

6. CHAMAECYPARIS Spach, Hist. Nat. Vég. Phan. 11: 329. 1841.

扁柏属 bian bai shu

Trees evergreen, monoecious; branchlets arranged in a plane, flattened. Leaves decussate, scalelike, usually dimorphic along branchlets: facial pairs closely appressed, ovate or rhombic-ovate; lateral pairs boat-shaped, overlapping margins of facial pairs. Pollen cones ovoid or oblong; microsporophylls 6–8, each with 2–4 pollen sacs. Seed cones terminal on branchlets, solitary, globose or oblong, dehiscent when mature in 1st year; cone scales 8–12, peltate, woody, each fertile scale bearing (1 or)2(–5) seeds; free bract apex a small mucro. Seeds with lateral, narrow wings. Cotyledons 2.

Six species: E Asia, North America; five species (one endemic, three introduced) in China.

1a. Leaves on lower side of branchlets not or only slightly glaucous.

2a. Seed cones 4–9 mm in diam.; leaves usually with circular gland 1. *C. thyoides*

2b. Seed cones 8–12 mm in diam.; leaves with linear to circular abaxial gland, or gland absent . 2. *C. lawsoniana*

1b. Leaves on lower side of branchlets glaucous.

3a. Facial leaves eglandular, obtuse or subacute at apex 5. *C. obtusa*

3b. Facial leaves with an abaxial, sometimes obscure gland, acute to acuminate at apex.

4a. Seed cones globose, ca. 6 mm in diam. 3. *C. pisifera*

4b. Seed cones oblong or oblong-ovoid, 5–9 mm in diam. 4. *C. formosensis*

1. *Chamaecyparis thyoides* (Linnaeus) Britton & al., Prelim. Cat. Anth. Pter. New York 71. 1888.

美国尖叶扁柏 mei guo jian ye bian bai

Cupressus thyoides Linnaeus, Sp. Pl. 2: 1003. 1753. Trees to 20(–28) m tall; trunk to 0.8(–1.5) m d.b.h.; bark dark reddish brown, irregularly furrowed and ridged; leafy branchlets fan-shaped. Leaves to 2 mm, usually with circular abaxial gland, apex acute to acuminate; leaves on lower side of branchlets not or only slightly glaucous. Pollen cones dark brown, 2–4 mm; pollen sacs yellow. Seed cones bluish purple to reddish brown, glaucous, globose, 4–9 mm in diam.; cone scales 5–7, fertile scales each with 1 or 2 seeds. Seeds 2–3 mm; wing narrower than seed.

Cultivated for ornament. Jiangsu, Jiangxi, Sichuan, Zhejiang [native to E United States].

2. *Chamaecyparis lawsoniana* (A. Murray bis) Parlatores, Ann. Mus. Imp. Fis. Firenze 1: 181. 1864.

美国扁柏 mei guo bian bai

Cupressus lawsoniana A. Murray bis, Edinburgh New Philos. J., n.s., 1: 292. 1855.

Trees to 50 m tall; trunk to 3 m d.b.h.; bark reddish brown; leafy branchlets predominantly pinnately arranged. Leaves mostly 2–3 mm, with linear to circular abaxial gland, or eglandular, apex acute to acuminate; leaves on lower side of branchlets not or only slightly glaucous. Pollen cones dark brown, 2–4 mm; pollen sacs red. Seed cones purplish to reddish brown, glaucous, globose, 8–12 mm in diam.; cone scales 5–9, each fertile scale with 2–4 seeds. Seeds 2–5 mm; wing equal to or wider than seed.

Cultivated. Jiangsu, Jiangxi, Zhejiang [native to W United States].

3. *Chamaecyparis pisifera* (Siebold & Zuccarini) Endlicher, Syn. Conif. 64. 1847.

日本花柏 ri ben hua bai

Retinispora pisifera Siebold & Zuccarini, Fl. Jap. 2: 39. 1844.

Trees to 50 m tall; bark reddish brown; crown pyramidal. Leaves acute at apex; facial leaves with an obscure abaxial gland; leaves on upper and lowersides of branchlets glaucous; lateral leaves slightly longer than facial ones. Seed cones dark brown, globose, ca. 6 mm in diam.; cone scales 10–12, each fertile scale with 1 or 2 seeds. Seeds narrowly obovoid to transversely ellipsoid, ca. 2 mm; wing ca. 4 mm.

Cultivated for ornament. Guangxi, Guizhou, Jiangsu, Jiangxi, Shandong, Sichuan, Yunnan, Zhejiang [native to Japan].

