

2. *ALTINGIA* Noronha, Verh. Batav. Genootsch. Kunsten 5, art. 2: 1. 1790.

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 carpelodes) absent or needlelike; ovary semi-inferior; ovules ca. 30–50 per locule, axile; styles subulate, divergent, often strongly recurved; stigmas papillose, caducous or basal parts persistent in fruit. Infructescences globose, base truncate. Capsules woody, dehiscing loculicidally 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 obconical 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 indistinctly 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 panicle; 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, base cuneate. Seeds brown, angular. Fl. Apr–Jun, fr. Jul–Sep.

- Evergreen forests; 400–1000 m. Fujian, E Guangdong, Hainan,

S Zhejiang.

The bark resin is used in medicine and perfumery.

2. *Altingia tenuifolia* Chun ex H. T. Chang, Acta Sci. Nat. Univ. Sunyatsen. 1973(2): 34. 1973.

薄叶蕈树 *bo ye tan shu*

Trees 6–10 m tall; young branches glabrescent, sparsely lenticellate; buds ovoid, shiny. Stipules caducous; petiole slender, 1.5–2 cm, glabrous; leaf blade ovate, 6.5–8 × 3.5–5 cm, thinly leathery, abaxially glabrous, base subcordate or rounded, margin crenate-serrate, apex acuminate and to 1 cm; lateral veins 5 or 6 on each side, somewhat prominent on both surfaces. Peduncle ca. 1 cm in fruit. Flowers not seen. Infructescence solitary, obconical, ca. 1.5 cm wide, base cuneate. Capsules 5 or 6, borne on upper part of head; staminode teeth scalelike. Seeds brown. Fl. Apr–Jun, fr. Jul–Oct.

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

3. *Altingia excelsa* Noronha, Verh. Batav. Genootsch. Kunsten 5, art. 2: 9. 1790.

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-flowered; peduncle 2–4 cm, pubescent. Male flowers: stamen filaments ca. 1 mm, glabrous; anthers somewhat longer than filaments. Female flowers: staminode teeth absent; styles 3–4 mm, pubescent. Infructescences subglobose, 1.5–2 cm wide. Capsules without staminode teeth. Seeds many, brown. Fl. Mar–May, fr. Jun–Aug.

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

4. *Altingia multinervis* Cheng, Notes Forest. Inst. Nat. Centr. Univ. Nanking, Dendrol. Ser., 20. 1947.

赤水蕈树 *chi shui tan shu*

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.

- Forests; ca. 1000 m. N Guizhou (Chishui Xian).

5. *Altingia yunnanensis* Rehder & E. H. Wilson in Sargent, Pl. Wilson. 1: 422. 1913.

云南蕈树 *yun nan tan shu*

Trees (3–)15–30 m tall; young branches slightly pubescent, glabrescent, older growth lenticellate. Stipules linear, 2–5 mm, caducous; petiole 1–2 cm, glabrous; leaf blade usually oblong, 6–15 × 3–7 cm, leathery, abaxially glabrous, base cuneate, sometimes subrounded, margin serrate, apex acute; lateral veins 6–9 on each side, prominent on both surfaces. Male inflorescences ellipsoid, ca. 1 cm, several arranged in panicle; bracts 4, ovate, ca. 15 mm. Female inflorescences usually in racemes, 16–24-flowered. Peduncle 3–4 cm in fruit, pubescent. Male flowers: stamens sessile. Female flowers: staminode teeth scalelike; styles 3–4 mm, brown-pubescent. Infructescences subglobose, 1.5–2.5 cm wide. Seeds angular. Fl. Mar–May, fr. May–Jul.

- Forests; ca. 1000 m. SE Yunnan.

6. *Altingia siamensis* Craib, Bull. Misc. Inform. Kew 1928: 68. 1928.

镰尖蕈树 *lian jian tan shu*

Altingia angustifolia H. T. Chang; *A. takhtajanensis* Thai

Van Trung & Lie Viet Lok.

