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ADDITIONS TO THE FLORA OF COLORADO—VII

WILLIAM A. WEBER, BARRY C. JOHNSTON AND RONALD WITTMANN

Weber, William A. (University of Colorado Museum, Campus Box 218, Boulder, CO 80309), Barry C. Johnston (U.S. Forest Service, Lakewood, CO 80225) and Ronald Wittmann (University of Colorado Museum, Campus Box 218, Boulder, CO 80309). Additions to the flora of Colorado—VII. *Brittonia* 33: 325–331. 1981.—The continuing study of the flora of Colorado has turned up 27 new records and has made necessary 14 new combinations and the re-evaluation or reinstatement of 6 species.

Rupert Barneby passed through Colorado many times on his sporadic collecting trips through the West, and invariably his sharp eye and prior knowledge of the flora enabled him to anticipate the occurrence of many species which had lain unnoticed under the noses of resident botanists. His discoveries have been a great stimulus to us, and looking to him as an example, we continue to find novelties each season.

The previous installment of this series appeared in *Phytologia* (Weber et al., 1979). Entries are presented under the following topics: new combinations; new Colorado records: indigenous species, adventive species; re-evaluations and reinstatements. Unless otherwise specified, herbarium documentation of these reports is in Herbarium COLO.

New Combinations

***Alnus incana* (L.) Moench subsp. *tenuifolia* (Nutt.) Breitung f. *incisa* (W. A. Weber) W. A. Weber, comb. nov.**

Alnus tenuifolia Nutt. f. *incisa* W. A. Weber, *Phytologia* 41: 486. 1979.

***Carex pensylvanica* Lam. subsp. *heliophila* (Mack.) W. A. Weber, comb. nov.**

Carex heliophila Mack. *Torreyia* 13: 15. 1913.

***Ceratochloa marginata* (Nees ex Steud.) W. A. Weber, comb. nov.**

Bromus marginatus Nees ex Steud. *Syn. Pl. Glum.* 1: 322. 1854.

Evidently this combination has never been effectively published. A. S. Hitchcock (1935) listed “*Ceratochloa marginata* Nees ex Steud. ex Jackson, *Index Kew.* 1: 487. 1893, presumably referring to *Bromus marginatus* Nees.”

***Ceratochloa polyantha* (Scribn.) W. A. Weber, comb. nov.**

Bromus polyanthus Scribn. in Shear, U.S.D.A. Div. Agrostol. Bull. 23: 56. 1900.

***Cleome serrulata* Pursh f. *inornata* (Greene) W. A. Weber, comb. nov.**

Cleome inornata Greene, *Pittonia* 4: 16. 1899.

This is a form with the stamens not at all exerted. The type collection from Grand Junction was said to have pale pink to white flowers, but the color is variable. A recent collection is at hand from Weld Co.: sandy shoulder of graded farm road ca 2 mi E of Fort Lupton, 16 Sep 1977, *D. L. & M. L. Denham* 5301.

Eremogone hookeri (Nutt. ex T. & G.) W. A. Weber, comb. nov.

Arenaria hookeri Nutt. ex T. & G. Fl. N. Amer. 1: 178. 1838.

Eremogone hookeri subsp. **desertorum** (Maguire) W. A. Weber, comb. nov.

Arenaria hookeri var. *desertorum* Maguire, Amer. Midl. Naturalist 46: 506. 1951.

Eremogone hookeri subsp. **pinetorum** (A. Nels.) W. A. Weber, comb. nov.

Arenaria pinetorum A. Nels. Bull. Torrey Bot. Club 26: 350. 1899.

Eremogone kingii (S. Wats.) Ikonn. subsp. **uintahensis** (A. Nels.) W. A. Weber, comb. nov.

Arenaria uintahensis A. Nels. Bull. Torrey Bot. Club 26: 7. 1899.

Oreocarya humilis Greene subsp. **nana** (Eastw.) W. A. Weber, comb. nov.

