CUPRESSACEAE

Fu Liguo (傅立国 Fu Li-kuo), Yu Yongfu (于永福); Aljos Farjon

Trees or shrubs evergreen, monoecious or dioecious. Leaves decussate or in whorls of 3, scalelike and then often dimorphic with flattened facial leaves and keeled lateral leaves, or needlelike particularly in juvenile plants, often with an abaxial resin gland. Pollen cones terminal or axillary, solitary, maturing and shed annually; microsporophylls 6–16, decussate or whorled, each bearing (2 or)3–6(–9) pollen sacs; pollen wingless. Seed cones usually terminal, solitary, globose, ovoid, or oblong, dehiscent or indehiscent when mature in 1st or 2nd(or 3rd) year; cone scales developing after ovules originate in bract axils; bracts almost completely enveloped by cone scales, free only at apex; ovules 1–numerous per bract axil, erect; cone scales of mature cones 3–16, flat or peltate, woody, ± leathery, or succulent, 1–20-seeded. Seeds winged or not; wings derived from seed coat. Cotyledons usually 2, rarely 3–6. Germination epigeal.

Nineteen genera and ca. 125 species: worldwide; eight genera (one introduced) and 46 species (16 endemic, 13 introduced) in China.

In this account, the Cupressaceae is treated sensu stricto, i.e., excluding those taxa that are traditionally classified in Taxodiaceae. A merger of these two families is substantially supported by both morphological and molecular evidence (the Cupressaceae forms a clearcut monophyletic group derived from within the Taxodiaceae). No consistent characters separate them, while the homology of the reproductive organs, so fundamentally different from other conifer families, appears to unite them phylogenetically. However, the traditional family concept, as adopted in FRPS, has been maintained here for pragmatic reasons.

In FRPS, it was stated that Microbiota decussata Komarov had been said to grow in NE China, but that no material had been seen. This species is known with certainty only from the Sikhote Alin range of E Russia (Primorye), not far from the Chinese border, where it grows on mountains above the timberline. It resembles a spreading Juniperus but has minute, dehiscent, 1-seeded cones, and should be searched for in comparable areas in E Heilongjiang. One endemic species, Thuja sutchuenensis, has apparently become extinct in the wild in historic times. Sabina, which was recognized in FRPS as a distinct genus, is reduced to the synonymy of Juniperus in this account.

For the species that bear scallelike leaves, the branchlets described are those bearing such leaves.

1a. Seed cones succulent, indehiscent or slightly dehiscent when mature; seeds wingless ....................... 8. Juniperus

1b. Seed cones woody or leathery, dehiscent when mature; seeds usually winged, rarely wingless.

2a. Seed cones with peltate scales, maturing in 1st or 2nd year.

2b. Seed cones with flattened scales, maturing in 1st year.

3a. Leaves 2–10 mm; seeds with 2 apical, unequal wings ............................................................... 7. Fokienia

3b. Leaves up to 3 mm; seeds with lateral, narrow wings.

4a. Branchlets usually not arranged in a plane; seed cones maturing in 2nd year, fertile cone scales with 3–numerous seeds ................................................................. 5. Cupressus

4b. Branchlets arranged in a plane; seed cones maturing in 1st year, fertile cones scales with (1 or)2(–5) seeds ................................................................. 6. Chamaecyparis

5a. Lateral leaves 4–7 mm, with conspicuous, white stomatal bands abaxially; fertile cone scales each with 3–5 seeds ......................................................... 1. Thujopsis

5b. Lateral leaves usually less than 4 mm, without conspicuous, white stomatal bands abaxially; fertile cone scales each with 2 or 1 seeds.

6a. Seed cones with only middle pair of scales fertile; seeds with 2 subapical, unequal wings 4. Calocedrus

6b. Seed cones with middle 2 or 3 pairs of scales fertile; seeds with 2 lateral, narrow wings, a very narrow wing, or wingless.

7a. Seed cones with 8 or 10 thin scales; bracts almost completely enveloped by cone scales, free apex, a very short mucro; seeds with 2 lateral, narrow wings 2. Thuja

7b. Seed cones with 6 or 8 thick scales; bracts partly enveloped by cone scales, free apex a long, recurved cusp; seeds wingless, rarely with a very narrow wing 3. Platycladus

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1 Herbarium, Institute of Botany, Chinese Academy of Sciences, 20 Nanxincun, Xiangshan, Beijing 100093, People’s Republic of China.
2 CITES Management Authority of China, 18 Hepingli Dongjie, Beijing, 100714, People’s Republic of China.
3 Herbarium, Royal Botanic Gardens, Kew, Richmond, Surrey TW9 3AB, England, United Kingdom.

Trees monoecious; branchlets arranged in a plane, flattened, lower side with white powder. Leaves decussate, scalelike, dimorphic along branchlets; lateral leaves boat-shaped, 4–7 mm, overlapping margins of facial leaves, with conspicuous, white stomatal bands abaxially, apex slightly incurved. Cones terminal, solitary. Pollen cones cylindrical; microsporophylls 12–20. Seed cones subglobose; cones scales 6–8, flat, woody, usually mucronate below apex, each fertile scale with 3–5 seeds. Seeds with 2 lateral, narrow wings. Cotyledons 2.

One species: Japan; introduced in China.


Trees to 15 m tall; bark thin, gray or reddish brown, peeling off in long strips; crown pyramidal; branches ascending; branchlets 4–6 mm in diam. Leaves lustrous; facial leaves appressed, broadly obovate; lateral leaves ascending, deep green adaxially, ovate-lanceolate, 4–7 × 1.5–2.2 mm, with a white stomatal band abaxially, apex obtuse, slightly incurved. Seed cones 1–1.6 cm. Seeds ellipsoid, 4–5 × 3–3.5 mm; wing thick. Cultivated for ornament. Fujian, Guangxi, Guizhou, Hubei, Jiangsu, Jiangxi, Shandong, Yunnan, Zhejiang [native to Japan].


Trees or shrubs evergreen, monoecious; branchlets arranged in a plane, flattened. Leaves 4-ranked, scalelike, base decurrent only on leading branchlets, dimorphic along branchlets: facial pairs obovate-rhombic; lateral pairs boat-shaped, ridged abaxially, less than 4 mm, overlapping facial pairs, without conspicuous, white stomatal bands abaxially. Pollen cones with (4 or)6–10(–16) microsporophylls, each with (2 or)3 or 4 pollen sacs. Seed cones terminal, solitary, dehiscent when mature in 1st year; cone scales 8 or 10, decussate, flat, only middle, larger 2 or 3 pairs fertile, each fertile scale bearing 1 or 2 seeds; free bract apex a very short mucro. Seeds flat, with 2 lateral, narrow wings. Cotyledons 2.

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

1a. Leaves obtuse at apex, rarely subacute.

2a. Facial leaves without a gland; young branchlets not glaucous ............................................. 1. *T. sutchuenensis*

1b. Leaves subacute to acuminate at apex.

2b. Facial leaves with a gland; young branchlets ± glaucous .......................................................... 2. *T. koraiensis*


Shrubs or trees to 20 m tall; bark orange-brown when young, turning gray-brown, thin, soon flaking; branches spreading, densely arranged; branchlets not glaucous. Facial leaves 1.5–4 × 1–1.5 mm (to 7 mm on leading branchlets), abaxial gland absent, apex obtuse; lateral leaves of ultimate branchlets slightly shorter than facial leaves, 0.8–1 mm wide, apex incurved. Pollen cones yellowish, subglobose, ca. 2.5 mm; microsporophylls 6–8, each with (2 or)3 pollen sacs. Seed cones ellipsoid, 5–7 × 3–4 mm; fertile cone scales 4. Seeds ovoid-oblong, ca. 3.5 mm; wings 0.5 mm wide, apex acute.

- Probably now extinct in the wild owing to forest clearance; recorded at 1400 m. NE Sichuan (Chengkou Xian).


Shrubs (when on mountain ridges), or small trees to 10 m tall; trunk to 80 cm d.b.h.; bark reddish brown and smooth when young, grayish brown and fissured when old, soon flaking; branches ascending or spreading; young branchlets ± glaucous, soon becoming green. Facial leaves 1–2 mm, to 15 mm on leading branchlets, abaxial gland near base, apex obtuse; lateral leaves as long as or shorter than facial leaves, apex incurved. Pollen cones purplish, subglobose, 2–3 mm; microsporophylls 6–10, each with 3 or 4 pollen sacs. Seed

Not collected in the wild since the original gatherings from the only known locality by P. G. Farges in 1892 and 1900. Repeated searches for the species have been unsuccessful.

cones dark brown when ripe, ellipsoid-globose, 7–10 × 6–8 mm; basal pair of cone scales subellipsoid, middle pairs suboblong, apical pair long and narrow. Seeds ellipsoid, flattened, ca. 4 × 1.5 mm; wings 1–1.5 mm wide. Pollination May, seed maturity Sep.

