HAMAMELIDACEAE

金缕梅科  jin lu mei ke

Zhang Zhiyun (张志耘)  Zhang Hongta (张宏达)  Chang Hung-ta  Peter K. Endress

Shrubs or trees, evergreen or deciduous, hermaphroditic, andromonoecious, or monoecious. Indumentum usually of stellate hairs or stellate or peltate scales. Buds perulate or naked. Leaves distichous or spiral, rarely subopposite or opposite, stipules minute to large, usually paired (solitary and enclosing bud in *Mytilaria*, and apparently absent in *Rhodoleia*); petiole usually well defined; leaf blade simple or palmately lobed, pinnately veined or palmately 3–5-veined. Inflorescences usually spikes or heads, rarely racemes or (condensed) thyrses or panicles, axillary or terminal. Flowers small to medium-sized, bracteate and often bracteolate, bisexual or unisexual, actinomorphic or rarely zygomorphic (*Rhodoleia*), hypogynous to epigynous, floral cup shallow to urn-shaped, sometimes absent; sepals 4 or 5(–10), sometimes absent, imbricate, usually persistent; petals absent or 4 or 5, yellow, white, greenish or red, often ribbonlike and cirnicate in bud, caducous; stamens 4, 5, or many, free, rarely arranged in 2 whorls with the inner whorl staminodal, development of polyandrous androecia centripetal or centrifugal; andreses basified, thecae mostly bisporangiate, each opening by two valves or a single longitudinal slit, or monosporangiate and opening by a single valve (*Exbucklandia, Hamamelis* and the genera of the S hemisphere), connective protruding; disk scales sometimes present between stamens and carpels. Ovary 2-locular, carpels free at apex; ovules mostly 1 per carpel, less often many, but then most of them sterile, crassinucellar, bitegmic, anatropous, halfway between apotropous and epitropous, pendent from ovary top if solitary, along the carpellary margins if numerous; placental axile. Styles and stigmas 2. Fruit a capsule, dehiscing septicidally, septifragally, or loculicidally and 4-valved; endocarp woody or leathery, usually loose from leathery exocarp. Seeds 1 to many per carpel; if solitary then seed coat thick, hard, smooth and shiny, black or brown; if numerous then sometimes winged and only a few viable. Endosperm thin; embryo straight; cotyledons leaflike, radicle short.

About 30 genera and 140 species: E and S Africa (including Madagascar), E, W, and SE Asia, NE Australia, Central, North, and South America, Pacific Islands; 18 genera (four endemic) and 74 species (58 endemic) in China.

Several genera and species need critical revision.


1a. Ovules and seeds several to many per carpel; inflorescences capitate or spicate; leaves palmately veined, sometimes lobed (pinnately veined in *Rhodoleia* and *Altingia*).

2a. Stipules apparently absent; leaves pinnately veined, entire; petals spatulate to oblanceolate, red; inflorescence axillary, nodding, enclosed by conspicuous involucre of rounded bracts as long as flowers ................................. 6. *Rhodoleia*

2b. Stipules present; leaves usually palmately veined, often acuminate to lobed (pinnately veined and simple in *Altingia*); petals linear or absent; inflorescence terminal, not nodding, not enclosed by involucre.  

3a. Stipules large, leaving each node with prominent annular scar; inflorescences elongate or, if ± capitate, capsules clearly exerted.  

4a. Inflorescence capitate; stamens 2-locular ................................................................. 5. *Exbucklandia*

4b. Inflorescence spicate; stamens 4-locular

5a. Stipule 1, long and tubular; petals present ................................................................. 7. *Mytilaria*

5b. Stipules 2, rounded; petals absent ............................................................................. 8. *Chunia*

3b. Stipules linear, leaving small discrete scars; inflorescences globose, capsules not or only slightly exerted, or inflorescence 2-flowered.

6a. Inflorescence with 2 opposite flowers; flower with 5 stamens; petals red .................. 1. *Disanthus*

6b. Inflorescence with 5 or more flowers; flowers with more than 5 stamens; petals white or absent.

7a. Styles and staminodes caducous; leaves undivided, pinnately veined ....................... 2. *Altingia*

7b. Styles and staminodes persistent; leaves lobed, or at least basally 3-veined.

8a. Leaf blade palmately 3–5-lobed, base cordate; infructescence globose .......................... 3. *Liquidambar*

8b. Leaf blade heteromorphic, undivided and basally 3-veined or palmately 3-lobed, base cuneate; infructescence semiglobose with truncate base ........................................ 4. *Semiliquidambar*

1b. Ovules and seeds 1(–3) in each carpel (*Corylopsis* with 2 extra, abortive ovules in each carpel); inflorescences racemose, spicate or condensed thyrses or panicles; leaves pinnately veined, undivided.  

9a. Petals absent, stamens variable in number.

10a. Inflorescences capitate spikes, without terminal flowers, each flower with simple bract and without bracteoles, sepals present; capsules arranged spirally along main axis, sessile.  

11a. Leaves evergreen, venation brochidodromous ...................................................... 9. *Sycopsis*

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双花木属  shuang hua mu shu

Shrubs, deciduous, most parts glabrous; buds perulate, apex acute. Leaves long petiolate; stipules large, linear, caducous; leaf blade broadly ovate to obovate, thinly leathery or membranous, margin entire, palmately 5–7-veined. Inflorescence with 2 opposite flowers, axillary on short lateral branches; peduncle very short; involucral bracts several, glabrous except for margins; floral bracts hairy. Flowers bisexual, sessile, hypogynous. Floral cup short and broad, hairy. Sepals 5, broader than long, recurved at anthesis. Petals 5, red, linear-lanceolate, circinate in bud. Stamens much shorter than petals; anthers ovoid. Ovary superior; ovules 5 or 6 per locule; styles short, stigmas minute. Capsules woody, dehiscing with 2 valves; fruit usually conspicuously lenticellate by curved longitudinal slit. Ovary superior; ovules 5 or 6 per locule; styles short, stigmas minute. Capsules woody, dehiscing loculicidally by 2 valves; endocarp bony, separated from exocarp. Seeds ellipsoid, unequal. 2n = 16.

One species: China, Japan.


长柄双花木  chang bing shuan hua mu

Shrub, to 3 m. Branchlets brown, glabrous, lenticellate. Petiole 3–5 cm; leaf blade broadly ovate-rounded, 5–10 × 5–9 cm, membranous, drying gray-white abaxially and green adaxially, glabrous, base slightly to deeply cordate, rarely truncate, margin entire, apex emarginate, rarely obtuse, acuminate. Peduncle (3–)9–22.5 mm, up to 25 mm in fruit; floral cup ca. 1 mm, abaxially brown hairy; sepals ovate, 1–1.5 mm. Petals red, linear from wider base, ca. 7 mm, each with 2 basal nectaries. Stamens much shorter than petals; anthers ovoid. Ovary glabrous; styles 1–1.5 mm. Capsules obovoid, 1.2–1.4 × 1–1.3 cm, apex subtruncate. Seeds black, shiny, irregularly ellipsoid, 4–7 × 3–4 mm. Fl. Oct–Nov, fr. Sep–Oct of following year.

- Mixed evergreen and deciduous broad-leaved forests; 450–1200 m. Hunan, Jiangxi, Zhejiang.

This taxon is listed as endangered by the IUCN. **Disanthus cercidifolius** subsp. **cercidifolius** is endemic to Japan.


蕈树属  tan shu shu

Trees, evergreen; terminal buds perulate, narrowly ovoid. Leaves petiolate; stipules usually present, minute, caducous or connate with petiole, leaving small scars; leaf blade lanceolate to ovate or obovate, leathery, discolorous, margin usually crenate-serrate, occasionally entire, venation pinnate. Plants monoecious. Male inflorescence a globose to shortly cylindrical, pedunculate, many-flowered, head, grouped in terminal or subterminal, compound racemes or panicles; each flower with 1–4 basal bracts. Female inflorescences capitate, subterminal or in lower part of male inflorescence, long-pedunculate, 5–30-flowered. Flowers unisexual. Sepals and petals absent. Male flowers: stamens (4 to) many; filaments very short or absent; anthers obovate-ovoid, thecae 2-sporangiate,
each dehiscing by a longitudinal slit or rudimentary valve, apex truncate. Female flowers: staminodes (also interpreted as carpel-
dodes) absent or needlelike; ovary semi-inferior; ovules ca. 30–50 per locule, axile; styles subulate, divergent, often strongly recurv-
ed; stigmas papillose, caducous or basal parts persistent in fruit. Infructescences globose, base truncate. Capsules woody, dehiscing
löcicidally by two 2-lobed valves; staminode teeth and styles not persistent. Seeds many, upper ones sterile, wingless; one or a few
lower ones fertile, flattened, narrowly winged along margin or only at apex; seed coat thick and hard; endosperm thin. 2n = 32.

About 11 species: Bhutan, Cambodia, China, India, Indonesia, Laos, Malaysia, Myanmar, N Thailand, Vietnam; eight species (five endemic) in
China.

The resin is used in medicine and perfumes, the timber for making furniture, and the trunks and branches for cultivating mushrooms.

1a. Inflorescences 5–8-flowered; infructescence oboconical with cuneate base.
2a. Leaf blade ovate-lanceolate, 2–2.5 cm wide, leathery, base rounded, margin usually entire, less often
serrate ................................................................. 1. A. gracilipes
2b. Leaf blade ovate, 3–5 cm wide, thinly leathery, base slightly cordate, margin serrate .............................. 2. A. tenuifolia
1b. Inflorescences 10–28-flowered; infructescence subglobose.
3a. Leaf blade ovate, base rounded or slightly cordate.
4a. Leaf blade membranous, lateral veins 6–8 on each side ................................................................. 3. A. excelsa
4b. Leaf blade leathery, lateral veins more than 10 on each side .......................................................... 4. A. multinervis
3b. Leaf blade oblong, elliptic-oblong, ovate-lanceolate, lanceolate or obovate, base cuneate.
5a. Leaf blade oblong, elliptic-oblong, ovate-lanceolate or lanceolate; petiole 1.5–2 cm.
6a. Leaf blade usually oblong, elliptic-oblong, 6–15 × 3.5–6.5 cm, margin distinctly serrate .............. 5. A. yunnanensis
6b. Leaf blade usually ovate-lanceolate or lanceolate, 6–8–(12) × 2.5–4 cm, margin undulate and
distinctly serrate ................................................................................................................................. 6. A. siamensis
5b. Leaf blade obovate; petiole 0.4–1 cm.
7a. Leaf blade apex acute to acuminate ................................................................. ................................. 7. A. chinensis
7b. Leaf blade apex rounded or obtuse ................................................................................................... 8. A. obovata

1. Altingia gracilipes Hemsley, Hooker’s Icon. Pl. 29: t. 2837. 1907.

细柄蕈树  xi bing tan shu

Altingia gracilipes var. serrulata Tutcher; A. gracilipes f. uniflora H. T. Chang.

Trees 12–20 m tall; young branches glabrescent, older growth lenticellate; buds ovoid, puberulent. Stipules absent;
petiole slender, 1–3 cm, glabrous; leaf blade ovate-lanceolate, 4–7 × 1.5–2.5 cm, leathery, abaxially glabrous, base obtuse or
narrowly rounded, margin usually entire, less often serrate, apex caudate-acuminate; lateral veins 5 or 6 on each side,
abaxially somewhat prominent and glabrous, adaxially indistinct. Male inflorescences globose, 0.5–0.6 cm in diam.,
usually several arranged in a panicule; bracts 4 or 5, ovate-lanceolate, ca. 8 mm, membranous, brown-pubescent. Female inflorescences
solitary or arranged in raceme, 5–6-flowered; peduncle 2–3 cm, pubescent. Male flowers: stamens sessile; anthers red, obovoid,
ca. 1.5 mm. Female flowers: staminodes scalelike; styles ca. 2.5 mm, apex recurved. Infructescences obconical, 1.5–2 cm wide,

● Forests; ca. 1000 m. Guizhou, S Jiangxi.


细青皮  xi qing pi

Liquidambar altingiana Blume.

Trees ca. 20 m tall (to 50 m in Indonesia and Malaysia); young branches glabrous or sparsely pubescent, older growth
lenticellate. Stipules 2–6 mm; petiole slender, 2–4 cm, sparsely pubescent; leaf blade ovate or narrowly ovate, 8–14 × 4–7 cm,
abaxially glabrescent, base rounded or subcordate, margin crenate-serrate, apex acuminate; lateral veins 6–8 on each side.
Male inflorescences globose, many, arranged in raceme. Female inflorescence usually solitary in leaf axils, 14–22-flower-
ed; peduncle 2–4 cm, pubescent. Male flowers: stamen filaments ca. 1 mm, glabrous; anthers somewhat longer than fil-
aments. Female flowers: staminode teeth absent; styles 3–4 mm, pubescent. Infructescences subglobose, 1.5–2 cm wide.

● Forests, a dominant species in tropical montane evergreen broad-leaved forests; ca. 1000 m. SE Xizang (Mêdog Xian), SE Yunnan [Bhu-
tan, India, Indonesia, Malaysia, Myanmar].

Trees ca. 10 m tall; young branches glabrescent, lenticellate; buds ovoid, ca. 1 cm, pubescent. Petiole 2–3 cm; leaf blade ovate or ovate-elliptic, 7–10 × 4–6 cm, leathery, abaxially glabrous, base rounded or obtuse, rarely subcordate, margin crenate-serrate, apex acuminate; lateral veins 10–14 on each side, prominent on both surfaces. Peduncle 2–3.5 cm in fruit. Flowers not seen. Infructescences globose, ca. 2 cm wide. Capsules 10–18. Fl. Mar–May, fr. Jun–Aug.

10. Altingia chinensis

Trees ca. 10 m tall; young branches glabrescent, lenticellate; buds ovoid, ca. 1 cm, pubescent. Petiole 2–3 cm; leaf blade ovate or ovate-elliptic, 7–10 × 4–6 cm, leathery, abaxially glabrous, base rounded or obtuse, rarely subcordate, margin crenate-serrate, apex acuminate; lateral veins 10–14 on each side, prominent on both surfaces. Peduncle 2–3.5 cm in fruit. Flowers not seen. Infructescences globose, ca. 2 cm wide. Capsules 10–18. Fl. Mar–May, fr. Jun–Aug.

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anthers; anthers ovoid, thecae 2-sporangiate, each dehiscing by a longitudinal slit or rudimentary valve, apex rounded or emarginate. Female flowers: staminodes (also interpreted as carpelloides) forming rudimentary scales or teeth around gynoecium, persistent in fruit; ovary semi-inferior; ovules many, inserted on septum, only lowest ones fertile; stigmas decurrent, persistent in fruit. Infructescences globose. Capsules woody, dehiscing loculicidally by 2 valves; pericarp thin; styles persistent. Seeds many, most of them sterile, minute, irregularly angular; fertile seeds large, ellipsoid, slightly compressed, membranous-winged; seed coat reticulately sculptured; endosperm thin, embryo straight. $2n = 30, 32$

Five species: E and SW Asia, Central and North America; two species (one endemic) in China.