Oreocarya nana Eastw. Bull. Torrey Bot. Club 30: 243. 1903.

Oreocarya rollinsii (I. M. Johnst.) W. A. Weber, comb. nov.

Cryptantha rollinsii I. M. Johnst. J. Arnold Arbor. 20: 391. 1939.

Oreocarya weberi (I. M. Johnst.) W. A. Weber, comb. nov.

Cryptantha weberi I. M. Johnst. J. Arnold Arbor. 33: 71. 1952.

Rhus aromatica Ait. subsp. **pilosissima** (Engelm.) W. A. Weber, comb. nov.

Rhus trilobata var. *pilosissima* Engelm. in A.DC. Monogr. Phan. 4: 386. 1833.

The previous publication of this combination (Weber, Johnston & Wilken, 1979) neglected to cite the basionym.

Spergulastrum lanuginosum Michx. subsp. **saxosum** (A. Gray) W. A. Weber, comb. nov.

Arenaria saxosa A. Gray, Pl. Wrightianae 2: 18. 1853.

New Colorado Records

Indigenous species

CAREX SYCHNOCEPHALA Carey, Amer. J. Sci. II. 4: 24. 1847.

Hermann (1970) listed this for Colorado, but cited no specimen. This species of northeastern North America is not otherwise reported south of Montana.

BOULDER CO.: in drying mud of small pond, westernmost of Stapps Lakes complex, 0.5 mi NW of T2N, R73W, S26, 3 mi NW of Ward, 9550 ft alt., with *Ranunculus flammula*, *Eleocharis acicularis*, 28 Jul 1966, H. L. Clark & G. Arp 1286.

CAMISSONIA ANDINA (Nutt.) Raven, Brittonia 16: 285. 1964.

MOFFAT CO.: Stuntz Reservoir on Blue Mt., 7000 ft alt., 13 Aug 1957, Harrington 8739 (CS).

Harrington (1954) listed this species as reported but unsubstantiated.

CYMOPTERUS DUCHESNENSIS M. E. Jones, *Contr. W. Bot.* 13: 12. 1910.

RIO BLANCO Co.: red hills SW of Raven Ridge ca 14 mi WNW of Rangely, T2N, R104W, S23, 1680 m, in heavy red clay along tops and sides of the hills, 27 May 1979, *Weber, Johnston, Wingate & Kelso 1928*.

An endemic of the Uinta Basin barely entering Colorado here.

DRABA PAYSONII Macbride, *Contr. Gray Herb.*, n.s. 56: 52. 1918.

PITKIN Co.: rocky alpine summit of Electric Pass, 13,600 ft alt., 18 Jul 1971, *D. Hartman 6978* (COLO, COCO). Det. G. Mulligan.

ERIOGONUM PALMERIANUM Reveal in *Munz, Suppl. Fl. Calif.* 58. 1968.

MESA Co.: Colorado National Monument, Monument Canyon, loose sandy soil in open pinyon-juniper, 2 May 1975, *P. Hackney* (Colorado Nat. Mon. 957).

Harrington (1954) possibly was alluding to this when he listed *E. densum* Greene as being likely to occur in southwestern Colorado.

LINUM ARISTATUM Engelm. in *Wislizenus, Mem. N. Mex.* 101. 1848.

MONTEZUMA Co.: barren rocky hill, Four Corners, T32N, R20W, S20, 14 Jun 1949, *Weber 4854*. Det. C. M. Rogers in 1964.

LINUM PRATENSE (Norton) Small, *N. Amer. Fl.* 25: 69. 1907.

OTERO Co.: short-grass disclimax ca 6 mi S of La Junta, ca 4500 ft alt., 19 May 1969, *D. L. & M. L. Denham 2518*.

LOMATIUM FOENICULACEUM (Nutt.) C. & R. Subsp. MACDOUGALII (C. R.) Theobald, *Brittonia* 18: 15. 1966.

