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## A NEW SUBSPECIES OF *PEDICULARIS DENSIFLORA*

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*Pedicularis densiflora* Benth. subsp. *aurantiaca* subsp. nov. Habitus quam in specie proprio laxior; galea 2-18 mm. longa, 4-6 mm. lata; floribus luteis, aurantiacis vel coccineis; bracteis oblanceolatis, plus aut minus laciniatis.

*Type*, from a burn in manzanita brush, Yellow Pine Forest, between the camp ground and the lake, Lake Almanor, Plumas County, California, at 4300 feet, May 30, 1957, *E. F. Sprague 1206* (RSA no. 112,883). Other collections—Plumas County: Lake Almanor, *Sprague 1202* (RSA), *1214* (RSA); 4.2 miles west of Mineral, *Sprague 1217* (RSA); 6 miles southwest of Viola, *Sprague 1231* (RSA); Woodleaf, *Rose in 1931* (CAS). Butte County: Jonesville, *Bassett in 1923* (CAS). Shasta County: Montgomery Creek, *Bethel in 1923* (CAS). Sierra County: Rebel Ridge, West Tahoe Forest, *L. S. Smith in 1926* (CAS).

In habit the proposed subspecies differs from the typical coastal form in being more consistently procumbent and does not reach the maximum height of that subspecies. The most conspicuous characters are the proportionately larger galea (12-18 mm. vs. 6-12 mm. long and 4-6 mm. vs. 3-4.5 mm. wide) and the orange-red to yellow color vs. intense purple-red. The floral bracts in the new subspecies are oblanceolate and somewhat laciniate, whereas subspecies *densiflora* has lanceolate bracts with coarse serrate margins. The congested spike seems more capitate because of the larger flowers, few of which are open at one time. The galea has a well developed apiculate tip and its distal abaxial margins curve up approximately half the depth of the deeper galea. In the coastal form the galea is strongly truncate and its margin is generally straight. In the new subspecies the conspicuously narrow tube is long exerted at maturity and the shorter throat appears more abruptly expanded. Lobes of the lower lip are acute and not rounded and erose as in most coastal populations. The lower lip is often apparent within the ventral sinus of the calyx at anthesis.

This subspecies intergrades to the south in the mountains of Fresno and Tulare counties and to the northwest in the region from Shasta County to Trinity and Siskiyou counties, with plants having purple-red flowers subtended by lanceolate bracts. In its area in Butte, Plumas, Lassen and eastern Shasta counties it grows in gravelly soil of open pine forests containing *Pinus ponderosa*, *P. lambertiana*, *Abies concolor*, *Libocedrus decurrens* and *Pseudotsuga menziesii*. Occasionally it is found in nearly pure stands of *Abies concolor*, as near Fireking on Highway 89, or in areas of *Arctostaphylos patula*, which follows burns in the pine forest, as at Lake Almanor. Since examination showed that its haustoria were more frequent on pine and fir roots even when the plant was growing within mats of *Ceanothus prostratus* or in the shade of *Arctostaphylos*, a host preference would indicate a further distinction. The coastal forms appear to prefer *Adenostoma* or *Arctostaphylos* in the southern part of the range and broad-leaved trees in the northern part.