38.

野茉莉 ye mo li

Shrubs or small trees, 4–8(–10) m tall. Branchlets purple, slightly flattened, becoming terete. Leaves alternate; petiole 5–10 mm; leaf blade elliptic, oblong-elliptic, or ovate-elliptic, 4–10 × 2–5(–6) cm, papery to almost leathery, glabrous except for veins or vein axils, base cuneate to broadly cuneate, margin entire or apically remotely serrate, apex acute to short acuminate; secondary veins 5–7 per side, tertiary veins reticulate, conspicuously raised on both surfaces, sparsely stellate pubescent. Racemes terminal, 5–8 cm, 5–8-flowered. Flowers 2–2.8(–3) cm, slightly pendulous. Pedicel slender, 2.5–3.5 cm, glabrous or sparsely stellate pubescent. Calyx 4–5 × 3–5 mm, membranous, glabrous or sparsely stellate pubescent, teeth irregular. Corolla tube 3–5 mm; lobes ovate, obovate, or elliptic, 1.6–2.5 × 5–7(–9) mm. Stamens shorter than corolla; filaments slightly expanded, apical free parts white villose. Fruit ovoid, 0.8–1.4 × 0.8–1 cm, irregularly rugose, densely gray stellate tomentose, apex short

pointed. Seeds brown, conspicuously rugose. Fl. Apr–Jul, fr. Sep–Dec.

400–1800 m. Anhui, Fujian, Guangdong, Guangxi, Guizhou, Hainan, Hebei, Henan, Hunan, Jiangsu, Jiangxi, Shaanxi, Shandong, Shanxi, Sichuan, Yunnan, Zhejiang [Japan, Korea].

- 1a. Calyx and pedicel glabrous 8a. var. *japonicus*
1b. Calyx and pedicel sparsely stellate
pubescent 8b. var. *calycothrix*

8a. *Styrax japonicus* var. *japonicus*

野茉莉 (原变种) ye mo li (yuan bian zhong)

Cyrta japonica (Siebold & Zuccarini) Miers; *Styrax bodinieri* H. Léveillé.

Calyx and pedicel glabrous. Fl. Apr–Jul, fr. Sep–Nov.

Forested slopes; 400–1800 m. Anhui, Fujian, Guangdong, Guangxi, Guizhou, Hainan, Hebei, Henan, Hunan, Jiangsu, Jiangxi, Shaanxi, Shandong, Shanxi, Sichuan, Yunnan, Zhejiang [Japan, Korea].

8b. *Styrax japonicus* var. *calycothrix* Gilg, Bot. Jahrb. Syst. 34(Beibl. 75): 58. 1940.

毛萼野茉莉 mao e ye mo li

Calyx and pedicel sparsely stellate pubescent. Fl. Apr–May, fr. Sep–Dec.

* Forests; 500–1000 m. Guizhou (Qingzhen Xian), Shangdong (Laoshan Xian), Yunnan.

9. *Styrax grandiflorus* Griffith, Not. Pl. Asiat. 4: 287. 1854.

大花安息香 da hua an xi xiang

Styrax cavaleriei H. Léveillé; *S. duclouxii* Perkins; *S. hookeri* C. B. Clarke var. *yunnanensis* Perkins; *S. japonicus* Siebold & Zuccarini var. *kotoensis* (Hayata) Masamune & Suzuki; *S. kotoensis* Hayata; *S. touchanensis* H. Léveillé.

Shrubs or small trees 4–7 m tall. Trunk to 30 cm d.b.h.; bark gray. Branchlets subterete, yellow-brown stellate pubescent. Leaves alternate; petiole 3–7 mm; leaf blade elliptic-ovate to oblong, 3–7(–9) × 2–4 cm, sparsely stellate pubescent or glabrous except for veins, base cuneate to broadly cuneate, margin entire or apically remotely serrulate, apex acute secondary veins 5–7 per side, tertiary veins reticulate. Racemes terminal, 3–9-flowered, 3–4 cm. Flowers 1.5–2.5 (–3) cm. Pedicel 2.5–5 cm, densely stellate tomentose. Calyx ca. 7 × 5 mm, membranous, truncate to obscurely 5-toothed, densely gray-yellow stellate tomentose. Corolla tube 3–5 mm; lobes ovate-oblong to elliptic, 1.2–2 cm × 4–6 mm. Stamens 10(or 11), included; filaments basally white villose; anthers oblong, slightly stellate pubescent. Style shorter or equal to corolla. Fruit ovoid, 1–1.5 × 0.8–1 cm, 3-valved, dehiscent, densely gray-yellow stellate tomentose, rugose when dry, apex apiculate. Seeds 1 or 2, brown, ovoid, deeply rugose. Fl. Apr–Jun, fr. Aug–Oct.

Forest thickets, on mountain slopes or in ravines; 1000–2100 m. Guangdong, Guangxi, Guizhou, Taiwan, Xizang, Yunnan [Bhutan, India, Japan (Ryukyu Islands), Myanmar, Nepal, Sikkim]

10. *Styrax supaii* Chun & F. Chun, Sunyatsenia 3: 34. 1935.

