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THE TORREY BOTANICAL CLUB

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Studies on the Rocky Mountain flora — XX

PER AXEL RYDBERG

Phacelia nervosa sp. nov.

Phacelia alpina Rydb. Fl. Colo. 283, in part, as to the Colorado specimens. 1906.

Perennial, with a short rootstock; stems decumbent at the base, 1–3 dm. high, more or less hirsute and with short grayish hairs intermixed; lower leaves with petioles 2–7 cm. long, simple or with a pair of smaller lobes on the petioles; blades lanceolate, 2–5 cm. long, acute, hirsute on both sides, veins rather strong beneath; upper leaves sessile; inflorescence soon open; the racemes peduncled, in fruit 4–9 cm. long; calyx more or less tinged with purple, about as long as the corolla; sepals narrowly linear, acute, hirsute, with a strong midrib; corolla white or nearly so, pubescent, about 5 mm. long; filaments about twice as long as the corolla, slightly bearded at the base with short hairs; seeds lance-ovoid, 2.5 mm. long, brown, faveolate.

This was mistaken for *Phacelia alpina*, which it resembles in habit, but it differs in the longer and more open racemes, the longer calyx-lobes, which about equal the corolla and have a strong midrib, in the almost glabrous filaments, in the whitish instead of lilac corolla, and in the more acute seeds. It grows on high mountains at an altitude of 3000 m. or more.

COLORADO: Silver Plume, Aug. 24, 1895, *P. A. Rydberg* (type, in herb. N. Y. Bot. Gard.); same locality and date, *C. L. Shear* 3253; Mt. Harvard, Aug. 17, 1896, *C. L. Shear* 3790; 1896, *F. E. Clements* 408; near Ironton, San Juan County, July, 1899, *C. C. Curtis*.

Phacelia Burkei sp. nov.

Perennial, with a taproot; stems 2–3 dm. high, canescent; basal leaves 3–10 cm. long, petioled; blades lanceolate, entire, strongly veined, densely white-canescenscent on both sides; inflorescence branched, open; racemes elongated, 2–8 cm. long; calyx canescent and hispid-ciliate; lobes narrowly linear, obtuse, two thirds as long as the corolla, with a rather strong midvein; corolla pubescent, white, 4–5 mm. long; stamens about twice as long as

the corolla, villous-bearded; seeds 4, dark chestnut-brown, 2 mm. long, puberulent, ellipsoid, strongly but finely faveolate.

This resembles *P. leucophylla* Torrey in general habit, but differs in the narrow and more strongly ribbed calyx-lobes, the smaller and white corolla, and the more finely faveolate seeds.

IDAHO: Snake Country, *Burke* (type, in herb. Columbia Univ.).

WASHINGTON: Collector not given.

Phacelia leptosepala sp. nov.

Perennial, with a taproot and a more or less caespitose rootstock; stems ascending, hirsute, 1–3 dm. high; leaves usually simple, hirsute on both sides, 5–10 cm. long, oblanceolate or elliptic; the lower ones petioled; inflorescence with several short branches; calyx hirsute; lobes narrowly linear, hirsute, nearly as long as the corolla, acute; corolla white, glabrous or nearly so, 5 mm. long; filaments about twice as long, sparingly villous-bearded.

This species is probably most nearly related to *Phacelia nemoralis* Greene, but differs in the low, slender, ascending stems, the caespitose habit, the longer and narrower, acute sepals, and the less bearded stamens. It somewhat resembles *P. alpina* in habit, but differs in the narrow calyx-lobes almost equaling the white corolla and in the hirsute pubescence, which consists only of coarse hairs.

BRITISH COLUMBIA: Vermilion Lake, Aug. 5, 1905, *Edith M. Farr 1013* (type, in herb. N. Y. Bot. Gard.); Avalanche débris above Lardo, Selkirk Mountains, June 16, 1905, *Shaw 695*.

MONTANA: Mount MacDougal, 1901, *Umbach 139*; Sperry Glacier, 1903, *Umbach 826*.

Lappula leucotricha sp. nov.

Annual; stem 2–4 dm. high, slender, branched above, densely pilose, especially below, with long white hairs; basal leaves oblanceolate, 2–4 cm. long, softly pilose on both sides; stem-leaves linear or oblong, numerous; bracts linear-lanceolate; sepals linear, 2.5–3 mm. long, in fruit 4–5 mm.; corolla white, 3–3.5 mm. long, 3 mm. broad; fruit erect, about 5 mm. wide; nutlets about 2.5 mm. long, light, almost straw-colored; marginal prickles in one row, not united into a disk, but broadened below and flat, scarcely grooved; back strongly muricate.

This species is related to *Lappula occidentalis* (S. Wats.) Greene, but differs in the soft white spreading pubescence, the white

flowers, the smaller fruit with broader, flattened prickles. In *L. occidentalis* the prickles are only slightly broadened below, not flattened, and strongly grooved on the inside.