Valleys, slopes, mountain ridges; 700–1800 m. S Jilin (Changbai Shan) [Korea]. A vulnerable species in China.


北美乔柏 bei mei qiao bai

Thuja gigantea Nuttall.

Trees to 50(–75) m tall; trunk to 2(–5) m d.b.h., often buttressed at base; bark reddish brown or grayish brown, fibrous, fissured; crown conical; branches arching; branchlets pendulous. Leaves on upper side of branchlets glossy green, (1–)3–6 mm, apex acuminate; lateral leaves longer than facial leaves, apex straight. Pollen cones reddish, 1–3 mm. Seed cones brown, ellipsoid, 1–1.4 cm; fertile cone scales ca. 4. Seeds reddish-brown, 4–7 mm including wings.

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


北美香柏 bei mei xiang bai

Thuja obtusa Moench; T. theophrasti C. Bauhin ex Nieuwland.

Trees to 15(–38) m tall; trunk 0.9(–1.8) m d.b.h.; bark reddish brown or grayish brown, fibrous, fissured; crown conical. Leaves on both sides of branchlets dull yellowish-green; facial leaves (1.5–)3–5 mm, abaxial gland conspicuous, apex acute; lateral leaves slightly shorter than or as long as facial leaves, apex incurved. Pollen cones reddish, 1–2 mm. Seed cones brown, ellipsoid, (0.6–)0.9–1.4 cm; fertile cone scales ca. 4. Seeds reddish-brown, 4–7 mm including wings.

Planted for timber. Anhui, Guizhou, Hebei, Henan, Hubei, Jiangsu, Jiangxi, Shandong, Sichuan, Zhejiang [native to E Canada, NE United States].


日本香柏 ri ben xiang bai

Thujopsis standishii Gordon, Pinetum Suppl. 100. 1862; Thuja gigantea Nuttall var. japonica (Maximowicz) Franchet & Savatier; T. japonica Maximowicz.

Trees to 18 m tall; bark reddish brown; crown broadly pyramidal; branches spreading; branchlets thick, flattened, 1.5–2.5 mm wide. Leaves deep green, facial leaves without abaxial gland, apex subacute; lateral leaves slightly shorter than or as long as facial leaves, apex incurved. Seed cones deep brown, obovoid, 8–10 mm; cone scales 10–12, middle 4–6 scales fertile, each with 3 seeds. Seeds 5–6 mm; wings 6–7 × 2–2.5 mm.

Cultivated. Jiangsu, Jiangxi, Shandong, Zhejiang [native to Japan].


侧柏属 ce bai shu

Biota D. Don ex Endlicher.

Trees evergreen, monoecious; branchlets arranged in a plane, spreading or ascending, flattened. Leaves decussate, 4-ranked, scalelike, base decurrent, with an abaxial resin gland, dimorphic along branchlets; lateral leaves without conspicuous, white stomatal bands abaxially but with a median groove. Pollen cones with 8–12 microsporophylls, each with 3–6 pollen sacs. Seed cones terminal, solitary, dehiscent when mature in 1st year; cone scales 6 or 8, decussate, flat, thick, woody, only the middle 2 pairs fertile; free bract apex a long, recurved cusp. Seeds wingless, rarely with a very narrow wing. Cotyledons 2.

One species: China, Korea, E Russia.


侧柏 ce bai

Thuja orientalis Linnaeus, Sp. Pl. 2: 1002. 1753; Biota orientalis (Linnaeus) Endlicher; Platycladus stricta Spach; Thuja chengii Bordères & Gaussen; T. orientalis var. argyi Lemée & H. Léveillé.

Trees to more than 20 m tall; trunk to 1 m (or more) d.b.h.; bark reddish brown to light grayish brown, thin, flaking in long strips; crown ovoid-pyramidal when young, broadly rounded or irregular when old. Leaves 1–3 mm, apex bluntly pointed; facial leaves rhomboid, with a conspicuous, linear, glandular groove at center abaxially; lateral leaves overlapping facial ones, boat-shaped, ridged, apex slightly incurved. Pollen cones yellowish green, ovoid, 2–3 mm. Seed cones when immature bluish green, subglobose, ca. 3 mm in diam., when ripe reddish brown, subovoid, 1.5–2(–2.5) × 1–1.8 cm; proximal 2 fertile cone scales 2-seeded, distal 2 fertile scales 1-seeded. Seeds grayish brown or purplish brown, ovoid or subellipsoid, 5–7 × 3–4 mm, slightly ridged. Pollination Mar–Apr, seed maturity Oct.

Natural occurrences difficult to distinguish from local introductions, owing to extensive cultivation and planting in the past; 300–3300 m. Native in S Gansu, Hebei, Henan, Shaanxi, Shanxi; introduced or status uncertain in Anhui, Fujian, N Guangdong, N Guangxi, Guizhou, Hubei, Hunan, Jiangsu, Jiangxi, JiLin, Liaoning, S Nei Mongol, Shandong, Sichuan, Xizang, Yunnan, Zhejiang [Korea, E Russia].
4. CALOCEDRUS Kurz, J. Bot. 11: 196. 1873.

翠柏属 cui bai shu

Trees evergreen, monoecious; branchlets arranged in a plane, spreading or ascending, flattened, prominently jointed. Leaves decussate, almost in whorls of 4, scale-like, base decurrent, dimorphic along branchlets: facial pairs flattened; lateral pairs boat-shaped, usually less than 4 mm, overlapping facial pairs, without conspicuous, white stomatal bands abaxially. Pollen cones terminal, solitary; microsporophylls 10–16, each with 2–5 pendulous pollen sacs. Seed cones terminal, solitary, oblong or ellipsoid-cylindric, dehiscent when mature in 1st year; cone scales 6, decussate, flat, only middle pair fertile, each fertile scale bearing 1 or 2 seeds; free bract apex a short mucro. Seeds with 2 subapical, unequal wings. Cotyledons 2.

Two species: China, Laos, Myanmar, Thailand, Vietnam, Mexico, United States; one species in China.


翠柏 cui bai

Trees to 35 m tall; trunk to 1.5 m d.b.h.; bark grayish brown or reddish brown, smooth when young, fissured and exfoliating when old; crown pyramidal when young, broadly rounded when old; branches spreading and ascending. Leaves (1.5–)3–4(–8) mm. Pollen cones yellow, ovoid or oblong, 4–8 × 2–3 mm; microsporophylls each with (3 or)4(or 5) pollen sacs. Seed cones reddish brown when ripe, 10–20 × 4–6 mm; cone scales flattened, woody, fertile scales 2-seeded, basal pair small, ca. 3 mm, recurved, apical pair connate. Seeds subovoid or ellipsoid, slightly flattened, 5–6 mm. Pollination Mar–Apr, seed maturity Sep–Oct.

Forests; 300–2000 m. ?Guangdong, W Guangxi, S Guizhou, Hainan, N Taiwan, Yunnan [N India, Laos, NE Myanmar, NE Thailand, Vietnam].

A vulnerable plant in China.

1a. Seed-cone-bearing branchlets terete or 4-angled .................................. 1a. var. macrolepis
1b. Seed-cone-bearing branchlets flattened ................................................... 1b. var. formosana

1a. Calocedrus macrolepis var. macrolepis

翠柏(原变种) cui bai (yuan bian zhong) Heyderia macrolepis (Kurz) H. L. Li; Libocedrus macrolepis (Kurz) Bentham & J. D. Hooker; Thuja macrolepis (Kurz) Voss.

Seed-cone-bearing branchlets terete or 4-angled. Species in mountain regions; 1000–2000 m. ?Guangdong, W Guangxi (Jingxi Xian), S Guizhou, Hainan, Yunnan [N India, Laos, NE Myanmar, NE Thailand, Vietnam].


台湾翠柏 tai wan cui bai

Libocedrus formosana Florin, Svensk. Bot. Tidskrift 24: 126. 1930; Calocedrus formosana (Florin) Florin; Heyderia formosana (Florin) H. L. Li; Libocedrus macrolepis var. formosana (Florin) Kudō.

Seed-cone-bearing branchlets flattened. 2n = 22*.

• Forests; 300–1900 m. N Taiwan.