*Liquidambar edentata* Merrill (J. Arnold Arbor. 8: 6. 1927) and *L. rosthornii* Diels (Bot. Jahrb. Syst. 29: 380. 1900) were described from China (the former from Fujian), but the present authors have no specimens.

The resin, stems, leaves, and fruit are used medicinally.

1a. Pistillate flowers and capsules with calyx teeth clearly defined, acute; infructescences with 24–43 capsules; petiole 8–12 cm ................................................................................................................................. 1. *L. formosana*

1b. Pistillate flowers and capsules with calyx teeth very short and scalelike or absent; infructescences with 15–26 capsules; petiole 4–8 cm ........................................................................................................................................……. 2. *L. acalycina*


**枫香树** feng xiang shu

*Liquidambar acerifolia* Maximowicz; *L. formosana* var. *monticola* Rehder & E. H. Wilson; *L. maximowiczii* Miqel; *L. tonkinensis* A. Chevalier.

Trees to 30 m tall, trunk sometimes 1 m in diam.; bark gray-brown; branchlets pubescent or glabrous, somewhat lenticellate; buds ovoid, 1 cm, puberulent. Stipules red, nearly free or adnate to petiole, 1–1.4 cm; petiole 8–12 cm, pubescent; leaf blade broadly ovate, palmately 3-lobed and 3-veined, central lobe longer, abaxially usually drying gray-white, pubescent or glabrous, base rounded, margin glandular serrate, apex caudate-acuminate, cordate, subcordate or truncate, veins prominent on both surfaces. Male inflorescence a short spike, several arranged in a raceme. Female inflorescence 24–43-flowered; peduncle 3–6 cm, occasionally lenticellate, eglandular. Male flowers: stamens many, filaments unequal, anthers slightly shorter than filaments. Female flowers: staminode teeth 4–7, needlelike, 4–8 mm; ovary pubescent, styles 6–10 mm, usually coiled backwards. Infructescence globose, 3–4 cm wide. Capsules with persistent staminodes. Seeds many, brown. Fl. Mar–Jun, fr. Jul–Sep.

Sunny places, near villages, montane forests; 500–800 m. Anhui, Fujian, Guangdong, Guizhou, Hainan, Hubei, Jiangsu, Jiangxi, Sichuan, Taiwan, Zhejiang [S Korea, Laos, N Vietnam].


**缺萼枫香树** que e feng xiang shu

Trees ca. 25 m tall; bark black-brown; branchlets glabrous, lenticellate. Stipules 3–10 mm, brown-tomentose; petiole 4–8 cm; leaf blade broadly ovate, 8–13 × 8–15 cm, both surfaces glabrous or pubescent in young leaves, palmately 3–5-veined, veins prominent abaxially, lateral lobes triangular-ovate. Male inflorescence globose, several, arranged in racemes, 2–2.5 cm wide, drying black-brown in fruit; peduncle 2–3 cm. Female inflorescence solitary in leaf axils of short shoots, 15–26-flowered; peduncle 3–6 cm, sparsely pubescent. Male flowers: filaments 1–1.5 mm; anthers ovoid. Female flowers: staminode teeth absent or scalelike and sometimes very short; styles 5–7 mm, brown-pubescent. Capsules without persistent staminode teeth, persistent styles recurved. Fertile seeds winged, sterile seeds many, brown, irregularly angular. Fl. Mar–Jun, fr. Jul–Sep.

- Montane evergreen forests; 600–1000 m. Anhui, Guangdong, Guangxi, Guizhou, Hubei, Jiangsu, Jiangxi, Sichuan.

The wood is used for making furniture.


**半枫荷属** ban feng he shu

Trees deciduous or evergreen, up to 30 m tall. Leaves aggregated at shoot apex, petiolate; stipules linear, caducous, leaving small scars; leaf blade usually ovate or elliptic, usually at least some 3-lobed, leathery, margin glandular serrate, 3-veined. Plants monoecious. Male inflorescence a compound spike, terminal. Female inflorescences capitate, solitary in leaf axils, long pedunculate. Flowers unisexual. Sepals and petals absent. Male flowers: stamens many; filaments very short, anther thecae 2-sporangiate, dehiscence pattern uncertain. Female flowers: floral cup adnate to ovary; staminodes (also interpreted as carpelloides) linear, short, persistent, or absent. Ovary semi-inferior; ovules many, axile; styles oblique, usually coiled backwards; stigmas papillose. Infructescences semiglobose with truncate base. Capsules woody, dehiscing by two 2-lobed valves, styles and floral cups persistent. Seeds many, minute, angular, most of them sterile.

- Three species.

1a. Leaves monomorphic, undivided, ovate, apex caudate-acuminate ................................................................................................................................. 3. *S. caudata*

1b. Leaves dimorphic, leaf blade undivided or divided, apex acute or acuminate.
HAMAMELIDACEAE

2a. Leaves firmly leathery, petiole stout; staminode teeth more than 2 mm in fruit ................................................. 1. S. cathayensis
2b. Leaves thin leathery, petiole slender; staminode teeth less than 2 mm in fruit .......................................................... 2. S. chingii


半枫荷 ban feng he

Altingia chingii Metcalfe var. parvifolia Chun; Semiliquidambar cathayensis var. fukeniensis H. T. Chang; S. cathayensis var. parvifolia (Chun) H. T. Chang; S. coriacea H. T. Chang.

Trees 15–20 m tall, trunk ca. 60 cm in diam.; bark gray; branches dark brown, glabrous, older growth lenticellate; buds narrowly ovoid, sparsely pubescent. Leaves dimorphic; petiole stout, 1.7–4 cm, glabrous; entire leaves: blade elliptic, ovate-elliptic, oblong, ovate-oblong, 5–13 × 3–6 cm, leathery, discolorous, abaxially glabrous, base cuneate, broadly cuneate or slightly rounded, somewhat asymmetrical, margin serrulate, apex acute or acuminate; lobed leaves: blade palmately 3-lobed, central lobe 3–5 cm, lateral lobes ascending, ovate-triangular, 2–2.5 cm, margin glandular serrate, base rounded or truncate, lateral veins 4 or 8 on each side. Male inflorescences ca. 6 cm. Female inflorescence solitary; peduncle ca. 4.5 cm, glabrous. Male flowers: anthers ca. 1.2 mm, apex emarginate. Female flowers: staminode teeth needlelike, 2–5 mm, pubescent; styles 3–4 mm.


细柄半枫荷 xi bing ban feng he


Trees ca. 25 m tall; young branches drying black-brown, glabrescent, lenticellate; buds drying red-brown, shiny, slightly pubescent. Leaves dimorphic; stipules linear, caducous; petiole slender, 2–4.5 cm; entire leaves: blade elliptic or oblong, 6–10 × 3–5 cm, thinly leathery, discolorous, abaxially glabrous or pubescent, base cuneate or slightly rounded, apex acute, palmately 3-veined, lateral veins 3–7 on each side; veins prominent; lobed leaves: blade broadly ovate, 7–10 × 5–8 cm, central lobe ovate, 4–5 cm, lateral lobes 1.5–2 cm, margin glandular serrate. Male inflorescence not seen. Fruiting peduncle slender, 3–8 cm. Female flowers: staminode teeth persistent, 1–2 mm. Infructescence globose, 1.5–2 cm wide (not including styles). Capsules with persistent styles 4–6 mm, apex recurved. Fl. Mar–Jun, fr. Jul–Sep.

- Forests; ca. 1000 m. Fujian, Guangdong, SE Guizhou (Libo Xian), S Jiangxi.

This species is listed as endangered by the IUCN.


长尾半枫荷 chang wei ban feng he

Semiliquidambar caudata var. cuspidata (H. T. Chang) H. T. Chang; S. cuspidata H. T. Chang.

Trees evergreen or semievergreen, ca. 10 m tall; young branches pubescent with gray-brown hairs, glabrescent, older growth lenticellate; buds drying red-brown, shiny, subglabrous. Petiole slender, 1.5–4.5 cm; leaf blade ovate, ovate-elliptic, or oblong-ovate, 4–10 × 2–4.5 cm, leathery, base rounded or broadly cuneate, somewhat asymmetrical, margin sparsely or densely serrate, apex acut- acuminate, prominently 3-veined from base. Male inflorescence not seen. Female inflorescence solitary in leaf axils, opening together with leaves, 18–24-flowered; fruiting peduncle 2.5–3.5 cm, pubescent. Female flowers: staminode teeth persistent, 1–2 mm; styles 3–4 mm. Infructescence subglobose or compressed-globose, ca. 1.5 × 2–2.5 cm (not including styles). Capsules somewhat exserted from infructescence; persistent staminodes spinelike, less than 1 mm. Seeds brown, angular. Fl. Mar–Jun, fr. Jun–Sep.

- Forests; 600–1000 m. C. Fujian, S Zhejiang.


马蹄荷属 ma ti he shu


Trees, evergreen; branchlets stout, with distinct nodes. Leaves alternate, long petiolate; stipules large, leathery, coherent, caducous, leaving annular scar at each node; leaf blade simple or, in saplings and young shoots, palmately 3–5-lobed, thickly leathery, margin entire, venation palmate. Inflorescence capitulate, sometimes in compound racemes, usually axillary, pedunculate, 7–16-flowered. Flowers bisexual, initially enclosed by a pair of stipules. Floral cup adnate to ovary base. Petals absent or 2–5, white, linear, straight in bud. Stamens 10–15; filaments varying in length, subulate; anthers oblong or ovoid, thecae 1-sporangiate, each dehiscing by 1 valve, connective apiculate. Ovary semi-inferior; ovules 5 or 6 per locule; styles somewhat elongated; stigmas deciduous, caducous in fruit. Infructescences globose or subglobose. Capsules dehiscing loculicidally by 4 valves; exocarp usually smooth, sometimes tuberculate. Seeds 5–7 in each locule, upper 4 or 5 sterile and wingless, lower 1 or 2 fertile and narrowly winged, embryo scant, fleshy; cotyledon compressed. 2n = 32.

About four species: Bhutan, China, India, Indonesia, Laos, Malaysia, Myanmar, Nepal, Sikkim, Thailand, Vietnam; three species (one endemic) in China.
HAMAMELIDACEAE

Some authors have questioned the validity of *Exbucklandia* because Brown did not give the place of publication of the replaced synonym, *Bucklandia*. However, the rule requiring citation of this information (St. Louis Code, Art. 33.3) applies only to names published on or after 1 January 1953.

1a. Petals present, 10–12 mm, longer than stamens; leaf base truncate

1b. Petals absent or, if present, 2–3 mm, shorter than stamens; leaf base cordate or broadly cuneate.

2a. Leaf base usually cordate or occasionally broadly cuneate; capsules 7–9 × 4–5 mm, smooth

2b. Leaf base usually broadly cuneate; capsules 10–15 × 6–8 mm, tuberculate


1b. Petals absent or, if present, 2–3 mm, shorter than stamens; leaf base cordate or broadly cuneate.

2a. Leaf base usually cordate or occasionally broadly cuneate; capsules 7–9 × 4–5 mm, smooth

2b. Leaf base usually broadly cuneate; capsules 10–15 × 6–8 mm, tuberculate


6. **RHODOLEIA** Champion ex Hooker, Bot. Mag. 76: t. 4509. 1850.
HAMAMELIDACEAE

About ten species: China, Indonesia, Malaysia, Myanmar, Vietnam; six species (three endemic) in China.


1a. Petals linear-oblanceolate, 1.5–3 mm wide; leaf blade base rounded ...................................................... 6. *R. stenopetala*

1b. Petals spathulate or obovate, 5–8 mm wide; leaf blade base cuneate.

2a. Leaf blade abaxially brown tomentose, reticulate venation axially very distinctly impressed .......................... 5. *R. forrestii*

2b. Leaf blade abaxially glabrous or with stellate scales, reticulate venation axially indistinct.

3a. Leaf blade abaxially stellately scaly; capsules long ovoid, 1.2–2 × 0.6–1 cm ........................................ 4. *R. macrocarpa*

3b. Leaf blade abaxially glabrous or very sparsely stellately scaly; capsules subglobose, ca. 1 × 1 cm.

4a. Peduncles 2–3 cm long, with several scalelike bracts; petals 6–8 mm wide ............................................. 1. *R. championii*

4b. Peduncles 1–1.5 cm long, with few or no bracts; petals 5–6 mm wide.

5a. Leaf blade oblong, lateral nerves indistinct, at ca. 45° to midrib; involucral bracts abaxially mostly whitish stellately pubescent, brown-pilose only at or near margin ........................................ 2. *R. parvipetala*

5b. Leaf blade ovate-elliptic, lateral nerves abaxially prominent, pale, at ca. 30° to midrib; involucral bracts abaxially ferruginous-tomentose ................................................................................................... 3. *R. henryi*


**红花荷** hong hua he

*Rhodoleia latiovatifolia* G. A. Fu.

Trees, to 12 m tall; young branches stout, drying dark brown, glabrous. Petiole 3–5.5 cm; leaf blade ovate to broadly ovate, 7–16 × 4.5–10.5 cm, firmly leathery, drying discolorous, abaxially whitish gray, usually glabrous or sometimes with remains of brown stellate scales or stellate indumentum that appears tuberculate on drying, base broadly cuneate, apex obtuse or subacute; obscurely 3-veined at base, lateral veins 7–9 on each side at ca. 60° to midrib, conspicuous on both surfaces, reticulate veins obscure. Inflorescences 3–4 cm, 2.5–3.5 cm wide in fruit; peduncle 2–3.8 cm, with several scalelike bracts; involucral bracts many, ovate-rounded, brown pubescent; bracteoles 5 or 6, scalelike. Petals spatulate, 25–35(–40) × 4–8 mm. Stamens as long as petals, filaments glabrous, 1.5–2 cm, anthers 4–6 mm. Ovary glabrous; styles somewhat shorter than stamens. Capsules 5, ovoid-globose, ca. 1.2–1.5 cm, styles not persistent, pericarp thin-woody. Seeds yellow-brown, flattened. Fl. Feb–Apr, fr. May–Aug.

Forests; ca. 1000 m. C and W Guangdong, Guizhou, Hainan [Indonesia (Sumatra), W Malaysia, Myanmar, Vietnam].

Records of *Rhodoleia championii* from outside China must be treated with caution; collectors have commented on the similarity of the foliage to that of *Rhododendron*.


**小花红花荷** xiao hua hong hua he

Trees, to 20 m tall; young branches drying dark brown, stellately scaly but quickly glabrescent. Petiole 2–4.5 cm; leaf blade oblong, 5–10 × 2–4 cm, drying discolorous, abaxially whitish gray, glabrous, drying abaxially dark green, base cuneate, apex acute; obscurely 3-veined at base, lateral veins 6–9 on each side, abaxially somewhat raised, adaxially obscure. Inflorescences 2–2.5 cm, 2.5–3.5 wide in fruit; peduncle 1–1.5 cm, to 2 cm in fruit; involucral bracts 5–7, ovate-rounded, 7–10 mm, pubescent with dark brown hairs; bracteoles absent. Petals spatulate, 15–18 × 5–6 mm. Stamens 6–8, about as long as petals. Ovary glabrous; styles as long as stamens. Capsules 0.8–1 cm. Seeds many, flattened. Fl. May–Apr, fr. Apr–Sep.