裂叶安息香 lie ye an xi xiang

Shrubs or small trees, 2–6 m tall. Trunk to 10 cm d.b.h., bark brown, exfoliating. Branchlets terete, brown to dark brown stellate pubescent and sparsely villose. Leaves alternate but subopposite at base of branchlets; petiole 2–5 mm; leaf blade ovate to obovate, 4–8 × 2–5 mm, papery to leathery, abaxially sparsely stellate pubescent, adaxially with simple or with 2- or 3-rayed to stellate villose hairs when young, base rounded to broadly cuneate, margin coarsely serrate or 3–5 deeply dentate or lobed but opposite blades usually entire, apex acute to acuminate; secondary veins 3–5 per side, tertiary veins reticulate, conspicuously raised. Racemes terminal, 2- or 3-flowered, 3–4 cm. Flowers 1.5–1.8 cm. Pedicel slender, 1–1.5 cm. Calyx obconical, ca. 1.2 cm × 4 mm, membranous; teeth lanceolate, 4–5 mm. Corolla tube ca. 3 mm; lobes elliptic-lanceolate, 1.4–1.5 cm × 4–5 mm. Stamens alternately differing in length; filaments basally densely white pubescent. Fruit ovoid, 1–1.2 cm × 7–9 mm, longitudinally rugose, densely white villose, apex apiculate to short beaked. Seeds brown, ovoid, smooth. Fl. Apr–May, fr. Jun–Sep.

* Forest edges, thickets; 300–900 m. N Guangdong, S Hunan.

11. *Styrax hemsleyanus* Diels, Bot. Jahrb. Syst. 29: 530. 1900.

老鸱铃 lao gua ling

Styrax hemsleyanus var. *griseus* Rehder.

Trees 5–12 m tall. Trunk to 12 cm d.b.h.; bark dark brown. Branchlets hairy or glabrous. Leaves alternate but subopposite on basal part of branchlets; petiole 0.7–1.5 cm; leaf blade oblong to ovate-oblong, 8–12 × 4–6 cm, papery, scabrous, sparsely gray-brown stellate pubescent on veins, gray-green to dark green when dry, base oblique and subrounded to broadly cuneate, margin serrate to subentire, apex slightly curved and acute to rarely acuminate; secondary veins 7–10 per side, tertiary veins reticulate. Racemes terminal, 8–10-flowered, 9–15 cm, usually basally 2- or 3-branched. Flowers 1.8–2.7 cm. Pedicel 2–4 mm, slightly curved. Calyx 4–8 × 3–6 mm; teeth 5, subulate to deltoid, unequal, 2–3 mm, apex brown glandular dotted. Corolla lobes elliptic to elliptic-obovate, ca. 1.5 cm × 5 mm, acute. Stamens shorter than corolla; filaments sparsely white stellate villose on free part. Fruit globose to ovoid, 0.8–1.3 × 1–1.5 cm, rugose, densely yellow-brown to gray-yellow stellate tomentose, apex apiculate. Seeds 1 or 2, brown, smooth or slightly rugose, glabrous. Fl. May–Jun, fr. Jul–Sep.

* Mountain slopes, forest edges; 300–900 m. Guizhou, Henan, Hubei, Hunan, Shaanxi, Sichuan.

12. *Styrax macrocarpus* Cheng, Contr. Biol. Lab. Chin. Assoc. Advancem. Sci., Sect. Bot. 10: 242. 1938.

大果安息香 da guo an xi xiang

Trees 6–9 m tall, deciduous. Branchlets terete, densely gray stellate pubescent, glabrescent. Leaves subopposite on basal part of branchlets, alternate or subopposite in apical part

of branchlets; petiole very short; leaf blade elliptic to obovate-elliptic, 7–17 × 3.5–7.5 cm, papery, glabrous but veins stellate pubescent, base cuneate to broadly cuneate, margin entire or apically serrate, apex acute; secondary veins 7–10 per side, tertiary veins subparallel. Pedicel ca. 1 cm. Flowers solitary, axillary, opening before leaves, ca. 3.3 cm. Calyx 5–7 × 7–9 mm, membranous, subglabrous; teeth 5 or 6, deltoid. Corolla tube 3–4 mm; lobes 5–7, elliptic, ca. 2.2 cm × 9 mm. Stamens shorter than corolla; filaments basally densely white villose. Fruit ovoid to pyriform, 2–3 × 2–2.5 cm, densely gray to brownish stellate tomentose, apex short pointed. Seeds dark brown, irregularly deeply rugose. Fl. May–Jun, fr. Sep–Oct.

* Forest thickets, slopes, ravines; 500–800 m. Guangdong, Hunan.

13. *Styrax zhejiangensis* S. M. Hwang & L. L. Yu, Acta Bot. Austr. Sin. 1: 75. 1983.

浙江安息香 zhe jiang an xi xiang

Shrubs to 2 m tall. Branchlets subterete, brown to gray-brown, glabrous. Leaves alternate but 2 lowermost on branchlet subopposite; petiole very short; leaf blade broadly elliptic to ovate-oblong, 2.5–8 × 2–5 cm, papery, abaxially glabrous but veins sparsely stellate villose, adaxially glabrous, base broadly cuneate to rounded, margin denticulate to subentire, apex acute; secondary veins 6–8 per side, tertiary veins reticulate. Flowers unknown. Fruit solitary, axillary, 1.8–2 × 1–1.2 cm, densely grayish stellate villose, apex short pointed. Seeds ovoid-ellipsoid, irregularly rugose, sparsely white stellate villose. Fr. Jun.

* Thickets, along stream banks; ca. 900 m. Zhejiang (Jiande Xian).

14. *Styrax chrysocarpus* H. L. Li, J. Arnold Arbor. 25: 312. 1944.

黄果安息香 huang guo an xi xiang

Trees 7–20 m tall. Branchlets densely yellow stellate tomentose, sometimes glabrescent. Leaves alternate; petiole 5–8 mm; leaf blade oblong-ovate to oblong, 10–20 × 5.5–13 cm, papery, sparsely hirsute with simple and stellate hairs, base rounded, margin entire or serrate, apex acute to short acuminate; secondary veins 5–10 per side, tertiary veins reticulate. Flowers unknown. Infructescences racemose, 3–5-fruited, ca. 1.8 × 1.2 cm, densely golden-yellow stellate tomentose to pubescent. Fruiting pedicel ca. 4 mm. Fruit ca. 6 mm in diam., with a persistent calyx, apex beaked. Fr. Jul.