柏木属 bai mu shu

Trees (rarely shrubs) evergreen, monoecious; branchlets ascending, rarely pendulous, often decussately arranged, terete or 4-angled in cross section. Leaves decussate, 4-ranked; juvenile leaves needlelike; adult leaves scalelike, with an abaxial resin gland, usually not dimorphic along branchlets. Pollen cones ovoid or oblong; microsporophylls 6–16, each with 2–6 pollen sacs. Seed cones terminal, solitary, globose or subglobose, dehiscent when mature in 2nd year; cone scales 8–16, decussate, peltate, woody, each fertile scale bearing 3–20 seeds; free bract apex a short mucro. Seeds slightly flattened, ridged, with lateral, narrow wings. Cotyledons 2–5.

About 17 species: N Africa, Asia, S Europe, SW North America; nine species (four endemic, four introduced) in China. Cupressus cashmeriana Royle ex Carrière (Traité Gén. Conif., ed. 2, 1: 161. 1867) known with certainly only from Bhutan, might possibly extend into China, in SE Xizang. That is if the acronym of C. cashmeriana as was given by A. Farjon (World Checkl. Bibliogr. Conif. 45. 1998). Cupressus assamica Silba (J. Intern. Conifer Preserv. Soc. 1: 19. 1994) described from SE Xizang with Kingdom Ward 12449 (BM) as the holotype, is indeed a synonym of C. cashmeriana, as was given by A. Farjon (World Checkl. Bibliogr. Conif. 45. 1998).

1a. Branchlets flattened; seed cones 0.8–1.5 cm in diam.; seeds 3–5(or 6) per cone scale .............................. 9. C. funebris
1b. Branchlets terete or 4-angled; seed cones 1–3 cm in diam.; seeds more than 8 per cone scale.

2a. Branchlets terete.

3a. Branchlets loosely or densely arranged, ultimate ones pendulous or irregularly spreading, slender, 1–1.4 mm in diam.; seed cones dark grayish brown at maturity, 1–1.8 cm in diam. .............................. 6. C. torulosa
3b. Branchlets densely arranged, ultimate ones spreading, ascending, or drooping but not pendulous, stout, 1.2–2 mm in diam.; seed cones brown or reddish brown at maturity, 1.2–2 cm in diam.
4a. Branchlets not glaucous; bracts with a small, free mucro at apex ................................. 7. C. chengiana
4b. Branchlets often glaucous; bracts with a prominent, large, free mucro at apex ................ 8. C. gigantea
2b. Branchlets 4-angled.
5a. Leaves with a conspicuous abaxial gland ............................................................................. 5. C. arizonica
5b. Leaves without a conspicuous abaxial gland.
6a. Leaves green, not glaucous.
7a. Leaves obtuse or subacute at apex; seed cones 2–3 cm in diam.; cone scales 8–14 3. C. sempervirens
7b. Leaves acute at apex; seed cones 1–1.5 cm in diam.; cone scales 6–10 ......................... 4. C. goveniana
6b. Leaves bluish green or grayish green, glaucous.
8a. Seed cones with ca. 12 cone scales; branchlets stout, ultimate ones 1.5–2 mm in diam. 8. C. gigantea
8b. Seed cones with 6–10 seed scales; branchlets thin, ultimate ones 0.8–1 mm in diam.
9a. Branchlets spreading or drooping but not pendulous; seed cones 1.5–3.2 cm in diam., with (6–)8–10 cone scales ...................................................................................... 1. C. duclouxiana
9b. Branchlets pendulous; seed cones 1–1.5 cm in diam., with 6–8 cone scales ...... 2. C. lusitanica
1. Cupressus duclouxiana Hickel in A. Camus. [Les Cyprès] Encycl. Econ. Sylvicult. 2: 91. f. 419–424. 1914. 干香柏  gan xiang bai Cupressus austrotribetica Silba. Trees to 25 m tall; trunk to 80 cm d.b.h.; crown conical when young, rounded or broadly domed when old; branches densely arranged; branchlets spreading or drooping but not pendulous, thin, ultimate ones 4-angled, 0.8–1 mm in diam. Leaves closely appressed, slightly glaucous abaxially, 1–2 mm on ultimate branchlets, ridged or ± gibbous with an inconspicuous or more visible abaxial gland, base long decurrent on leading branchlets, apex acute or slightly obtuse. Pollen cones subglobose or oblong, (4–)5–7 mm; microsporophylls (12–)16–20. Seed cones dark brown or purlipsh brown when ripe, glaucous, globose, 1.5–3.2 cm in diam.; cone scales (6–)8–10, each fertile scale with numerous seeds. Seeds brown or purlipsh brown, 3–5 mm, with 3 ridges. 2n = 22*.
● Forests on mountain slopes; 1400–3300 m. ?Guizhou, SW Sichuan, C and NW Yunnan, SE Xizang.
2. Cupressus lusitanica Miller, Gard. Dict., ed. 8. Cupressus no. 3. 1768. 墨西哥柏木 mo xi ge bai mu Trees to 30 m tall; trunk to 1 m d.b.h.; bark reddish brown, longitudinally fissured; branchlets not arranged in a plane, pendulous, thin, ultimate ones 4-angled, ca. 1 mm in diam. Leaves bluish green, glaucous, without a conspicuous abaxial gland, apex pointed. Seed cones brown, glaucous, globose, 1–1.5 cm in diam.; cone scales 6–8, each fertile scale with numerous seeds. Cultivated for ornament. Jiangsu, Jiangxi [native to W Asia, E Mediterranean region].
3. Cupressus sempervirens Linnaeus, Sp. Pl. 2: 1002. 1753. 地中海柏木 di zhong hai bai mu Trees to 30 m tall; bark grayish brown, shallowly fissured; branches ascending or horizontally spreading; branchlets not arranged in a plane, ultimate ones 4-angled, ca. 1 mm in diam. Leaves in 4 ranks, densely appressed, dark green, not glaucous, 0.5–1 mm, ridged abaxially, without a conspicuous abaxial gland, apex obtuse or subacute. Pollen cones 4–8 mm. Seed cones yellowish gray when ripe, subglobose or ellipsoid, 2.5–4 × 2–3 cm; cone scales 8–14, each fertile scale with 8–20 seeds. Cultivated. Jiangsu, Jiangxi [native to W Asia, E Mediterranean region].
4. Cupressus goveniana Gordon, J. Hort. Soc. London 4: 295. 1849. 加州柏木 jia zhou bai mu Shrubs or small trees to 5 m tall; bark smooth or rough, fibrous; crown globose to columnar, dense or sparse; branchlets not arranged in a plane, ultimate ones 4-angled, ca. 1 mm in diam. Leaves green, not glaucous, without a conspicuous abaxial gland, apex acute. Pollen cones 3–4 × 1.5–2 mm; microsporophylls each with 3–6 pollen sacs. Seed cones grayish brown, not glaucous, globose, 1–2.5–3 × 1–1.5 cm; cone scales 6–10, each fertile scale with numerous seeds. Seeds 3–4–(5) mm. Cultivated. Jiangsu [native to W United States].
5. Cupressus arizonica Greene, Bull. Torrey Bot. Club 9: 64. 1882. 绿干柏 lu gan bai Trees to 25 m tall; bark smooth when young, remaining so or becoming rough, furrowed, and fibrous; crown conical when young, becoming broadly columnar with age, dense; branches ascending, stout; ultimate branchlets 4-angled, 1–2 mm in diam. Leaves bluish green, slightly glaucous, ridged abaxially, with a conspicuous abaxial gland, apex acute. Pollen cones 2–5 × ca. 2 mm; microsporophylls mostly each with 4–6 pollen sacs. Seed cones gray or brown, often glaucous initially, globose or oblong, mostly 2–3 cm; cone scales 5–6, each fertile scale with numerous seeds. Seeds mostly 4–6 mm.
Cultivated. Guangxi, Jiangsu, Jiangxi [native to N Mexico, SW United States].


西藏柏木 xi zang bai mu

*Cupressus tongmaiensis* Silba; *C. tongmaiensis* var. *ludlowii* Silba; *C. tonkinensis* Silba.

Trees to 45 m tall; trunk to 3.5 m d.b.h.; branchlets loosely or densely arranged, terete, ultimate ones pendulous or irregularly spreading, slender, 1–1.4 mm in diam. Leaves closely arranged, scalelike, 1–1.8 mm, flat or slightly gibbous and with a rounded, sometimes inconspicuous central abaxial gland, apex usually slightly obtuse. Pollen cones 3–6 mm; microsporophylls 14–18. Seed cones dark grayish brown when ripe, not glaucous, oblong-globose, 1.5–2 × 1.3–1.6 cm; cone scales ca. 12, each fertile scale with numerous seeds; bracts with a prominent umbo or mucro at apex. Seeds ovate-oblong, flattened, 3–5 mm. 2n = 22.


