
三尖杉属  san jian shan shu

Morphological characters and geographical distribution are the same as those for the family.

1a. Leaves strongly convex, midvein, stomatal bands, and marginal bands on abaxial surface all ± equal in width, 0.8–1 mm wide, base shallowly cordate or cordate-truncate

1b. Leaves ± flat, midvein and marginal bands both narrower than stomatal bands, base truncate, obtuse, cuneate, or shortly attenuate.

2a. Leaves ± linear, tapered from widest point above middle near apex, stomatal bands with 11–15(–18) rows of stomata.

3a. Leaves 7–10 × as long as wide, apex gradually drawn out into a cusp 0.5–1 mm; peduncle of pollen-cone capitula naked except at apex

3b. Leaves 5–7 × as long as wide, apex abruptly mucronate, mucro less than 0.5 mm; peduncle of pollen-cone capitula bracteate, or unknown.

4a. Trees to 15 m tall; leaves slightly falcate, with obtuse or truncate base and very short, apical mucro 0.1–0.2 mm

4b. Shrubs or small trees to 5 m tall; leaves ± straight, with cuneate base and slightly longer, apical mucro 0.2–0.4 mm

5a. Seed cones borne at base of branchlets; seeds 3.5–4.5 cm; leaves thin textured and leathery

5b. Seed cones borne at apex of branchlets; seeds 1.6–3 cm; leaves firm textured.

6a. Leafy branchlets oblong-elliptic in outline, about 1/2 as wide as long

6b. Leafy branchlets obtriangular in outline, ± rectangular or obovate, about as wide as or wider than long


蓖子三尖杉  bi zi san jian shan

Shrubs or small trees to 4 m tall; bark yellow to grayish brown, scaly. Leafy branchlets oblong-elliptic in outline, plane, 7–9 × 3.5–5 cm. Leaves borne at 55–70° to branchlet axis; petiole ca. 0.5 mm; blade dull matt green adaxially, linear-lanceolate, ± straight or very slightly falcate, strongly convex, (1.5–) 1.6–2.5(–3.2) cm × 2.3–3.2 mm, hard and leathery, midvein ca. 0.8–1 mm wide, stomatal bands on abaxial surface 0.8–1 mm wide abaxially, of 13–17 rows of stomata, as wide as (rarely wider than) midvein and marginal bands, marginal bands ca. 0.8 mm wide, base shallowly cordate or cordate-truncate, margin flat, apex obtuse, shortly cuspidate, cusp often breaking off. Pollen-cone capitula axillary, borne on lower side and toward distal end of terminal branchlets; buds developing before the subtending leaves expand; microsporophylls 6–10, each with 3 or 4 pollen sacs. Seeds cones solitary; peduncle ca. 6 mm. Seed obovoid, ovoid, or almost globose, 2.2–2.7 × 1.4–1.8 cm, apex with small mucro. Pollination Mar–Apr, seed maturity Aug–Oct. 2n = 24*.


A vulnerable species, endemic to China; records from Vietnam are referable to **Cephalotaxus mannii**.


粗榧  cu fei

Shrubs or small trees to 12(–15) m tall; trunk to 1.2 m d.b.h.; bark reddish, gray, or grayish brown. Leafy branchlets elliptic, oblong, or more usually obovate-rectangular in outline, plane, 5–12(–18) × 4–8(–10) cm. Leaves borne ± perpendicular to branchlet axis, or directed forward at 50–85°; petiole 0–1 (–2.5) mm; blade green adaxially, linear or linear-lanceolate, ± parallel sided almost throughout length and tapered from near apex only, or tapered from point above middle of blade but well below apex, straight or very slightly falcate, flat, (1–)1.8–5(–7) cm × 2–3.5(–4) mm, 7–10 × as long as wide, leathery but relatively soft, midvein 0.2–0.6 mm wide abaxially, stomatal bands white (very rarely green), 0.8–1.2 mm wide, of (12–)13–15(–18) rows of stomata, 2–4 × as wide as midvein, marginal bands 0.1–0.3 mm wide, base cuneate or rounded-cuneate, symmetric or very slightly asymmetric, margin narrowly revolute, apex acute and shortly mucronate to long acuminate. Pollen-cone capitula globose, 4–7 mm in diam., each of 6 or 7 pinkish brown cones; peduncle ca. 3 mm, naked except at apex; microsporophylls 4–11, each with (2 or)3(or 4) pollen sacs. Seed cones solitary or borne 2–5(–8) together; peduncle 3–8 mm; seed scales grayish green,
ovate, apex shortly cuspidate. Aril red or reddish purple when ripe, 1.6–2.5 × 0.8–1.6 cm, with 6 prominent, longitudinal ridges. Seeds ovoid or obovoid to ellipsoid, 1.8–2.5 × 0.9–1.2 cm, apex mucronate or cuspidate. Pollination Mar–Jun, seed maturity (Jun–)Jul–Nov. 1a. Leaves ± parallel sided almost throughout length, tapered from near apex only, 5–10 × as long as wide; mainland .......... 2a. var. sinensis

