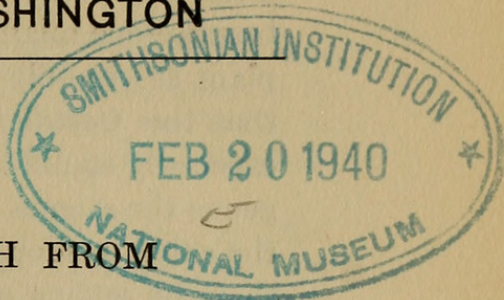


PROCEEDINGS
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A NEW INDIAN PAINT-BRUSH FROM
MOUNT RAINIER.

BY FRANCIS W. PENNELL AND GEORGE NEVILLE JONES.

With thousands of persons visiting its cool heights every year one would suppose that the flowering plants occurring on Mount Rainier or indeed throughout the whole area of the surrounding National Park would now be fully known to science. Ten years ago the senior author thought that whatever still awaited description would prove to be inconspicuous species or else members of genera of unusual taxonomic difficulty. It was in August, 1927, that this complacency was roughly shaken when Mr. F. A. Warren sent him a striking and beautiful *Pedicularis* which proved to occur widely over the Park, and this past summer the senior author was surprised to note the frequency and showiness of *P. rainierensis* Pennell & Warren¹ near Yakima Park, on the northern side of Mount Rainier. Here, on August 3, 1937, there was seen yet another member of the Scrophulariaceae, which, like the *Pedicularis*, has remained undetected, and which also seems likely to prove a locally frequent endemic of this mountain area.

On the previous evening, during an inspection of the small herbarium assembled at the Yakima Park headquarters, the naturalist, Mr. Edward Young Danner, called attention to this odd *Castilleja*, so different from the showy members of its genus on Mount Rainier, and the next day he guided the senior author to it in the meadow below Yakima Park in the direction of Mount Rainier itself. There, by a brook and half hidden by the grasses of an alpine meadow, grew this obscure Indian Paint-Brush. No wonder it has escaped collection! The

¹ Bull. Torrey Bot. Club 55 : 317. 1928.

corollas stay hidden within the pale yellow calyces, and the latter are shorter than the green or dull vinaceous-brown leafy bracts—one might be excused for supposing that here was some plant as yet only in bud. But inspection of the flowers showed that this *Castilleja* was in full blossom, and one detail seemed especially significant. In contrast to the usual condition of this genus the stigma was not extruded, but remained hidden within the calyx in such a position as to make it seem wholly probable that the setting of seed is by habitual self-pollination.

On reaching Seattle the senior author was again confronted with specimens of the same species, this time by the junior author, who has had a longer and more intimate acquaintance with the plant. He had first found it in the fruiting condition at Owyhigh Lakes, in September, 1936. In August, 1937, abundant flowering material was collected in Berkeley Park.

The following description has been prepared jointly. Foliage and flowering features have been checked carefully against the type specimens gathered at Yakima Park this summer, but fruiting data have been derived from specimens in the junior author's collection in Seattle.

***Castilleja cryptantha* Pennell & G. N. Jones, sp. nov.**

Perennial. Stems erect, tufted, slender, simple, 1–1.5 dm. tall, hirsute-pubescent throughout. Leaves linear-lanceolate, acuminate, 2–3 cm. long, hirsute-pubescent on both surfaces, the lowermost entire, the upper with a single pair of slender linear lobes. Bracts similar but slightly smaller, green or dull vinaceous-brown, 3-cleft, longer than the flowers. Spikes 3–8 cm. long. Calyx pilose-hirsute, 15 mm. long, about equally cleft medianly for the distal third of its length, the lateral segments slightly toothed at apex (actually, the sepals united medianly about two-thirds their length and laterally nearly to apex), the lobes only about 0.5 mm. long; calyx proximally greenish-yellow, distally “picric yellow” to “pale lemon-yellow” (Ridgway). Corolla 15 mm. long, about equaling and wholly included within the calyx; tube about 10 mm. long, loosely hirsute; galea 4–5 mm. long, puberulent, its narrow tip projecting or slightly de-curved; lower lip 2–3 mm. long, proximally slightly inflated and with 3 green ridges which distally pass into the pale or white lobes. Anthers 1.5 mm. long, glabrous. Stigma included within the galea. Capsule 6–7 mm. long, ellipsoid, apiculate. Seeds 1.5 mm. long, ovoid, foveolate.

Perennis; caulis erectus gracilis simplex hirsuto-pubescent 1–1.5 dm. altus; folia hirsuto-pubescentia lineari-lanceolata acuminata 2–3 cm. longa, infima integra, superiora trifida; bracteae virides trifidae calycem excedentes; calyx piloso-hirsutus 15 mm. longus in duas partes laterales aequaliter vel subaequaliter fissus, lobis ultimis flavis ca. 0.5 mm. discretis;

corolla 15 mm. longa inclusa, galea 4-5 mm. longa, labio inferiore 2-3 mm longo; stigma inclusum; capsula 6-7 mm. longa apice apiculata; semina 1.5 mm. longa, testa membranacea profunde foveolata.

Type.—Grassy meadow, at an altitude of 6300 to 6400 feet (1900 meters), Yakima Park, Mount Rainier National Park, Washington, collected in flower August 3, 1937, by F. W. Pennell & E. Y. Danner, no. 21173; in Herb. Academy of Natural Sciences of Philadelphia, isotype in Herb. University of Washington at Seattle.

Additional collections seen.—Wet meadow near Mystic Lake, alt. 5700 feet, July 17, 1928 (flower), *F. A. Warren*; Grand Park, alt. 5500 feet, July 6, 1934 (flower), *Charles Landes*; subalpine meadow, alt. 5200 feet, Owyhigh Lakes, September 12, 1936 (fruit), *G. N. Jones* 9667; Berkeley Park, August 24, 1937 (flower), *G. N. Jones* 10494. These specimens are in the Herbarium of the University of Washington at Seattle.

These records show that the species is locally frequent in subalpine meadows on the northern side of Mount Rainier, that it flowers in July and August and fruits in September.

The relationship of this peculiar Indian Paint-Brush is not as yet established, but its most obvious resemblance is to *Castilleja indecora* Piper,² an endemic species of the Wallowa Mountains of northeastern Oregon. The following distinctions between them appear to exist:

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|---|------------------------|
| Corolla 20 mm. long, the lower lip about one-third the length of the galea, the tip of the latter barely extruded beyond the calyx; stigma extruded; calyx cleft more deeply on anterior side; bracts yellowish at tip; leaves all entire, sparsely pubescent..... | <i>C. indecora</i> . |
| Corolla 15 mm. long, the lower lip about two-thirds the length of the galea, the tip of the latter as well as the stigma included within the calyx; calyx cleft equally anteriorly and posteriorly; bracts green or dull vinaceous throughout; leaves, except the lowermost, trifid, hirsute-pubescent..... | <i>C. cryptantha</i> . |



Pennell, Francis W. and Jones, George Neville. 1937. "A new Indian paint-brush from Mount Rainier." *Proceedings of the Biological Society of Washington* 50, 207–209.

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