

**Notes on the Biennial and Perennial West American Species of Lappula**



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Very close to *L. arida*, differing in its smaller blue flowers, softer pubescence, and the smaller fruit without granulations on the ventral side.

8. *Lappula Cusickii* sp. nov.

Perennial, erect or ascending, 15–30 cm. high, the caudex thickly clothed with old leaf bases, the whole plant pale bluish-green with a very closely appressed fine pubescence, except on the petioles where it is hirsute-ciliate: radical leaves lanceolate, acute, 4–8 cm. long, the petioles equaling the blades; cauline leaves linear-lanceolate, acute, all but the lower sessile by broad bases, 2–5 cm. long: inflorescence corymbose, the false racemes 6–8-flowered: calyx-lobes linear, acute, 2 mm. long: corolla blue, 5–6 mm. broad; appendages short pilose, about as long as broad, the protuberance oblong, as long or longer; immature fruit 5 mm. long, the back flat, muriculate, and bearing about 10 short glochidiate bristles; marginal prickles flat, separate and rather distant, all glochidiate, shorter than the diameter of the nutlet.

Logan Mountains, eastern Oregon, 6500 feet altitude, in the shelter of juniper, 1 July 1901, *W. C. Cusick*, 2623.

This species is related to *L. arida*, differing in its smaller blue flowers and the separate marginal prickles of the nutlet.

9. *LAPPULA CAERULESCENS* Rydberg, *Flora Montana*, 328. 1900

This species is readily distinguished from any other described species by the long hairs of the corolla-appendages. At least one other undescribed species represented in the Gray herbarium by too scanty material, has a very similar corolla-appendage, so that this character alone can not be entirely relied upon.

The species as here interpreted shows considerable variation as regards pubescence, and in some specimens the flowers are apparently white.

MONTANA: Bridger Mts., 18 July 1897, *Rydberg & Bessey*, 4899.

WYOMING: Mammoth Hot Springs, 30 June 1899, *A. & E. Nelson*, 5602.

UTAH: Salt Lake City, May 1891, *Eastwood*; Salt Lake City, 30 April 1898, *W. Travers*; Salt Lake City, May 1889, *Sarah K. White*; Wasatch Mts., May 1869, *Watson*, 860; Pine Valley, June 1874, *Parry*, 172. In this plant the pubescence is hirsute, and it was included by Dr. Gray under *Echinosperrum*

*ursinum*. The fornix is exactly like that of the present species, but it is possible that fruiting material may show additional characters.

NEVADA: Battle Mts., June 1868, *Watson, 860*; Humboldt Mts., 27 May 18—, *Beckwith*.

In the original description of this species the fruit was not described. The following are its characters as it occurs on the Nelson specimen above cited:

Nutlets 3 mm. long; marginal prickles of two lengths, free to the base or nearly so, all glochidiate; back plane or with a more or less evident central ridge densely finely muriculate and bearing about ten short glochidiate prickles; ventral surface finely rugose.

10. LAPPULA HISPIDA Greene, *Pittonia*, 2: 182. 1891

*Echinosperrum diffusum* var. *hispidum* Gray, *Proc. Am. Acad.* 17: 225. 1882.

*E. hispidum* Gray, *Proc. Am. Acad.* 20: 259. 1884.

This species differs from any other which I have examined in having the corolla-lobes broadest at base. The species proper has been collected only by Cusick in eastern Oregon as follows: 1880, rocky hillsides of Pine Creek near the mouth, 855; 31 May 1898, hillsides near Snake River, 1906; 15 June 1898, Burnt River, 1906; without locality, 1885.

The Wilcox specimen referred here by Dr. Gray in the original description belongs to *L. cinerea* as above. The Watson specimen referred here with some doubt in the *Synoptical Flora* (2: 422) is an undescribed species.

11. LAPPULA CILIATA Greene, *Pittonia*, 2: 182. 1891.

*Cynoglossum ciliatum* Dougl.; *Lehm. Pugillus*, 2: 24. 1830.

*Echinosperrum ciliatum* Gray, *Proc. Am. Acad.* 17: 225. 1882.

The original specimens of this species were collected by Douglas according to the note in Hooker's herbarium, "On the gravelly banks of mountain streams near the head springs of the Columbia"; according to the note in Bentham's herbarium; "Kettle Falls and Spokane River, 1826."

The plant is quite common on the gravelly bluffs of Latah Creek and of the Spokane River within the environs of Spokane,