* Forest ravines; ca. 1500 m. Yunnan (Pingbian Xian).

15. *Styrax odoratissimus* Champion ex Benth, Hooker's J. Bot. Kew Gard. Misc. 4: 304. 1852.

芬芳安息香 fen fang an xi xiang

Styrax prunifolius Perkins; *S. veitchiorum* Hemsley & E. H. Wilson.

Trees 4–10 m tall. Trunk to 20 cm; bark gray-brown, not exfoliating. Young twigs slightly flattened, becoming purple to dark purple, terete, glabrous. Leaves alternate; petiole 5–10 mm; leaf blade ovate to ovate-elliptic, 4–15 × 2–8 cm, lea-

they to papery, glabrous but abaxially sometimes veins densely brown stellate pubescent, base broadly cuneate to rounded, margin entire or remotely serrulate, apex acuminate to acute; secondary veins 6–9 per side, tertiary veins subparallel. Inflorescences terminal racemes or panicles, 5–8 cm, densely yellow stellate tomentose. Flowers 1.2–1.5 cm. Pedicel 1.5–1.8 cm. Calyx ca. 5 × 5 mm, membranous, truncate to undulate. Corolla lobes elliptic to obovate-elliptic, 0.9–1.1 cm × 4–5 mm, membranous. Stamens shorter than corolla; filaments slightly flexuous at middle, densely white stellate pubescent. Fruit subglobose, 8–10 mm in diam., densely gray-yellow stellate tomentose, apex with a slightly curved beak. Seeds ovoid, tuberculate, densely brown scaly. Fl. Mar–Apr, fr. Jun–Sep.

* Damp shaded ravines, slopes in forest thickets; 600–1600 m. Anhui, Fujian, Guangdong, Guangxi, Guizhou, Hubei, Hunan, Jiangsu, Jiangxi, Zhejiang.

16. *Styrax bashanensis* S. Z. Qu & K. Y. Wang, Bull. Bot. Res., Harbin 9(1): 27. 1989.

巴山安息香 *ba shan an xi xiang*

Trees 3–7 m tall. Trunk to 16 cm d.b.h.; bark dull brown. Branchlets hairy or glabrous. Leaves alternate; petiole 4–10 mm; leaf blade elliptic-lanceolate to ovate-lanceolate, 6–15 × 2–3.5 cm, almost leathery, sparsely white stellate pubescent, base narrowly cuneate, margin remotely serrulate, apex long acuminate; secondary veins 7–9 per side, tertiary veins reticulate. Racemes terminal, 4–8-flowered, and 2–4.5 cm, or axillary, 1–4-flowered, and 1–2.5 cm. Flowers 1.2–1.4 cm. Pedicel 6–10 mm. Calyx ca. 3 × 4 mm, densely stellate tomentose, teeth 5 or 6. Corolla lobes 4–6, long elliptic, 8–10 × 4–5 mm. Stamens shorter than corolla; filaments densely whitish stellate pubescent on free part. Fruit ovoid-cylindric, ca. 7 mm in diam., densely tomentose with gray-yellow stellate hairs, apex short rostrate. Seeds dark brown, rugose, glabrous. Fl. May–Jun, fr. Jul–Aug.

* Forested slopes; ca. 1000 m. Shaanxi.

17. *Styrax macranthus* Perkins, Bot. Jahrb. Syst. 31: 487. 1902.

禄春安息香 *lu chun an xi xiang*

Trees to 7 m tall. Branchlets slightly flattened to terete, densely yellowish stellate puberulent or glabrous. Winter buds conical. Leaves alternate; petiole 5–10 mm; leaf blade oblong to ovate-lanceolate, 8–12 × 3–4 cm, papery to almost leathery, sparsely brownish stellate pubescent or glabrous except for veins or veins axils, base slightly oblique and rounded to broadly cuneate, margin glandular serrulate and slightly revolute, apex acute; secondary veins 5–7 per side, tertiary veins subparallel. Racemes terminal, 3- or 4-flowered, 4–6 cm. Flowers 1.2–2.5 cm. Pedicel 0.8–1.5 cm. Calyx 3.5–6 × 4.5–5.5 mm, membranous, irregularly 5-toothed to undulate, densely yellow stellate tomentose. Corolla tube 3–4 mm; lobes obovate to obovate-elliptic, 0.8–1.6 cm × 5–10 mm. Stamens shorter than corolla; filaments apical half of free parts densely white stellate tomentose. Fruit obovoid-cylindric, 1.5–2 × 1–

1.5 cm, longitudinally rugose, with dense gray-yellow stellate hairs, apex short pointed. Fl. Apr–Jun, fr. Aug–Oct.

* Slopes and ravines, in forest thickets; 2000–2500 m. Guangxi, S Yunnan.

18. *Styrax roseus* Dunn, Bull. Misc. Inform. Kew 1911: 273. 1911.