RIO BLANCO Co.: NW side of saddle of ridge just NE of radio towers, Mellen Hill WNW of Rangely, T2N, R103W, S10, 1885 m, 28 May 1979, *Weber, Johnston, Wingate & Kelso 1979*.

This is the Great Basin race, entering our area from southwestern Wyoming and eastern Utah.

MYOSURUS APETALUS Gay, *Historia Fisica y Política de Chile. . . Botánica* 1: 31. 1845.

JACKSON Co.: North Park, ca 16 mi WSW of Walden, on a level bench overlooking the Irvine Ranch near Roaring Ditch, T8N, R82W, S24, 2550 m, in a circular depression seasonally filled with water, 13 Aug 1979, *Weber 15486*.

Previous reports (as *M. aristatus* Benth.) were said to have been misidentifications of *M. minimus* L. (Harrington, 1954). The present collection appears to represent var. *apetalus*, with spreading acicular beaks and very short receptacles.

NAMA HISPIDUM A. Gray, *Proc. Amer. Acad. Arts* 5: 339. 1861.

MONTEZUMA Co.: between Rincon Canyon and East McElmo Canyon, just N of the Ute Indian Reservation, T35N, R20W, S26, 5100 ft alt., 23 Aug 1977, *Ratzloff 1568*.

The Brandegee collection cited by Hitchcock (cf. Weber, 1966) was merely from "Colorado."

PENSTEMON GRAHAMII Keck in Graham, Ann. Carnegie Mus. 26: 332. 1937.

RIO BLANCO Co.: Raven Ridge, ca 12 mi WSW of Rangely, end of ridge NW of Mormon Gap, T2N, R104W, S13, 1780 m, on white shale, Green River Formation, on ridgetops, 27 May 1979, Weber, Johnston, Wingate & Kelso 1923.

A Uinta Basin endemic barely getting into western Colorado.

ROOTALA RAMOSIOR (L.) Koehne in Martius, Fl. Bras. 13(2): 194. 1875.

BOULDER Co.: temporary pool, filled in early summer by overflow from Baseline lake, now empty but still muddy in low areas, with a few hummocks which are islands at high water, W of Cherryvale Road and the lake, 4 mi E of Boulder, with *Ammannia robusta*, 1, 8 Oct 1979, R. Wittmann 865, 896.

Several older collections have been detected in mixtures with *Ammannia*, which this species very closely resembles.

SAXIFRAGA DELICATULA (Small) Fedde, Just's Bot. Jahresber. 33: 613. 1906.

This is the most common of the *Saxifraga cespitosa* group, represented in herb. COLO from Boulder, Clear Creek, Custer, El Paso, Grand, Gunnison, La Plata, Larimer, and Summit counties. See discussion of this and the two following later in this paper.

SAXIFRAGA MICROPETALA (Small) Fedde, loc. cit.

BOULDER Co.: Niwot Ridge, 3–6 mi ENE of Mountain Research Station, 11,000–12,000 ft alt., 10 Jul 1979, K. A. Teare & D. W. Taylor 1221.

SAXIFRAGA MONTICOLA (Small) Fedde, loc. cit.

This species seems to be restricted to the most mesic tundra areas characteristic of east-west trending ranges. We have collections from Gunnison, Park, Pitkin and Summit counties. A characteristic specimen is:

GUNNISON Co.: bog below late snowbank, just N of summit of North Italian Mt., T13S, R84W, SW¼ S2, 13,100 ft alt., 17 Jul 1980, Johnston 2364.

SENECIO DIMORPHOPHYLLUS Greene var. INTERMEDIUS Barkley, Trans. Kansas Acad. Sci. 65: 362. 1963.

MONTROSE Co.: Smokehouse Campground, Uncompahgre Plateau, 8700 ft alt., M. Douglass 54-349.

