

Key to *Juniperus* of Mexico and Guatemala rev. 2/2011

- 1a. Whip- and scale-leaf margins entire (20 X) or with irregular teeth (40 X) and then with scale-leaves with acuminate to mucronate tips.
- 2a. Whip- and scale-leaf with irregular teeth (40 X), scale-leaves acuminate; seed cones 1(2), (4-) 6-10 (-13) seeded, tan-brown to brownish-purple; branches pendulous to erect.
- 2.1a. Seed cones 9-20 mm diam., (4) 6 - 10 (-13) seeds per cone, terminal branch tips drooping (hanging)
- 3a. Branching radially, seed cones tan to brownish/purple.....***J. flaccida***
- 3b. Branching planate, seed cones bluish-brown.....***J. poblana***
- 2.1b. Seed cones (5-) 6 (-9) mm diam., 1-2 (3) seeds per cone, terminal branch tips erect
.....***J. martinezii***
- 2b. Whip- and scale-leaf margins smooth (entire) (40 X), scale-leaves obtuse to acute to apiculate; seed cones 1-2(3) seeded, blue-black to brownish-blue when mature; branches not drooping (but ultimate branchlets are often flaccid).
- 4a. Seed cones bi-lobed (reniform), with a few globose, seed cones maturing 1 year.
- 5a. Scale-leaves acute to acuminate.....***J. blancoi***
- 5b. Scale-leaves with mucronate tips.....***J. blancoi* var. *mucronata***
- 4b. Seed cones globose, rarely bi-lobed, twigs (6-15 mm diam.) with bark exfoliating in plates, reddish-copper beneath; seed cones maturing in 2 years.....***J. scopulorum***
- 1b. Whip- and scale-leaf margins denticulate (20 X)
- 6a. Seed cones (1) 2 - 11 seeded, if 1 seeded, then bark exfoliating in quadrangular plates
- 7a. Seed cones (1-3 -) 4 -5 (- 6) seeded (except var. *gamboana* with 1-2 seeds/cone), fibrous to obscurely woody; trunk bark exfoliating in quadrangular plates or if trunk exfoliating in strips, then upper branches exfoliating in quadrangular plates (f. *sperryi*).....***J. deppeana***
- 7b. Seed cones 2- 9 seeded, bark exfoliating in strips (if exfoliating in quadrangular plates, then seed cones small, 5-6 mm long).
- 8a. Mature seed cones reddish-brown to brown, with a light coat of bloom; seed cone peduncles straight.
- 9a. Mature seed cones irregular and gibbous; seeds (2-)4-9(-11) per cone; terminal whip branches strict; foliage very loosely spaced; scale-leaves do not appear as a string-of-beads on the ultimate twig.....***J. jaliscana***
- 9b. Mature seed cones bluish-red, very glaucous, globose; seeds 1-4 per cone; terminal whip branches erect to strict, recurved (hooked) at tip; foliage tightly-spaced; scale leaves appear as a string-of-beads on the ultimate twig.....***J. durangensis***
- 8b. Mature seed cones dark blue to bluish-black, with light coat of bloom, cone peduncles usually curved
- 10a. Twigs not distichous, or sometimes sub-distichous, scale-leaves thick but not with a hood or beak, ultimate branchlets 1.3 - 1.4 mm wide, central and n. Mexico.
- 10.1a. Whip leaf glands oval to elongate, usu. raised, branchlets (3-5mm diam.) rough with persistent old leaves, mature twigs 5-10 mm. long, angle of branching of ultimate twig 50-60 degrees, foliage tightly compacted, prostrate shrubs (to 1 m.), sub-alpine habitat, on limestone.....***J. zanonii***
- 10.1b. Whip leaf glands elongate, often sunken, branchlets (3-5mm diam.) smooth, mature twigs 10-40 mm. long, angle of branching of ultimate twig 40-60 degrees, foliage loose to tightly compacted, low shrub to tree (to 10 m), sub-alpine to montane habitat, especially on volcanic soils.....***J. monticola***
- 10b. Twigs distichous, scale-leaves thick, usually a hood or beak, ultimate branchlets 1.4 - 1.8 mm wide, Chiapas, Mexico and n. Guatemala.....***J. standleyi***
- 6b. Seed cones 1-2 (-3) seeded, fleshy to fibrous (when mature and fresh)
- 11a. Scale-leaves with a raised hemispherical gland