粉花安息香 *fen hua an xi xiang*

Trees 4–8 m tall. Trunk to 8 cm d.b.h. Branchlets terete, brown to gray stellate puberulent, glabrescent. Leaves alternate; petiole 3–5 mm; leaf blade elliptic to ovate-elliptic, 6–12 × 2–6 cm but sometimes apical leaf blade smaller, papery, pubescent with grayish simple and 2-radiate to stellate hairs but glabrescent, base oblique and broadly cuneate to rarely rounded, margin glandular serrulate, apex acuminate and slightly curved; secondary veins 5–7 per side, tertiary veins subparallel. Racemes, 2- or 3(or 4)-flowered, 3–5 cm, densely stellate pubescent. Pedicel 2–8 mm. Flowers 1.5–2.5 cm. Calyx 5–8 × 3–5(–7) mm, membranous, densely yellow-brown to orange-red stellate tomentose to short pubescent; teeth 5, often deeply 2- or 3-crenately divided after anthesis. Corolla tube ca. 2 mm; lobes obovate-elliptic, 1.2–1.5 cm × 5–8 mm. Stamens shorter than corolla; filaments basally slightly expanded, free part of basal half stellate. Fruit subglobose, 1.2–1.4 cm in diam., rugose when mature, densely gray and brownish stellate tomentose. Seeds 1 or 2, nearly smooth. Fl. Jul–Sep, fr. Sep–Dec.

* Forests; 1000–2300 m. Guizhou, Hubei, S Shaanxi, S Sichuan, SE Xizang, SW Yunnan.

19. *Styrax wuyuanensis* S. M. Hwang, Acta Phytotax. Sin. 18: 160. 1980.

婺源安息香 *wu yuan an xi xiang*

Shrubs 1.5–3 m tall. Branchlets terete, sparsely brown stellate pubescent. Leaves alternate or opposite on lowermost part of branchlet; petiole 2–5 mm; leaf blade elliptic to elliptic-pyriform, 3.5–6 × 1–3 cm, papery, glabrous but veins sparsely brown stellate pubescent, base broadly cuneate, margin remotely serrulate, apex acuminate to caudate-acuminate; secondary veins 3–5 per side, tertiary veins reticulate. Inflorescences reduced to either a raceme of 2 or 3 flowers at branch apex or to a single axillary flower. Pedicel slender, 1.5–2 cm, glabrous. Calyx brown, ca. 3 × 3.5 mm, membranous, glabrous; teeth 5 or 6, subulate. Corolla tube ca. 3 mm; lobes stellate tomentose. Stamens shorter than or equal to corolla; filaments free part basally whitish stellate villose. Fruit globose, ca. 1 cm in diam., 3-valved, dehiscent, apex short pointed. Seeds brown, ovoid, glabrous. Fl. Apr, fr. Aug.

* Damp and shady areas, forest thickets; ca. 2000 m. S Anhui, NE Jiangxi.

20. *Styrax argentifolius* H. L. Li, J. Arnold Arbor. 24: 371. 1934.

银叶安息香 *yin ye an xi xiang*

Trees 5–15 m tall. Trunk to 40 cm d.b.h.; bark gray to dark gray. Branchlets densely brown scaly. Leaves alternate; petiole 7–10 mm; leaf blade elliptic, ovate-lanceolate, or elliptic-lanceolate, 5–15 × 2.5–6 cm, leathery, abaxially densely covered with silver-gray to brownish glossy scales, adaxially glabrous and green to yellow-green when dry, base broadly cuneate to rounded, margin entire, apex acuminate; secondary veins 5–8 per side, tertiary veins subparallel. Inflorescences terminal or axillary, racemes or panicles, 3–9-flowered, 3–5 cm. Flowers 1.2–1.6 cm. Pedicel 1–2 mm. Calyx ca. 3 × 3.5 mm, truncate to obscurely 5-toothed. Corolla tube 5–7 mm; lobes 4 or 5, lanceolate, 8–9 × 1.5–2 mm. Stamens shorter than corolla; filaments densely yellow-brown stellate pubescent. Fruit subglobose, ca. 2.5 cm in diam., irregularly rugose when mature, densely gray scaly and sparsely gold-yellow stellate pubescent, apex short beaked. Seeds brownish, glabrous. Fl. Apr–May, fr. Aug–Sep.

Ravines in dense forests; 500–1500 m. SW Guangxi, S Yunnan [Vietnam].

21. *Styrax calvescens* Perkins in Engler, Pflanz. IV. 241 (Heft 30): 32. 1907.

灰叶安息香 *hui ye an xi xiang*

Styrax dasyanthus Perkins var. *cinerascens* Rehder.

Shrubs or small trees, 5–15 m tall. Trunk to 15 cm d.b.h.; bark dark gray. Branchlets sparsely brownish stellate puberulent. Leaves alternate; petiole 1–3 mm; leaf blade elliptic, obovate, or elliptic-obovate, 3–8 × 1.5–4.5, almost leathery, abaxially densely gray stellate tomentose and pubescent, adaxially sparsely stellate pubescent but glabrescent, base subrounded, margin apically serrulate, apex acuminate to acute; secondary veins 6 or 7 per side, tertiary veins reticulate, conspicuously raised. Inflorescences terminal or axillary, many-flowered racemes or panicles, 3.5–9 cm. Flowers 1–1.5 cm. Pedicel 5–10 mm. Calyx 3–5 × 3–4 mm, leathery, densely gray-yellow stellate tomentose and pubescent; teeth 5, deltoid, to 1 mm. Corolla tube ca. 3 mm; lobes oblong, 8–10 × 2–2.5 mm. Stamens shorter than corolla; filaments slightly expanded, free parts basally stellate villose. Fruit obovoid, ca. 8 × 6 mm, densely gray-yellow stellate tomentose and pubescent, apex short pointed. Seeds brown, smooth, glabrous. Fl. May–Jun, fr. Jul–Aug.

* Forest edges on slopes; 500–1200 m. S Henan, W Hubei, Hunan, Jiangxi, Zhejiang.

22. *Styrax chinensis* Hu & S. Y. Liang, Acta Phytotax. Sin. 18: 230. 1980.