*Forest*; ca. 1000 m. C and W Guangdong, Guizhou, Hainan [Indonesia (Sumatra), W Malaysia, Myanmar, Vietnam].

Slopes in evergreen forests; ca. 1000 m. W Guangxi, SE Guizhou, SE Yunnan [N Vietnam].


**小脉红花荷** xiao mai hong hua he

Trees, to 15 m tall. Petiole ca. 5 cm; leaf blade ovate-elliptic, ca. 11 × 3–6 cm, abaxially drying yellow-green, glabrous, adaxially drying dark green, base broadly cuneate, apex acuminate; lateral veins ca. 6 on each side at ca. 30° to midrib, abaxially raised, adaxially sunken. Inflorescences 3–3.5 cm, 5-flowered; peduncle 1–1.5 cm; involucral bracts many, rusty tomentose; bracteoles absent. Petals dark red, spatulate, ca. 30 × 6 mm. Stamens 7–9, as long as petals. Ovary glabrous; styles 1.8–2 cm. Capsules not seen. Fl. Mar–May.

● Slopes in evergreen forests; 2000–2450 m. SE Yunnan.


**大果红花荷** da guo hong hua he

Trees, to 10 m tall; young branches drying dark brown, stellately lepidote. Petiole 2.5–4 cm; leaf blade elliptic or narrowly elliptic, 7–11 × 3–6 cm, abaxially gray-white, lepidote, adaxially drying dark green, not shiny, base broadly cuneate, apex mucronate; obscurely 3-veined, lateral veins 8 or 9 on each side at ca. 75° to midrib, obscure on both surfaces. Flowers not seen. Infructescences 2.5–3.5 cm wide; fruiting peduncle 1–1.5 cm, stout, pubescent. Capsules 5, narrowly ovoid, 1.5–2 × 1.1–1.4 cm, glabrous, apex acute; styles persistent, short. Seeds dark brown, flattened, ca. 6 × 4 mm, narrowly winged. Fl. Mar–Jun, fr. Aug–Sep.

● Slopes in evergreen forests; 2000–2400 m. SE Yunnan.


**绒毛红花荷** rong mao hong hua he

Trees, to 15 m tall; young branchlets long tomentose. Petiole ca. 3.5 cm, rusty tomentose; leaf blade oblong lanceolate, 7–15 × 2–7 cm, abaxially whitish gray, brown-tomentose to pilose, adaxially drying dark green, shiny, ± bullate, base cuneate, apex acute or acuminate; lateral veins 7–9 on each side at ca. 45° to midrib, abaxially convex, adaxially sunken, as is the reticulate venation. Inflorescences ca. 3 cm, 2.5–3 cm wide
HAMAMELIDACEAE

in fruit; peduncle ca. 1 cm; involucral bracts many, ovate-rounded or broadly ovate, 5–10 mm, brown-tomentose. Petals ob lanceolate, ca. 28 × 6 mm. Ovary glabrous; styles shorter than stamens. Capsules ovoid-globose, angular, 1.3–1.6 cm, styles persistent, long. Seeds dark brown, flattened, narrowly winged. Fl. Mar–May, fr. Jun–Sep.

Evergreen forests; 1500–2300 m. W Yunnan [NE Myanmar].


窄瓣红花荷 zhai ban hong hua he

Trees, to 20 m tall. Petiole 3–5 cm, stout, glabrous; leaf blade ovate or broadly so, 6–10 × 4–6.5 cm, drying discolorous, abaxially whitish gray, adaxially dark green, somewhat shiny, base rounded or obtuse, apex obtuse or nearly acute; 3-veined at base, lateral veins 4–6 on each side, abaxially slightly raised, obscure adaxially. Inflorescences ca. 2 cm long, ca. 2.5 cm wide in fruit; peduncle 1–1.5 cm, stellately pubescent; involucral bracts ca. 10, ovate-rounded, 5–9 mm, abaxially stellately tomentose. Petals 4, narrowly ob lanceolate, 15–20 × 1.5–3 mm. Stamina 8, ca. 17 mm; filaments stout, glabrous. Ovary tomentose; styles ca. 1.5 cm. Capsules 5, ovoid-globose, ca. 1.2 cm long, styles not persistent. Seeds flattened. Fl. Mar–Jun, fr. Jul–Sep.

Evergreen forests; 600–1000 m. W Guangdong, Hainan.

This species has the narrowest petals in Rhodoleia.


壳菜果属 ke cai guo shu

Trees, evergreen, up to 20 m tall; branchlets with distinct nodes, glabrous. Leaves long petiolate; stipule solitary, narrowly ovate, enclosing apical bud, caducous, leaving annular scar at each node; leaf blade tricuspidate or simple, broadly ovate-rounded, leathery, base cordate, margin entire, venation actinodromous. Inflorescence densely spicate, terminal or leaf-opposed, pedunculate, many flowered. Flowers bisexual, adjacent flowers united at base. Floral cup adnate to ovary. Sepals usually 5, imbricate, ovate-rounded, unequal. Petals usually 5, white, linear-liguliform, subfleshy, straight in bud. Stamens 10–13 (but see comment below), filaments short, stout; anther thecae 2-sporangiate, each dehiscing by 2 valves, connective protrusion massive, stamens and staminodes fused with petals into a tube. Ovary semi-inferior; ovules 6 per locule; styles very short. Capsules ovoid-globose, dehiscing above middle by two 2-lobed valves; exocarp subfleshy, endocarp woody. Seeds more than 1 per carpel, ellipsoid; seed coat thick and hard; endosperm fleshy; embryo situated in middle. 2n = 26.

One species; China, Laos, N Vietnam.

The stamen number in Mytilaria is uncertain. Chang (Sunyatsenia 7: 69. 1948, and in FRPS 35(2): 50. 1979) gave it as 10–13, but the collection W. T. Tsang 22180 (P) from Guangxi has 5 stamens and 5 staminodes.


壳菜果 ke cai guo

Trees to 30 m tall; branchlets stout, glabrous. Petiole 7–10 cm, glabrous; leaf blades broadly ovate-rounded, 10–13 × 7–10 cm, abaxially yellow-green or grayish, glabrous, adaxially drying olive-green, shiny, apex shortly acute, palmately 5-veined, veins raised. Inflorescences terminal or axillary, ca. 4 cm, densely many flowered; peduncle glabrous. Sepals ca. 1.5 mm, apex subacute, abaxially pubescent; petals white, 8–10 mm. Styles 2–3 mm; stigmas decurrent papillose. Capsules yellow-brown, 1.5–2 cm. Seeds brown, shiny, 10–12 × 5–6 mm. Fl. Mar–Jun, fr. Jul–Sep.

Forests; ca. 1000 m. W Guangdong, W Guangxi, SE Yunnan [Laos, N Vietnam].


山铜材属 shan tong cai shu

Trees, evergreen; branchlets stout, with distinct nodes; buds compressed globose, glabrous. Leaves long petiolate; stipule thickly leathery, enclosing buds, caducous, leaving annular scar at each node; leaf blade tricuspidate or simple, broadly ovate-rounded, thickly leathery, margin entire, venation actinodromous. Inflorescence densely spicate, terminal or subterminal, 12–16-flowered; bracts 2. Flowers bisexual. Sepals and petals absent. Stamens 8, filaments somewhat longer than anthers; anthers ovoid, thecae 2-sporangiate, each dehiscing by 2 valves, connective produced. Ovary inferior; ovules 6 per locule; styles very short; stigmas papillose. Capsules ovoid-globose, dehiscing loculicidally above middle by two 2-lobed valves; exocarp woody, endocarp thick and hard. Seeds ellipsoid; seed coat thick and hard; endosperm fleshy; embryo straight.

One species.


山铜材 shan tong cai

Trees to 20 m tall; bark scabrous, dark brown; branchlets stout, gray-brown, lenticelate; buds compressed globose. Stipules subrounded, 2–2.5 cm in diam., glabrous; petiole 7–13 cm, glabrous; leaf blade 10–15 × 8–14 cm, abaxially yellow-green,
glabrous, adaxially drying dark green, shiny, base subcordate or truncate, apex acuminate; veins 5, palmate, abaxially convex, adaxially distinct. Flowers opening before leaves, 1.5 × 0.5 cm, stellately pubescent, 3–4 cm in fruit, usually only upper 3 or 4 flowers developing into fruits; peduncle 3–6 cm. Filaments 4–5 mm; anthers red, 2–3 mm. Styles 1.5 mm. Capsules ca. 15 × 13 mm; pericarp 2–2.5 mm thick. Seeds black-brown, shiny, 4–6 mm. Fl. Mar–Jun, fr. Jul–Sep.

- Wet valleys, rain forests; 300–600 m. S Hainan.

This species is listed as endangered by the IUCN.


水丝梨属 shui si shu

Shrubs or small trees, evergreen; branches with 1 prophyll, glabrous or stellately lepidote; buds naked. Leaves petiolate; stipules minute, caducous, leaving small scars; leaf blade leathery, base rounded to cuneate, margin entire or shallowly toothed towards leaf apex, venation brochidodromous, sometimes with 3 basal veins, lepidote, glabrescent. Plants andromonoecious. Inflorescence a short, dense, spike, terminal on short lateral branches, pedunculate, sometimes recurved, flowers spiral, terminal flower absent; each flower with a large simple bract and without bracteoles. Flowers male or bisexual. Sepals 5 or 6, irregular. Petals absent. Stamens 8–10, inserted on margin of floral cup; filaments equal or unequal; anthers ellipsoid, red, thecae 2-sporangiate, each dehiscing by a longitudinal slit, connective apiculate. Male flowers: floral cup short, rudimentary ovary present or absent. Bisexual flowers: floral cup urceolate, stellately lepidote. Ovary superior, but enclosed by floral cup; ovules 1 per locule; styles subulate, slender, divergent; stigmas decurrent. Capsules arranged spirally along rachis, usually ovoid-globose, woody, tomentose, dehiscing by two 2-lobed valves, persistent floral cup shorter than capsule, splitting irregularly. Seeds narrowly ovoid; endosperm thick; embryo straight. 2n = 36.

Two or three species: China, NE India (Assam); two species (both endemic) in China.

1a. Leaf blade without 3 basal veins, abaxially nearly glabrous; persistent floral cup pubescent, ca. 4 mm ...................... 1. S. sinensis
1b. Leaf blade with 3 basal veins, abaxially pubescent; persistent floral cup lepidote, ca. 2 mm ......................... 2. S. triplinervia

1. Sycopsis sinensis Oliver, Hooker’s Icon. Pl. 20: t. 1931. 1890.

水丝梨 shui si li

Distylium formosanum Kanehira; Sycopsis formosana (Kanehira) Kanehira & Hatusima; S. sinensis var. integrifolia Diels.

Trees to 14 m tall; young branches lepidote, older growth drying dark brown, glabrescent. Petiole 0.8–1.8 cm; leaf blade narrowly ovate or lanceolate, 5–12 × 2.5–4 cm, discolorous, abaxially sparsely stellately pubescent, glabrescent, adaxially shiny, stellately pubescent when young, soon glabrous, base cuneate or obtuse, margin entire or distally serrulate, apex acuminate; lateral veins 6 or 7 on each side. Inflorescences 7- or 8-flowered. Floral bracts brown, ovate-rounded, 6–8 mm, stellately pubescent. Male flowers: floral cup short, reduced pistil pubescent. Bisexual flowers: floral cup 1.7–2 mm, pubescent. Sepals ovate. Filaments slender, 1–1.2 cm; anthers red, 1.8–2 mm, acute. Ovary pubescent; styles 5 mm, coiled backwards. Capsules 8–10 mm, villous, dehiscing irregularly; persistent floral cup 3–4 mm; persistent styles 1–2 mm. Seeds 5–7 mm. Fl. Apr–Jun, fr. Jul–Sep.

- Mountain thickets, evergreen forests; 1300–1500 m. Anhui, Fujian, Guangdong, Guangxi, Hubei, Hunan, Jiangxi, Shaanxi, Sichuan, Taiwan, Yunnan, Zhejiang.

Further study is needed.


三脉水丝梨 san mai shui si li

Shrubs; young branches stellately tomentose, older growth lepidote, glabrescent. Petiole 6–13 mm, stellately pubescent; leaf blade oblone or obovate-oblong, 5–14 × 2–6 cm, discolorous, abaxially sparsely stellately pubescent, adaxially shiny and stellately pubescent along veins, base rounded, margin entire or occasionally 1–3-toothed, apex acute; lateral veins 2 or 3 on each side, distal leaf blades 3-veined at base. Inflorescences ca. 1.5 cm; 10–12-flowered, peduncle 3–5 mm, 0.8–1 cm in fruit. Male and bisexual flowers sessile. Floral cup 1.2–1.5 mm, lepidote. Sepals ovate, as long as floral cup. Stamens 8–10; anthers 2–3 mm, connective produced. Styles 1.2–1.5 mm, pubescent. Capsules 10–12 mm, tomentose and villous; persistent floral cup 1.8–2 mm, lepidote; persistent styles 3–4 mm. Seeds ca. 6 mm. Fl. Apr–Jun, fr. Jun–Sep.

- Forests; 800–1000 m. Sichuan, NE Yunnan (Daguang Xian, Yiliang Xian).

It is uncertain whether this species belongs to the genus Sycopsis. Further study is needed.


银缕梅属 yin lu mei shu

Shaniodendron M. B. Deng et al.

Trees, deciduous, up to 30 m tall; branches with 1 prophyll, stellately pubescent when young, glabrescent. Leaves alternate; stipules caducous, leaving small scars; leaf blade broadly obovate or elliptic, membranous, usually dentate towards leaf apex, venation craspedodromous, both surfaces stellately pubescent. Plants andromonoecious. Inflorescence a capitate spike, axillary and terminal, 3–7-flowered; floral bracts large, brown; bracteoles absent. Flowers male or bisexual, open before leaves. Sepals 7–8(–10),...
irregular in shape, spirally arranged, basally united, persistent. Petals absent. Stamens (5–)10–15, anthers elongate, thecae 2-sporangiate, each dehiscing by a longitudinal slit. Ovary semi-inferior, ovules 1 per locule; styles long, stigmas decurrent. Capsules arranged spirally along rachis, sessile, long-globose, woody, densely stellately pubescent. Seeds ellipsoid. \( n = 24 \).

Two species; one species in SW Asia (S Caspian region) and one in China.


Shrubs or small trees, evergreen; branches with 1 prophyll, stellately pubescent or lepidote when young; buds naked. Leaves distichous (rarely spiral), shortly petiolate; stipules caducous, leaving small scars; leaf blade leathery, margin entire or shallowly toothed towards leaf apex, venation pinnate; lateral veins usually prominent abaxially. Plants andromonoecious. Inflorescences capitulate, or subcapitate, sometimes pedicellate. Capsules ovoid-globose, woody, stellately dehiscing by a longitudinal slit; connective produced. Bisexual flowers 4 or 5, floral cup short, margin irregularly toothed, persistent. Sepals ovate, ca. 3 mm. Stamens erect in buds, pendent at anthesis, filaments filiform, 15–18(–20) mm, anthers oblong, 4–4.5 mm, connectives elongated into a mucro. Ovary semi-inferior, styles ca. 2 mm, stigmas recurved. Capsules subglobose, 8–9 mm in diam., dehiscing by 2 valves, persistent floral cup ca. 2.5 mm; styles persistent. Seeds 6–7 mm, base and apex acute. Fl. May–Jun, fr. Jun–Aug.

