

reflectentibus et marescentibus, laxe villosis vel sublaevibus: calyce ebracteolato 9-10 mm. longo, subter dense villoso pilis prope 2 mm. longis, labio superiore diverso 2-dentato, prope 2 mm. longo, inferiore subrecto vel ad basin paulo inflato 3 mm. lato 2-dentato, sinu plerumque sine vestigio; corolla pallido-rosea vel-purpurea; vexillo 12-14 mm. longo, 7-8 mm. lato, apice paulo contracto, rotundato vel truncato, plus contracto ungue 2-4 mm. lato; alis 11-14 mm. longis, 5-7 mm. latis, ad basin non ciliatis; carina 9-11 mm. longa, subrecta: leguminibus usitatibus prope 14 x 8 mm.; seminibus pallidis maculatis, 4.5 x 4 mm.

WASHINGTON. Without definite locality, 1889, *G. R. Vasey 259* (TYPE, US 296664; type-duplicates, G, NY). Yakima County: Yakima region, 1882, *T. S. Brandegee 42* (UC); North Yakima, Oct., 1885, *T. S. Brandegee* (UC); Fritillaria Club, North Yakima, 1890, (US); Toppenish, 17 July, 1897, *V. Bailey 91* (US); Yakima, 3 June, 1898, *A. B. Leckenby* (US); North Yakima, 29 May, 1899, *J. B. Flett* (US); Wenas, 1 June, 1902, *Griffith & Cotton 85* (US, NY). Kittitas County: Ellensburg, 25 June, 1897, *K. Whited 536* (US); Ellensburg, June, 1897, *A. D. E. Elmer 371* (US, NY).

Seemingly peculiar to the valley of the Yakima River in central Washington. The flowers are relatively large with broad petals. Perhaps the strongest individual character is that the floral bracts are tardily or not at all reflex-withering as the flower-buds open. The seeds are flesh-color, mottled with a pale reddish brown, the hilum of the darker color. FIG. 1 illustrates abnormal specimens of this variety.

*Fluviatilis* is Latin for "of a river," and refers to the habitat.

4d. *Lupinus subvexus transmontanus* var. nov. [FIG. 10.]

A var. *fluviatili* differt foliolis oblanceolatis plerumque acutis; calyce 9-11 mm. longo, sinu labii inferioris plerumque dentis vestigio instructo; vexillo apice angulato, 11-12 mm. longo, prope 6 mm. lato ad basin paulatim contracto.

Similar to var. *fluviatilis*, but the leaflets are usually acute at the apex, the floral bracts usually reflex and wither as the flower-buds open, the lower lip of the calyx has the vestigial median tooth, and the banner is evidently acute at the apex.

OREGON. Wasco County: Antelope, May, 1885, *T. Howell* (TYPE, US 20844; type-duplicate, PA). County not given: Carrant Creek, 11 May, 1885, *T. Howell 361* (G); John Day River, Crown Rock, 19 June, 1896, *V. Bailey 65* (US). Malheur County:

Malheur River, June, 1883, *Cusick 1113* (G). Jackson County: Antelope Creek, near Eagle, 4 June, 1898, *E. I. Applegate 2388* (US).

CALIFORNIA. Modoc County: meadow bank along stream, 28 July, 1893, *Milo S. Baker* (UC); shore of Goose Lake, Aug., 1895, *Mrs. R. M. Austin* (US); sagebrush at Tule Lake, 31 May, 1897, *E. I. Applegate 879* (US); Goose Lake, July, 1898, *Mrs. R. M. Austin & Bruce 154* (UC). Lassen County: Craigs, 1893, *M. S. Baker* (UC); Madeline Plains, June, 1898, *Mrs. R. M. Austin & Bruce 2145* (DS, NY, UC). Siskiyou County: Klamathon, 2 July, 1903, *E. B. Copeland*, Baker Distribution 3537 (US, NY, G); Klamath Hills, 13 May, 1909, *G. D. Butler 704* (UC); Klamath Hills, 21 May, 1910, *G. D. Butler 1373* (US, UC).

