

Hesperocyparis arizonica (Greene) Bartel, ARIZONA SMOOTH CYPRESS, PIUTE CYPRESS.

Tree, evergreen, scale-leaved, multi-trunked, densely branched on young growth with new shoot units $< 15 \times 1.2\text{--}1.4$ mm, when young with a conic canopy, in range < 10 m tall; monoecious (strongly protandrous); shoots flexible, with leaves in 4 vertical rows (4-ranked; “cylindric”), having appressed leaves arranged shinglelike, on standard shoots with internodes $<$ leaves and a leaf closely appressed and slightly overlapping the next leaf in a vertical row completely concealing stem, on rapidly growing shoots (whip shoots) with internodes $>$ leaves and leaves commonly not concealing stem, glabrous, with resin canals, strongly aromatic; bark on trunk peeling in thin vertical plates, gray with exposed strips cinnamon brown. **Stems:** on green shoots, entirely hidden by decurrent leaf bases, the bases turning dark red and peeling off; on young twigs forming \pm smooth periderm, young periderm tight, dull gray-brown. **Leaves:** opposite decussate, strongly 4-ranked, of different forms on 2 types of shoots, simple, sessile and firmly attached to stem, without stipules; blade of typical scale leaves overlapping, awl-shaped with only 1 mm of diamond-shaped tip exposed, tip never diverging or spreading, minutely toothed on exposed margins, \pm rounded on back, obscurely veined, with gland or depressed pit on exposed surface often when young each leaf with liquid resin droplet later exudate drying white, dull green with grayish or white wax accumulated along edges; blade of whip shoot ascending to spreading, deltate, ca. 1 mm, not fleshy, with decurrent base clearly defined by raised margins, minutely toothed on margins, acuminate at tip, \pm flat on back, often lacking resin droplet or white exudate. **Pollen cone:** spikelike, terminal on scattered, newly formed winter shoots with scale leaves, ovoid and 4-angled, $3\text{--}4.2 \times 2.2\text{--}2.5$ mm (when releasing pollen), of 10–16 pollen-bearing, opposite decussate microsporophylls; microsporophylls stalked (peltate) with surface broadly ovoid and initially flat, 1.5–2 mm wide, yellowish green to orange-green and having a colorless and minutely toothed upper margin, with 3–6 pale light yellow pollen sacs on under lower edge of each microsporophyll (conspicuous on immature cone); pollen light yellow. **Seed cone:** solitary, terminal on short lateral shoots formed 200–500 mm behind tip of rapidly growing vertical whip shoot; cone-bearing shoot 3–5 mm long, on vegetative section with opposite, scale leaves, produced 10–80 mm from leader axis; at pollination young cone open after most pollen cones on plant have senesced, ca. 3×3 mm, of 6–8(–10) erect and ascending cone scales (scale-bract complex); fertile scales in pairs, awl-shaped with minutely toothed margins (basal cone scales) and roundish with entire margins (upper cone scales), red-brown with pale margins, when spread exposing many chimneylike projections (exposed micropyles of ovules) along edge of each fertile cone scale; mature seed cone (1 year) with many seeds per scale, \pm woody, somewhat spheroid spreading open to release seeds without fire, 20–32 mm, dull brown and gray, with 6–10 cone scales, each scale surface with a low, central projection (= scale of cone at pollination; umbo) and somewhat spinescent. **Seed:** irregularly several-sided with pockets and generally 2–3 wings, 3.5–6 mm long and nearly as thick as wide, dark brown to chestnut brown with yellowish attachment scar, dull brown on thick end, somewhat glaucous or not glaucous. Late November (first pollen cone)–February (latest receptive seed cone).

Naturalized. Small tree commonly planted along roadsides in SMM and occasionally observed as an escape, established from seeds of the original individuals. *Hesperocyparis*

arizonica is more commonly known as *Cupressus arizonica*, and it appears to be synonymous with *H. nevadensis* and *C. nevadensis*, assuming that the genus *Hesperocyparis* is acceptable. Its shoots have scale leaves in four vertical rows, each leaf often with a drop of resin, and old leaves are grayish due to white surface wax (epicutular wax) and also commonly each scale leaf has a dry white exudate where the resin polymerized. Arizona cypress is intolerant of fire, and must be reestablished from seed.

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