中华安息香 *zhong hua an xi xiang*

Trees 10–20 m tall. Branchlets subterete, densely yellow-brown stellate pubescent. Leaves alternate; petiole 1–1.5 cm, 4-angled; leaf blade oblong-elliptic to obovate-elliptic, 8–23 × 3–12 cm, leathery, abaxially densely gray-brown stellate tomentose, adaxially subglabrous, base rounded to broadly cuneate, margin entire, apex acute; secondary veins 7–12 per side, tertiary veins subparallel. Inflorescences terminal or axillary, racemes or panicles, 4–12 cm. Flowers

1.2–1.5 cm. Pedicel 1–3 mm. Calyx 6–7 × 6–7 mm, densely yellowish stellate tomentose; teeth 5, ovate-deltoid, ca. 2 mm. Corolla 1–1.2 cm × 2–3 mm, tube ca. 3 mm; lobes valvate or induplicate. Stamens longer than corolla; filaments expanded, free parts densely stellate pubescent. Fruit globose, ca. 1.8 cm in diam., indehiscent or 3-valved and dehiscent, densely tomentose and sparsely pubescent with gray stellate hairs, apex obtuse to short pointed. Seeds brown, globose, slightly rugose, glabrous. Fl. Apr–May, fr. Nov–Sep.

Dense forests; 300–1200 m. Guangxi, Yunnan [Laos].

23. *Styrax hainanensis* How, Fl. Hainan. 3: 576. 1974.

厚叶安息香 *hou ye an xi xiang*

Styrax pachyphyllum Merrill & Chun (1935), not Pilger (1901).

Trees 8–10 m tall. Branchlets subterete, densely dark brown to red-brown stellate pubescent. Leaves alternate; petiole 2–3 cm; leaf blade ovate, broadly ovate, or broadly elliptic, 7–13 × 4–9 cm, thick leathery, base rounded to broadly cuneate, margin entire or inconspicuously serrate, apex short acuminate; secondary veins 5–7 per side, tertiary veins subparallel. Racemes axillary, 2–8-flowered, 3–4 cm. Flowers 1.3–1.6 cm. Pedicel ca. 5 mm. Calyx ca. 6 × 7 mm, truncate to slightly undulate, densely dark brown stellate tomentose. Corolla tube ca. 4 mm; lobes oblong-lanceolate, 1–1.2 cm × 3–4 mm. Filaments expanded, densely stellate pubescent. Fruit subglobose to globose, 2–2.2 cm in diam., densely gray-yellow stellate pubescent, irregularly 3-valved, dehiscent. Seeds chestnut brown, smooth, glabrous. Fl. Mar–Apr, fr. Aug–Oct.

* Mixed forests; 200–500 m. Hainan (Yaxian Xian, Lingshui Xian).

24. *Styrax benzoides* Craib, Bull. Misc. Inform. Kew 1912: 267. 1912.

滇南安息香 *dian nan an xi xiang*

Trees 9–12 m tall. Branchlets terete, densely gray-brown stellate tomentose. Leaves alternate; petiole 1–1.5 cm, nearly 4-angled; leaf blade ovate to ovate-lanceolate, 5–7 × 3–6.5 cm, leathery, abaxially densely gray-brown stellate tomentose, adaxially glabrous or midvein densely stellate pubescent, base rounded, margin subentire, apex acuminate; secondary veins 5–9 per side, tertiary veins subparallel. Inflorescences axillary, many-flowered racemes or panicles, 2.5–5 cm. Flowers 1–1.2 cm. Pedicel ca. 4 mm. Calyx ca. 3.5 × 3 mm, truncate to undulate, rarely 5-toothed, densely stellate tomentose. Corolla tube ca. 2 mm; lobes oblong-lanceolate, ca. 9 × 2 mm. Filaments densely stellate villose on free part. Fruit globose to subglobose, 1–1.6 cm in diam., rugose, densely gray stellate tomentose, 3-valved, dehiscent. Seeds brown, glabrous. Fr. Oct.

Forest thickets in ravines; 800–1000 m. S Yunnan [Laos, Myanmar, N Thailand, Vietnam].

25. *Styrax suberifolius* Hooker & Arnott, Bot. Beechey Voy. 196. 1841.

栓叶安息香 shuan ye an xi xiang

Trees 4–20 m tall. Branchlets red-brown to gray-brown stellate tomentose. Leaves alternate; petiole 1–1.5(–2) cm, nearly 4-angled; leaf blade elliptic, oblong, or elliptic-lanceolate, 5–15(–18) × 2–5(–8) cm, leathery, abaxially densely brownish stellate tomentose, adaxially subglabrous or mid-vein sparsely stellate pubescent, base cuneate, margin subentire, apex acuminate and sometimes slightly curved; secondary veins 5–12 per side, tertiary veins subparallel. Inflorescences terminal or axillary, many-flowered racemes or panicles, 6–12 cm. Flowers 1–1.5 cm. Pedicel 1–3 mm. Calyx 3–5(–7) × 2–4(–7) mm, densely gray-yellow tomentose mixed with few stellate hairs; teeth ± rudimentary, deltoid to undulate. Corolla tube ca. 3 mm; lobes 4(or 5), lanceolate to oblong, 8–10 × 2–3 mm. Stamens 8–10, shorter than corolla; filaments expanded, stellate pubescent on free part. Fruit ovoid-globose, 1–1.8 cm in diam., densely gray to brown stellate tomentose, 3-valved, dehiscent, with persistent calyx enclosing to middle. Seeds brown, glabrous. Fl. Mar–May, fr. Aug–Nov.

100–3000 m. Anhui, Fujian, Guangdong, Guangxi, Guizhou, Hainan, Hubei, Hunan, Jiangsu, Jiangxi, Sichuan, Taiwan, Yunnan, Zhejiang [Myanmar, Vietnam].