岷江柏木 min jiang bai mu

Trees to 30 m tall; trunk to 1 m d.b.h.; branchlets densely arranged, not glaucous, terete, ultimate ones spreading, ascending, or drooping but not pendulous, stout, 1.2–2 mm in diam. Leaves in 4 ranks, scalelike, 1–1.5 mm on ultimate branchlets, arched (gibbous) and with a conspicuous, often darker central abaxial gland, apex usually slightly obtuse, dull green, not glaucous. Pollen cones 2–4 mm; microsporophylls 12–16. Seed cones brown or reddish brown when ripe, not glaucous, globose to subglobose or oblong-ovoid, 1.2–2 cm in diam.; cone scales 8–14, each fertile scale with numerous seeds; bracts with a small, free mucro at apex. Seeds ovate-triangular, flattened, 3–5 × 2–4 mm. 2n = 22*.

• Mountain slopes, valleys; 800–2900 m. S Gansu, N and W Sichuan. A vulnerable species.

1a. Seed cones globose to subglobose; cone scales 8–10

1b. Seed cones oblong-ovoid; cone scales 10–14


剑阁柏木 jian ge bai mu


Branchlets subterete. Seed cones oblong-ovoid; cone scales 10–14.

• About 800 m. N Sichuan (Jiange Xian).


巨柏 ju bai

Trees to 45 m tall; trunk 3(–6) m d.b.h.; branchlets densely arranged, often glaucous, stout, usually 4-angled, rarely terete, ultimate ones not drooping, 1.5–2 mm in diam. Leaves closely arranged, in 4 ranks, glaucous, scalelike, obtusely ridged or arched (gibbous) and with a rounded central abaxial gland. Seed cones usually glaucous, oblong-globose, 1.5–2 × 1.3–1.6 cm; cone scales ca. 12, each fertile scale with numerous seeds; bracts with a prominent, large, free mucro at apex. 2n = 22*.

• Mountain slopes, along rivers; 3000–3400 m. SE Xizang.

An endangered species. Perhaps better treated as a variety of *Cupressus torulosa,* from which it differs mainly in its thicker ultimate branchlets, which are not drooping but spreading (xeromorphy), and in that some stands in SE Xizang contain very massive trees. However, some herbarium specimens of *C. torulosa* collected outside China in the W Himalayan region have similarly thick foliage, while another specimen from SE Xizang has ultimate branchlets only 0.8 mm wide.


柏木 bai mu

*Chamaecyparis funebris* (Endl.) Franco; *Cupressus funebris* var. *gracilis* Carrière.

Trees to 35 m tall; trunk to 2 m d.b.h.; branchlets arranged in a plane, pendulous, green, slender, flattened, ca. 1 mm wide. Leaves densely appressed, scalelike, dimorphic, 1–1.5 mm, apex sharply pointed; facial pairs with a linear abaxial gland; lateral pairs folded face-to-face, overlapping basal part of facial pairs, ridged abaxially. Pollen cones ellipsoid or ovoid, 2.5–5 mm; microsporophylls 10–14. Seed cones dark brown when ripe, globose, 0.8–1.5 cm in diam.; cone scales 6–8–(12), 5-angular, each fertile scale with 3–5(6) seeds. Seeds light brown, lustrous, obovate-rhombic or suborbicular, flattened, 2.5–3.5 mm. Cotyledons 2.

Pollination Mar–May, seed maturity May–Jun. 2n = 22*.

• Below 2000 m. Anhui, Fujian, Gansu, N Guangdong, N Guangxi, E Guizhou, Henan, W Hubei, Hunan, Jiangxi, Shaanxi, Sichuan, Yunnan, Zhejiang; also widely cultivated in S China. Often classified in *Chamaecyparis* on account of its flattened foliage sprays and relatively few seeds in small cones; however, it is here placed in *Cupressus* because of its developmental characters (cones maturing in 2nd year) and chemical composition of biflavones.

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, dehiscing 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. Cotylelons 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*


美国尖叶扁柏 mei guo jian ye bian bai


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, globose, 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].


美国扁柏 mei guo bian bai


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 yellow. Seed cones bluish purple to reddish brown, globose, 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 W United States].

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

日本花柏 ri ben hua bai


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].


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-ornicular, 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

5b. Chamaecyparis obtusa var. formosana (Hayata) Hayata

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].


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.

福建柏属 fu jian bai shu
Trees evergreen, monoecious; branchlets arranged in a plane, flattened, prominently jointed. Leaves decussate, almost in whorls of 4, scalelike, dimorphic along branchlets: facial pairs closely appressed; lateral pairs boat-shaped, overlapping margins of facial pairs, with 2 white, depressed stomatal bands abaxially. Pollen cones with (6–)10–12 microsporophylls each with 3 pollen sacs. Seed cones terminal on branchlets, solitary, subglobose, dehiscent when mature in 2nd year; cone scales 12–16, decussate, peltate, woody, fertile scales 2-ovulate; free bract apex a mucro. Seeds ovoid, with a prominent umbilicus and 2 apical, unequal wings. Cotyledons 2.

One species: China, N Laos, Vietnam.


福建柏 fu jian bai
Cupressus hodginsii Dunn, J. Linn. Soc., Bot. 38: 367. 1908; Fokienia kawai Hayata; F. maclurei Merrill.
Trees to 30 m tall; trunk to 1 m d.b.h.; bark purplish brown, nearly smooth or irregularly fissured. Facial leaves on young plants bluish green adaxially, narrowly oblanceolate, 4–7 × 1–1.2(–2) mm, with an elevated midvein; lateral leaves almost as long as or slightly longer than facial leaves, usually straight, 5–10 × 2–3 mm, on adult plants small, 2–7 mm, ridged and with a white, depressed stomatal band abaxially. Pollen cones yellowish green, subglobose, 4–5 mm. Seed cones brown when ripe, subglobose, 1.5–2.5 × 1.2–2.2 cm. Seeds 4–5 mm, 3- or 4-ridged; larger wing ovate-dolabiform, ca. 5 mm, smaller wing ca. 1.5 mm or a mere strip. Pollination Mar–Apr, seed maturity Oct–Nov.

Forests on mountains; 100–1800 m. Fujian, N Guangdong, Guangxi, Guizhou, S Hunan (Yizhang Xian), W Jiangxi (Jinggang Shan), SE Sichuan (Jiangjin Xian), SE Yunnan, S Zhejiang [N Laos, Vietnam]. A vulnerable species in China.


刺柏属 ci bai shu
Sabina Miller.
Trees or shrubs evergreen, monoecious or dioecious; bark thin, exfoliating in long strips; branchlets not arranged in a plane, terete or 3-, 4-, or 6-angled in cross section. Leaves decussate or in whorls of 3, decurrent or non-decurrent; juvenile leaves always needlelike; adult leaves scalelike or needlelike, usually not dimorphic along branchlets but sometimes different on juvenile and adult branchlets, with 1 or 2 pale stomatal bands adaxially, or in addition a few stomata near base abaxially. Pollen cones yellow, ovoid or oblong; microsporophylls 6–16, each with 2–8 pollen sacs. Seed cones terminal or axillary, berrylike, globose or ovoid, indehiscent or slightly dehiscent when mature in (1st or)2nd(or 3rd) year; cone scales connate or fused, succulent; each fertile scale bearing 1–3 seeds; free bract apex a small point. Seeds 1–6(–10) per cone, wingless, usually with resin pits. Cotyledons 2–6.

About 60 species: N hemisphere; 23 species (ten endemic, two introduced) in China.

1a. Leaves always needlelike, base jointed, not decurrent; cones axillary; seed cones with 3 whorled cone scales.
2a. Leaves adaxially with 2 whitish stomatal bands separated by a green midvein .......................... 1. J. formosana
2b. Leaves adaxially with 1 white stomatal band, without a green midvein.
3a. Leaves “V”-shaped in cross section, 10–23 × ca. 1 mm, rigid, deeply grooved adaxially, white stomatal bands narrower than green margins .................................................. 2. J. rigida
3b. Leaves nearly flat in cross section, 4–10 × 1–2 mm, white stomatal band broader than green margins .................................................................................................................. 3. J. sibirica