ARIZONA: Tucson, Apr. 20, 1894, *Toumey* (type, in herb. N. Y. Bot. Gard.); vicinity of Flagstaff, June 16, 1898, *MacDougal 122*; Clifton, Apr., 1881, *Rusby 281*.

UTAH: St. George, 1877, *Palmer 359*.

***Eremocarya muricata* sp. nov.**

Annual; stem slender, branched throughout with ascending branches, strigose; leaves linear, 2–5 mm. long, hispidulous, the hairs with pustulate bases; racemes short and dense, usually less than 1 cm. long; bracts oblong, 1–2 mm. long; sepals linear, obtuse, 1.5 mm. long, hispidulous on the margins and midvein; corolla white, 1 mm. long; limb scarcely 0.5 mm. wide; nutlets lanceolate in outline, long-acuminate, dull, finely muricate.

This species is somewhat intermediate between *Eremocarya micrantha* and *E. lepida*. It resembles the former most in habit, but differs in the more ascending branches, the shorter leaves, and especially in the narrower, muriculate and dull, instead of smooth and shining, nutlets. The latter resemble much those of *E. lepida*, but are narrower and more tapering upwards. *E. lepida* has much broader leaves and larger flowers.

UTAH: Southern Utah, 1874, *Parry 164* (type, in herb. Columbia Univ.).

ARIZONA: Near Camp Lowell, Apr. 13, 1881, *Pringle*; Prescott, 1883, *Rusby 745*; Tucson Mountains, Apr. 12, 1903, *Thornber*; Plains of Tucson, Apr., 1881, *Lemmon 203*; Mesa, near Tucson, May 14, 1883, *Pringle*; Apr. 25, 1906, *Shear 4235*; Tucson, Apr. 3, 1894, *Toumey*.

***Greeneocharis circumscissa* (H. & A.) Rydb. comb. nov.**

Lithospermum(?) *circumscissum* H. & A. Bot. Beech. 370. 1840.

Piptocalyx circumscissus Torr.; S. Wats. Bot. King's Exp. 240. 1871.

Eritrichium circumscissum A. Gray, Proc. Am. Acad. 10: 58. 1874.

Krynitzkia circumscissa A. Gray, Proc. Am. Acad. 20: 275. 1885.

Wheelerella circumscissa Grant, Bull. So. Calif. Acad. Sci. 5: 28. 1906.

Piptocalyx Torr. of 1871 is antedated by *Piptocalyx* Oliver of 1870 and therefore *Greeneocharis* Gürke & Harms was proposed instead of the former in the appendix to the Register of the Engler & Prantl, *Natürlichen Pflanzenfamilien*.^{*} This name was properly published, although no binomials were used. There was therefore no need of substituting another generic name *Wheelerella* as was done by Grant. The fact that the etymology is not as good as it might be does not at all invalidate *Greeneocharis*. Reluctantly the writer is forced to add another binomial to the already too many names of this plant.

Oreocarya spicata sp. nov.

Perennial, with a taproot; stem solitary and simple, virgate, hispid throughout; basal leaves numerous, spatulate, 2–5 cm. long, hispid on both sides; the hairs usually with pustulate bases; stem-leaves linear-ob lanceolate or linear, 4–9 cm. long, those of the inflorescence many times longer than the short flower clusters; inflorescence elongated, spike-like; calyx hispid, 4–5 mm. long, lobes oblong-lanceolate, obtuse; corolla 6 mm. long, 4 mm. broad; nutlets 4 mm. long, ovate in outline, scarcely keeled on the back, white and shining, smooth on the back, margins merely acute.

This species is closely related to *Oreocarya virgata*, from which it differs in the light-colored, smooth nutlets, the smaller corolla-limbs, shorter and broader basal leaves. The nutlets in *O. virgata* are more acuminate, brown or brownish gray, with a more distinct ridge on the back, more or less transversely rugose and tubercled on the back, and with sharper margins.

COLORADO: Artist's Glen, Aug. 1, 1901, *Clements 102* (type, in herb. N. Y. Bot. Gard.); North Cheyenne Cañon, July 14, 1896, *Ernst A. Bessey*; "Colorado," *G. W. Hulse*.

Cryptanthe leptophylla sp. nov.

Annual; stem simple, slender, erect, strigose throughout, 1.5–3 dm. high; leaves narrowly linear, 1–3 cm. long, 0.5–1.5 mm. broad, strigose; inflorescence cymose, short, at the end of the stem, and on a few small branches; calyx-lobes linear-filiform,

^{*} Gesamtregister 462. 1899.

3-4 mm. long, in fruit 8-10 mm. long, white-silky with long spreading hairs; corolla minute, shorter than the calyx; limb hardly 0.5 mm. wide; nutlets 3 mm. long, narrowly lanceolate, long-acuminate, strongly muricate; groove closed, 2-forked at the base.

