

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 barbiger*, 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 Montesano, 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.