- Montane forests; 600–700 m. Anhui (Jinzhai Xian, Jixi Xian, Shucheng Xian), S Jiangsu (Yixing Xian), N Zhejiang (Anji Xian).

This species is listed as critically endangered by the IUCN (as *Shaniodendron subaequale*).

蚊母树 wen mu shu

Shrubs or trees; young branches stellately lepidote, older growth drying brown, glabrous; buds lepidote. Petiole 5–10 mm, sparsely stellately lepidote; leaf blade elliptic or obovate-elliptic, 3–7 × 1.5–3.5 cm, abaxially glabrescent, adaxially drying green, shiny, base broadly cuneate, margin entire, apex obtuse or subacute; lateral veins 5 or 6 on each side, reticulate veins indistinct on both surfaces. Inflorescences 1.8–2 cm; pedicels 2–5 mm, glabrous. Capsules 1.2–1.5 × 1–1.2 cm; pericarp densely gray lepidote, base cuneate, margin entire, apex obtuse or rounded; lateral veins 4 or 5 on each side, reticulate veins obscure on both surfaces. Infructescences 3–5 cm, fruiting peduncle lepidote. Flowers not seen. Capsules narrowly ovoid-globose, 1.4–1.6 × 0.6–0.8 cm, densely gray lepidote, base cuneate, apex acuminate, dehiscing by two 2-lobed valves; persistent styles 2–3 mm. Seeds ovoid, 5–6 mm. Fr. Aug.

- Montane evergreen forests; 500–800 m. Anhui, Fujian, Guangdong, Guangxi, E Guizhou, Hunan, Jiangxi, Sichuan, SE Yunnan (Funing Xian), Zhejiang.

*Distylium myricoides* var. macrocarpum C. Y. Wu (Fl. Yunnan. 1: 134. 1977) was described from Yunnan (Funing Xian), but two type specimens (flowering and fruiting) were indicated, so the name is invalid under Art. 8.1 and 37 of the St. Louis Code.


大叶蚊母树 da ye wen mu shu

Shrubs or trees, to 5 m tall; young branches angular, stellately lepidote; buds narrowly ovoid, ca. 6 mm, stellately pubescent, stellately lepidote. Petiole 7–10 mm, stout, glabrescent; leaf blade elliptic or ovate-elliptic, 7–12 × 3.5–6.5 cm, drying discolored, both surfaces glabrous, base rounded or obtuse, margin entire or apically dentate, teeth mucronate, apex acute or subobtuse; lateral veins 5 or 6 on each side, reticulate veins more prominent abaxially. Inflorescences 5–7 cm; fruiting peduncle stellately lepidote. Flowers not seen. Fruiting pedicels 2–5 mm, glabrous. Capsules 1.2–1.5 × 1–1.2 cm; persistent styles 2–4 mm, stellately pubescent with yellow-brown hairs. Seeds 5–7 mm. Fr. Aug.

- Forests; 1000–1300 m. Fujian, Hainan, Taiwan, Zhejiang [Japan (Ryukyu Islands), Korea].

3. **Distylium myricoides** var. serratum E. Walker.

F杨蚊母树 yang mei wen mu shu

*Distylium myricoides* var. serratum H. T. Chang.

Shrubs or small trees; young branches stellately lepidote, older growth drying gray-brown, glabrescent, lenticellate; buds ovoid, minute, densely stellately lepidote. Petiole 8–12 mm, stellately lepidote; leaf blade obovate or obovate-oblong, 5–10 × 2.5–4.5 cm, drying discolored, abaxially densely silver-gray lepidote, adaxially glabrescent, base cuneate, margin entire, apex obtuse or rounded; lateral veins 4 or 5 on each side, reticulate veins obscured on both surfaces. Infructescences 3–5 cm, fruiting peduncle lepidote. Flowers not seen. Capsules narrowly ovoid-globose, 1.4–1.6 × 0.6–0.8 cm, densely gray lepidote, base cuneate, apex acuminate, dehiscing by two 2-lobed valves; persistent styles 2–3 mm. Seeds ovoid, 5–6 mm. Fr. Aug.

- Montane evergreen forests; 800–1000 m. N Guangdong (Ruyuan Xian), Guangxi, S Hunan (Jianghua Xian).


屏边蚊母树 ping bian wen mu shu


Shrubs or trees, 3–8 m tall; young branches brown stellately pubescent, older growth drying brown, glabrescent, lenticellate; buds brown tomentose. Petiole 5–10 mm, stellately pubescent; leaf blade ovate-lanceolate or lanceolate, 7–14 × 2.5–3.7 cm, drying discolored, abaxially brown stellately pubescent or glabrescent, base rounded, somewhat asymmetrical, margin entire or apically 1–3-toothed, apex caudate-acuminate; lateral veins 6 on each side, reticulate veins somewhat prominent abaxially. Male inflorescences 1–1.5 cm; infructescences 3–5 cm. Bracts oblong, 6–7 mm, brown stellately pubescent. Floral bracts 2–3 mm, stellately tomentose. Stamina filaments unequal, 1.5–2.5 mm; anthers ovoid, 1.5–2 mm. Fruiting pedicels 3–4 mm, pubescent. Capsules ovoid-globose, 1–1.2 cm, stellately pubescent with brown hairs, apex acute, dehiscing by two 2-lobed valves. Seeds 5–6 mm. Fl. Apr–Jun, fr. Jun–Aug.

- Forests; 800–1000 m. N Guizhou (Suiyang Xian, Zunyi Shi), W Hubei (Badong Xian), SE Yunnan.

尖尾蚊母树 jian wei wen mu shu

Trees to 7 m tall; young branches brown stellately pubescent, older growth drying gray-brown, glabrescent; buds ovoid, brown stellately pubescent. Stipules narrowly lanceolate, ca. 4 mm, pubescent; petiole 5–7 mm, densely stellately tomentose; leaf blade ovate, 5–7 × 2–3 cm, drying discolorous, both surfaces stellately tomentose when young, glabrescent, base rounded or broadly cuneate, margin entire or apically with several teeth, teeth mucronate, apex caudate-acuminate; lateral veins 3–5 on each side, reticulate veins indistinct on both surfaces. Infructescences terminal on shoots, with 2 or 3 basal leaves. Bracts lanceolate, 1.8–2 mm, pubescent. Stamen filaments very short; anthers 1.8–2 mm. Ovary stellately pubescent, hairs brown; styles 2–3 mm. Fruiting pedicels short or absent. Capsules ovoid-globose, 1–1.2 cm, brown stellately tomentose. Fl. Apr–Jun, fr. Jun–Aug.

- Forests; 1200–1400 m. Guizhou, E Yunnan.


闽粤蚊母树 min yue wen mu shu


Trees, small; young branches brown stellately pubescent, older growth drying gray-brown, glabrous, lenticellate; buds stellately tomentose. Petiole ca. 10 mm, stellately tomentose; leaf blade oblong or ovate-oblong, 6–10 × 3–4 cm, drying discolorous, abaxially sparsely stellately tomentose or glabrescent, base broadly cuneate, margin entire or apically 1- or 2-toothed, teeth mucronate, apex acute or subobtuse; lateral veins 5 or 6 on each side, reticulate veins conspicuous on both surfaces. Infructescences 2–3 cm. Flowers not seen. Fruiting pedicels very short. Capsules 2 or 3, 1.2–1.5 cm, brown stellately pubescent, dehiscing by two 2-lobed valves; persistent styles 2–3 mm. Seeds 6–7 mm. Fr. Aug.

- Forests; 1000–1200 m. S Fujian, E Guangdong.


黔蚊母树 qian wen mu shu

Trees to 7 m tall; young branches rusty tomentose, older growth drying brown, glabrescent, lenticellate; buds ovoid, brown tomentose. Petiole 10–15 mm, densely tomentose; leaf blade oblong, 10–15 × 4–5.5 cm, abaxially brown stellately tomentose, adaxially glabrescent, base cuneate, margin entire or apically 1- or 2-toothed, apex acute; lateral veins 5–7 on each side, reticulate veins somewhat conspicuous on both surfaces. Infructescences terminal on shoots, 3–5 cm, with 2 or 3 basal leaves. Flowers not seen. Fruiting pedicels 2–4 mm. Capsules narrowly ovoid, 1.5–1.7 cm, densely tomentose, dehiscing by two 2-lobed valves; persistent styles ca. 3 mm. Seeds 8–9 mm. Fr. Jul.

- Forests; 1000–1200 m. Guizhou (Bazai, Dushanzi).


窄叶蚊母树 zhai ye wen mu shu

Distylium lanceolatum Chun ex Cheng; Myrica rapaneoidea H. Léveillé; M. seguinii H. Léveillé.

Shrubs or small trees, 2–6 m tall; young branches slightly angular, brown stellately tomentose, older growth drying gray-brown, glabrescent. Petiole 5–8 mm, stellately tomentose; leaf blade narrowly lanceolate, 6–10 × 1.2–2.2 cm, both surfaces glabrous or abaxially with tufts of hairs in axils of main veins, base rounded or broadly cuneate, margin entire, apex acute; lateral veins 6–9 on each side, reticulate veins somewhat conspicuous abaxially. Infructescences axillary, 3–5 cm. Flowers not seen. Capsules 1–1.2 cm in diam., dehiscing by 4 valves; persistent styles very short. Seeds 4–5 mm. Fr. Aug.

- Slopes and forests; 1200–1400 m. Guangdong, Guangxi, Guizhou, SE Yunnan (Funing Xian).


中华蚊母树 zhong hua wen mu shu


Shrubs to 1 m tall; young branches stout, internodes 2–4 mm, older growth glabrescent. Petiole 1.5–2 mm, densely lepidote; leaf blade elliptic to oblancoaleate, 2–4 × 1–1.2 cm, both surfaces glabrous, base broadly cuneate, margin entire or with 2 or 3 teeth on each side near apex, apex subacute; lateral veins 5 on each side, reticulate veins obscure on both surfaces. Infructescences 1.5–1.5 cm. Floral bracts oblong or lanceolate, 1.2–1.5 mm. Stamens 2–7, 4–7 mm; filaments slender; anthers ovoid. Capsules 0.7–0.8 cm, dehiscing by 4 valves; persistent styles 1–2 mm. Seeds 3–4 mm. Fl. Apr–Jun, fr. Jun–Aug.

- Wet places, river sides or stream sides; 1000–1300 m. Hubei, Sichuan.


小叶蚊母树 xiao ye wen mu shu


Shrubs 1–2 m tall; young branches slender, glabrescent, older growth glabrous; internodes 1–2.5 cm. Leaves at least partly spirally and not distichously arranged. Petiole 1–3 mm; leaf blade oblongate, oblong-lanceolate, or obovate, 2–5 × 1–1.8 cm, drying discolorous, both surfaces glabrous, base narrowly cuneate, margin entire or apically with 1 tooth on each side, apex acute or obtuse, mucronate; lateral veins 3–6 on each side, reticulate veins obscure on both surfaces. Flowers not seen. Capsules 0.7–0.9 cm in diam.; persistent styles 1–2 mm. Seeds 4–5 mm. Fl. Apr–May, fr. Jun–Aug.

- River sides, stream sides; 1000–1200 m. Fujian, Guangdong, Guangxi, Guizhou, Hubei, Hunan, Sichuan, Zhejiang.
12. **Distylium gracile** Nakai, J. Arnold Arbor. 5: 77. 1924.

**C. taiwan wen mu shu**

Trees to 10 m tall; young branches stellately pubescent, older growth glabrescent, lenticellate; buds stellately tomentose. Petioles 2–4 mm, stellately pubescent; leaf blade broadly elliptic, 2–3 × 0.7–2 cm, drying discolorous, both surfaces glabrous, base broadly cuneate, margin entire or apically with 1 tooth on each side, apex obtuse, mucronate. Infructescences 1.5–3 cm. Flowers not seen. Capsules 1–3, 0.8–1 cm in diam., stellately pubescent; persistent styles very short. Fr. Jul.–Aug.

- **Forests; 1000–1200 m. Taiwan, NE Zhejiang (Putao Xian).**


**C. jia wen mu shu shu**

Trees, evergreen, up to 15 m tall; branches with 1 prophyll, young shoots and petioles stellately tomentose or with sessile peltate scales; buds pubescent. Leaves distichous (rarely spiral), shortly petiolate; stipules ovate or elliptic, caducous, leaving small scars; leaf blade often oblanceolate, leathery, base cuneate, margin entire or nearly so, venation pinnate, sometimes with 3 basal veins, often glabrescent. Plants andromonoecious. Inflorescence a condensed panicle or botryoid, each axis terminated by a flower, axillary or terminal on short lateral branches, few-flowered; bracts 3-lobed. Flowers male or bisexual, distichously (or rarely spirally) arranged. Floral cup urceolate to cup-shaped, subtended by (often stipulate) sepal-like bracts, often ± ascending on one side. Male flowers sessile, bisexual flowers often pedicellate. Sepals and petals absent. Stamens (1–)5–6–(15), anther thecae 2-sporangiate, each dehiscing by a longitudinal slit. Male flowers with reduced carpels. Ovary superior, enclosed by long floral cup, ovules 1 per locule; stigmas decurrent. Capsules arranged distichously (rarely spirally) along rachis, partly stalked. Seeds ellipsoid.

About six species: China, Laos, Malaysia, New Guinea; five species (four endemic) in China.

1a. Leaf blade with 3 main basal veins, abaxial surface persistently densely stellately tomentose; floral cup as long as capsule ............................................................... 1. *D. laurifolia*

1b. Leaf blade without 3 main basal veins, abaxial surface glabrous or glabrescent; floral cup 1/3–1/2 as long as capsule.

1a. Leaf blade narrowly lanceolate, less than 2 cm wide .......... 5. *D. salicifolia*

1b. Leaf blade elliptic, obovate or ovate-oblong, 2–6 cm wide.

2a. Leaf blade elliptic or obovate, apex rounded or obtuse, 3–6 cm .................................................. 4. *D. tutcheri*

2b. Leaf blade oblong, obovate-oblong, apex acuminate or bluntly acuminate, 5–13 cm.

3a. Leaf blade elliptic or obovate, apex rounded or obtuse, 3–6 cm................................. 4. *D. tutcheri*

3b. Leaf blade 5–7 × 2–5 cm .................................................. 2. *D. dunnii*

4a. Leaf blade 5–7 × 2–5 cm .................................................. 2. *D. dunnii*

4b. Leaf blade 9–13 × 3–6 cm .................................................. 3. *D. yunnanensis*


**C. jian ye jia wen mu shu**

*Sycopsis laurifolia* Hemsley, Hooker’s Icon. Pl. 29: t. 2836. 1907; *Distylium velutinum* Hu.

