

Vascular Plants of Williamson County

Platanus occidentalis var. *occidentalis*, EASTERN SYCAMORE, AMERICAN SYCAMORE
[Platanaceae]

Platanus occidentalis L. var. *occidentalis*, EASTERN SYCAMORE, AMERICAN SYCAMORE. Tree, winter-deciduous, with 1 thick trunk, trunk erect to ascending, branching somewhat open, in range 12–30+ m tall; monoecious; shoots with emerging leaves and young axes densely tan-tomentose and covered with branched (dendritic) hairs, having a distinctive smell when crushed; bark on large branches and trunk with dark brown cracked bark but often peeling in stiff flakes (exfoliating) producing smooth patches of chalky white to pale brown before aging. **Stems:** cylindric, zigzagged and knobby with projecting leaf buttresses, internodes to 75 mm long, on young shoots olive to brown, becoming glabrescent, with encircling stipular scars; axillary buds conic; cataphylls long-strigose with pale, unbranched hairs. **Leaves:** helically alternate, palmately lobed with 3 principal lobes, petiolate, with stipules; stipules 1, leafy aging papery, sheathing stem, lower portion 3/4-sheathing, to 6 × 8 mm, parallel-veined, reddish, densely hairy, blade of stipule 7-lobed, to 6 mm long, strongly wavy with the lobes alternately up and down; deciduous; petiole 30–65 mm wide with dilated, hollow base covering axillary bud, base somewhat ridged, above base cylindric and tough; blade 2-lobed with shallow sinuses, 100–250 × < 140–310 mm, length < width, truncate or broadly tapered to cordate at base, with to 8 broad, widely spaced acute teeth per lobe, acute to acuminate or with tail-like point at tip, pseudopalmately veined with 1 vein at base then 3-branched palmately above (to 10 mm from leaf base), principal vein to each lobe and raised on lower surface, velveteen with dense, tannish tomentose hairs on expanding surfaces, upper surface becoming glabrescent except along principal veins and margins, lower surface remaining tomentose. **Staminate inflorescence:** head, spikelike with sessile flowers, arising when leaves begin to emerge from dormant bud, with 1 ball-like head on a lax peduncle, 10–11 mm across with core 4 × 3 mm, abscising after all pollen released, many-flowered with dense, tightly packed flowers, bracteate; bract subtending peduncle on axil side, closed, unequally 2-lobed with saddle on 1 side and lobes on opposite side, 4–5 mm long, closed portion 2 mm long, lobes acuminate and sinus ca. 2 mm long, densely hairy often with orangish hairs; peduncle 35–60 mm long, greenish, with colorless hairs; head subspheroid, 10–11 mm, green or with a red blush, breaking apart in age to reveal a small, solid core, the ellipsoid core greenish in x-section, pale golden villous between flowers, the hairs < 1 mm long. **Staminate flower:** radial, ca. 3 mm across (obscurely defined on surface), 4 mm long; **perianth (petals)** 3–4, conspicuous on core and exerted above hairs, club-shaped to clove-shaped and knoblike, 1–1.4 mm long, fleshy and translucent-white, glabrous, lower portion stalklike and often 3-sided, upper portion mostly 3-lobed but irregularly so and 0.5–0.9 mm across; **stamens** 3–4, free, alternate with petals, individually and readily abscising; filaments 0.35–0.4 mm long, whitish; anthers basifixed, dithecal, wedge-shaped and somewhat compressed with a fleshy, umbrellalike (peltate) cap covering anthers, ± 3.5 mm long (including cap), sacs along opposite sides and pale yellowish white with central connective green, cap green having some colorless hairs, longitudinally dehiscent to outer side; pollen whitish, copious, dry, airborne; **pistils** if present = minute pistillodes (sterile). **Pistillate inflorescence:** head, spikelike with sessile flowers, arising when leaves

emerging from dormant buds, with 1 ball-like head pendent on a lax peduncle, head many-flowered, flowers sessile, bracteate; bract subtending peduncle sheathing and closed, weakly lobed to toothed, 6–8 mm long, pale green, densely hairy with some hairs orangish; peduncle cylindric, 15–55 mm long increasing in fruit, greenish beneath dense tomentum; bract subtending head at top of peduncle crownlike, 1–2 mm long, membranous with coppery teeth and hairs on margin; head spheric, at anthesis 9–11 mm diameter and enlarging, mostly green with red due to styles of numerous pistils; bractlet subtending flower membranous (concealed by hairs and wedged between flowers), semicircular to short fan-shaped or deltate, mostly to 1 × 1.5 mm, aging pale brownish with fine teeth and hairs on margins. **Pistillate flower:** radial, ca. 3 mm across; **perianth (sepals)** 3–4, inconspicuous; **stamens** = 3–4 staminodes (sterile), compressed club-shaped, ± 1 mm long, subsessile, green, tomentose; **pistils** 5–9, free, mostly ascending, ± 4 mm long; ovaries superior, subspheroid to obovoid, ca. 1 × 0.5 mm, green, with colorless basal hairs < 0.5 mm long, 1-chambered with 1–2 ovules; style with decurrent stigma along inner face to top of ovary, ascending and spreading (never straight) curved to recurved or somewhat coiled at top, red mostly above midpoint. **Fruits:** achenes (folliclelike), on fruiting heads in range 21–28+ mm diameter, achenes of each flower abscising individually, each typically 1-seeded, ± club-shaped and 4-sided with short beak (persistent style), fruit body 7–8 × 1.4–1.6 mm, light golden brown but often purplish on top, with some hairs on sides but denser dendritic hairs and persistent swollen bases of shed hairs on top, having a tuft of many, ascending, straight stiff hairs attached to base, the hairs (< 2–)4–7 mm long, pale golden brown, not barbed; beak short, without terminal hook; peduncle in fruit 50–75 mm long, when aged eventually separating into several fibers.

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