1b. Leaves needlelike, scalelike, or both, base of needlelike leaves not jointed, decurrent; cones terminal; seed cones with 3–8 decussate or whorled cone scales.
4a. All leaves needlelike.
5a. Leaves deciduous or in whorls of 3, very short, 2–4.5 mm; seed cones 1–3-seeded ............ 4. J. gaussenii
5b. Leaves in whorls of 3 only; seed cones either 1-seeded or 2- or 3-seeded.
6a. Seed cones 2- or 3-seeded .............................................................................. 5. J. procumbens
6b. Seed cones 1-seeded.
7a. Leaves abaxially keeled, without longitudinal grooves ........................................ 6. J. pingii
7b. Leaves abaxially convex or obtusely ridged, with thin longitudinal grooves along ridge or at base.
8a. Branchlets pendulous; leaves loosely appressed, 3–6 mm, to 10 mm in young plants, convex
with longitudinal grooves at base abaxially ............................................................ 7. *J. recurva*
8b. Branchlets not pendulous; leaves spreading, ascending, or appressed, 1–10 mm, obtusely ridged with longitudinal grooves on ridge (or at base) abaxially.
9a. Leaves closely appressed, small, 1–2 × 0.5–1.2 mm; branchlets 4- or 6-angular 8. *J. chengii*
9b. Leaves spreading or ascending, larger, 4–10 × 1–1.3 mm; branchlets not angled.
  10a. Leaves ascending, 4–6 × ca. 1 mm; branchlets loosely arranged, usually straight,
      long ................................................................................................................. 9. *J. baimashanensis*
  10b. Leaves spreading or ascending, 5–10 × 1–1.3 mm; branchlets densely
      arranged, straight or curved, usually short ..................................................... 10. *J. squamata*

4b. Leaves scalelike, both scalelike and needlelike, or needlelike only on young plants.
11a. Seed cones (1 or)2- or 3(–5)-seeded.
12a. Leaves scalelike, needlelike only on young plants.
  13a. Shrubs erect or decumbent, rarely small trees; branchlets densely arranged, slender,
      0.8–1 mm in diam. ........................................................... 14. *J. sabina*
  13b. Trees, rarely shrubs; branchlets loosely arranged, stout, 1–2 mm in diam. ........................................... 15. *J. semiglobosa*
12b. Leaves both scalelike and needlelike, sometimes one form predominates.
  14a. Shrubs decumbent.
  15a. Leaves of both types present ................................................................. 13. *J. davurica*
  15b. Mostly scalelike leaves present ............................................................. 12. *J. chinensis*
14b. Trees.
  16a. Leaves predominantly scalelike on mature plants, gland basal on scalelike
      leaves ....................................................................................................... 11. *J. virginiana*
  16b. Leaves both scalelike and needlelike on mature plants, gland central on
      scalelike leaves ........................................................................................... 12. *J. chinensis*
11b. Seed cones 1-seeded.
  17a. Abaxial gland of scalelike leaves basal.
  18a. Branchlets 4-angled, curved ................................................................. 19. *J. saltuaria*
  18b. Branchlets terete, straight, rarely curved.
  19a. Branchlet systems tapering, ultimate branchlets gradually shorter toward apex
      of system; leaves without cuticular wax covering ........................................ 17. *J. komarovii*
  19b. Branchlet systems not tapering ultimate branchlets of equal length or irregularly
      unequal; leaves covered with cuticular wax ........................................... 18. *J. przewalskii*
17b. Abaxial gland of scalelike leaves central.
  20a. Ultimate branchlets thin, ca. 1 mm in diam.; seed cones small, 5–8(–10) × 5–6 mm 16. *J. convallium*
  20b. Ultimate branchlets thicker than 1 mm (to 2 mm); seed cones larger, (7–)8–16 × 8–13 mm.
  21a. Branchlets terete or slightly 4-angled ..................................................... 20. *J. tibetica*
  21b. Branchlets 4-angled, sometimes ± terete.
  22a. Branchlet systems not tapering; scalelike leaves decussate or sometimes in
      whorls of 3 ................................................... 19. *J. saltuaria*
  22b. Branchlet systems tapering; scalelike leaves decussate.
  23a. Shrubs procumbent to small trees ..................................................... 22. *J. pseudosabina*
  23b. Shrubs or trees to 15 m ................................................................. 23. *J. centrasiatica*


刺柏  ci bai

*Juniperus chekiangensis* Nakai; *J. formosana* var. *concolor* Hayata; *J. formosana* f. *tenella* Handel-Mazzetti; *J. mairei* Lemée & H. Léveillé.

Shrubs or trees to 15 m tall; bark brown; crown usually pyramidal or cylindric; branches spreading or
ascending; branchlets pendulous, 3-angled. Leaves in whorls of 3, linear-lanceolate or linear-needlelike, 1.2–2 cm × 1.2–2 mm, slightly concave adaxially, with 2 white, broad stomatal bands separated by a narrow, green midvein, green and obtusely keeled abaxially, base jointed, not decurrent, apex sharply pointed. Pollen cones axillary, globose or ellipsoid, 4–6 mm; microsporophylls 9–12, in whorls of 3, each with 4 or more pollen sacs. Seed cones axillary, light reddish brown when ripe, glaucous or not, subglobose or broadly ovoid, 6–9 × 6–8 mm, with 6 fused scales in 2 alternating whorls, often 3-seeded, with a single seed on each scale of apical whorl. Seeds ovoid-prolonged, 4–5 × 3–3.5 mm, 3- or 4-ridged, base with 3 or 4 resin pits, apex pointed.

- Forests; 200–3400 m. S Anhui, W Fujian, E Gansu, Guizhou, W Hubei, S Hunan, S Jiangsu, Jiangxi, NE Qinghai, S Shaanxi, Sichuan, Taiwan, S Xizang, Yunnan, Zhejiang.


Juniperus utilis Koidzumi: J. utilis var. modesta Nakai. Shrubs erect, or small trees to 10 m, dioecious; crown pyramidal or cylindrical; branches ascending; branchlets pendulous, 3-angled when young. Leaves in whorls of 3, green abaxially, linear-needlelike, thick, “V”-shaped in cross section, 1–2.3 cm × ca. 1 mm, rigid, deeply grooved with a narrow, white stomatal band adaxially, prominently keeled abaxially, base jointed, not decurrent, apex sharply pointed. Pollen cones axillary, ellipsoid or subglobose, 3–5 mm; microsporophylls 9–12 (or more), in whorls of 3, each with 4–6 pollen sacs. Seed cones axillary, light brownish blue or bluish black when ripe, usually glaucous, globose, 6–8 mm in diam. Seeds often subovoid, ca. 5 mm, indistinctly 4-ridged, apex obtuse or rounded.

Dry areas in mountains; below 2200 m. Gansu, N Hebei, Hailongjiang, Jilin, Liaoning, Nei Mongol, Ningxia, Qinghai, Shaanxi, Shanxi [Japan, Korea].

Only subsp. rigida, described here, occurs in China; subsp. conferta (Parlatoire) Kitamura (J. conferta Parlatoire) is a decumbent, coastal shrub that occurs in Japan and E Russia (Sakhalin).


Juniperus communis Linnaeus var. montana Aiton (1789), not Neilereich (1859); J. communis var. nana (Willdenow) Baumgarten; J. communis var. saxatilis Pallas; J. nana Willdenow. Leaves in whorls of 3, all needlelike, unequal in length, 6–8 mm, rigid, slightly concave adaxially, with 2 white stomatal bands adaxially, base decurrent apex sharply pointed. Pollen cones not seen. Seed cones terminal on very short branchlets, usually glaucous, bluish black when ripe, ovoid, ca. 6 mm, 1- or 2- or 3-seeded, evolute, yellowish brown. Seed ca. 5 mm, with a few shallow resin pits, apex indistinctly ridged.

- 1200–2000 m. C Yunnan.

A little-known species found in C Yunnan and in part described from planted trees in or near Kunming. It is in need of further collection and study.


Juniperus chinensis Linnaeus var. procumbens Siebold ex Endlicher, Syn. Conif. 21. 1847; Sabina procumbens (Siebold ex Endlicher) Iwata & Kusaka. Shrubs procumbent, to 70 cm; branches creeping, much elongated, leading shoots and branchlets ascending. Leaves in whorls of 3, all needlelike, unequal in length, 6–8 mm, rigid, slightly concave adaxially, with 2 white stomatal bands adaxially, base decurrent apex sharply pointed. Pollen cones not seen. Seed cones black when ripe, glaucous, subglobose, 8–9 mm in diam., 2- or 3-seeded. Seeds ca. 4 mm, ridged.

Cultivated for ornament. Anhui, Fujian, Jiangsu, Jiangxi, Liaoning, Shangdong, Yunnan, Zhejiang [native to Japan (including Bonin Islands)].


Shrubs or trees monoecious; branchlets prominently 6angled or not. Leaves in whorls of 3, 3–5(–7) × 1–1.5 mm, glaucous, all needlelike, concave and with a faint green midvein adaxially, keeled and without longitudinal grooves abaxially, base decurrent, apex acuminate. Pollen cones axillary, ovoid or globose, 3–4 mm; microsporophylls 6–9, whorled, each with 2–3 pollen sacs. Seed cones axillary, black when ripe, lustrous, ovoid or subglobose, 7–9 mm, 1-seeded. Seeds ovoid or subglobose, 5–7 mm, with prominent resin pits, base rounded, apex obtuse.

