

Castilleja affinis Hooker & Arnott subsp. *affinis*, COAST INDIAN PAINTBRUSH. Perennial herb, photosynthetic root parasite (hemiparasite), several–many-stemmed at base, ascending to ± erect, 20–75 cm tall; shoots with only cauline leaves, typically villous and glandular-hairy, with short and long hairs having heads, surface not oily. **Stems:** ridged, to 3 mm diameter, with 2 ridges descending from each leaf, internodes to 130 mm long, villous with subdivided (septate) hairs (sometimes sparsely so) and becoming finely pubescent approaching inflorescence. **Leaves:** helically alternate, simple and unlobed to fan-shaped or sometimes pinnately lobed, sessile and often weakly clasping (not clasping), without stipules; blade linear to lanceolate (unlobed) to ovate or obovate in outline, 15–90 mm long with spreading lobes (when lobed), and 1.5–10 mm wide (when unlobed) and to 75 mm wide with ascending lobes, rounded at base, entire, acute at tips, 3-veined at base or 5-veined on broader blades, ± parallel-veined below lobes, with principal veins sunken on upper surface and conspicuous and raised on lower surface, pubescent and sparsely villous and having some short, capitate glandular hairs. **Inflorescence:** leafy spike, terminal, dense, cylindric, 50–300 × 30–50 mm in fruit, brilliant orange-red or vivid to bright red within a single population (rarely bright yellow), of many helically arranged, erect, sessile flowers, bracteate, villous and more densely glandular-hairy than shoot; rachis strongly ridged like stem; bractlet subtending flower leaflike and enveloping flower, in range 21–26 × 12–20 mm, typically (1)3–6-lobed, only green throughout inflorescence or green below lobes and brightly colored above (yellowish between green and red, upper part of inflorescence), broadly tapered at base, strongly 3-veined at base, villous primarily on green tissue, glandular-pubescent with capitate hairs throughout, lateral lobes oblanceolate, ascending, acute to obtuse at tips, separated from rest of bract by a sinus 11–17.5 mm deep, the middle lobe 2× wider than other lobes, abruptly acuminate at tip, separated from intermediate lobes by a sinus 1.5–6 mm deep, spreading in fruit; pedicel ± absent. **Flower:** bisexual, strongly bilateral, 3–3.5 mm across; **calyx** 2-lipped side-to-side and tubular, in range 15–20 mm long, villous and glandular-pubescent (sometimes villous hairs also capitate-glandular); tube cylindric, 8–12.5 mm long, >> lips, vivid to strong red along upper and lower sinuses, villous, not pleated, not saclike at base, with 4 principal veins (1 to each lobe); sinuses between lips 6.5–10 mm deep (lower sinus) and 6–9 mm deep (upper sinus), lateral lobes vivid to strong red or pale yellowish green with yellowish pink on margins, acute at tip, separated by sinus 2.5–5.5 mm deep; **corolla** 2-lipped, in range 17–25 mm long, pale greenish yellow tinged pink on exposed surface; tube 6–12 mm long, 2–4 mm wide below orifice; lower lip erect, 3-lobed, 1.5–2 mm long, greenish, glabrous, each lobe separated by inward bulges extending partially along throat, lobes acute, sometime reddish at tip; upper lip (galea) beaklike, in range 7–14 mm long, folded lengthwise along a thick, greenish rib, inrolled on membranous margins, acute to 3-toothed at tip, glabrous at base becoming densely pubescent on upper edge near tip, reddish to greenish yellow on margins; **stamens** 4, lacking staminode, fused to corolla at different levels, 2 arising below lower lip, 2 arising closer to corolla orifice and below upper lip (galea), included ± at level of throat orifice; filaments 10–12 mm long, light yellow; anthers positioned within tip of galea, dorsifixed but connective extended, obliquely dithecal, 2.5–3.4 mm long, light orange-yellow, narrowly arrow-shaped at base, glabrous, longitudinally dehiscent; pollen light yellow; **nectary** fused to upper side of ovary base, obliquely semicircular, dark green; **pistil** 1; ovary superior, asymmetrically narrowly

ovoid, 3.3–4 × 1.5–2 mm, green, glabrous, 2-chambered with many ovules attached to center; style reaching tip of corolla and hanging below galea or exserted, mostly straight but bent 90° just below stigma, yellowish white or greenish where exposed; stigma slightly 2-lobed, 0.5 mm diameter, dark green, short-papillate. **Fruit:** capsule, loculicidal, enveloped by persistent perianth, dehiscent by 2 valves, many-seeded, ovoid, 16–18 × 5.8–7.7 mm, brownish, ridged on front and back faces, grooved on sides, with a beak at tip compressed side-to-side. **Seed:** oblanceoloid to inversely conic-pyramidal, 1.4–2.2 × 0.6–1.2 mm, light tan to brown, straight or arched, deeply honeycombed with thin chamber walls. Mid-December–early July.

Native. Perennial herb observed in flower during winter and spring but in some years with blooms extending into early summer, occurring from the immediate coast to interior slopes with coastal sage scrub, chaparral, and southern oak woodland. *Castilleja affinis* is the most often seen local species of red Indian paintbrush, and it is delightful to view the several shades of red exhibited within each population. Bractlets and calyx are the brilliantly colored structures, and red pigmentation attracts hummingbirds as pollinators. An individual with bright yellow bracts and flowers has been collected in range (e.g., at SMMNRA Cheeseboro).

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