1b. At least some leaves tapered from point above middle of blade but well below apex, ca. 10 × as long as wide; Taiwan .......... 2b. var. wilsoniana

2a. Cephalotaxus sinensis var. sinensis

粗榧 (原变种) cu fei (yuàn biàn zhòng)

Cephalotaxus drupacea Siebold & Zuccarini var. sinensis Rehder & E. H. Wilson in Sargent, Pl. Wilson. 2: 3. 1914; C. drupacea var. sinensis f. globosa Rehder & E. H. Wilson; C. harringtonii (Knight ex J. Forbes) Koch var. sinensis (Rehder & E. H. Wilson) Rehder; C. sinensis f. globosa (Rehder & E. H. Wilson) H. L. Li. Leaves ± parallel sided almost throughout length, tapered from near apex only, 5–10 × as long as wide. 1. At least some leaves tapered from point above middle of blade but well below apex, ca.

2b. Cephalotaxus sinensis var. wilsoniana

台灣粗榧 tai wan cu fei

Cephalotaxus harringtonii (Knight ex J. Forbes) K. Koch var. wilsoniana (Hayata) Kitamura; C. wilsoniana Hayata. At least some leaves tapered from point above middle of blade but well below apex, ca. 10 × as long as wide.


宽叶粗榧 kuan ye cu fei

Shrubs or small trees to 5 m tall; bark grayish brown; branches stout. Leafy branchlets oblong in outline, plane, 5.5–9 × 4–5 cm. Leaves borne at (60–)65–80(–85)° to branchlet axis, sessile but decurrent for whole length of internode; blade dark olive green adaxially, linear, ± straight, 1.6–3 cm × 2.8–4(–6) mm, thick and leathery, midvein raised adaxially and bordered on each side by a paler, longitudinal channel, strongly raised abaxially, 0.25–0.5 mm wide, stomatal bands white, 0.8–1 mm wide, of 11–15 rows of stomata, ca. 2–3 x as wide as midvein, marginal bands green, ca. 0.3 mm wide, base cuneate, slightly asymmetric, margin flat (slightly revolute when dry), apex abruptly mucronate, micro 0.2–0.4 mm. Pollen-cone capitula axillary on lower side of branchlet axis; peduncle 1.5–2.5 mm, scaly; bracts ca. 9, ovate, in 4 rows, apical bracts ca. 0.7 × 0.3 mm, apex mucronate. Seeds cones borne 2–6 together; peduncle 2–4 mm, scaly. Seed obovoid, 1.8–2 cm, apex with small mucro at center. Pollination May.

- Thickets in mountainous areas; 900–2400 m. NW Fujian, N Guangdong, NE Guangxi, SW Hubei, W Jiangxi, SE Yunnan, Zhejiang; cultivated in Shandong. 2. At least some leaves tapered from point above middle of blade, ca. 10 × as long as wide; Taiwan