- Forests or thickets on mountain slopes; 2600–4900 m. S Gansu, NW Hubei, S Qinghai, S Shaanxi, Sichuan, Xizang, Yunnan.

1a. Branchlets pendulous, usually slender; trees .......................................................... 6a. var. pingii

1b. Branchlets not pendulous, usually stout; shrubs or small trees.

2a. Leaves appressed, strongly arched, 3–4 mm; branchlets prominently 6-angled 6b. var. wilsonii

2b. Leaves ascending, straight or slightly arched, 4–7 mm; branchlets usually not 6-angled .......................... 6c. var. carinata

6a. Juniperus pingii var. pingii


Trees to 30 m tall; branchlets pendulous, usually slender, prominently 6-angled. Leaves slightly curved or straight on young trees, 3–4 mm.

- Forests on mountain slopes; 2600–3800 m. SW Sichuan, NW Yunnan.


Shrubs erect or procumbent, or small trees to 6 m tall; branchlets not pendulous, stout, prominently 6-angled. Leaves appressed, strongly arched, (2–)3–4 mm.

- Thickets in mountain regions; 2600–4900 m. S Gansu, NW Hubei, S Qinghai, S Shaanxi, Sichuan, Xizang, Yunnan.


直叶香柏 zhi ye xiang bai

Shrubs procumbent or erect to 4 m, rarely small trees; branchlets not pendulous, stout, not usually 6-angled. Leaves ascending, straight or slightly arched, 4–7 mm.

- Montane forests and thickets; 2700–4500 m. S Gansu, S Shaanxi, Sichuan, Xizang, Yunnan.


垂枝柏 chui zhi bai

Shrubs or trees monoecious or rarely dioecious; bark light grayish brown or brown; crown conical or broadly pyramidal; branches ascending in apical part of plant and spreading toward base; branchlets pendulous, curved. Leaves in whorls of 3, loosely appressed, greenish white or slightly glaucous adaxially, all needlelike, nearly straight, slightly incurved, 3–10 × ca. 1 mm, concave adaxially, base decurrent, convex with longitudinal grooves at base abaxially, apex sharply pointed. Pollen cones axillary, yellow, ovoid-oblong or ellipsoid-ovoid; microsporophylls 10–16, decussate, each with 3 pollen sacs. Seed cones axillary, slightly glaucous when young, maturing purplish black and not glaucous, ovoid; 6–12 × 5–9 mm, 1-seeded. Seeds ovoid or conical-ovoid, 5–9 × 3–6 mm.

- Forests or thickets; 1800–3900 m. SE Xizang, NW Yunnan. [Afghanistan, Bhutan, N India, Kashmir, N Myanmar, Nepal, Pakistan, Sikkim].

7a. Juniperus recurva var. recurva

垂枝柏(原变种) chui zhi bai (yuans bian zhong) Sabina recurva (Buchanan-Hamilton ex D. Don) Antoine.

Trees small, rarely shrubs. Branchlets short, pendulous. Leaves 3–8 mm long, adaxial surface of leaves greenish white, slightly glaucous, with an obscure midvein. Seed cones 7–12 × 6–9 mm. Seeds ovoid, 6–8 × 5–6 mm.

- Forests or thickets; 2700–3900 m. SE Xizang, NW Yunnan. [Afghanistan, Bhutan, N India, Kashmir, Nepal, Pakistan, Sikkim].


Shrubs, rarely trees. Branchlets long, pendulous. Leaves 6–10 mm, adaxial surface of leaves with 2 greenish white stomatal bands and a prominent, green midvein. Seed cones 6–8 × 5–6 mm. Seeds conical-ovoid, 5–6 × 3–4 mm, 3-ridged.

- Forests; 1800–3900 m. SE Xizang, NW Yunnan. [Afghanistan, Bhutan, N India, N Myanmar, Sikkim].


万钧柏 wan jun bai

Trees to 9 m tall; branchlets usually arched, not pendulous, thin, 4- or 6-angled, 1.1–2 mm in diam. Leaves decussate or in whorls of 3, closely appressed, lustrous abaxially, ovate, strongly arched, 1–2 × 0.5–1.2 mm, concave adaxially, obtusely ridged, with longitudinal grooves on ridges abaxially, base decurrent,
apex obtuse or acute. Pollen cones not seen. Seed cones purplish black when ripe, oblong to globose, 9–11 × ca. 9 mm, 1-seeded. Seeds triangular-ovoid, ca. 9 × 7 mm, ridged.

- 3100–3200 m. NW Yunnan (Zhongdian Xian).
- This recently described species is known from a single collection, with very small leaves but otherwise close to Juniperus pingii, of which it may be a variety. More material needs to be collected and studied.


德钦柏 de qin bai

Shrubs to 60 cm; branches glaucous; branchlets ascending, loosely arranged and almost parallel, thin, usually straight, long, not angled. Leaves in whorls of 3, ascending, needlelike, straight or slightly incurved, 4–6 × ca. 1 mm, concave, with a white stomatal band and without a green midvein adaxially, obtusely ridged with longitudinal, thin grooves on ridges abaxially, base decurrent, apex sharply acuminate. Pollen cones not seen. Seed cones brownish black when ripe, globose, ca. 6 × 6 mm, 1-seeded. Seeds triangular-ovoid, ca. 5 × 5 mm.

- Mountain slopes; ca. 3400 m. NW Yunnan (Dêqên Xian).
- This recently described species is known from a single collection, with non-pendulous branchlets but otherwise close to Juniperus pingii, of which it may be a variety. More material needs to be collected and studied.


高山柏 hongxi gao shan bai

Shrubs erect or procumbent, or small trees to 12 m tall; branches ascending or horizontally spreading; branchlets densely arranged, straight or curved, usually short, not angled. Leaves in whorls of 3, spreading or ascending, sometimes nearly appressed, needlelike, straight or slightly curved, (2.5–) 5–10 × 1–1.5 mm, slightly concave, with white stomatal bands adaxially, obtusely ridged with longitudinal, thin groove on ridge or at base abaxially, base decurrent, apex acute or acuminate. Pollen cones ovoid, 3–4 mm; microsporophylls 9–12, each with 3 pollen sacs. Seed cones black or bluish black when ripe, ovoid or subglobose, 4–8 × 4–6 mm, 1-seeded. Seeds ovoid, 3.5–6 × 2–5 mm, ridged, with resin pits.

- Mountane thickets; 3200–4400 m. W Hubei, Shaanxi, Sichuan, Taiwan, Xizang, Yunnan [Afghanistan, Bhutan, N India, Kashmir, N Myanmar, Nepal, Pakistan, Sikkim].

10a. Juniperus squamata var. squamata

Juniperus morrisonicola Hayata; J. squamata var. morrisonicola (Hayata) H. L. Li & H. Keng; J. recurva Buchanan-Hamilton ex D. Don var. squamata (Buchanan-Hamilton ex D. Don) Parlatore; Sabina squamata (Buchanan-Hamilton ex D. Don) Antoine.

Shrubs. Leaves ascending or nearly appressed, usually short and broad, straight or slightly incurved, 5–7 × 1.2–1.5 mm at base.

- Montane thickets; 2300–4400 m. W Hubei, Shaanxi, Sichuan, Taiwan, Xizang, Yunnan [Afghanistan, Bhutan, N India, Kashmir, N Myanmar, Nepal, Pakistan, Sikkim].

10b. Juniperus squamata var. fargesii


长叶高山柏 chang ye gao shan bai

Juniperus fargesii (Rehder & E. H. Wilson) Komarov; J. kansiensis Komarov; J. lemeana H. Léveillé & Blinovskij.

Shrubs erect or procumbent, or trees. Leaves spreading or ascending, usually long and narrow, straight or slightly curved, 6–10 × 0.8–1 mm at base.

- Forests, valleys, roadsides; 1600–4500 m. S Anhui (Huang Shan), W Fujian (Liancheng Xian), S Gansu, E Guizhou (Jiangkou), SW Sichuan (Taibai Shan), Sichuan, Yunnan.

10c. Juniperus squamata var. parviflora


小叶高山柏 xiao ye gao shan bai

Shrubs. Leaves ascending or appressed, densely arranged, internodes not exposed, strongly curved, thick, small, 2.5–3.5 × 0.8–1.2 mm.

- Montane forests and thickets; 3200–3800 m. SW Sichuan.

10d. Juniperus squamata var. hongxiensis


洪溪高山柏 hong xi gao shan bai

Shrubs; branchlets with exposed internodes. Leaves spreading, loosely arranged, internodes exposed, strongly arched, small, 3.5–4.5 × 1–1.3 mm.

- Mountains; 3600–3700 m. S Sichuan (Meigu Xian).