- 1a. Leaf blade abaxially brownish tomentose..... 25a. var. *suberifolius*
1b. Leaf blade abaxially densely grayish white tomentose 25b. var. *hayataianus*

25a. *Styrax suberifolius* var. *suberifolius*

栓叶安息香(原变种) shuan ye an xi xiang (yuan bian zhong)

Cyrta suberifolia (Hooker & Arnott) Miers; *Styrax caloneurus* Perkins; *S. oligophlebius* Merrill ex H. L. Li; *S. suberifolius* var. *caloneurus* Perkins; *S. suberifolius* var. *fargesii* Perkins.

Leaf blade abaxially densely brownish stellate tomentose. Fl. Mar–May, fr. Sep–Nov.

Mountain slopes in broad-leaved evergreen forests; 100–3000 m. Anhui, Fujian, Guangdong, Guangxi, Guizhou, Hainan, Hubei, Hunan, Jiangsu, Jiangxi, Sichuan, Taiwan, Yunnan, Zhejiang [Vietnam].

25b. *Styrax suberifolius* var. *hayataianus* (Perkins) K. Mori, Trans. Nat. Hist. Soc. Taiwan 25: 418. 1935.

台北安息香 tai bei an xi xiang

Styrax hayataianus Perkins, Repert. Spec. Nov. Regni Veg. 8: 82. 1910; *S. formosanus* Matsumae var. *hayataianus* (Perkins) H. L. Li.

Leaf blade abaxially densely grayish white stellate tomentose. Fl. Apr–May, fr. Aug–Nov

* Mixed forests or thickets on mountain slopes; ca. 1000 m. Taiwan.

26. *Styrax agrestis* (Loureiro) G. Don, Gen. Hist. 4: 5. 1837.

喙果安息香 hui guo an xi xiang

Cyrta agrestis Loureiro, Fl. Cochinch. 1: 278. 1790; *Styrax rostratum* Hosokawa; *S. subcrenatus* Handel-Mazzetti.

Trees to 15 m tall. Trunk to 20 cm d.b.h. Branchlets sparsely brownish stellate pubescent or glabrous. Leaves alternate; petiole 0.8–1.5 cm; leaf blade elliptic, oblong, or elliptic-lanceolate, 5–15 × 3–8 cm, papery to almost leathery, yellow-green when dry, abaxially sparsely stellate pubescent, adaxially glabrous, base cuneate to broadly cuneate, margin entire or irregularly denticulate, apex slightly curved and acute to acuminate; secondary veins 4–7 per side, tertiary veins reticulate, conspicuously raised on both surfaces. Racemes terminal, 5–10-flowered, 6–12 cm. Flowers 1.5–2.2 cm. Pedicel 0.8–1.5 cm. Calyx ca. 7 × 5 mm, densely yellow stellate tomentose and pubescent. Corolla tube ca. 4 mm; lobes lanceolate, ca. 1.2 cm × 4 mm. Stamens shorter than corolla; filaments flexuous at middle, free parts basal half villose. Fruit cylindrical to oblique ovoid, 1.2–3 × 0.8–1.6 cm, densely brownish stellate tomentose, apex usually short rostrate to short pointed. Seeds 1 or 2, brown, ellipsoid, rugose or smooth, densely scaly to glabrous. Fl. Mar–Nov, fr. Sep–Dec.

Dense forests; 100–700 m. S Guangdong, Hainan, S Yunnan [Indonesia, Laos, Malaysia, New Guinea, Vietnam; Pacific Islands].

27. *Styrax serrulatus* Roxburgh, Fl. Ind. ed. 1832, 2: 415. 1832.

齿叶安息香 chi ye an xi xiang

Trees 4–12 m tall. Trunk 9–25 cm d.b.h. Branchlets densely brown stellate pubescent. Leaves alternate; petiole 3–5 mm; leaf blade ovate, oblong, or ovate-lanceolate, 5–14 × 2–4(–5.5) cm, papery, sparsely stellate pubescent or glabrous, base broadly cuneate to rounded, margin serrate or rarely entire, apex acuminate to short acuminate; secondary veins 5–7 per side, tertiary veins reticulate, abaxially conspicuously raised. Inflorescences many-flowered racemes or panicles, 3–10 cm. Flowers 1–1.3 cm. Pedicel 3–8 mm. Calyx 3–4 × 3–4 mm, densely yellow stellate tomentose and pubescent teeth 5. Corolla outside puberulent, inside glabrous, tube 2–3 mm; lobes oblong-lanceolate, 7–9 × 2–3 mm. Stamens shorter than corolla; filaments expanded, slightly flexuous at middle, free parts basally white villose. Fruit ellipsoid to ellipsoid-ovoid, 0.8–1.6 cm × 6–8 mm, densely gray-brown stellate tomentose, sometimes sparsely stellate villose, apex slightly oblique and acute to apiculate. Seeds 1 or 2, dark brown, smooth or rugose, stellate pubescent or glabrous. Fl. Mar–May, fr. Jul–Nov.

Sparse forests; 500–1700 m. S Guangdong, S Guangxi, Hainan, Taiwan, SE Xizang, S Yunnan [Bhutan, India, Laos, W Malaysia, Myanmar, Nepal, Thailand, Vietnam].

28. *Styrax confusus* Hemsley, Bull. Misc. Inform. Kew 1906: 162. 1906.