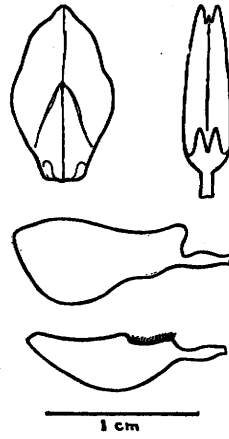


FIG. 10. LUPINUS SUBVEXUS TRANSMONTANUS C. P. Smith. *T. Howell* (US 20844).

*Transmontanus* is Latin for "across the mountains" and refers to the fact that the form is found on both sides of the Cascade ranges. It has been determined as *L. densiflorus*, *L. microcarpus*, and *L. malacophyllus*.

4e. *Lupinus subvexus Leibergii* var. nov. [FIG. 11.]

A var. *transmontano* differt altitudine 25-40 cm.; caule fistuloso ramoso aliquantum super basin; pedunculis ramisque elongatis; verticillis 4-5, distantibus; floribus suberectis mox post anthesin prope 13 mm. longis; bracteis mox marescentibus; calyce 2-dentato, 10 mm. longo, prope 3 mm. lato; vexillo 11 mm. longo, 5 mm. lato, apice acuto vel prope acuminato, ungue 4 mm. lato basi; alis 11 mm. longis; carina 8 mm. longa, recta.

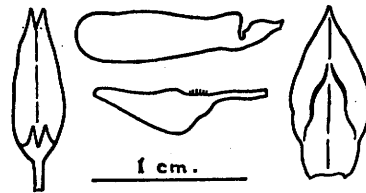


FIG. 11. LUPINUS SUBVEXUS LEIBERGHII C. P. Smith. *J. B. Leiberg 317* (US 291134).

Unlike the other northern races of *L. subvexus*, this variety is branched from well above the base and has the lower parts distinctly fistulous. The verticils are remote, the banner is almost acuminate at the apex and its claw is poorly defined, and the

flowers are evidently far from being showy. It is probably very local and rare and should be carefully studied in the field.

OREGON. Crook County: near Prineville, 955 m. alt., 1894, *J. B. Leiber* 317 (TYPE, US 291134; type-duplicates, G, US 291133).

4f. *Lupinus subvexus insularis* var. nov. [FIG. 12.]

Ad basin ramosus; foliis aliquantum congestis, foliolis gracilibus 2-3 cm. longis; racemis pluribus, floribus ad anthesin pendentibus ascendentibus postea, bracteis reflectentibus, bracteis petiolis pedicellisque laxe villosis; calyce dense villosus; carina curva.

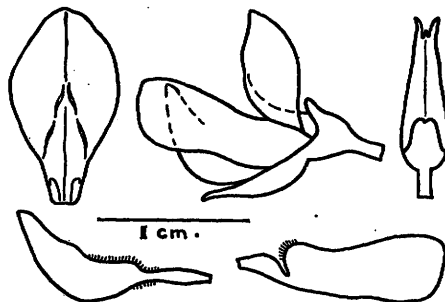


FIG. 12. *LUPINUS SUBVEXUS INSULARIS* C. P. Smith. *T. S. Brandege* (UC 82003).

Much branched near the base, foliage congested, leaflets slender and 2-3 cm. long; racemes several with the flowers spreading in anthesis but ascending soon afterwards, bracts reflexing as the flower-buds open, the bracts, petioles and pedicels loosely villous; calyx densely villous; keel distinctly curved.

CALIFORNIA. Santa Cruz Island: Apr., 1888, *T. S. Brandege* (TYPE, UC 82003).

Mounted on the sheet with the above specimen are some small plants (UC 82002) collected by Brandege at San Telmo, Lower California, 28 Apr., 1893. These may represent the variety *insularis*, but should prove to be different. They are so small and in such condition I prefer to attempt no definite classification of them at this time.

4g. *Lupinus subvexus phoeniceus* var. nov. [FIG. 13.]

Eramosus vel ad basin laxe ramosus, ramis ramulosis laxe breve-villosis; verticillis 2-5 vel plus, appositis vel distantibus; floribus ad anthesin pendentibus, postea ascendentibus vel suberectis, 12 mm. longis; calyce ebracteolato, 7 mm. longo, subter paulo