Shrubs to 3 m tall; young branches with stellate scales and stellate hairs, at first tomentose, glabrescent, sparsely lenticellate. Petiole 8–10 mm, densely stellately lepidote; leaf blade ovate or narrowly so, 5–12 × 2–4 cm, discolorous, abaxially glaucous, stellately tomentose, hairs yellowish, adaxially shiny, base cuneate or obtuse, margin entire or with a few teeth near apex, apex acute or acuminate; lateral veins 5 or 6 on each side, with 3 main veins from base, reticulate venation abaxially obscure, adaxially raised. Infructescences 1–2 cm, bracts lanceolate, 3–4 mm. Male flowers sessile; floral cup lanceolate, 1.8–2 mm, tomentose; bracteoles inserted on cup, subglabrous. Stamens 1–7, filaments ca. 3 mm; anthers elliptoid, 0.8–1 mm. Bisexual flowers: pedicellate; floral cup 1.2–1.5 mm, stellately tomentose, with subglabrous bracteoles; stamens 8–12; filaments 1.7–2 mm. Ovary stellately pubescent; styles 4–5 mm, glabrous. Capsule 10–12 mm, densely yellow-brown villous, apex acute, persistent floral cup almost as long as capsule, stellately pubescent. Seeds 6–7 mm. Fl. Apr–Jun, fr. Jun–Sep.

- **Forests; 1300–1500 m. SW Guizhou (Anlong Xian, Xingren Xian), SE Yunnan.**


**C. jian ye jia wen mu shu**

*Sycopsis dunnii* Hemsley, Hooker’s Icon. Pl. 29: t. 2836. 1907.

Shrubs or small trees, 3–6 m tall; young branches and petioles with sessile, peltate scales, glabrescent. Petiole 10–15 mm, persistently densely lepidote; leaf blade oblong or ovate-oblong, occasionally oblong-lanceolate, 6–11 × 2–5 cm, discolorous, both surfaces glabrescent, adaxially shiny, base cuneate or subobtuse, margin entire, apex acute or acuminate; lateral veins 6 or 7 on each side, abaxially prominent; reticulate venation obscure on both surfaces. Bracts oblong. Male flowers: borne in lower part, sessile. Stamens 4–5, filaments 4–9 mm; anthers 1.7–2 mm; ovary absent. Bisexual flowers: shortly pedicellate; floral cup 2–3 mm; stamens 4–11. Ovary villous; styles 4–5 mm, glabrous, recurved. Capsules 1–4, pedicellate, 10–13 mm, gray-brown villous, apex subacute, persistent floral cup 3–4 mm, with dense sessile scales; persistent styles short. Seeds 4–5 mm. Fl. Apr–Jun, fr. Jun–Sep.

Montane evergreen forests; 800–1500 m. Fujian, Guangdong, Guangxi, Guizhou, Hunan, Jiangxi, Yunnan [Laos].

Dian jia wen mu shu


Shrubs or small trees. Petiole 6–10 mm, tomentose; leaf blade oblong, 9–13 × 3–6 cm, discolorous, abaxially glabrous, base broadly cuneate or subrounded, margin entire, apex acute or subobtuse; lateral veins 6 or 7 on each side, abaxially prominent. Inflorescences axillary or terminal on shoots, 3.5–4 cm in fruit; fruiting peduncle glabrous. Flowers not seen. Capsules 3 or 4, stalked or sessile, 8–10 × 6–8 mm, gray-brown villous, apex subacute, persistent floral cup 4–6 mm; persistent styles very short. Seeds 4–5 mm. Fl. Apr.–Jun, fr. Jun.–Sep.

- Evergreen forests; 800–1000 m. Fujian, Guangdong, Hainan.


柳叶假蚊母树 liu ye jia wen mu shu


Shrubs to 3 m tall. Leaves at least partly spiral and not distichous. Petiole 3–4 mm; leaf blade narrowly lanceolate, 6–9 × 1–1.5 cm, thinly leathery, discolorous, both surfaces glabrescent, base cuneate, margin entire, apex acute; lateral veins 5–7 on each side, abaxially slightly prominent; reticulate veins obscure on both surfaces. Inflorescences 1–2 cm, 1.5–2.5 cm in fruit; bracts ovate, 2–4 mm, pubescent. Floral cup 2–3 mm, bracts preceding flowers, narrowly ovate, 1.8–2 mm, deciduous. Stamens 6–(8–15); filaments 2–4 mm; anthers ellipsoid, 1.8–2 mm; ovary villous. Styles 5–6 mm, pubescent, recurved. Capsules 1 or 2, 7–8 mm, villous, apex acute, persistent floral cup 3–4 mm; persistent styles very short, apex acuminata. Fl. Apr.–May, fr. Jun.–Aug.

- Montane forests; 900–1200 m. S Hainan.


金缕梅属 jin lu mei shu

Hamamelis mollis Oliver, Hooker’s Icon. Pl. 18: t. 1742. 1888.

金缕梅 jin lu mei

Hamamelis mollis var. oblongifolia M. P. Deng & K. Yao.

Shrubs or small trees to 8 m tall; young branches and petioles with sessile, peltate scales, glabrescent. Petiole 3–5 mm, persistently densely lepidote; leaf blade elliptic or obovate, 3–6 × 2–4 cm, discolorous, both surfaces glabrescent, base broadly cuneate, margin entire, apex obtuse or subrounded; lateral veins 5 on each side, adaxially impressed; reticulate veins prominent abaxially, obscure adaxially. Flowers not seen. Pedicel 3–6 mm. Capsules 1–5, 10–13 mm, yellow-brown villous, apex acute to subacute, persistent floral cup 4–5 mm, with sessile scales; persistent styles very short. Seeds 4–5 mm. Fl. Apr.–Jun, fr. Jun.–Sep.

- Mountains in evergreen forests; 800–1000 m. Fujian, Guangdong, Hainan.


�建木属 ji mu shu

Tetrathyrium Bentham.

Six species: China, Japan, North America; one species (endemic) in China.

1. Hamamelis mollis Oliver, Hooker’s Icon. Pl. 18: t. 1742. 1888.

金缕梅 jin lu mei

Hamamelis mollis var. oblongifolia M. P. Deng & K. Yao.

Shrubs or small trees to 8 m tall; young branches and petioles with sessile, peltate scales, glabrescent; buds narrowly ovoid, yellow-gray tomentose. Petiole 6–10 mm, tomentose; leaf blade broadly obovate-rounded or oblong, 8–15 × 6–10 cm, abaxially densely stellately tomentose with gray hairs, adaxially subscabrous, sparsely stellately pubescent, base cordate, asymmetrical, margin sinuate-dentate, apex acute; lateral veins 6–8 on each side, abaxially prominent, basal 2 lateral veins with tertiary veins. Inflorescence peduncle ca. 5 mm. Sepals ca. 3 mm, sometimes brown adaxially, persistent. Petals yellow, ca. 1.5 cm; filaments ca. 2 mm; anthers nearly equal to filaments; staminodes 4, alternating with stamens, scalelike, producing nectar. Ovary semi-inferior; ovules 1 per locule; styles very short. Capsules woody, dehiscing above middle by two 2-lobed valves; endocarp loose from woody exocarp. Seeds ellipsoid; endosperm fleshy. 2n = 24.

Six species: China, Japan, North America; one species (endemic) in China.
HAMAMELIDACEAE

Shrubs or small trees, evergreen or semievergreen; buds naked. Leaves shortly petiolate; stipules membranous; leaf blade membranous or thinly leathery, margin entire, venation pinnate. Inflorescence capitate, shortly spicate, or racemose, axillary or terminal, 3–25-flowered. Flowers bisexual, usually 4 or 5(or 6)-merous. Floral cup obconical, stellatelly pubescent. Sepals usually 4 or 5(6), ovate, pubescent, deciduous. Petals white or red, straplike, circinate in bud. Stamens 4 or 5(6), perigynous, anther thecae 2-sporangiate, each dehiscing by 2 valves, connective protrusion long and slender; disk scales present. Ovary inferior or semi-inferior; ovules 1 per locule. Fruiting pedicel short or absent. Capsules dehiscing by two 2-lobed valves, lower part enveloped by floral cup. Seeds 1 per carpel; endosperm fleshy.

Three species: China, E and N India, Japan; three species (two endemic) in China.

1a. Bracts pectinate, glandular flabellate; inflorescence axillary, 14–25-flowered; flowers 5-merous; styles ca. 2 mm; capsules sessile, clustered in a head, adnate to floral cup for 1/4–1/2 of their length .......................... 1. *Loropetalum subcordatum*

1b. Bracts entire, eglandular; inflorescence terminal, mostly on short branches, 3–16-flowered; flowers 4(or 5)-merous; styles very short; capsules pedicellate, separated, adnate to floral cup for 2/3–3/4 of their length.

2a. Leaves glabrescent; peduncle 3–5 mm; capsule 10–14 × 9–10 mm ........................................ 2. *Loropetalum lanceum* 2b. Leaves with scattered stellate hairs, seldom glabrescent; peduncle 8–10 mm; capsule 7–8 × 6–7 mm .............. 3. *Loropetalum chinense*


四药门花  si yao men hua

*Tetrathyrium subcordatum* Bentham, Fl. Hongk. 133. 1861.

Shrubs or trees to 12 m tall; branchlets glabrous. Stipules lanceolate, 5–6 mm, stellatelly pubescent; petiole 1–1.5 cm; leaf blade ovate or elliptic, 7–12 × 3.5–5 cm, discolored, base rounded or subcordate, margin entire or sparsely serrulate, apex acute; lateral veins 6–8 on each side, abaxially prominent, glabrous, axially impressed. Inflorescence axillary, 14–25-flowered; peduncle 4–5 cm; bracts linear, ca. 3 mm. Sepals ca. 1.5 mm, stellatelly pubescent. Petals ca. 1.5 cm; anthers ovoid; staminodes divergent, teeth oblong-ovate, ca. 2.5 mm. Ovary stellatelly pubescent. Persistent floral cup ca. 2/3 as long as capsule; capsules subglobose, 10–12 mm in diam., adnate to floral cup for 1/4–1/2 of their length. Seeds 6–7 mm. Fl. Apr–Jun, fr. Jul–Aug.

- Roadside; 100–200 m. Guangdong, SW Guangxi (Longzhou Xian), Guizhou.

This species is listed as endangered by the IUCN (as *Tetrathyrium subcordatum*).


大果檀木  da guo ji mu

Trees, 9–13 m tall; young branches pubescent; buds naked, stellatelly pubescent. Leaf blade lanceolate or ovate-lanceolate, 5–8.5 × 2.5–3.5 cm, abaxially glabrous, adaxially olive, glabrous, base cuneate or obtuse, somewhat asymmetrical, apex caudate-acuminate and ca. 1 cm; lateral veins 5 on each side, abaxially somewhat prominent. Inflorescence a short spike, terminal, mostly on short lateral branches, 4- or 5-flowered; peduncle 0.3–0.5 cm. Flowers nearly sessile. Sepals ovate, 2–2.5 mm. Petals white, 1–1.3 cm. Stamens short, filament as long as anthers, connective produced into a long mucro. Ovary tomentose, styles very short. Fruiting pedicel ca. 1.5 mm; capsules compressed-globose, 12–14 × 10–12 mm, stellatelly tomentose, hairs yellow-brown, adnate to floral cup for 2/3–3/4 of their length. Seeds ellipsoid, 7–8 mm. Fl. Mar–May, fr. Jun–Aug.

Evergreen forests on mountain slopes; ca. 1000 m. S Guangxi (Shiwan Dashan), Guizhou.


檀木  ji mu


Shrubs or small trees, 1–3 m tall, much branched; branchlets stellatelly pubescent. Stipules triangular-lanceolate or obovate, 3–5 × 1.5–2 mm, stellatelly pubescent; petiole 0.2–0.5 cm, stellatelly pubescent; leaf blade ovate, elliptic or, rarely, obovate, 2–6.5 × 1–3 cm, discolored, abaxially densely stellatelly pubescent, adaxially sparsely pubescent or stellatelly pubescent when young, glabrescent, base asymmetrical, rounded or cuneate, margin ± entire, apex acute or slightly acuminate; lateral veins 4–8 on each side, abaxially prominent. Inflorescence a short raceme or nearly capitule, terminal, mostly on short lateral branches, 3–16-flowered; peduncle 0.8–1 cm, stellatelly pubescent; bracts linear or lanceolate, 2–4.5 cm. Flowers shortly pedicellate, open before leaves appear. Floral cup cupular, stellatelly pubescent, 1.2–1.5 mm. Sepals ovate, 2–3 mm. Petals 4(6), white, pale yellow or red, 1–2 cm, apex obtuse or rounded. Stamens 4 or 5, filaments very short, connective elongated into a horn, 0.4–0.5 mm, anthers ovoid, 0.5–0.6 mm; staminodes 4–6; scalelike, alternate with stamens. Ovary inferior, stellatelly pubescent, styles ca. 1 mm. Persistent floral cup 2/3–4/5 as long as capsule; capsules ovoid or obovoid-globose, 7–8 × 6–7 mm, stellatelly tomentose, hairs brown, apex rounded, adnate to floral cup for 2/3–3/4 of their length. Seeds ovoid-globose or ellipsoid, 4–7 × 3.5–4 mm. Fl. Mar–Apr, fr. May–Jul.

Forests, thickets, sunny hills; 1000–1200 m. Anhui, Fujian, Guangdong, Guangxi, Guizhou, Hubei, Hunan, Jiangsu, Jiangxi, Sichuan, Yunnan, Zhejiang [NE India, Japan].

This species is widely cultivated in China.

Two varieties occur in China; the present authors have seen no specimens of the recently published var. *coloratum* C. Q. Huang (Bull. Bot. Res., Harbin 21: 508. 2001).

1a. Flowers usually white or pale yellow ....... 3a. var. *chinense* 1b. Flowers usually purple-red or red ............ 3b. var. *rubrum*
3a. *Loropetalum chinense* var. *chinense*


**秀柱花 xiù zhu hua shù**

Trees to 16 m tall; buds brown tomentose. Stipules linear or narrowly lanceolate; petiole 6–12 mm, brown stellately tomentose; leaf blade elliptic or oblong, 10–16 × 4–6 cm, drying discolorous, abaxially brown stellately tomentose, adaxially shiny, base obtuse or broadly cuneate, margin entire, apex acuminate; lateral veins 7–11 on each side, abaxially slightly prominent. Inflorescences 3–7 cm; peduncle brown tomentose; basal inflorescence bracts 2, leaflike, 1.2–1.5 cm, abaxially brown stellately tomentose; bracts and bracteoles obovate, ca. 3 mm. Floral cup stellately tomentose. Sepals 1.8–2 mm. Petals 1.2–1.5 mm, apex obtuse. Stamens somewhat shorter than sepals. Ovary stellately tomentose; styles 5–8 mm, glabrous. Capsule 15–17 × 12–15 mm, brown stellately tomentose. Seeds 7–8 mm. Fl. Apr–May, fr. Jun–Aug.

Forests; 400–500 m. Guangdong, Guangxi, Yunnan [Vietnam].


