

Vascular Plants of Williamson County

Castilleja indivisa – TEXAS PAINTBRUSH, ENTIRE-LEAF PAINTBRUSH
[Orobanchaceae/Scrophulariaceae]

Castilleja indivisa Engelm., TEXAS PAINTBRUSH, ENTIRE-LEAF PAINTBRUSH. Annual, hemiparasitic, taprooted, 1-stemmed at base, unbranched or having several spreading to ascending lateral branches, 14–38 cm tall; shoots with only cauline leaves, leaves ± clasping, villous with long hairs and glandular-hairy with various sizes of stalked glandular hairs. **Stems:** ridged, to 2.5 mm diameter, 2-ridged descending from each leaf, tough, green or tinged red to purple-red. **Leaves:** helically alternate, simple, sessile and ± clasping, without stipules; blade linear-lanceolate, to 85 × 15 mm, the widest near base and long-tapered to tip, entire, long-acuminate at tip, mostly 5-veined at base with principal veins sunken on upper surface and raised on lower surface. **Inflorescence:** spike, terminal, 10+-flowered, often broader than long, bracteate, soft-hairy and with stalked glandular hairs; rachis ridged, with 3 ridges descending from each bractlet, purple-red, densely long-hairy with hairs to 3 mm long and various lengths of glandular hairs having colorless heads; bractlet subtending flower spreading, leaflike, < 60 mm long, at the lowest 2–3 nodes green, acute at tip, at other nodes shorter and scarlet (light yellow in yellow form) above midblade and transitioning to obovate rounded at tip, 23–25 mm long, having 3 principal veins raised on lower surface and ± keeled, some longer hairs on upper surface, margins, and along veins on lower surface, scarlet (light yellow) tissue densely puberulent with pigmented hairs. **Flower:** bisexual, bilateral, 8–9 mm across; **calyx** 2-lipped, lacking lobes, at anthesis 15–18 mm long aging to 26 mm long; tube narrowly funnel-shaped compressed somewhat side-to-side, 2 mm wide at base and 4 mm wide at orifice, white with raised green veins to lips, long hairs along raised veins; lips fan-shaped truncate to slightly 2-lobed (scarcely notched), ca. 7 mm wide and aging to 9 mm long, cream-colored tinged reddish (pigment absent in yellow form) above midpoint aging with wider and more conspicuous band, with 2 prominent veins (to 2 “lobes”), surfaces with stalked glandular hairs; **corolla** 2-lipped, 26–27 mm long, white; tube constricted above level of ovary, ca. 8 mm long, throat slightly expanded; upper lip = hood with opening to lower side and outrolled margins, white with green back, glandular-hairy on green and along veins; lower lip ca. 2 mm long, 3-lobed deeply infolded between lobes, central lobe < 1 mm long, lateral lobes 1–1.2 mm long, green, ± rounded with wavy margins, with stalked glandular hairs; **stamens** 4 in 2 pairs, long stamens attached at top of corolla tube, short stamens attached just before lower corolla lip; filaments oriented to corolla hood, ca. 9 mm long (long stamens) and 5–5.5 mm long (short stamens), white, glabrous; anthers dorsifixed, dithecal, 2.6–2.9 mm long with sacs conspicuously offset, light orange-yellow to light yellow orange (light yellow in yellow form), longitudinally dehiscent; pollen light orange-yellow (light yellow in yellow form); **nectary disc** surrounding base of ovary, dark green, nectar-producing; **pistil** 1, 18–19 mm long; ovary superior, ovoid, 3 × 1.2–1.3 mm, green, glabrous, 2-chambered, each chamber with many ovules attached to center; style exerted 1.5–3 mm, white below where exerted pale green to light green; stigma capitate, spheroid unequally 2-lobed, 1 mm diameter, green. **Fruit:** capsule, loculicidal, many-seeded, persistent on dead plant, ovoid, 9.5–12 × 4.8–6 mm (not including fine tips on valves), having 2 chambers of slightly different widths; surrounded by papery, pubescent corolla.

Seed: club-shaped to wedge-shaped truncate at top, 0.8–1.3 × 0.4–0.6 mm, light brown to red-brown, straight, deeply honeycombed with transparent, thin chamber walls.
A. C. Gibson