- 12a. Scale-leaf glands protruding like a bead, hemispherical, whip-leaf glands hemispherical (var. *ashei*) or oval (var. *ovata*), dark brownish-green on dark grayish-green mature leaf; angle of branching of ultimate twig 25-40 degrees; scales leaves on ultimate twig do not appear as a string-of-beads.....***J. ashei***
- 12b. Whip-leaf glands elongate, not hemispherical, scale-leaf gland protruding, oval to elliptical, same color as light gray-green mature leaf; twig bark grayish brown, smooth; angle of branching of ultimate twig about 60 degrees; scale-leaves on ultimate twig appear as a string of beads.....***J. saltillensis***
- 11b. Scale-leaves without a raised hemispherical gland
- 13a. Seed cones (7-) 9-10 (-13) mm. diam., fibrous to woody pericarp, bluish-brown under glaucous, 1 (-2) seeded; dioecious (1.9% monoecious), branchlets approx. as wide as scale-leaf length; scale-leaves closely appressed and generally flattened, branchlets terete, Baja California.....***J. californica***
- 13b. Seed cones 5-8 mm diam., fleshy when ripe and fresh.
- 13.1a. Mature seed cones orange, reddish-orange, red, bronze, or reddish-brown, appearing pink or rose-color if covered with bloom.
- 14a. Stem bark exfoliating in quadrangular plates; cones reddish-brown; terminal whip branches tips straight, not curved; seeds subglobose or broadly ovoid.....***J. deppeana* var. *gamboana***
- 14b. Stem bark exfoliating in longitudinal strips, often interconnected; seed cones rose, orange to reddish-brown or bronze-color; seed ovoid or if bark in quadrangular plates, then seed cones bluish-rose.
- 15a. Mature seed cones orange to red, with light bloom appearing pink or rose-colored; whip-leaf ventral side white-glaucous, glands on whip-leaves visible, raised, elongated and divided (often 3 glands); often single stemmed shrub-trees, with stocky, clumpy foliage
- 15.1a. Shorter whip-leaf glands, half or less as long as the associated sheath (not yet confirmed in Mexico, but likely grows in n. Sonora on the Arizona border).....***J. arizonica***
- 15.1b. Longer whip-leaf glands, more than half as long as the associated sheath***J. coahuilensis***
- 15b. Mature seed cones copper to reddish-brown, with no bloom; whip-leaf ventral side not white-glaucous, glands on whip-leaves visible, raised, oval, not divided; shrubs with elongated terminal whips.....***J. pinchotii***
- 13.1b. Mature seed cone dark blue to bluish-brown with a light to heavy coat of bloom appearing light blue.
- 16a. Ultimate twigs very slender (0.7- 0.8 mm. wide); stem bark fibrous-ragged; narrow strips; seed cones globose, bluish, 5-8 mm. diam., 1 (2) per cone; seeds 4-6 mm. long, 3-4 mm. wide; strong central axis, usually single-stemmed tree (to 10 m.), with a globose or broad-conic crown; foliage with faint odor of aromatic (terpenoid) compounds, scale-leaf glands not conspicuous, visible on whip-leaves but seldom ruptured.....***J. comitana***
- 16b. Ultimate twigs slender (0.8-1.1 mm. wide), trunk bark exfoliating in quadrangular plates on the lower part, then grading into longitudinal strips on the upper branches, occasionally trunk exfoliating only strips; mature seed cones bluish and very glaucous, 5-7 mm. diam., 1 (2) seeds per cone; seeds globose to ovoid, 5-6 mm. long, 4-5 mm. wide; shrubs branched at base or short trees (to 10 m.) with horizontally broadened crowns; foliage with strong odor of aromatic (terpenoid) compounds, scale-leaf glands not conspicuous, whip-leaf glands visible but not usually ruptured***J. angosturana***