

Platanus L. SYCAMORE, PLANE TREE

Platanus racemosa Nutt., CALIFORNIA SYCAMORE, WESTERN SYCAMORE, ALISO. Tree, winter-deciduous, with 1–several thick trunks, trunks ascending to reclining, branching somewhat open, in range 8–20+ m tall; monoecious; shoots with emerging leaves and young axes densely tomentose and covered with branched (dendritic) hairs, having a distinctive smell when crushed; bark on large branches and trunk smooth = mosaic of chalky white to dark gray patches, peeling in stiff flakes (exfoliating), on very old trunks cracked and not exfoliating. **Stems:** cylindrical, somewhat zigzagged and knobby with projecting leaf buttresses, on young shoots olive to brown, becoming glabrescent, with ringlike stipular scars; axillary buds conic; cataphylls strigose with golden unbranched hairs. **Leaves:** helically alternate, palmately lobed with 3 or 5(7) lobes, petiolate, with stipules; stipules 1, leafy, sheathing stem, round with encircling blade lobes touching or shortly fused when immature, 20–60 mm wide, toothed or not, deciduous or sometimes persisting dead on winter stems; petiole 20–80 mm wide with dilated, hollow base covering axillary bud; blade \pm round, 90–300 mm, truncate to cordate at base, lobes long-triangular with sinuses $1/3$ – $2/3$ blade length, entire or with various-sized, widely spaced teeth on lobe margins, acute at tip, palmately 3-veined from base or pseudopalmately veined with 1 vein at base, velveteen tomentose with light brown hairs on expanding surfaces, upper surface becoming glabrescent, lower surface remaining tomentose. **Staminate inflorescence:** head, arising when leaves begin to emerge from dormant bud, with 2–5 ball-like heads pendent on a lax, zigzagged rachis, the rachis 25–80 mm long and < 2 mm diameter, abscising after all pollen released, lateral heads sessile, head many-flowered with dense, tightly packed flowers, bracteate; bract subtending peduncle on axil side, open, unequally 2-lobed, 2–4 mm long, lobes acute, densely hairy; peduncle 5–40 mm long, densely tan-tomentose; head subspheroid, 8–11 mm, green often with a red blush, breaking apart in age to reveal a small, solid core, the core golden villous between flowers; bractlet subtending flower minute. **Staminate flower:** radial, 2.5–3 mm long; **perianth (petals)** 3–4, inconspicuous and hidden by hairs, rounded and knoblike, ca. 0.4 mm long, fleshy; **stamens** 3–4, free, alternate with petals; filaments 0.3–0.4 mm long, greenish; anthers basifixed, dithecal, wedge-shaped with a fleshy, umbrellalike (peltate) cap covering anthers, ± 2.5 mm long (including cap), sacs pale yellow with central connective green, cap having some hairs, longitudinally dehiscent; pollen pale yellow, copious, dry, airborne; **pistils** if present = minute pistillodes (sterile). **Pistillate inflorescence:** head, arising when leaves emerging from dormant buds, with (2–)3–7(–9) ball-like heads pendent on a lax rachis (like staminate inflorescence but not zigzagged), the rachis ca. 2.5 mm diameter, lateral heads sessile, head many-flowered (± 100), flowers sessile, bracteate; bract subtending peduncle sheathing and closed, unequally 2–3-lobed, 4–8 mm long, often reddish, lobes acute to obtuse, with parallel veins, hairy; axis in fruit to 250 mm long, persistent until next spring; bract subtending head crownlike, 1–2 mm long, greenish with red to copper teeth or margins; head spheric, at anthesis > 10 mm diameter and enlarging, dark red due to numerous pistils. **Pistillate flower:** radial; **perianth (sepals)** 3–4, inconspicuous; **stamens** = 3–4 staminodes (sterile), compressed club-shaped, ± 1.2 mm long, subsessile, translucent with green or rose at tip, tomentose below tip dome; **pistils** (3–)5–9, free, ± 4 mm long; ovary superior, with colorless basal

hairs, 1-chambered with several ovules; style with decurrent stigma along inner face, ascending and spreading (never straight), red. **Fruits:** achenes, on fruiting heads 20–25(–30) mm diameter, typically 1-seeded, ± club-shaped with beak (persistent style), 7–10 mm long; fruit body 3.5–6.5 × 1.2–1.7 mm, several-sided or not, brown, with scattered dendritic hairs and persistent swollen bases of shed hairs, the basal hairs many, ascending and bristlelike, < achene, golden brown, unbranched; abscising from head or persistent; beak ± = fruit body, with terminal hook or not. Early February–early April.

Native. Deciduous tree codominant along permanent streams of riparian woodland in SMM and SH. Pendent staminate and pistillate inflorescences of *Platanus racemosa* arise from dominant buds with the new foliage. Staminate structures are smaller, have a zigzagged axis, and are short-lived; for each head, the mass is mainly anther sacs, breaking apart from the open edge. It is very difficult to dissect a flower to observe the perianth, and the dominant features are the wedge-shaped anthers (several per flower), each having a green, calluslike cap. Pistillate heads are very colorful because they have dark red pistils, but sandwiched between the pistils of each flower are the green “caps” of aborted stamens (staminodes).

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