*红花继木 hóng huá jì mù*

*Eustigma* stellatum K. Y. Tong; *Distylium chingii* Chun ex E. Walker.

Trees to 16 m tall; buds brown tomentose. Stipules linear or narrowly lanceolate; petiole 6–12 mm, brown stellately tomentose; leaf blade elliptic or oblong, 10–16 × 4–6 cm, drying discolorous, abaxially brown stellately tomentose, adaxially shiny, base obtuse or broadly cuneate, margin entire, apex acuminate; lateral veins 7–11 on each side, abaxially slightly prominent. Inflorescences 3–7 cm; peduncle brown tomentose; basal inflorescence bracts 2, leaflike, 1.2–1.5 cm, abaxially brown stellately tomentose; bracts and bracteoles obovate, ca. 3 mm. Floral cup stellately tomentose. Sepals 1.8–2 mm. Petals 1.2–1.5 mm, apex obtuse. Stamens somewhat shorter than sepals. Ovary stellately tomentose; styles 5–8 mm, glabrous. Capsule 15–17 × 12–15 mm, brown stellately tomentose. Seeds 7–8 mm. Fl. Apr–May, fr. Jun–Aug.

Forests; 400–500 m. Guangdong, Guangxi, Yunnan [Vietnam].


*云南秀柱花 yún nán xiù zhu hua*

*Eustigma* stellatum Feng ex C. Y. Wu.

Trees to 10 m tall. Petiole 1–2 cm; leaf blade narrowly rounded, 7–12 × 3–5 cm, abaxially brown stellately tomentose
along veins, adaxially glabrous, base broadly cuneate or obtuse, margin entire, apex acute; lateral veins 7–10 on each side. Peduncle 5–10 mm; bracts ca. 1 mm. Flowers shortly pedicellate. Floral cup 1.8–2 mm. Sepals short. Petals minute. Stamens ca. 2 mm. Styles 3–4 mm. Fruiting pedicel 8–10 mm; capsule 1.1–1.3 cm. Fl. Apr–May, fr. Jun–Aug.

○ Forests; 1000–1200 m. SE Yunnan (Guangnan Xian, Pingbian Xian).

蜡瓣花属 la ban hua shu

Shrubs or small trees, deciduous or semievergreen, branches with 3 prophylls, usually stellately pubescent; buds perulate. Leaves petiolate; stipules large, membranous, usually rapidly caducous, leaving small scars; leaf blade membranous or leathery, margin serrate, venation pinnate, the 2 basal lateral veins usually with tertiary veins. Inflorescence a raceme or compact thyrse, pendent, usually open before leaves appear; peduncle with 2 or 3 basal leaves; each flower usually with 1 bract and 2 bracteoles. Flowers bisexual. Sepals 5, persistent or deciduous. Petals yellow, rounded or ovate. Stamens 5; filaments linear; anther thecae 2-sporangiate, usually open before leaves appear; peduncle with 2 or 3 basal leaves; each flower usually with 1 bract and 2 bracteoles. Flowers bisexual. Sepals 5, persistent or deciduous. Petals yellow, rounded or ovate. Stamens 5; filaments linear; anther thecae 2-sporangiate, each dehiscing by 2 valves; 5–10 nectar producing disk scales present, alternating with stamens, apex truncate or 2-lobed. Sometimes 1–5 staminodes present. Ovary from almost superior to almost inferior; ovules 3 per locule, 2 of them sterile; styles short or long, stigmas capitate, persistent in fruit. Capsules ovoid-globose, woody, dehiscing loculicidally by 4 valves, with persistent styles. Seeds ellipsoid; endosperm fleshy; embryo straight. 2

Corylopsis calcicola C. Y. Wu (Fl. Yunnan. 1: 126. 1977) was described from NE Yunnan (Zhenxiong Xian), but the present authors have seen no specimens.

1a. Ovary superior, free from floral cup, capsule separated from persistent floral cups.

2a. Floral cup, ovary and leaves abaxially stellately pubescent ................................................................. 3. C. stelligera
2b. Floral cup and ovary glabrous, leaves glabrous or abaxially pubescent along veins.

3a. Petals narrowly spatulate, 6–7 mm; styles as long as petals ................................................................. 1. C. henryi
3b. Petals broadly spatulate, 3–4 mm; styles less than 1/2 as long as petals ............................................ 2. C. brevistyla

1b. Ovary semi-inferior, connate with floral cup.

4a. Flowers shortly pedicellate, petals narrowly oblanceolate to spatulate, 1.5–2 mm wide; capsule 12–20 mm, with conspicuously thick pedicel; buds gray-white tomentose ......................................................... 4. C. multiflora
4b. Flowers sessile, petals obovate or axelike, 3–4 mm wide; capsules 6–9 mm; buds mostly glabrous, occasionally pubescent (tomentose in C. rotundifolia).

5a. Disk scales undivided.

6a. Inflorescences 2–5-flowered ...................................................................................................................... 5. C. pauciflora
6b. Inflorescences 10 or more-flowered.

7a. Leaf blade obovate, 3.5–5.5 cm, apex rounded; stipules 0.5–0.7 cm ....................................................... 6. C. alnifolia
7b. Leaf blade ovate or broadly ovate, 6–10 cm, apex shortly acute; stipules 2–3 cm .............................. 7. C. platypetala

5b. Disk scales 2-lobed.

8a. Floral cup and ovary stellately pubescent.

9a. Inflorescences 8–9 cm, usually with 25–40 capsules, leaf blade with 10–12 lateral veins on each side ................................................................................................................................. 12. C. trabeculosa
9b. Inflorescences 3–6 cm, usually with less than 25 capsules; leaf blade with 6–9 lateral veins on each side.

10a. Styles 5–7 mm, as long as or longer than petals.

11a. Stamens shorter than petals; basal bracts of inflorescences 0.8–1 cm, abaxially pubescent .................................................. 8. C. sinensis
11b. Stamens longer than petals; basal bracts of inflorescences 1–1.3 cm, abaxially glabrous ......................... 9. C. veitchiana

10b. Styles 1–2.5 mm, shorter than petals.

12a. Leaf blade abaxially pubescent only along nerves; petiole ca. 1 cm; petals 6–7 × 4–5 mm; stamens 4–5 mm; styles 2–2.5 mm ................................................................. 10. C. yunnanensis
12b. Leaf blade abaxially densely tomentose; petiole 1.5–2 cm; petals 3–4 × 3–4 mm; stamens ca. 3 mm; styles 1–1.5 mm ................................................................. 11. C. velatina

8b. Floral cup and ovary glabrous.

13a. Leaf blade abaxially pubescent, at least along nerves.

14a. Styles 4–5 mm; petals 5–6 mm; peduncle almost glabrous ................................................................. 16. C. glandulifera
14b. Styles 1–3 mm; petals 2–3 mm; peduncle pubescent.

15a. Young branches and buds glabrous; capsule globose ................................................................. 15. C. microcarpa
15b. Young branches and buds pubescent or tomentose; capsule ovoid.
16a. Leaves circular or oblate; styles 1.2–1.5 mm ................................. 13. C. rotundifolia
16b. Leaves obovate; persistent styles 2–3 mm ................................. 14. C. obovata

13b. Leaf blade abaxially glabrous or pubescent only along nerves when young.

17a. Peduncle 5–7 cm, flowers and capsules pedicellate, laxly arranged ................................. 20. C. yui
17b. Peduncle 2–4 cm, flowers and capsules sessile, densely arranged.

18a. Petals ob lanceolate, 1.5–1.7 mm wide; leaf blade abaxially pale gray ........................... 17. C. glaucescens
18b. Petals obovate, 2–3 mm wide; leaf blade abaxially green.

19a. Petals, stamens and styles 3 mm or more; leaf blade abaxially pubescent
along nerves, apex acute ............................................................... 18. C. willmottiae
19b. Petals, stamens and styles 1.5–2 mm; leaf blade abaxially glabrous, apex
emarginate or truncate, ................................................................. 19. C. omeiensis

1. Corylopsis henryi Hemsley, Hooker's Icon. 29: Pl. t. 2819. 1906.

鄂西蜡瓣花 e xi la ban hua

Shrubs; branchlets gray-brown, glabrous, minutely lenticellate; terminal buds ellipsoid, 0.8–1 cm, glabrous. Stipules oblong, 18–20 mm, glabrous; petiole 8–10 mm, puberulent; leaf blade obovate-rounded, 6–8 × 4–6 cm, abaxially pale gray-brown, sparsely pubescent or glabrescent along veins, adaxially drying green, glabrous, base cordate, asymmetrical, margin sinuate-serrate, teeth mucronate, apex acute, lateral veins 8–10 on each side, the 2 lowermost with obscure tertiary veins at 90° to lateral veins. Inflorescence 3–4.5 cm, 5–6 cm in fruit; peduncle ca. 1.5 cm, pubescent, with 1 or 2 basal leaves; floral bract ovate, ca. 7 mm, abaxially glabrous; bracteoles oblong, 4–5 mm, abaxially glabrous. Floral cup glabrous. Sepals ovate, apex rounded. Petals narrowly spatulate, 6–7 × 3–3.5 mm. Stamens 5–7 mm; disk scales 2-lobed, apex acute, shorter than sepals. Ovary superior, glabrous; styles 5–6 mm, somewhat longer than stamens. Capsules 6–7 mm. Seeds 4–5 mm. Fl. Apr–Jun, fr. Jul–Sep.

● Forests; ca. 1000 m. W Hubei, E Sichuan.


短柱蜡瓣花 duan zhu la ban hua

Shrubs; young branches glabrous, with minute, white lenticels; buds narrowly ovoid, 8–10 mm, glabrous, scales ovate. Stipules narrowly oblong, 13–15 × 3–4 mm, abaxially villous, adaxially glabrous; petiole 5–10 mm, glabrous; leaf blade obovate or obovate-rounded, 3–7 × 2.5–5 cm, abaxially drying grayish, initially villous along veins, glabrescent, adaxially drying dark green, base almost symmetrical, cordate, margin serrate above middle of leaf, teeth mucronate, apex obtuse and mucronate or acute; lateral veins 6–8 on each side. Inflorescence 1.5–2 cm, 14–18-flowered, peduncle ca. 1 cm, tomentose, with 1 or 2 basal leaves; involucral bracts 4–5, scalelike, ovate-rounded, 1–1.2 cm, abaxially pubescent with yellow-brown hairs, adaxially villous; floral bract ovate, 3–4 mm, pubescent; bracteoles oblong, 1.2–1.5 mm. Floral cup glabrous. Sepals nearly rounded, equal to floral cup. Petals broadly spatulate, 3–4 × 2–3 mm, base clawed. Stamens 2.5–3 mm; disk scales 2-parted, apex obtuse, somewhat shorter than sepals. Ovary superior, glabrous; styles 1–1.5 mm. Capsules 5–6 mm, glabrous; persistent styles ca. 1 mm. Seeds 3–4 mm. Fl. Apr–Jun, fr. Jul–Aug.

● Forests; ca. 1200 m. NW and NE Yunnan.


星毛蜡瓣花 xing mao la ban hua

Shrubs or small trees; young branches gray-brown, pubescent, lenticellate; terminal buds ellipsoid, 1.5–2 cm, glabrous. Petiole ca. 10 mm, stellately pubescent; leaf blade ovate or obovate-elliptic, 5–12 × 3–7 cm, abaxially stellately pubescent at least along veins, adaxially puberulent along veins, base cordate, asymmetrical, margin serrate above middle of leaf, teeth mucronate, apex acute; lateral veins 7 or 8 on each side, the 2 lowermost with obscure tertiary veins. Inflorescence 3–4 cm, 5–6 cm in fruit; peduncle ca. 1 cm, with 2 or 3 basal leaves; basal bracts of inflorescences (stipules of reduced leaves) 5 or 6, scalelike, ovate, 1–1.3 cm, abaxially glabrous, adaxially villous; floral bracts ovate, 3–4 mm, tomentose on both surfaces; bracteoles oblong-lanceolate, 1.5–2 mm, pubescent. Floral cup stellately pubescent. Sepals ovate, glabrous, apex rounded. Petals spatulate, ca. 5 mm. Stamens ca. 6 mm, exserted from corolla; disk scales acute, 2-lobed, subequal to sepals. Ovary superior, stellately pubescent; styles as long as stamens. Capsules 6–7 mm, stellately pubescent, with persistent styles. Seeds ovoid-ellipsoid, 3–4 mm. Fl. Apr–Jun, fr. Jun–Aug.

● Forests; ca. 1300 m. SW China.


瑞木 rui mu

Shrubs or small trees, sometimes semievergreen; young branches tomentose or glabrous; older growth gray-brown, glabrescent, minutely lenticellate; buds gray-white tomentose. Stipules oblong, 18–20 mm, petiole 10–15 mm; leaf blade ovate, obovate, obovate-elliptic, or almost circular, 5–15 × 4–8 cm, abaxially glabrous or stellately pubescent at least along veins, base almost symmetrical, cordate, margin serrate, teeth mucronate, apex acute or acuminate; lateral veins 7–9 on each side, the 2 lowermost with obscure tertiary veins. Inflorescence 2–4 cm, 5–6 cm in fruit; peduncle and general bracts glabrous or pubescent, with 1–5 basal leaves. Pedicel 1–2 mm. Floral cup glabrous. Sepals ovate, 1–1.5 mm. Petals obovate or narrowly so, 3–5 × 1–2 mm. Stamens 4–7 mm; disk scales not lobed, apex truncate, subequal to sepals. Ovary semi-inferior, glabrous; styles slightly shorter than stamens.

● Forests, slopes, roadsides; 1000–1500 m. Fujian, Guangdong, Guangxi, Guizhou, Hubei, Hunan, Taiwan, Yunnan.
1a. Young branches tomentose; leaves abaxially \textit{stellately pubescent}; peduncles pubescent; stamens 6–7 mm ................................. 4a. var. \textit{multiflora}

1b. Young branches, leaves and peduncles glabrous; stamens 4 mm ........................................ 4b. var. \textit{nivea}

4a. \textit{Corylopsis multiflora} var. \textit{multiflora}

瑞木（原变种） rui mu (yuan bian zhong)

\textit{Corylopsis cavaleriei} H. Léveillé; \textit{C. cordata} Merrill ex H. L. Li; \textit{C. multiflora} var. \textit{cordata} (Merrill ex H. L. Li) H. T. Chang; \textit{C. multiflora} var. \textit{parvifolia} H. T. Chang; \textit{C. stenopetalata} Hayata; \textit{C. wilsonii} Hemsley.