海南粗榧 hai nan cu fei

Cephalotaxus griffithii J. D. Hooker; C. hainanensis H. L. Li. Trees to 20 m tall; trunk to 50(–110) cm d.b.h.; bark light brown to reddish brown, flaking off. Leafy branchlets elliptic or oblong-elliptic in outline, 8–19(–24) × 4.5–8(–9.5) cm, about 1/2 as wide as long. Leaves borne at 45–80° to branchlet axis; petiole ± absent or (0.3–)0.5(–1) mm; blade dark green or shining olive green adaxially, linear or linear-lanceolate, usually straight, occasionally slightly falcate, flat, 1.5–4 cm × 2.5–4 mm, leathery or relatively thin, midvein prominent adaxially, 0.2–0.3 mm wide abaxially, stomatal bands white or bluish white, often indistinct and green when dry because of white powder being shed, 0.7–1.6 mm wide, of 19–23(–26) rows of stomata, 2.5–8 × as wide as midvein, marginal bands 0.1–0.3 mm wide, base very broadly obtuse or obtusely truncate, symmetric or not, margin narrowly revolute, apex cuspidate (with leaf tapered into apex from at least middle, often from base), or abruptly and very shortly mucronate (with leaf parallel sided and mucro 0.1–0.2 mm). Pollen cones borne 6–8 together, pale yellow.
globose, 4–4.5 mm in diam.; peduncle (1–)4–5 mm, usually with at least 10 bracts; microsporophylls 7–13, each with 3 or 4 pollen sacs. Seed cones solitary or borne 2 or 3 together; peduncle 6–10 mm. Aril green initially, turning red when ripe, 2.2–3 × 1.1–1.2 cm. Seeds obovoid-ellipsoid or obovoid, sometimes laterally compressed, 2.2–2.8 cm, apex shortly mucronate or cupuliform. Pollination (Nov–)Feb–Mar, seed maturity Aug–Oct.

Mixed forests and forested ravines; ca. 1100 m. SW Guangdong (Xinxi Xian), Guanzhi (Rong Xian), Hainan (Jinfeng Ling, Limu Ling, Wuzhi Shan), SE Xizang, S and W Yunnan [NE India, Laos, N Myanmar, N Thailand, N Vietnam].

An endangered species in China. Records of *Cephalotaxus mannii* from Xizang and Yunnan require confirmation; they may be misidentifications of *C. fortunei* var. *alpina*. R. R. Mill considers the plants from Hainan (and possibly also those from Guangdong and Guangxi) to be separable as *C. hainanensis* H. L. Li (Lloydia 16: 164. 1953), which was placed in the synonymy of *C. mannii* by L. K. Fu (Acta Phytotax. Sin. 22: 281. 1984). Mill’s comparison of the types and other material of both species suggests that they may be distinct taxa, with *C. hainanensis* differing as follows: leafy branchlets 8–10 × 4.5–5.5 cm in outline (not 11–19(–24) × 6–8(–9.5) cm); leaves borne at 70–80° to branchlet axis (not 45–70°), parallel sided throughout (not tapered), stomatal bands 0.7–1.3 mm wide (not 1.2–2 mm), 2.5–4 × as wide as midvein (not 6–8 ×), apex abruptly and very shortly mucronate (not cupuliform); seed cones solitary (not 2 or 3 together), N. T. Hiep & J. E. Vidal (Fl. Cambodge, Laos et Vietnam 1.6 mm), 2.5–4 × as wide as midvein (not 6–8 ×), apex abruptly and very shortly mucronate (not cupuliform); seed cones solitary (not 2 or 3 together), N. T. Hiep & J. E. Vidal (Fl. Cambodge, Laos et Vietnam 28: 115–118. 1996) concurred with Fu in adopting a broad concept of *C. mannii*, but identified *C. hainanensis* as a recognizable entity within the complex. H. L. Li, in the protologue, considered *C. hainanensis* to be closer to *C. sinensis* than to *C. mannii*.