Trees 7–30 m tall, trunk 20–100 cm in diam.; young branches glabrescent, older growth sparsely lenticellate; buds ovoid, 3–5 mm, glabrous, inner bud scales brown pubescent. Stipules 3–4 mm; petiole 1–2 cm, glabrous; leaf blade usually ovate-lanceolate or lanceolate, 6–8(–12) × 2.5–4 cm, base subrounded or narrowly so, margin undulate and indistinctly serrate, apex caudate-acuminate, sicklelike, and to 1.5 cm; lateral veins 6–8 on each side, prominent abaxially. Male inflorescences ovoid or globose, usually several arranged in raceme. Female inflorescence solitary in leaf axil. Peduncle 1–2 cm, 2–4 cm in fruit, brown-pubescent when young; bracts 4, ovate,

brown-pubescent. Infructescences compressed-globose, 1.5–2 cm wide. Capsules 15–17. Fl. Apr–Jun, fr. Nov–Dec.

Humid forests; 1000–1200 m. E Guangdong (Han Jiang valley), S Yunnan (Jiangcheng Xian) [Cambodia, Laos, N Thailand, Vietnam].

7. *Altingia chinensis* (Champion) Oliver ex Hance, J. Linn. Soc., Bot. 13: 103. 1873.

葶树 tan shu

Liquidambar chinensis Champion, Hooker's J. Bot. Kew Gard. Misc. 4: 164. 1852.

Trees ca. 20 m tall, trunk to ca. 60 cm in diam.; bark gray, subsabrous; young branches glabrous; buds ovoid, pubescent. Stipules caducous; petiole ca. 1 cm, glabrous; leaf blade obovate-oblong, 7–13 × 3–4.5 cm, leathery, abaxially glabrous, base cuneate, margin crenate-serrate, apex acute; lateral veins ca. 7 on each side, prominent on both surfaces. Male inflorescences cylindrical, ca. 1 cm, usually many arranged in panicle; peduncle pubescent. Female inflorescence solitary or many in panicles, 15–26-flowered; peduncle 2–4 cm; bracts 4 or 5, ovate or lanceolate, 1–1.5 cm. Male flowers: stamens subsessile; anthers obovoid. Female flowers: staminode teeth pointed; styles 3–4 mm, pubescent, apex recurved. Infructescences subglobose, 1.7–2.8 cm wide, base truncate. Seeds brown, shiny. Fl. Mar–Jun, fr. Jul–Sep.

Forests; 600–1000 m. Fujian, Guangdong, Guangxi, Guizhou, Hainan, Hunan, Jiangxi, SE Yunnan, Zhejiang [Vietnam].

The trunks and branches are used for cultivating mushrooms, the essential oils of the wood are used in medicines and perfumes, and the wood itself is used for making furniture.

8. *Altingia obovata* Merrill & Chun, Sunyatsenia 2: 238. 1935.

海南葶树 hai nan tan shu

Trees ca. 30 m tall, trunk to ca. 100 cm in diam.; bark scabrous; young branches sparsely pubescent; buds ovoid, ca. 1 cm, sparsely pubescent. Stipules caducous; petiole 0.4–1 cm; leaf blade obovate or narrowly so, 5–11 × 2–4.5 cm, abaxially glabrous, base narrowly cuneate, margin crenate-serrulate, apex rounded or obtuse; lateral veins 7–9 on each side, prominent on both surfaces. Male inflorescences ellipsoid, usually many arranged in raceme; bracts ovate, brown-pubescent. Female inflorescence usually solitary in leaf axil, 16–28-flowered; peduncle ca. 3 cm. Male flowers: stamen filaments very short; anthers red, obovoid, ca. 1.5 mm. Female flowers: staminodes usually scalelike; styles ca. 3 mm, pubescent, apex recurved. Infructescences subglobose, ca. 2 cm wide, base truncate. Seeds brown, irregularly angular. Fl. Mar–Jun, fr. Jul–Sep.

- Montane evergreen forests; 800–1400 m. Hainan.