Young branches tomentose. Leaf blade obovate, obovate-elliptic, or almost circular, 7–15 × 4–8 cm, abaxially drying gray-white, \textit{stellately pubescent} at least along veins, adaxially pubescent along veins. Peduncle \textit{pubescent}; general bracts 1.5–2 cm, abaxially pubescent with gray-white hairs; bracts ovate, 6–7 mm, pubescent; bracteole 1, oblong, ca. 5 mm, pubescent. Petals \textit{oblanceolate}, 4.5–5 × 1.5–2 mm. Stamens 6–7 mm, excised from corolla. Capsules sessile, hard woody, 12–20 × 8–2 cm, abaxially pubescent with gray-white hairs; bracts ovate, 2–5 cm, abaxially drying gray-white, \textit{stellately pubescent} at least along veins, adaxially glabrous, base asymmetrical, cordate, margin serrate above middle of leaf, teeth mucronate, apex rounded and mucronate; lateral veins 7 or 8 on each side, the 2 lowermost with faint tertiary veins. Inflorescence 3–4 cm, 10–12-flowered; peduncle 1.2–1.5 cm, glabrous; basal bracts of inflorescences and floral bracts caducous. Floral cup 1 mm, glabrous. Sepals broadly ovate, as long as floral cup, glabrous. Petals and stamens not seen. Disk scales shorter than sepals, not lobed, apex obtuse or submarginate. Ovary adnate to floral cup, glabrous; styles 2–3 mm. Capsules 6–7 mm, glabrous. Fl. May–Jul, fr. Jul–Sep.

● Forests; ca. 1500 m. Fujian, Guangdong, Guangxi, Guizhou, Hubei, Hunan, Taiwan, Yunnan.


白背瑞木 bai bei rui mu

Young branches glabrous. Leaf blade ovate, 5–11 × 4–6.5 cm, abaxially glaucous, glabrous. Peduncle and basal bracts of inflorescences abaxially glabrous; floral bract and bracteoles sparsely pubescent. Petals narrowly \textit{oblanceolate}, ca. 3 × 1–1.5 mm. Stamens 3–4 mm. Capsules not seen. Fl. May.

● Slopes, roadsides; ca. 1000 m. N Fujian (Chong’an Xian).


少花瑞木 shao hua la ban hua

\textit{Corylopsis matsudae} Kanehira & Sasaki.

Shrubs; young branches and terminal buds glabrous. Petiole 5–10 mm, slender, pubescent; leaf blade ovate-elliptic or broadly ovate, 3–6.5 × 2–3.5 cm, abaxially villous along lateral veins, adaxially glabrous, base somewhat asymmetrical, rounded or subcordate, margin serrate above middle of leaf, teeth mucronate, apex acute; lateral veins 6–8 on each side, the 2 lowermost with obscure tertiary veins. Inflorescence 1–2 cm, 2–5-flowered; peduncle short, glabrous; general bracts ovate-rounded, 0.8–1 cm, abaxially glabrous; floral bract broadly ovate, 7–8 mm, glabrous; bracteoles somewhat shorter than bract. Floral cup glabrous. Sepals triangular, glabrous, apex obtuse. Petals broadly obovate, 6–7 mm. Stamens 5–6 mm; disk scales not lobed, apex truncate. Ovary glabrous; styles 5–6 mm. Capsule 6–8 mm, glabrous. Fl. May–Jun, fr. Jul–Sep.

Slopes and forests; 200–300 m. Taiwan [Japan].


桤叶蜡瓣花 qi ye la ban hua


Shrubs, to 2 m tall; young branches dark gray, glabrous, older growth lenticellate; buds narrowly ovoid-globose, glabrous. Stipules oblong-ovate, 5–7 mm, glabrous; petiole 10–15 mm, glabrous; leaf blade obovate-rounded or almost circular, 3.5–5.5 × 3–5 cm, thinly leathery, abaxially pubescent along veins, adaxially glabrous, base asymmetrical, cordate, margin serrate above middle of leaf, teeth mucronate, apex rounded and mucronate; lateral veins 7 or 8 on each side, the 2 lowermost with faint tertiary veins. Inflorescence 3–4 cm, 10–12-flowered; peduncle 1.2–1.5 cm, glabrous; basal bracts of inflorescences and floral bracts caducous. Floral cup 1 mm, glabrous. Sepals broadly ovate, as long as floral cup, glabrous. Petals and stamens not seen. Disk scales shorter than sepals, not lobed, apex obtuse or submarginate. Ovary adnate to floral cup, glabrous; styles 2–3 mm. Capsules 6–7 mm, glabrous. Fl. May–Jul, fr. Jul–Sep.

● Forests and roadsides; 1000–1200 m. Guizhou.


阔瓣蜡花 kuo la ban hua


Shrubs, to 2.5 m tall; young branches sometimes glandular pubescent, older growth gray-brown, glabrescent, lenticellate; buds glabrous. Stipules oblong or oblong-lanceolate, 20–30 mm, apex acute, abaxially glabrous, adaxially villous; petiole 12–15 mm, sometimes glandular pubescent; leaf blade ovate or broadly ovate, 7–10 × 4–7 cm, villous on both surfaces, glabrescent, base symmetrical or asymmetrical, cordate, margin serrate, teeth mucronate, apex short acute; lateral veins 6–10 on each side, the 2 lowermost with tertiary veins. Inflorescence 2–2.5 cm, 8–20-flowered; peduncle 1.5–2 cm, subglabrous; basal bracts of inflorescences caducous; floral bracts oblong, 4–5 mm, sparsely pubescent; bracteoles caducous. Floral cup glabrous. Sepals ovate, glabrous, apex obtuse. Petals axileaf, 3–4 × ca. 4 mm, base shortly clawed. Stamens somewhat shorter than petals; disk scales not lobed, shorter than sepals. Ovary semi-inferior, glabrous; styles shorter than stamens. Capsules 7–9 mm, glabrous. Seeds 4–5 mm. Fl. Apr–Jul, fr. Jul–Sep.

● Montane forests; 1300–2600 m. Anhui, Hubei, Sichuan.


蜡瓣花 la ban hua

\textit{Corylopsis sinensis} var. \textit{parvifolia} H. T. Chang; \textit{C. spicata} Hemsley.

Shrubs; young branches and buds pubescent or glabrous. Stipules narrowly oblong, ca. 20 mm, sparsely pubescent; petiole 5–10 mm, \textit{stellately tomentose}; leaf blade obovate, obovate-
rounded, broadly ovate or oblong-obovate, 3–9 × 2–6 cm, abaxially gray-brown stellately pubescent to glabrous, adaxially glabrous or pubescent along veins, base asymmetrical, cordate or subtruncate, margin serrate, teeth mucronate, apex obtuse, acute, or acuminate; lateral veins 7–9 on each side, the 2 lowermost with obscure tertiary veins. Inflorescence 3–4 cm, 3–6 cm in fruit; peduncle 1.2–1.5 cm, pubescent; basal bracts of inflorescences ovate-rounded, 0.8–1 cm, abaxially pubescent, adaxially villous; floral bracts ovate, 4–5 mm, pubescent; bracteoles oblong, 2–3 mm. Floral cup stellately pubescent. Sepals ovate, glabrous, apex subobtuse. Petals spatulate, 5–6 × 3–4 mm. Stamens 4–5 mm; disk scales 2-lobed, apex acute, nearly equal to sepals. Ovary stellately pubescent; styles 6–7 mm, base pubescent. Capsules 10–14 × 7–9 mm, stellately pubescent. Seeds 4–5 mm.

- Forests, mountains; 1000–1500 m. Anhui, Fujian, Guangdong, Guangxi, Guizhou, Hunan, Jiangxi, Sichuan, Zhejiang.


Young branches and buds pubescent. Leaf blade broadly ovate or oblong-obovate, abaxially gray-brown stellately pubescent, adaxially glabrous or pubescent only along veins, base asymmetrical, cordate, apex subacute or obtuse. Fl. May–Jun, fr. Jul–Aug.

- Forests; ca. 1200 m. Anhui, Hubei, E Sichuan.


滇蜡瓣花 dian la ban hua

Shrubs, to 3 m tall; young branches drying grayish, tomentose, older growth dark brown, glabrescent, lenticellate; buds oblong, glabrous. Stipules oblong, glabrous; petiole 10–12 mm, pubescent; leaf blade ovate-rounded, 5–8 × 3–6 cm, abaxially gray, stellately pubescent at least along veins, adaxially drying dark green, glabrescent, base asymmetrical, cor- date, margin serrate, teeth short mucronate, apex rounded with a deltoid mucro; lateral veins 8 on each side, the 2 lowermost with obscure tertiary veins. Inflorescence 1.5–2.5 cm, 3.5–4.5 cm in fruit; peduncle 1–1.2 cm, brown tomentose, with 2 basal leaves; basal bracts of inflorescences ovate-rounded, 1–1.8 cm, abaxially glabrous; floral bracts ovate-rounded, ca. 6 mm, pubescent; bracteoles lanceolate, 3–4 mm, pubescent. Floral cup stellately pubescent. Sepals triangular-ovate, tomentose, apex subacute. Petals spatulate, 6–7 × ca. 5 mm. Stamens 4–5 mm; disk scales 2-lobed, apex truncate or obtuse, shorter than floral cup. Ovary stellately pubescent; styles 2–2.5 mm, base pubescent. Capsules 6–7 mm, stellately pubescent; persistent styles 1.8–2 mm, apex somewhat curved. Seeds 4–5 mm. Fl. Apr–Jun, fr. Jun–Aug.

- Forests; ca. 1500 m. NW Yunnan (Dali Xian).


绒毛蜡瓣花 rong mao la ban hua

Shrubs, to 3 m tall; young branches tomentose, glabrescent, older growth gray-brown, white lenticellate; buds elliptic, glabrous. Stipules oblong, 15–20 mm, apex rounded, abaxially pubescent, adaxially villous; petiole 15–20 mm, pubescent; leaf blade ovate-rounded or elliptic, 5–9 × 3–5.5 cm, abaxially stellately pubescent with brown hairs, villous along veins, adaxially drying pale green, base asymmetrical, cordate, margin serrate, teeth short mucronate, apex subacute; lateral veins 8 or 9 on each side, the 2 lowermost with obscure tertiary veins. Inflorescence 3–4 cm, 4–6 cm in fruit; peduncle 0.8–1 cm, densely tomentose, with 2 or 3 basal leaves; basal bracts of inflorescences rounded, 1–1.2 cm, pubescent; floral bracts tomentose; bracteoles lanceolate, tomentose. Floral cup pubescent. Sepals ovate, 0.8–1 mm, glabrous or ciliate. Petals spatulate, 3–

Shrubs or small trees, 2.5–5 m high. Young branches and petioles densely villous and glandular pubescent; buds ovoid-conical, pale green, borne at apex of short shoots. Leaf blade with 10–12 lateral veins on each side. Inflorescence 3–8 cm long, densely 20–40-flowered; rachis with dense yellow silky hairs; basal bracts of inflorescences involucellate at anthesis, usually 4, bright yellow, slightly patent, broadly elliptic or oblong, 2–2.8 × 1.2–1.5 cm, base attenuate, margin entire, apex slightly obtuse or acute, membranous, both surfaces and margin yellow sericeous, glabrescent; floral bracts yellow, oblong or ovate, obtuse or acute at apex, sometimes 3-lobed, the lower lobe 14–16 × 8–10 mm, sericeous on both sides, the upper lobes shorter and smaller; bracteoles lanceolate or linear, 4.6–1.5 mm, sericeous, acuminulate. Floral cup densely sericeous. Sepals unequal in size, triangular or lanceolate, 0.5–1.5 mm; petals oblong-spatulate or ovate-spatulate, obviously unequal in size, 4–8 × 2.5–4.5 mm, margin entire or irregularly undulate, apex obtuse. Stamens 5, anthers yellow, ovoid, 0.5–0.8 mm long, filaments yellow-green, filiform, 1.8–2.2 mm long, inflated at base; disk scales 5, red, nearly 2-parted to base, lobes 10, 0.5–0.6 mm long, club-shaped, apex obtuse. Ovary ovoid, densely sericeous; style 1.5–2 mm long, stigmas green, 2-parted to near base, upper part divergent, slightly curved. Inflorescences 8–9 cm, usually with 25–40 capsules. Fl. Jan–Mar, fr. May–Sep.


Shrubs, 2–3 m tall; young branches tomentose with yellow-brown hairs, older growth drying brown, minutely lenticellate; buds narrowly ovoid, glabrous. Stipules oblong, 8–13 × 4–5 mm, pubescent with yellow-brown hairs on both surfaces; petiole 7–12 mm, tomentose; leaf blades rounded or subrounded, 4–8 cm in diameter, membranous, abaxially sparsely pubescent, villous along veins, adaxially drying green, pubescent along veins, base subapical, cordate, margin serrate, teeth mucronate, ca. 1 mm, apex rounded and mucronate; lateral veins 6–9 on each side, the 2 lowermost with obscure tertiary veins. Inflorescence terminal on shoots, to 4.5 cm in fruit; peduncle ca. 1.5 cm, tomentose, with 2 or 3 basal leaves; basal bracts of inflorescences 4–6, ovate-rounded, 1.2–1.5 × 1–1.2 cm, brown tomentose on both surfaces; floral bracts ovate, 3–4 mm, pubescent; bracteoles oblong, 2–3 mm, pubescent. Floral cup 1.2–1.5 mm, glabrous. Sepals ovate-rounded, 0.8–1 mm, apex rounded. Petals broadly obovate, 2–3 × 2–2.5 mm, base shortly clawed. Stamens 1.5–2 mm; disk scales 2-lobed, shorter than sepals, apex obtuse. Ovary glabrous; styles 1.2–1.5 mm; stigmas slightly expanded. Capsules 10–17, 5–6 mm in diameter. Seeds 3–3.5 mm. Fl. Mar–May, fr. Jun–Aug.


Shrubs; young branches stellately pubescent with brown hairs, older growth glabrescent; buds narrowly ovoid, gray pubescent. Stipules oblong-lanceolate, 10–12 mm, abaxially gray pubescent, adaxially villous; petiole 10–15 mm, pubescent; leaf blades obovate or obovate-rounded, 4–6 × 3.5–4 cm, membranous, abaxially stellately pubescent with brown hairs, villous along veins, adaxially drying dark green, glabrous, base obtuse or subrounded, margin serrulate above middle of leaf, apex rounded or truncate and mucronate; lateral veins 7 or 8 on each side, the 2 lowermost with obscure tertiary veins. Flowers not seen. Infructescence terminal on shoots, 4–5 cm; fruiting peduncle 1.8–2 cm, villous, with 1–3 basal leaves. Capsules 15–20, densely arranged, 6–7 mm, glabrous; persistent styles 2–3 mm. Fr. Aug.


Shrubs, to 4 m tall; young branches slender, glabrous, older growth drying dark brown, minutely lenticellate; buds ovoid-globose, glabrous. Stipules narrowly rounded, 15–17 mm, adaxially densely pubescent, base abaxially villous; petiole 5–8 mm, slender, glabrescent; leaf blade obovate or obovate-rounded, 3–7 × 2–4 cm, membranous, abaxially stellately pubescent, villous along veins, adaxially drying dark green, glabrescent, base slightly asymmetrical, subcordate or rounded, margin serrate above middle of leaf, teeth minutely mucronate, apex acute; lateral veins 8–10 on each side, the 2 lowermost with obscure tertiary veins. Inflorescence 4–4.5 cm; peduncle pubescent, with 1 or 2 basal leaves; floral bracts ovate, 1.8–2 mm, adaxially tomentose. Flowers subsessile. Floral cup 1.8–2 mm, glabrous. Sepals 0.8–1 mm. Petals obovate, 2–3 mm. Stamens 1.5–2 mm; staminodes 2-lobed. Ovary glabrous; styles less than 1 mm. Capsules minute, 4–5 mm, glabrous. Seeds 2–3 mm. Fl. Mar–May, fr. Jun–Aug.