5. *Cephalotaxus fortunei* Hooker, Bot. Mag. 76: t. 4499. 1850. **三尖杉** san jian shan

- Trees or shrubs to 20 m tall; trunk to 20 cm or more d.b.h.; bark dark reddish brown, peeling in strips. Leafy branchlets obovate, obtriangular, or ± rectangular in outline, plane, (4–)5–21 × (3–)7–20 cm. Leaves borne at 30–110° to branchlet axis; petiole 0.5–2 mm; blade deep green and glossy adaxially, linear-lanceolate, distally gradually attenuate (from proximal 1/3 of blade), falcate or ± straight, flat, (1.5–)3.5–12.5 cm × (1.5–)3.2–5 mm, leathery but usually rather soft and flexible, midvein 0.2–0.5 mm wide abaxially, stomatal bands (0.8–)1.2–2.1 mm wide, usually of (13–)17–24 rows of stomata, 2–5 × as wide as midvein, marginal bands 0.1–0.4 mm wide, base cuneate or shortly attenuate, asymmetric, margin flat or very narrowly revolute when dry, apx cupuliform, cusp 0.5–2 mm, often breaking off. Pollen-cone capitula of 6–14 cones, distinctly pedunculate (peduncle 2–5 mm), or sessile to subsessile (peduncle 0–2 mm), globose, 6–10 mm in diam.; bracts ovate, largest ca. 2 × 2.5 mm, margin ± entire or erose, apex acute; microsporophylls 6–16, each with 3 or 4 pollen sacs. Seed cones borne 2–6 together; peduncle 3–12 mm; seed scales ca. 1.5 mm. Aril yellow or green initially, turning purple when ripe, 1.4–2.5 × 0.9–1.5 cm, with numerous indistinct striations or prominent longitudinal ridges, apex very shortly mucronate. Seeds ellipsoid, 1.3–2.4 × 0.7–1.4 cm. Pollination Apr–May, seed maturity Jun–Oct. Mixed, coniferous, and broad-leaved forests, thickets, roadsides; 200–3700 m. S Anhui, Fujian, S Gansu, Guangdong, Guangxi, Guizhou, S Henan, W Hubei, Hunan, Jiangxi, Shaanxi, Sichuan, Yunnan, Zhejiang [N Myanmar].

1a. Pollen cones distinctly pedunculate; peduncle 2–5 mm; leaves (2.2–)3.5–5 mm wide; aril with numerous indistinct striations

1b. Pollen cones sessile or subsessile; peduncle 0–2 mm; leaves 1.5–3.2(–3.5) mm wide; aril with prominent longitudinal ridges

5a. *Cephalotaxus fortunei* var. *fortunei* 三尖杉(原变种) san jian shan (yuán biàn zhòng)

5b. *Cephalotaxus fortunei* var. *alpina* 5b. var. *alpina*.

- Leaves (2.2–)3.5–5 mm wide. Pollen cones distinctly pedunculate; peduncle 2–5 mm. Aril with numerous indistinct striations. 2n = 24*.

- Trees, and mixed forests, thickets by streams; (1100–)1800–3700 m. S Anhui, Fujian, S Gansu, Guangdong, Guangxi, Guizhou, S Henan, W Hubei, Hunan, Jiangxi, S Shaanxi, Sichuan, Yunnan, Zhejiang [N Myanmar].


- Leaves 1.5–3.2(–3.5) mm wide. Pollen cones sessile or subsessile; peduncle 0–2 mm. Aril with prominent longitudinal ridges. 2n = 24*.

- *Abies* and mixed forests, thickets by streams; (1100–)1800–3700 m. S Gansu, N Shaanxi, N and W Sichuan, N Yunnan.


- Trees to 20 m tall; trunk to 40 cm d.b.h.; bark purple, smooth; branches pendulous. Leafy branchlets resembling 2 adjacent parallelograms in outline, broadly “V”-shaped in cross section, apex abruptly truncate. Leaves spreading ± horizontally at ca. 45° to branchlet axis; petiole very short; blade dark green adaxially, linear-lanceolate, distally tapered, straight or slightly falcate, 4.5–10 cm × 4–7 mm, thin textured and leathery, abaxial stomatal bands white, base rounded, margin revolute, apex long acuminate. Pollen cones unknown. Seeds cones with peduncle 1.5–2 cm at
maturity. Aril turning greenish brown when ripe. Seed obovoid-ellipsoid, 3.5–4.5 cm. Seed maturity Sep–Nov.

Broad-leaved forests, scattered; ca. 1900 m. NW Yunnan (Gongshan Drungzu Nuzu Zizhixian: banks of upper Dulongjiang) [N Myanmar]. An endangered species in China.