4. *Chamaecyparis formosensis* Matsumura, Bot. Mag. (Tokyo) 15: 137. 1901.

红桧 hong gui

Cupressus formosensis (Matsumura) A. Henry.

Trees to 60 m tall; trunk to 6.5 m d.b.h.; bark light reddish brown; branches spreading to pendulous. Facial leaves of ultimate branchlets rhomboid, 1–3 mm, apex acute to acuminate; leaves on upper side of branchlets green, with a gland abaxially; leaves on lower side of branchlets glaucous; lateral leaves slightly larger than others, mostly eglandular, apex incurved. Seed cones oblong or oblong-ovoid, (0.6–)1–1.2 cm × 5–9 mm; cone scales 8–12. Seeds reddish brown, ovate-orbicular, flattened, 1.5–2.5 mm in diam., including wings. 2n = 22*.

• Forests in mountain regions; 1000–2900 m. Taiwan.

A rare species.

5. *Chamaecyparis obtusa* (Siebold & Zuccarini) Endlicher, Syn. Conif. 63. 1847.

日本扁柏 ri ben bian bai

Trees to 40 m tall; trunk to 3 m d.b.h.; bark light reddish brown, peeling off in thin strips; crown

narrowly pyramidal; branches drooping to pendulous. Leaves of ultimate branchlets ridged abaxially, apex obtuse or subacute; facial leaves green or yellowish green, rhomboid, 1–1.5 mm, abaxial gland absent; leaves on lower side of branchlets glaucous, with a whitish basal part; lateral leaves 1–3 mm, apex incurved. Pollen cones ellipsoid, ca. 3 mm; microsporophylls ca. 12; pollen sacs yellow. Seed cones reddish brown when ripe, globose, 1–1.2 cm in diam.; cone scales 8–10, each fertile scale with 2–5 seeds. Seeds lustrous reddish brown, obovoid or suborbicular, flattened, 3–3.5 mm in diam., including wings. Pollination Apr, seed maturity Oct–Nov.

Forests in mountain regions, also cultivated for ornament and planted for timber and afforestation; below 2800 m. Native in Taiwan; introduced in Guangdong, Guangxi, Henan, Jiangsu, Jiangxi, Shandong, Yunnan, Zhejiang [Japan].

- 1a. Leaves of ultimate branchlets thick, apex obtuse; facial leaves 1–1.5 mm; lateral leaves ca. 3 mm; seeds suborbicular, ca. 3 mm (including wings) 5a. var. *obtusa*
1b. Leaves of ultimate branchlets thin, apex subacute; facial leaves 1–1.2 mm; lateral leaves 1–2 mm; seeds obovoid, 3–3.5 mm (including wings) 5b. var. *formosana*

5a. *Chamaecyparis obtusa* var. *obtusa*

日本扁柏(原变种) ri ben bian bai (yuan bian zhong)

Retinispora obtusa Siebold & Zuccarini, Fl. Jap. 2: 38. 1844; *Chamaecyparis breviramea* Maximowicz; *C. pendula* Maximowicz; *Cupressus obtusa* (Siebold & Zuccarini) F. Mueller.

Leaves of ultimate branchlets thick, apex obtuse; facial leaves 1–1.5 mm; lateral leaves ca. 3 mm. Seed cones 1–1.2 cm in diam. Seeds suborbicular, ca. 3 mm, including wings.

Cultivated for ornament and planted for timber and afforestation. Guangdong, Guangxi, Henan, Jiangsu, Jiangxi, Shandong, Taiwan, Yunnan, Zhejiang [native to Japan].

5b. *Chamaecyparis obtusa* var. *formosana* (Hayata) Hayata, Fedde's Repert. Sp. Nov. Regni Veg. 8: 365. 1910.

台湾扁柏 tai wan bian bai

Chamaecyparis obtusa f. *formosana* Hayata, J. Coll. Sci. Imp. Univ. Tokyo 25(19): 208. 1908; *C. obtusa* subsp. *formosana* (Hayata) H. L. Li; *C. taiwanensis* Masamune & S. Suzuki; *Cupressus obtusa* f. *formosana* (Hayata) Clinton-Baker; *C. obtusa* var. *formosana* (Hayata) Dallimore & A. B. Jackson.

Leaves of ultimate branchlets thin, apex subacute; facial leaves 1–1.2 mm; lateral leaves 1–2 mm. Seed cones 1–1.1 cm in diam. Seeds obovoid, 3–3.5 mm, including wings.

- Forests in mountain regions; 1300–2800 m. Taiwan.