The var. *intermedius* is much taller than the typical variety (up to 3–4 dm high), and has suborbicular to ovate-rotund leaves that are subcordate to truncate at the base, on narrow petioles. Formerly known only from the neighboring La Sal Mountains of Utah. A specimen from Bob Creek, collected "2 July" by Baker, Earle & Tracy, in Herb. Greeneanum, annotated by Greenman as *S. crocatus* Rydb., seems to be the same. There is no trace of orange pigment in the flowers, and the plants are tall, with the typical basal leaves and greatly reduced stem leaves.

SOLIDAGO NEMORALIS Ait. var. LONGIPETIOLATA (Mack. & Bush) Palmer & Steyermark, Ann. Missouri Bot. Gard. 22: 2650. 1935.

MONTROSE Co.: Escalante Canyon, ca 200 yds E of Cottonwood Springs, T51N, R13W, S31, 5600 ft alt., S-facing slope with *Distichlis*, *Sporobolus airoides*, 18 Aug 1979, Ratzloff 291.

Collected as *S. sparsiflora* A. Gray, but the leaves are not triple-nerved, and while the plants resemble the *S. spathulata* complex, they are short-pubescent and the inflorescence is secund. The plant is a good match for those referred to by Cronquist (1955, p. 310).

Adventive species

CARDARIA CHALEPENSIS (L.) Handel-Mazzetti, Ann. K. K. Naturhist. Hofmus. 27: 55. 1913.

JEFFERSON Co.: 7 mi S of Boulder on Rocky Flats Pediment, T2S, R70W, 10 Jul 1973, Kunkel & Shultz 292.

This is an abundant noxious weed in Colorado, occurring along roadsides in every cultivated area, while *C. draba*, for which it has been mistaken, has been collected only a few times. *Cardaria draba*, found throughout Europe and eastern North America, seems to require a mesic climate, while *C. chalepensis* thrives in the dry continental climate of the Rocky Mountain West. The species differ conspicuously in the size and shape of the silicle: in *C. draba* the silicle is 2 mm long, triangular-obcordate, and in *C. chalepensis* it is 5 mm long, almost spherical, broadest at the middle and rounded to the base and apex. We believe that *Flora Europaea* is unjustified in treating the latter as a subspecies.

CHAENORHINUM MINUS (L.) Lange in Willk. & Lange, Prodr. Fl. Hisp. 2: 577. 1870.

BOULDER Co.: City of Boulder Open Space at Jay Road and the Longmont Diagonal Highway, ca 1600 m, in a low alkaline area near the railroad track, 13 Jun 1980, R. & J. Wittmann 1050.

CYPERUS ODORATUS L., Sp. Pl. 46. 1753.

YUMA Co.: Bonny Reservoir State Recreation area; common along the S shore of the reservoir on sand near the high water line, 1300 m, 13 Sep 1980, R. Wittmann 1398.

DIANTHUS ARMERIA L., Sp. Pl. 410. 1753.

LARIMER Co.: Pinewood Lake Quadr., 13TDQ 745 615, Little Thompson River (Top Lake), 5800 ft alt., 3 Aug 1979, A. C. Cooper 804.

GYPSOPHILA SCORZONERIFOLIA Seringe in DC., Prodr. 1: 352. 1824.

BOULDER Co.: vacant lot on clay slope, Folsom Ave. between Bluff & Valmont, city of Boulder; one large plant with about 25 stems from a taproot, 22 Jul 1979, Weber 15476.

This plant has survived for at least two years, and there is a good likelihood that other plants are present in some numbers elsewhere in the vicinity. This species is treated in *Flora Europaea* and *Flora USSR*. It differs from *G. paniculata* in having glandular pedicels, broad, somewhat clasping, glaucous leaves, acute calyx lobes, and seeds with blunt tubercles.

LYSIMACHIA NUMMULARIA L., Sp. Pl. 148. 1753.

BOULDER Co.: along an irrigation ditch in open field S of National Bureau of Standards, established in tall grass, 1650 m, 7 July 1979, R. Wittmann 480.