The type sheet of this species was determined by Dr. Watson as *Eritrichium barbigerum*. It is abundantly distinct from *Cryptanthe barbigerum*, however, the main distinctions being the narrow strigose leaves, the strigose instead of hirsute or hispid stem, the minute corollas, and the narrower and differently shaped nutlets.

UTAH: St. George, 1877, *E. Palmer* 350 (type, in herb. Columbia Univ.).

***Cryptanthe confusa* sp. nov.**

Cryptanthe affinis Rydb. Mem. N. Y. Bot. Gard. 1: 330, in part. 1900.

Annual; stem rather stout, hispid, branched; leaves oblong or oblong-ob lanceolate, 2-5 cm. long, 3-8 mm. wide, coarsely hirsute; spikes at first very short, subcapitate, in age 4-5 cm. long; calyx-lobes 2 mm. long, lance-subulate, hispid, in fruit 3-4 mm. long; corolla about 3 mm. long; limb scarcely 1 mm. wide; nutlets ovate, 2 mm. long, light-colored, smooth, shining, thin-walled, attached by the lower half or two thirds; groove closed and simple to the base.

This species is related to *Cryptanthe affinis* and *C. leiocarpa*, but differs from both in the broader leaves. The nutlets are most like those of the former but the attachment extends somewhat higher.

WYOMING: Upper Madison Cañon, Yellowstone Park, Aug. 3, 1897, *Rydberg & Bessey* 4884 (type, in herb. N. Y. Bot. Gard.).

IDAHO: Beaver Cañon, June 27, 1895, *Rydberg*; Latah County, July 6, 1894, *Piper* 1940.

UTAH: Central Utah, 1875, *Parry* 67 (?).

***Cryptanthe grandiflora* sp. nov.**

Annual; stem branched, 2-4 dm. high, hirsute with white hairs; leaves broadly linear, lanceolate, or oblong, 3-5 cm. long, 5-10 mm. wide, hirsute, the hairs with pustulate bases; spikes lax, in fruit often 1 dm. long; calyx-lobes 3 mm. long, in fruit 5 mm., very hispid; corolla white, 4-5 mm. long; limb 5-6 mm. wide; nutlets ovate, 2.5 mm. long, shining, smooth, rather thin-walled; groove narrow, 2-forked at the base.

This species has been variously named *Cryptanthe leiocarpa*, *C. ambigua*, and *C. Torreyana*. It differs from the first in the 2-forked groove, from the second in the smooth nutlets, and from all in the large corolla. It is most related to *C. Torreyana*, having somewhat similar nutlets, but is easily distinguished from it by the large flowers and broad leaves. It may be the same as the large-flowered form of *C. Torreyana calycosa* referred to by Piper; * but it does not have the elongated calyx-lobes of that species and has three to four times as broad corolla.

IDAHO: Valley of Clearwater River, April 23, 1892, *Sandberg, MacDougal & Heller 10* (type, in herb. N. Y. Bot. Gard.); about Lewiston, April 30, 1896, *A. A. & E. Gertrude Heller 2998*.

WASHINGTON: Wawawai, May, 1897, *Elmer 775*; near Montezano, June 10, 1898, *A. A. & E. Gertrude Heller 3924*.

Mertensia pallida sp. nov.

Perennial, with a thick rootstock; stem glabrous, very pale, 5–8 dm. high, leafy; lower leaves oblanceolate, the upper narrowly lanceolate, 5–8 cm. long, glabrous or minutely muriculate, ciliolate on the margins, pale; inflorescence narrowly paniculate; pedicels usually strigulose or sometimes the hairs represented only by the somewhat pustulate bases; calyx-lobes oblong, about 1 mm. long, obtuse, ciliate on the margin; corolla about 1 cm. long, the tube about equaling the limb; filaments about 1 mm. long, dilated and at the apex broader than the anthers, which are about 2 mm. long.

This is related to *Mertensia ciliata* but differs in the paler narrower leaves, the smaller corolla, and the usually strigulose pedicels.

MONTANA: Lima, June 28, 1895, *Rydberg 2777* (type, in herb. N. Y. Bot. Gard.); June 30, 1895, *Shear 3395*; Spanish Basin, July 11, 1896, *Flodman 751*.

Mertensia Leonardi sp. nov.

Perennial, with thick rootstock; stem erect, glabrous, pale, 5–10 dm. high, leafy; leaves thin, glabrous and smooth beneath, more or less pustulate-muricate above, and ciliolate on the margins; the lower short-petioled; blades oblanceolate, 4–7 cm. long; the upper sessile, lanceolate or ovate, 5–15 cm. long; inflorescence much branched; pedicels sparingly pustulate; calyx-lobes lanceo-

* Contr. U. S. Nat. Herb. 11: 484. 1906.