Shrubs; to 9 m tall; young branches slender, glabrous, older growth drying dark brown, minutely lenticellate; buds ovoid-globose, glabrous. Stipules narrowly rounded, 15–17 mm, adaxially densely pubescent, base abaxially villous; petiole 5–8 mm, slender, glabrescent; leaf blade obovate or obovate-rounded, 3–7 × 2–4 cm, membranous, abaxially stellately pubescent, villous along veins, adaxially drying dark green, glabrescent, base slightly asymmetrical, subcordate or rounded, margin serrate above middle of leaf, teeth minutely mucronate, apex acute; lateral veins 8–10 on each side, the 2 lowermost with obscure tertiary veins. Inflorescence 4–4.5 cm; peduncle pubescent, with 1 or 2 basal leaves; floral bracts ovate, 1.8–2 mm, adaxially tomentose. Flowers subsessile. Floral cup 1.8–2 mm, glabrous. Sepals 0.8–1 mm. Petals obovate, 2–3 mm. Stamens 1.5–2 mm; staminodes 2-lobed. Ovary glabrous; styles less than 1 mm. Capsules minute, 4–5 mm, glabrous. Seeds 2–3 mm. Fl. Mar–May, fr. Jun–Aug.

Corylopsis glandulifera var. hypoglauca (Cheng) H. T. Chang; C. hypoglauca Cheng; C. hypoglauca var. glaucescens Cheng; C. sinensis Hemsley var. glandulifera (Hemsley) Reher & E. H. Wilson; C. willmottiae Rehder & E. H. Wilson var. cheksiangensis Cheng.
Shrubs, to 3 m tall; young branches glabrous, older growth drying gray-brown, lenticellate; buds narrowly ovoid, glabrous. Stipules narrowly oblong, 12–15 mm, glabrous; petiole 6–10 mm, pubescent; leaf blade obovate or obovate-rounded, 5–8 × 3.5–5.5 cm, abaxially sometimes gray-white, stellately pubescent, adaxially glabrous, base asymmetrical, subcordate or sub-rounded, margin serrate above middle of leaf, apex subacute; lateral veins 6–8 on each side, the 2 lowermost with tertitary veins. Inflorescence terminal on shoots, 4–6 cm in fruit; peduncle 0.8–1.3 cm, glabrous or pubescent at flower bases, with 1 or 2 basal leaves; basal bracts of inflorescences subrounded, 0.8–1 cm, abaxially glabrous, adaxially villous; floral bracts ovate-rounded, 3–4 mm, sparsely pubescent; bracteoles oblong, 3–4 mm, sparsely pubescent. Floral cup glabrous. Sepals ovate, glabrous, apex subobtuse. Petals spatulate, 5–6 × 3–4 mm. Fl. Mar–May, fr. Jun–Aug.


怒江蜡瓣花　nu jiang la ban hua

Corylopsis polyneura H. L. Li.

Shrubs or small trees; young branches glabrous, older growth drying gray-brown, minutely lenticellate; buds narrowly ovoid, 1.1–1.5 cm, glabrous. Petiole 10–20 mm, glabrous; leaf blade ovate-rounded or obovate-rounded, 5–12 × 4–8 cm, abaxially drying gray-white, glabrescent, adaxially drying green, sparsely villous along veins, base asymmetrical, cordate, margin serrate, teeth mucronate, apex acute; lateral veins 8 or 9 on each side, the 2 lowermost with tertitary veins. Inflorescence terminal on shoots, 4–5 cm, 5–7 cm in fruit; peduncle 1–2 cm, with 1 or 2 basal leaves. Floral cup glabrous. Sepals shorter than floral cup, apex rounded. Petals oblanceolate, 3–4 × 1.5–1.7 mm. Disk scales 2-lobed, apex obtuse. Ovary glabrous; styles 2–3 mm. Capsules 6–7 mm, glabrous. Seeds narrowly ovoid, 4–5 mm. Fl. Apr–Jun, fr. Jun–Aug.


四川蜡瓣花　si chuan la ban hua

Shrubs or small trees, to 5 m tall; young branches slender, glabrous, older growth drying gray-brown, minutely white lenticellate; buds narrowly ovoid, glabrous. Stipules purple, narrowly oblong, 12–20 mm; petiole 10–15 mm; glabrous; leaf blade obovate or broadly so, 4–9 × 2–6 cm, abaxially glabrescent, adaxially glabrous, base asymmetrical, subcordate or rounded, margin serrate, teeth obscurely mucronate, apex short acute; lateral veins 7–9 on each side, the 2 lowermost with obscure tertitary veins. Inflorescence terminal on shoots, 4–5 cm in fruit, 12–20-flowered; peduncle 1–2 cm, tomentose, with 1–3 basal leaves, basal bracts of inflorescences ovate-rounded, 1–1.5 cm, abaxially glabrous; floral bracts 6–8 × 3–4 mm; bracteoles ovate, 2–3 × 1.5–2 mm, pubescent on both surfaces. Floral cup glabrous. Sepals ovate, 1.2–1.5 mm, glabrous, apex rounded. Petals broadly obovate, 3–4 × 2.5–3 mm, base shortly clawed. Stamens 2.5–3 mm; disk scales 2-lobed, apex acute. Ovary glabrous; styles 3–4 mm. Capsules 7–8 mm, more than 1/2 enclosed in persistent floral cup, persistent styles obliquely patent or slightly curved downward. Seeds ca. 4 mm. Fl. Mar–Jun, fr. Jun–Aug.


峨眉蜡瓣花　e mei la ban hua

Shrubs, to 3 m tall; young branches slender, glabrous, older growth drying dark brown, sparsely minutely lenticellate; buds narrowly ovoid, ca. 1 cm, glabrous. Leaves glabrous; stipules oblong-lanceolate, 12–17 mm, membranous; petiole 10–18 mm, glabrous; leaf blade obovate-rounded or ovate-elliptic, 4–8 × 2.5–5.5 cm, membranous, abaxially gray-white, glabrous, adaxially drying green, base asymmetrical, cordate, margin entire or serrate above middle of leaf, teeth obscurely mucronate, apex obcordate or truncate; lateral veins 6 or 7 on each side, the 2 lowermost with obscure tertitary veins. Inflorescence terminal on shoots, 12–16-flowered; peduncle 1–1.5 cm, glabrous, with 2 basal leaves, basal bracts of inflorescences elliptic, 1–1.2 × 0.6–0.7 cm, abaxially glabrous, adaxially villous; floral bracts ovate-rounded, 2–3 mm, glabrous; bracteoles 1.2–1.5 mm, glabrous. Floral cup less than 1 mm, glabrous. Sepals shorter than floral cup, apex rounded. Petals oblong-lanceolate, 2 × 1.5 mm, base very shortly clawed. Stamens 1.5–2 mm; disk scales 2-lobed, apex obtuse or truncate. Ovary glabrous; styles 1.2–1.5 mm. Capsules 5–6 mm. Capsules 2.5–3 mm. Fl. Mar–Jun, fr. Jun–Aug.

- Montane forests; ca. 1500 m. SW Guizhou (Pan Xian), C Sichuan (Emei Shan).


长穗蜡瓣花　chang sui la ban hua

Shrubs, 3–5 m tall; young branches pubescent with gray-brown hairs, older growth drying dark brown, lenticellate; buds narrowly ovoid, 1–1.2 cm, gray pubescent. Stipules narrowly oblong, 16–18 × 3–4 mm, abaxially gray pubescent, adaxially villous; petiole 8–17 mm, pubescent; leaf blade obovate or obovate-rounded, 7–13 × 4–10 cm, membranous, abaxially pubescent, adaxially drying green, glabrous, base asymmetrical, subcordate or rounded, margin serrate, teeth distinctly mucronate, apex acute; lateral veins 8–11 on each side, the 2 lowermost with tertitary veins. Inflorescence terminal on shoots, 9–12 cm in fruit, 11–17-flowered; peduncle 1–1.5 cm, villous, with 1 or 2 basal leaves, basal bracts of inflorescences 4 or 5, ovate, ca. 1.2 cm, abaxially pubescent, adaxially villous; floral bracts ovate, 4.5–5 mm, tomentose; bracteoles lanateolate, tomentose. Flowers pedicellate. Floral cup 1.2–1.5 mm, glabrous. Sepals ovate-rounded, 1.5–2 mm, glabrous. Petals and stamens not seen. Disk scales 2-lobed, 0.8–1 mm, apex acute. Ovary glabrous; styles 1.5–2 mm. Capsules 1–1.5 mm, persistent. Seeds 3–4 mm. Fl. Mar–Jun, fr. Jun–Aug.

- Forests; 2700–3000 m. NW Yunnan.

**牛鼻栓属** **niu bi shuan**

Shrubs or small trees, deciduous; branchlets with 2 prophylls, stellately pubescent. Leaves petiolate; stipules minute, linear, caducous, leaving small scars; leaf blade margin serrate, venation pinnate, 2 basal lateral veins usually with tertiary veins. Plants usually monoecious. Inflorescence racemose, mostly terminal on short lateral branches, pedunculate. Flowers functionally unisexual. Bract and bracteoles densely pubescent; floral cup obconical, pubescent. Male and female flowers similar, anthers slightly larger in male flowers, carpels slightly larger in female flowers. Sepals 5, lanceolate, densely pubescent. Petals 5, opposite to sepals, filaments very short; anthers ellipsoid, thecae 2-sporangiate, each dehiscing by 2 valves. Ovary semi-inferior; ovules 1 per locule; styles long, stigmas large, deciduous. Capsules woody, with conspicuous lenticels, dehiscing loculicidally; endocarp thick and hard, usually loose from exocarp. Seeds narrowly ovoid; endosperm fleshy; embryo straight; cotyledons compressed, base subcordate. 2 ovules 1 per locule; styles long, filiform, stigma decurrent, exserted from floral cup. Capsules ovoid-globose, woody, stellate ly dehiscing by 2 valves; endocarp loose from exocarp. Seeds 1 per locule; endosperm fleshy. 2 ovules 1 per locule; styles long, filiform, stigma decurrent. Capsules woody, with conspicuous lenticels, dehiscing loculicidally; endocarp thick and hard, usually loose from exocarp. Seeds narrowly ovoid; endosperm scant; embryo straight; cotyledons compressed, base subcordate. 2 ovules 1 per locule; styles long, filiform, stigma decurrent. Capsules woody, with conspicuous lenticels, dehiscing loculicidally; endocarp thick and hard, usually loose from exocarp. Seeds narrowly ovoid; endosperm scant; embryo straight; cotyledons compressed, base subcordate. 2 ovules 1 per locule; styles long, filiform, stigma decurrent. Capsules woody, with conspicuous lenticels, dehiscing loculicidally; endocarp thick and hard, usually loose from exocarp. Seeds narrowly ovoid; endosperm scant; embryo straight; cotyledons compressed, base subcordate.

- One species.


**牛鼻栓** **niu bi shuan**

Shrubs or small trees, to 5 m tall; young branches with gray-brown hairs, older growth drying brown or gray-brown, glabrous, sparsely lenticellate; buds minute, naked, stellately pubescent. Petiole 4–10 mm; leaf blade ovate or obovate-elliptic, 7–16 × 4–10 cm, membranous, drying discolorous, abaxially villous, adaxially pubescent along midrib, base rounded or obtuse, margin dentate, apex acute; lateral veins 6–10 on each side. Inflorescences 4–8 cm; peduncle 1–1.5 cm, tomentose; bracts and bracteoles lanceolate, 1.5–2 mm, stellately pubescent. Pedicel 1–2 mm, stellately pubescent. Floral cup 0.8–1 mm, glabrous; sepals lanceolate, 1.2–1.5 mm. Petals narrowly lanceolate, shorter than sepals. Anthers 0.8–1 mm. Ovary sparsely pubescent; styles 1.5–2.5 mm. Fruiting pedicels 5–10 mm; capsules ovoid-globose, 12–15 mm, glabrous, white lenticillate, apex acute, dehiscing loculicidally by two 2-lobed valves. Seeds 8–10 × 5–6 mm. Fl. Mar–Apr, fr. May–Jun.

- Forests; 800–1000 m. Anhui, Henan, Hubei, Jiangxi, Shaanxi, Sichuan, Zhejiang.

18. **SINOWILSONIA** Hemsley, Hooker’s Icon. Pl. 29: t. 2817. 1906.

**山白树属** **shan bai shu**

Shrubs or small trees, deciduous; branchlets with 2 prophylls, stellately pubescent. Leaves petiolate; stipules minute, linear, abaxially villous, adaxially pubescent; buds naked. Leaves petiolate; stipules minute, linear, abaxially villous, adaxially pubescent; buds naked. Leaves petiolate; stipules minute, linear, abaxially villous, adaxially pubescent; buds naked. Leaves petiolate; stipules minute, linear, abaxially villous, adaxially pubescent; buds naked.

- One species.

1. **Sinowilsonia henryi** Hemsley, Hooker’s Icon. Pl. 29: t. 2817. 1906.

**山白树** **shan bai shu**

Shrubs or small trees to 8 m tall. Stipules ca. 8 mm; petiole 0.8–1.5 cm; leaf blade 10–18 × 6–10.5 cm, base rounded to shallowly cordate, asymmetrical, margin entire or dentate, apex acute to shortly acuminate, lateral veins 7–9 on each side, abaxially prominent. Male inflorescences 6–8 cm, lacking basal leaves. Female inflorescences 6–8 cm, with 1 or 2 basal leaves; peduncle ca. 3 cm, pendent, 10–20 cm in fruit. Bracts lanceolate, ca. 2 mm; bracteoles linear-lanceolate, ca. 1.5 mm, stellately tomentose. Male flowers: pedicellate; stamens 5, opposite to sepals, filaments very short; anthers ellipsoid, thecae 2-sporangiate, each dehiscing by 2 valves; ovary rudimentary. Female flowers: sessile; staminodes 5; ovary nearly superior but enclosed by floral cup; ovules 1 per locule; styles long, filiform, stigma deciduous. Capsules ovoid-globose, woody, stellately tomentose, dehiscing by 2 valves; endocarp loose from exocarp. Seeds 1 per locule; endosperm fleshy. 2n = 24*.

- Forests; 800–1500 m. Gansu, Henan, Hubei, Shaanxi, Shanxi, Sichuan.

1a. Leaves obovate, rarely elliptic, abaxially pubescent .............................................. 1a. var. **henryi**

1b. Leaves obovate-orbicular, abaxially glabrous ..................................................... 1b. var. **glabrescens**

1a. **Sinowilsonia henryi** var. **henryi**

**山白树(原变种)** **shan bai shu (yuan bian zhong)**

*Corylopsis macrostachya* Pampanini.


- Forests; 1000–1500 m. Gansu, Henan, Hubei, Shaanxi, Shanxi, Sichuan.

秃山白树 tu shan bai shu


- Forests; 800–1000 m. S Shanxi (Yuanqu Xian).