This was reported by Weber (1961), but with the use in new homesites as ground cover this plant has become quite common in the area.

POLYGONUM ACHOREUM Blake, *Rhodora* 19: 232. 1917.

BOULDER CO.: adventive weed in a corner planting at Pine and 11th Street, Boulder, 30 Aug 1979, *Weber 15498*; rather common on compacted soils throughout National Bureau of Standards grounds, Boulder, 10 Aug 1979, *R. Wittmann 815*.

This is possibly the plant reported by Rydberg (1906, p. 110) as *P. erectum*: "also reported from Colorado, but no exact locality given." Since the cited reference has never been identified, *P. erectum* should be purged from the Colorado inventory (Weber & Johnston, 1979). *Polygonum achoreum* was described from western North America as an indigenous species, but we know of no area in Colorado where it does not behave as an introduced weed.

RUDBECKIA TRILOBA L., *Sp. Pl.* 907. 1753.

BOULDER CO.: in a *Typha* swale beside the highway at N base of Davidson Mesa between Boulder and Marshall, 1600 m, 9 Sep 1979, *Weber 15536*.

This species has been cultivated in and around Boulder for many years and now appears to be locally established in wet places on the outskirts of town.

VIOLA ODORATA L., *Sp. Pl.* 934. 1753.

BOULDER CO.: Boulder Mt. Parks W of National Bureau of Standards, along a stream-bed above the Mesa Trail, ca 1850 m, growing in loose leaf-mold, 10 May 1980, *R. Wittmann 944*.

This commonly cultivated species has escaped to lawns and now seems to be thoroughly naturalized in gulches in the foothills, at least around Boulder. It can easily be confused with the indigenous *V. nephrophylla* Greene, but *V. odorata* is strongly stoloniferous, has purple flowers, puberulent foliage, pubescent capsules, and a style with the apex recurved like the tip of a crochet-needle. It is usually fragrant, but not necessarily so. *Viola nephrophylla* is not stoloniferous but has thick rhizomes, lavender flowers with the petals strongly purple-veined and white at the base, glabrous foliage and capsules and a style truncate at the tip.

SYMPHYTUM OFFICINALE L., *Sp. Pl.* 136. 1753.

MOFFAT CO.: SE face of Douglas Mt., ca 6 mi SW of Greystone on open S-facing slope, 7160 ft alt., 3 Jul 1971, *B. & M. MacLeod 2017*.

Re-evaluations and Reinstatements

CENTUNCULUS MINIMUS L.

Until recently, *Centunculus* was known in Colorado from two collections from El Paso and Boulder counties, but it now appears to be probably a common plant in sedge and *Juncus* meadows in the piedmont valleys along the eastern base of the Front Range. The plant probably was overlooked because its precise habitat was not understood and because its monotonous habitat is not one that attracts local botanists. Typically it occurs on tussocks of *Juncus arcticus* and *Carex* spp., but it is so slender and weak as to require the surrounding vegetation to hold it erect. The locality cited will be destroyed in the near future by a projected dam.

BOULDER CO.: abundant in a wet swale just S of the channel of Coal Creek on the S side of Lake Mesa E of Marshall, T1S, R70W, S26, Louisville Quadr., 24 Jul 1979, *Cancalosi s.n.*, *Weber & Colson 15491*.

GILIA CAPILLARIS Kellogg.

The single Colorado record of this species for almost a hundred years was that of Alice Eastwood from Steamboat Springs, July 1891. Recently a collection was made from the same general area, demonstrating that the species is not only alive and well, but locally abundant. The plant was taken accidentally with other species and was sorted out from a mixture of grass stems.

ROUTT Co.: 4 mi NW of Oak Creek, T4N, R86W, NW¼ SW¼ NE¼ S14, in *Artemisia-Symphoricarpos* association, 8 Jul 1979, D. Buckner (COLO 332649).