赛山梅 sai shan mei

Trees 2–8 m tall. Trunk to 12 cm d.b.h. Branchlets densely brownish stellate pubescent. Leaves alternate; petiole 1–3 mm; leaf blade narrowly oblong, obovate-elliptic, or

oblong-elliptic, 4–14 × 2.5–7 cm, leathery to almost leathery, sparsely stellate pubescent but gradually glabrescent, base rounded to broadly cuneate, margin serrulate, apex acute to short acuminate; secondary veins 5–7 per side, tertiary veins reticulate, conspicuously raised. Racemes terminal, 3–8-flowered, 4–10 cm. Flowers 1.3–2.2 cm. Pedicel 1–1.5 cm. Calyx 3–10 × 4–6 mm, densely yellowish to gray stellate tomentose and villose; teeth 5, deltoid. Corolla tube 3–4 mm; lobes lanceolate to oblong-lanceolate, 1.2–2 cm × 3–4 mm. Filaments slightly expanded, free parts basally densely white villose. Fruit subglobose to obovoid, 0.8–1.5 cm in diam., densely yellowish stellate tomentose; exocarp 1–2 mm thick, rugose. Seeds brown, obovoid, smooth or deeply rugose. Fl. Apr–Oct.

* 100–1700 m. Anhui, Fujian, Guangdong, Guangxi, Guizhou, Hubei, Hunan, Jiangsu, Jiangxi, Sichuan, Zhejiang

- 1a. Calyx ca. 3 mm 28b. var. *microphyllus*
1b. Calyx 5–8 mm.
2a. Leaf blade elliptic to obovate-elliptic, sparsely stellate pubescent; flowers ca. 1.5 cm 28a. var. *confusus*
2b. Leaf blade oblong-elliptic, glabrous; flowers ca. 2.2 cm 28c. var. *superbus*

28a. *Styrax confusus* var. *confusus*

赛山梅(原变种) sai shan mei (yuan bian zhong)

Styrax fukienensis W. W. Smith & Jeffrey; *S. juncudus* Diels; *S. mollis* Dunn; *S. philadelphoides* Perkins; *S. serrulatus* Roxburgh var. *vestitus* Hemsley.

Leaf blade elliptic to obovate-elliptic, sparsely stellate pubescent. Flowers 1.3–2.2 cm. Calyx 5–8 × 5–6 mm. Fl. Apr–Jun, fr Sep–Nov.

* Sparse forest on mountain slopes; 100–1700 m. Anhui, Fujian, Guangdong, Guangxi, Guizhou, Hubei, Hunan, Jiangsu, Jiangxi, Sichuan, Zhejiang.

28b. *Styrax confusus* var. *microphyllus* Perkins in Engler, Pflanzenr. IV. 241(Heft 30): 24. 1907.

小叶赛山梅 xiao ye sai shan mei

Leaf blade narrowly oblong to obovate, glabrous. Flowers ca. 1.5 cm. Calyx ca. 3 × 4 mm. Fl. Sep–Oct.

* Thickets; ca. 800 m. Hubei (Yichang Xian).

28c. *Styrax confusus* var. *superbus* (Chun) S. M. Hwang, Acta Phytotax. Sin. 18: 161. 1980.

华丽赛山梅 hua li sai shan mei

Styrax philadelphoides Perkins var. *superbus* Chun, Sunyatsenia 1: 296. 1934.

Leaf blade oblong-elliptic, glabrous, margin serrate. Flowers to 2.2 cm. Calyx 8–10 × 5–6 mm, teeth conspicuous. Fl. May.

* Slopes and ravines in mixed forests; ca. 1000 m. Guangdong (Ruyuan Xian).

29. *Styrax dasyanthus* Perkins, Bot. Jahrb. Syst. 31: 485. 1902.

垂珠花 chui zhu hua

Styrax argyi H. Léveillé; *S. rubifolius* Guillaumin.

Trees 3–20 m tall. Trunk to 24 cm d.b.h. Branchlets densely gray-yellow stellate pubescent, becoming purple and glabrous. Leaves alternate; petiole 3–7 mm, densely stellate pubescent; leaf blade obovate-elliptic to elliptic, 7–14(–16) × 3.5–6.5(–8) cm, leathery to almost leathery, sparsely stellate pubescent and glabrescent or hairy only along veins, base cuneate to broadly cuneate, margin denticulate and slightly revolute, apex acute to short acuminate; secondary veins 5–7 per side, tertiary veins reticulate, conspicuously raised. Inflorescences terminal or axillary, paniculate, many-flowered, 4–8 cm. Flowers 0.9–1.6 cm. Pedicel 6–10(–12) mm. Calyx ca. 4 × 3 mm; teeth 5, subulate to deltoid. Corolla tube 2.5–3 mm; lobes oblong to oblong-lanceolate, 6–8.5 × 1.5–2.5(–3) mm. Filaments expanded, free parts basally densely white villose. Fruit ovoid to globose, 0.9–1.3 cm × 5–7 mm, smooth or rugose, densely grayish stellate tomentose, apex short pointed, exocarp to 1 mm thick. Seeds brown, smooth. Fl. Mar–May, fr. Sep–Dec.

* Mixed forests; 100–1700 m. Anhui, Fujian, Guangxi, Guizhou, Hebei, Henan, Hunan, Jiangsu, Jiangxi, Shandong, Sichuan, Yunnan, Zhejiang.

30. *Styrax formosanus* Matsumura, Bot. Mag. (Tokyo) 15: 75. 1901.