北美圆柏 bei mei yuan bai

Trees to 30 m, dioecious; bark reddish brown; crown columnar-conical or conical; branches erect or spreading; branchlets thin, 4-angled, ca. 0.8 mm in

Sabina virginiana (Linnaeus) Antoine.

Trees to 30 m, dioecious; bark reddish brown; crown columnar-conical or conical; branches erect or spreading; branchlets thin, 4-angled, ca. 0.8 mm in
Trees or erect shrubs. Needlelike leaves in whorls of 3, loosely arranged, 0.8–1.2 cm.

Below 2300 m. Anhui, Fujian, S Gansu, Guangdong, N Guangxi, Guizhou, Hebei, Henan, N Hubei, Hunan, Jiangsu, Jiangxi, Nei Mongol, S Shaanxi, Shandong, Shanxi, Sichuan, Yunnan, Zhejiang [Japan, Korea, Myanmar].


偃柏 yan bai

Juniperus sargentii (A. Henry) Takeda ex Nakai;

Shrubs procumbent. Needlelike leaves sparse or absent on mature plants, decussate, densely arranged, 3–6 mm.

1400–2200 m. Heilongjiang [Japan, E Russia].


清水圆柏 qing shui yuan bai


Shrubs procumbent. Needlelike leaves usually present on mature plants, often in whorls of 3, densely arranged, ca. 6 mm.

Mountains: ca. 2200 m. E Taiwan (Hualian Xian) [Japan].

This variety was described by G. Masamune as only differing in its procumbent habit from var. chinensis; the latter taxon has a variable habit from a shrub to a tall tree.


兴安圆柏 xing an yuan bai

Sabina davurica (Pallas) Antoine.

Shrubs procumbent; bark purplish brown; branchlets densely arranged, ca. 1 mm in diam. Leaves both scalelike and needlelike, decussate; needlelike leaves loosely arranged, narrowly lanceolate or linear-lanceolate, (3–)4–6(–9) mm, concave, with broad, white stomatal bands axially, arched and obtusely ridged abaxially, apex acuminate or occasionally acute; scalelike leaves densely arranged, 1–3 mm, abaxial gland central, elliptic or oblong. Pollen cones ovoid-oblong, 4–5 mm; microsporophylls 12–18, each with 2–4 pollen sacs. Seed cones borne on curved branchlets, brown dark or bluish purple when ripe, glaucous, irregularly globose, 4–6 × 6–8 mm, 1–4-seeded. Seeds ovoid, 3–5 mm, slightly flattened, apex acute.

Thickets or forests on rocky mountains, sand dunes; 400–1400 m. Heilongjiang [Korea, Mongolia, E Russia].

Only subsp. davurica, described here, occurs in China; subsp. maritima Urosov is a decumbent shrub that occurs in E Russia (Primorye). Juniperus davurica is very similar to J. sabina but has both scalelike and needlelike leaves on mature plants; it is probably a variety of that very widespread species; similar specimens have been found in Europe (e.g., Austria: Tirol).


叉子圆柏 cha zi yuan bai
Shrubs, rarely small trees, dioecious, rarely monoecious; bark grayish brown; branchlets densely arranged, ascending, slender, 0.8–1 mm in diam. Leaves both scalelike and needlelike; needlelike leaves usually present on young plants, rarely present on adult plants, decussate or in whorls of 3, closely appressed, 3–7 mm, concave adaxially, convex abaxially, apex sharply pointed; scalelike leaves decussate, rhombic or rhombic-ovate, 1–2.5 mm, abaxial gland central, prominent, elliptic. Pollen cones ellipsoid or oblong, 3–4 mm; microsporophylls 10–14, each with 2–4 pollen sacs.

Seed cones light brownish green, brown, purplish blue, or black when ripe, often glaucous, usually irregularly globose, 5–8 × 5–9 mm, (1 or)2-seeded. Seeds ovoid, slightly flattened, 4–5 mm, ridged, with resin pits, apex blunt or slightly pointed.

At least 12 varieties have been described in this very wide-ranging species; it must be noted that ± straight fertile branchlets are occasionally found on specimens from C Asia and Europe.

1a. Seed-cone-bearing branchlets apically curved ........................................... 14a. var. sabina
1b. Seed-cone-bearing branchlets straight.
   2a. Shrubs ........................................ 14b. var. yuliniensis
   2b. Small trees ............................. 14c. var. erectopatens

14a. Juniperus sabina var. sabina
叉子圆柏 (原变种) cha zi yuan bai (yuan bian zhong)
Juniperus arenaria (E. H. Wilson) Florin; J. chinensis Linnaeus var. arenaria E. H. Wilson; J. sabina var. monosperma C. Y. Yang; Sabina officinalis Garcke; S. vulgaris Antoine.

Shrubs procumbent, to 1 m, rarely small trees; seed-cone-bearing branchlets apically curved.

Forests or thickets on rocky mountain slopes and sand dunes; 1000–3300 m. Gansu, Nei Mongol, Ningxia, NE Qinghai, N Shaanxi, N Sichuan, Xinjiang [Kazakstan, Mongolia, Russia (Far East, Siberia); SW Asia, Europe].

At least 12 varieties have been described in this very wide-ranging species; it must be noted that ± straight fertile branchlets are occasionally found on specimens from C Asia and Europe.

1b. Scalelike leaves with a convex abaxial gland; seed cones conical-ovoid or globose; seeds conical-globose, ca. 5 mm in diam. 16a. var. convallium
1b. Scalelike leaves with a convex abaxial gland; seed cones ovoid; seeds flattened ovoid, ca. 3 mm in diam. .... 16b. var. microsperma

16a. Juniperus convallium var. convallium
密枝圆柏 mi zhi yuan bai
Trees, rarely shrubs, dioecious or monoecious; branchlets densely arranged, straight or curved, terete, rarely slightly 4-angled, thin, ultimate ones usually about 1 mm in diam. Leaves grayish green, both scalelike and needlelike; needlelike leaves present only on young plants, decussate or in whorls of 3, ascending, 3–8 mm, concave adaxially; scalelike leaves decussate, rarely in whorls of 3, closely appressed, ± rhombic-ovate, 1–2.5 mm, abaxial gland near center. Pollen cones ± ellipsoid, 3–5 mm; microsporophylls 8–10, each with 3 or 4 pollen sacs. Seed cones light brown to bluish black when ripe, glaucous, ± obovoid-globose or nearly triangular and widest near apex, 2– or 3-seeded. Seeds 3–6 × 2–3.5 mm, angular ovoid, apices often diverging.

Forest borders; 2500–3300 m. SW Xinjiang, W Xizang [Afghanistan, N India, Kashmir, Kazakstan, Kyrgyzstan, Tajikistan, Uzbekistan].

昆仑多子柏 kun lun duo zi bai
Juniperus jarkendensis Komarov; J. sabina Linnaeus var. jarkendensis (Komarov) Silba; Sabina vulgaris Antoine var. jarkendensis (Komarov) C. Y. Yang.

Trees, occasionally shrubs, dioecious, rarely monoecious; branchlets loosely arranged, spreading, straight, stout, terete, 1–2 mm in diam. Leaves both scalelike and needlelike; needlelike leaves usually present on young plants, rarely present on adult plants, decussate or in whorls of 3, directed forward, 3–7 mm, concave adaxially, convex abaxially; scalelike leaves decussate, closely appressed, ± rhombic-ovate, 1–2.5 mm, abaxial gland near center. Pollen cones ± ellipsoid, 3–5 mm; microsporophylls 8–10, each with 3 or 4 pollen sacs. Seed cones light brown to bluish black when ripe, glaucous, ± obovoid-globose or nearly triangular and widest near apex, 2– or 3-seeded. Seeds 3–6 × 2–3.5 mm, angular ovoid, apices often diverging.

Forest borders; 2500–3300 m. SW Xinjiang, W Xizang [Afghanistan, N India, Kashmir, Kazakstan, Kyrgyzstan, Tajikistan, Uzbekistan].
6–8(–10) × 5–8 mm. Seeds conical-globose, ca. 5 mm in diam., with resin pits.

- High mountains; 2200–4300 m. S Qinghai, NW Sichuan, E Xizang.


scalelike leaves with an elliptic, ovate, or orbicular, convex gland abaxially. Seed cones ovoid, 5–7 × ca. 5 mm. Seeds flattened ovoid, ca. 4 × 3 mm.

- High mountains; 3200–4000 m. E Xizang.