SAXIFRAGA CESPITOSA L. sens. lat.

In Colorado we have three distinct members of the *Saxifraga cespitosa* group which are in every instance morphologically distinguishable. None of these can be equated with *C. cespitosa* sens. str. of Eurasia, and their distinctness appears to justify our treating them at the species level. I am greatly indebted to Dr. Vladimir Siplivinsky, an eminent Russian specialist in the Saxifragaceae, for demonstrating these taxa in our collections. They are distinguished as follows:

- 1 Hypanthium and sepals ca 5 mm high; petals ca 4 mm long; flowering stems stout, usually tall (commonly up to 6 cm) *S. monticola* (Small) Fedde
- 1 Hypanthium and sepals 3–4 mm high; petals 3 mm or less long; flowering stems slender, rarely more than 4 cm high, usually less.
- 2 Petals equalling or slightly exceeding the sepals *S. delicatula* (Small) Fedde
- 2 Petals minute, much shorter than the sepals *S. micropetala* (Small) Fedde

SAXIFRAGA PROREPENS Fisch. ex Sternberg, Rev. Saxifrag. 59. 1810.

Siplivinsky (1977) has shown that this is the oldest name for the plant that has gone under the name *Saxifraga propinqua* R.Br. (1819) and *Saxifraga hirculus* L. subsp. *propinqua* (R.Br.) A. & D. Löve (now recognized at the species level by them, cf. Löve & Löve, 1975, p. 316). The Colorado collections belong to this taxon, which is a diploid with $n=16$ chromosomes. The pertinent parts of Siplivinsky's key to this group follows (translation by B. C. Johnston):

- 1 Plants caespitose, with leafy one-flowered stems 5–15 cm tall; leaves obovate to oblong-elliptic, the cauline fewer than ten, broadly-lanceolate; sepals at flowering time appressed to the corolla or a little spreading; petals obovate *S. prorepens* Fisch. ex Sternberg
- 1 Plants not caespitose, with single stems 20–35 (40) cm tall, bearing 1–5 flowers; leaves lanceolate, the cauline more than ten; sepals at flowering time reflexed; petals oblong ..
..... *S. hirculus* L.

Literature Cited

- Cronquist, A. 1955. Compositae. In: C. L. Hitchcock, A. Cronquist, M. Ownbey & J. W. Thompson. Vascular plants of the Pacific Northwest, Part 5 (Univ. Wash. Publ. Biol. 17[5]): 1–343.
- Harrington, H. D. 1954. Manual of the plants of Colorado. Sage Books, Denver.
- Hermann, F. J. 1970. Manual of the carices of the Rocky Mountains and Colorado Basin. U.S.D.A. Agric. Handb. 374: 1–397.
- Hitchcock, A. S. 1935. Manual of the grasses of the United States. U.S.D.A. Misc. Publ. 200.
- Löve, A. & D. Löve. 1975. Cytotaxonomical atlas of the Arctic Flora. J. Cramer, Vaduz.
- Rydberg, P. A. 1906. Flora of Colorado. Agric. Exp. Sta. Agric. Coll. Colorado Bull. 100.
- Siplivinsky, V. 1977. Notae criticae de generis *Saxifraga* L. speciebus nonnullis Florae URSS. Nov. Syst. Vischix Rastenniy 7: 96–116.
- Weber, W. A. 1961. Additions to the flora of Colorado—III. Univ. Colorado Stud. Ser. Biol. 7: 1–26.
- . 1966. Additions to the flora of Colorado—IV. Univ. Colorado Stud. Ser. Biol. 23: 1–24.
- & B. C. Johnston. 1979. Natural history inventory of Colorado, I. Vascular plants, lichens, & bryophytes. (2nd Ed.). Univ. Colorado Mus., Boulder.
- , —— & D. Wilken. 1979. Additions to the flora of Colorado—VI. Phytologia 41: 486–500.