台湾安息香 tai wan an xi xiang

Shrubs 2–3 m tall. Branchlets densely brownish stellate pubescent, glabrescent. Leaves alternate; petiole 3–4 mm; leaf blade obovate, elliptic-rhomboid, or elliptic, 2–5(–7) × 1.5–2.5 cm, papery, sparsely brownish stellate pubescent but glabrescent, base cuneate, margin apically irregularly coarsely serrate or rarely 2–4-lobed, apex caudate to acuminate; secondary veins 3–5 per side, tertiary veins reticulate. Racemes terminal, 3–5-flowered, 2.5–4.5 cm. Flowers 1.2–1.4 cm, slightly pendulous. Pedicel 0.8–1.2 cm. Calyx 2.5–3 × 3–4 mm, truncate to obscurely 5-toothed, densely gray stellate tomentose. Corolla tube 2–3 mm; lobes 5(or 6), lanceolate to oblong-lanceolate, 8–11 × 2.5–3 mm, membranous. Stamens (9 or)10(or 11), shorter than corolla; filaments free part basally densely villose. Fruit ovoid, ca. 10 × 6 mm, irregularly rugose, apex beaked to apiculate. Seeds brown, ovoid, ca. 6 mm, glabrous. Fr. May–Aug.

* 500–1300 m. Anhui, Fujian, Guangdong, Guangxi, Hunan, Jiangxi, Taiwan, Zhejiang.

- 1a. Petioles, pedicels, and bracteoles sparsely stellate tomentose 30a. var. *formosanus*
1b. Petioles, pedicels, and bracteoles densely stellate pubescent 30b. var. *hirtus*

30a. *Styrax formosanus* var. *formosanus*

台湾安息香(原变种) tai wan an xi xiang (yuan bian zhong)

Petioles, pedicels, and bracteoles sparsely stellate tomentose. Leaf blade adaxially pubescent or glabrous. Fl. Apr–Mar, fr. May–Jun.

* Forest thickets on slopes; 500–1300 m. Anhui, Fujian, Guangdong, Guangxi, Hunan, Jiangxi, Taiwan, Zhejiang.

30b. *Styrax formosanus* var. *hirtus* S. M. Hwang, Acta Bot. Austr. Sin. 1: 77. 1983.

长柔毛安息香 chang rou mao an xi xiang

Petioles, pedicels, and bracteoles densely stellate pubescent and villose. Leaf blade adaxially sparsely villose. Fr. Jul–Aug.

* Thickets on mountain slopes, beside trails; 800–1000 m. Guangxi, Hunan, Zhejiang.

31. *Styrax faberi* Perkins in Engler, Pflanzenr. IV. 241(Heft 30): 33. 1907.

白花龙 bai hua long

Shrubs 1–2 m tall. Branchlets slender, densely stellate villose. Leaves alternate, sometimes subopposite on basal part of lateral twigs. Petiole 1–2 mm; leaf blade ovate, elliptic, or obovate, 4–11 × 3–3.5 cm, papery, sparsely brown to gray stellate pubescent to glabrescent, base broadly cuneate, auriculate, or subrounded, margin serrulate to remotely serrate, apex acuminate; secondary veins 5 or 6 per side, tertiary veins reticulate. Racemes terminal, 3–5-flowered, 3–4 cm. Pedicel 0.8–1.5 cm. Flowers 1.2–1.5(–2) cm, slightly pendulous after anthesis. Calyx 4–5 mm, membranous; teeth 5, deltoid to almost subulate. Corolla tube 3–4 mm; lobes lanceolate to oblong, 0.5–1.5 cm × 2.5–3 mm, membranous, glabrous. Stamens 0.9–1.5 cm; filaments expanded, free parts basally densely villose. Fruit obovoid to subglobose, 6–8 × 5–7 mm, densely gray stellate pubescent; exocarp ca. 0.5 mm thick, smooth. Fr. May–Oct.

* 100–1000 m. Anhui, Fujian, Guangdong, Guangxi, Guizhou, Hubei, Hunan, Jiangsu, Jiangxi, Sichuan, Taiwan, Zhejiang.

- 1a. Leaf blade orbicular to suborbicular, apex acute to obtuse 31c. var. *formosanus*
- 1b. Leaf blade ovate, ovate-lanceolate, elliptic, or obovate, apex acuminate to short acuminate.
 - 2a. Leaf blade elliptic to obovate, base broadly cuneate to subrounded, margin serrulate 31a. var. *faberi*
 - 2b. Leaf blade ovate to ovate-lanceolate, base auriculate, margin remotely serrate 31b. var. *amplexifolius*

31a. *Styrax faberi* var. *faberi*

白花龙(原变种) bai hua long (yuan bian zhong)

Styrax faberi var. *acutiserratus* Perkins; *S. iopilius* Diels.

Leaf blade elliptic to obovate, base broadly cuneate to subrounded. Fl. Apr–Jun, fr. Aug–Oct.

* Scrub covered slopes or under forests; 100–600 m. Anhui, Fujian, Guangdong, Guangxi, Guizhou, Hubei, Hunan, Jiangsu, Jiangxi, Sichuan, Taiwan, Zhejiang.

31b. *Styrax faberi* var. *amplexifolius* Chun & How ex S. M. Hwang, Acta Phytotax. Sin. 18: 161. 1980.

抱茎白花龙 bao jing bai hua long

Leaf blade ovate to ovate-lanceolate, thin papery, base auriculate to clasping, margin remotely serrate, apex acuminate. Seeds deeply rugose. Fr. Jul–Aug.

* Mixed forests or thickets; 800–1000 m. Hunan (Dongkou Xian).

31c. *Styrax faberi* var. *formosanus* (Matsumura) S. M. Hwang, Novon 4: 254. 1994.

苗栗白花龙 miao li bai hua long

Styrax rugosus Kurz var. *formosanus* Matsumura, Bot. Mag. (Tokyo) 15: 76. 1901; *S. faberi* var. *matsumuraei* (Perkins) S. M. Hwang; *S. formosanus* Matsumura var. *matsumuraei* (Perkins) Y. C. Liu; *S. matsumuraei* Perkins.

Leaf blade base broadly rounded to subrounded, apex acute to obtuse. Fr. May–Jul.

* Thickets on mountain slopes; ca. 1000 m. Taiwan.