Trees to 20 m, rarely shrubs, monoecious; branches spreading or ascending; branchlets usually curved, 4-angled, 1–1.7 mm in diam. Leaves both scalelike and needlelike; needlelike leaves present on young plants, in whorls of 3, 4.5–6 mm, ridged abaxially, apex sharply pointed; scalelike leaves decussate, 4-ranked, closely appressed, triangular-rhombic, gibbous, 1–2 mm, abaxial gland basal, inconspicuous, orbicular or ovate, slightly depressed leaf apex obtuse. Pollen cones subglobose, ca. 2 mm; microsporophylls 6–8, each with 2 or 3 pollen sacs. Seed cones erect, black or bluish black when ripe, ovoid or subglobose, 4–8(–10) mm, 1-seeded. Seeds irregularly ovoid-globose, 3.5–7 × 3–5 mm, ridged and pitted.

- Forests or thickets on mountains; 2700–4600 m. S Gansu, SE Qinghai, W Sichuan, NW Yunnan.


Trees to 30 m, rarely shrubs, monoecious, rarely dioecious; branchlets densely or loosely arranged, mostly straight, terete or slightly 4-angled, 1–2 mm in diam. Leaves both scalelike and needlelike; needlelike leaves usually present on seedlings and young plants, in whorls of 3, 4–8 mm; scalelike leaves decussate, sometimes in whorls of 3, ovate-rhombic, obtuse, 1–3 mm, abaxial gland central, conspicuous, slightly depressed, linear-elliptic or linear. Pollen cones subglobose, ca. 2 mm in diam.; microsporophylls 6–8, each with 2 or 3 pollen sacs. Seed cones erect, brown, black, or purplish black when ripe, ovoid or subglobose, 0.9–1.6 × 0.7–1.3 cm, 1-seeded. Seeds ovoid, rarely obovoid or globose, 7–11 × 6–8 mm, with deep resin pits.

- Forests on mountain slopes; 2700–4800 m. S Gansu, SE Qinghai, NW Sichuan.


Trees to 20 m, rarely shrubs, monoecious; branches spreading or ascending; branchlets usually curved, 4-angled, 1–1.7 mm in diam. Leaves both scalelike and needlelike; needlelike leaves present on young plants, in whorls of 3, 4.5–6 mm, ridged abaxially, apex sharply pointed; scalelike leaves decussate, 4-ranked, closely appressed, triangular-rhombic, gibbous, 1–2 mm, abaxial gland basal, inconspicuous, orbicular or ovate, slightly depressed leaf apex obtuse. Pollen cones subglobose, ca. 2 mm; microsporophylls 6–8, each with 2 or 3 pollen sacs. Seed cones erect, black or bluish black when ripe, ovoid or subglobose, 4–8(–10) mm, 1-seeded. Seeds irregularly ovoid-globose, 3.5–7 × 3–5 mm, ridged and pitted.

- Forests on mountain slopes or in valleys; 2700–4800 m. S Gansu, SE Qinghai, E and S Xizang.


Trees to 20 m, rarely shrubs, monoecious; branches spreading or ascending; branchlets usually curved, 4-angled, 1–1.7 mm in diam. Leaves both scalelike and needlelike; needlelike leaves present on young plants, in whorls of 3, 4.5–6 mm, ridged abaxially, apex sharply pointed; scalelike leaves decussate, 4-ranked, closely appressed, triangular-rhombic, gibbous, 1–2 mm, abaxial gland basal, inconspicuous, orbicular or ovate, slightly depressed leaf apex obtuse. Pollen cones subglobose, ca. 2 mm; microsporophylls 6–8, each with 2 or 3 pollen sacs. Seed cones erect, black or bluish black when ripe, ovoid or subglobose, 4–8(–10) mm, 1-seeded. Seeds irregularly ovoid-globose, 3.5–7 × 3–5 mm, ridged and pitted.

- Forests on mountain slopes or in valleys; 2700–4800 m. S Gansu, SE Qinghai, E and S Xizang.


Trees to 20 m, rarely shrubs, monoecious; branches spreading or ascending; branchlets usually curved, 4-angled, 1–1.7 mm in diam. Leaves both scalelike and needlelike; needlelike leaves present on young plants, in whorls of 3, 4.5–6 mm, ridged abaxially, apex sharply pointed; scalelike leaves decussate, 4-ranked, closely appressed, triangular-rhombic, gibbous, 1–2 mm, abaxial gland basal, inconspicuous, orbicular or ovate, slightly depressed leaf apex obtuse. Pollen cones subglobose, ca. 2 mm; microsporophylls 6–8, each with 2 or 3 pollen sacs. Seed cones erect, black or bluish black when ripe, ovoid or subglobose, 4–8(–10) mm, 1-seeded. Seeds irregularly ovoid-globose, 3.5–7 × 3–5 mm, ridged and pitted.

- Forests on mountain slopes or in valleys; 2700–4800 m. S Gansu, SE Qinghai, E and S Xizang.


Shrubs erect or procumbent, to 2 m, rarely small trees, dioecious; ultimate branchlets densely arranged, mostly straight, usually 4-angled, sometimes terete. Leaves both scalelike and needlelike; needlelike leaves usually present on young trees, in whorls of 3, ascending, 3–8 mm, apex acuminate; scalelike leaves decussate or sometimes in whorls of 3, closely appressed, rhombic, 1.2–2 mm, abaxial gland central, or basal in needlelike leaves, oblong or linear, depressed, leaf apex obtuse. Pollen cones subglobose or ovoid, 2–3 mm; microsporophylls 6–8, each with 2 or 3 pollen sacs. Seed cones erect, black-brown when ripe, subglobose or ovoid, 6–13 × 5–8 mm, 1(or 2)-seeded. Seeds ovoid, slightly flattened, 5–6 × ca. 4 mm, smooth or obscurely ridged.

Forests or thickets on mountain slopes; 2600–5100 m. E and S Xizang, NW Yunnan [Bhutan, N India, Kashmir, Nepal, Sikkim].

### 22. Juniperus pseudosabina


Shrubs erect or procumbent, or small trees to 12 m, dioecious; ultimate branchlets densely arranged, mostly straight, 4-angled or sometimes ± terete. Leaves both scalelike and needlelike; needlelike leaves usually present on seedlings and young trees, decussate or in whorls of 3, ascending, 4–8 mm, apex acuminate; scalelike leaves decussate, appressed or with free apex, rhombic, obtuse, 1.5–2 mm, abaxial gland central, or basal in needlelike leaves, oblong or broadly linear, depressed. Pollen cones ovoid or subglobose, 2–3 mm; microsporophylls 6–8, each with 2 or 3 pollen sacs. Seed cones bluish black or brownish black when ripe, ± glaucous, ovoid or broadly ovoid, 0.7–1.4 cm × 6–10 mm, 1-seeded. Seeds ovoid or ellipsoid, slightly flattened, 6–7 × 4–6 mm, ridged, base rounded or pointed, apex blunt.

Thickets on mountains; 2600–4000 m. Xinjiang [Afghanistan, Kazakhstan, Kyrgyzstan, Mongolia, Pakistan, Tajikistan, Uzbekistan].

1a. Shrubs with procumbent branches

22a. var. *pseudosabina*

1b. Trees or shrubs with prominent trunk

22b. var. *turkestanica*

### 22a. Juniperus pseudosabina var. *pseudosabina*

新疆方枝柏(原变种) xin jiang fang zhi bai (yuan bian zhong)


Shrubs; branches procumbent.

Thickets on mountains; 2000–3300 m. Xinjiang [Afghanistan, Kazakhstan, Kyrgyzstan, Mongolia, Pakistan, Tajikistan, Uzbekistan].

### 22b. Juniperus pseudosabina var. *turkestanica*


*S. centrasiatica* (Komarov) C. Y. Yang.

Trees to 15 m tall; crown dense; ultimate branchlets usually glaucous, 4-angled, 1.2–1.5 mm in diam. Leaves grayish green; scalelike leaves decussate, closely appressed, 1.5–2 mm, with a prominent, blunt abaxial ridge, abaxial gland central, often inconspicuous. Pollen cones ovoid or subglobose, 2–3 mm; microsporophylls 6–8, each with 2 or 3 pollen sacs. Seed cones brownish yellow or black-brown when ripe, slightly glaucous, ovoid, 0.9–1.3 cm × 8–10 mm, 1-seeded. Seeds ovoid, slightly flattened, 8–11 × 5–7 mm, base rounded.

Mountains, valleys, river banks; 2600–4000 m. Xinjiang [Afghanistan, Pakistan]. This species is doubtfully distinct from *Juniperus pseudosabina* (tree form, although the habit is not a good character, as it is ecologically determined). That species, in turn, has very few and minor characters, all of a continuous nature, distinguishing it from *J. indica*. These three taxa only marginally occur in China (Xinjiang, Xizang, NW Yunnan), where the variation does not match that found in populations outside China surrounding the Xizang plateau.