NEW NAMES AND COMBINATIONS, PRINCIPALLY IN THE ROCKY MOUNTAIN FLORA--II

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In the course of preparation of my flora of the Western Slope of Colorado, a number of names need to be changed in conformity with my concepts of genus and subspecies. In some instances, it appears desirable to treat some related taxa from other areas in order to bring them in line with these concepts. The first paper in this series was published in Phytologia 33:105-106. 1976.

In this paper I propose a new generic name for the segregate genus Viorna (Ranunculaceae).

ALSINANTHE MACRANTHA (Rydb.) W. A. Weber, **comb. nov.** Alsinopsis macrantha Rydb., Bull. Torr. Bot. Club 31:407. 1904.

ANOTITES SEELYI (Morton & Thompson) W. A. Weber, **comb. nov.** Silene seelyi Morton & Thompson, Torreya 33:70. 1933.

ASTRAGALUS BISULCATUS (Hook.) A. Gray ssp. **HAYDENIANUS** (A. Gray) W. A. Weber, **comb. nov.** Astragalus haydenianus A. Gray ex Brandegee, Bull. U. S. Geol. Surv. 2(3):235. 1876.

BOECHERA CRANDALLII (Robinson) W. A. Weber, **comb. nov.** Arabis crandallii Robinson, Bot. Gaz. 28:135. 1899. Löve & Löve (1976) proposed the genus Boechera to accommodate species of Arabis having the chromosome base number x=7, the type species of Arabis (alpina) having x=8. Rollins (1977) certainly had the right to criticize the Love's for not pointing out morphological evidence to support their separation on cytogenetic grounds. But at the same time, the difference in basic chromosome number, especially when it continues to be borne out on examination of other species, does represent a divergent phylogenetic line, and the genetic barrier that it presents to interbreeding of the units is sufficient justification for thinking in terms of discrete genera. However, Rollins is not scientifically objective when he says that "their describing a new genus to accommodate perfectly ordinary species of Arabis has no merit and should not be followed." Posterity, rather than appeal to authority, should be allowed to decide the wisdom of this.

Rollins himself says earlier that "those species of North America most closely related to Arabis of Eurasia have the same basic chromosome number pattern, i.e. x=8, whereas those species with a somewhat different circle of close affinity [my italics]

are based on x=7." Even a cursory examination of Arabis in the herbarium results in fairly easy separations: the loose slender root systems, large and numerous cauline leaves, most commonly toothed in Arabis, versus the short clustered caudices, small or absent and almost always entire cauline leaves of Boechera. The often very dense indument of forked or stellate trichomes of Boechera is not a characteristic feature of Arabis.

Even with Boechera removed, Arabis in America remains a genus in need of additional fragmentation. One group in particular deserving attention is the purple-flowered species endemic in the ancient Siskiyou area of southwestern Oregon and northwestern California (cf. Rollins 1977). At present , however, I am confining transfers to those taxa in the Colorado flora.

BOECHERA DEMISSA (Greene) W. A. Weber, **comb. nov.** Arabis demissa Greene, Pl. Baker. 3:8. 1901.

BOECHERA FENDLERI (S. Wats.) W. A. Weber, **comb. nov.** Arabis holboellii var. fendleri S. Wats. in Gray, Syn. Fl. N. Am. 1:164. 1895.

BOECHERA FENDLERI ssp. SPATIFOLIA (Rydb.) W. A. Weber, **comb. nov.** Arabis spatifolia Rydb., Fl. Rocky Mts. 361. 1918.

BOECHERA FERNALDIANA (Rollins) W. A. Weber, **comb. nov.** Arabis fernaldiana Rollins, Rhodora 43:430. 1941.

BOECHERA GUNNISONIANA (Rollins) W. A. Weber, **comb. nov.** Arabis gunnisoniana Rollins, Rhodora 43:434. 1941.

BOECHERA LEMMONII (S. Wats.) W. A. Weber, **comb. nov.** Arabis lemmonii S. Wats., Proc. Amer. Acad. 22:467. 1887.

BOECHERA LIGNIFERA (A.Nels.) W. A. Weber, **comb. nov.** Arabis lignifera A. Nels., Bull. Torr. Bot. Club 24:123. 1899.

BOECHERA OXYLOBULA (Greene) W. A. Weber, **comb. nov.** Arabis oxylobula Greene, Pittonia 4:195. 1900.

BOECHERA PENDULINA (Greene) W. A. Weber, **comb. nov.** Arabis pendulina Graene, Lfl. Bot. Obs. Crit. 2:81. 1910.

BOECHERA PERENNANS (S. Wats.) W. A. Weber, **comb. nov.** Arabis perennans S. Wats., Proc. Amer. Acad. 22:467. 1887.

BOECHERA PULCHRA (Jones ex S. Wats.) W. A. Weber, **comb. nov.** Arabis pulchra Jones ex S. Wats., Proc. Amer. Acad. 22:468. 1887.

BOECHERA PULCHRA ssp. **PALLENS** (Jones) W. A. Weber, **comb. nov.** Arabis pulchra var. pallens Jones, Contrib. West. Bot. 14:42. 1912.

BOECHERA SELBYI (Rydb.) W. A. Weber, **comb. nov.** Arabis selbyi Rydb., Bull. Torr. Bot. Club 31:557. 1904.

CERATOCHLOA WILLDENOWII (Kunth) W. A. Weber, **comb. nov.** Bromus willdenowii Kunth, Revis. Gram. 1:134. 1829.

CHLOROCREPIS ALBIFLORA (Hook.) W. A. Weber, **comb. nov.** Hieracium albiflorum Hook., Fl. Bor.-Am. 1:298. 1934.

CHLOROCREPIS FENDLERI (Schultz-Bip.) W. A. Weber, **comb. nov.** Hieracium fendleri Schultz-Bip., Bonplandia 9:173. 1861; Heteropleura fendleri Rydb.

CHLOROCREPIS TRISTIS (Willd.) Love & Love ssp. **GRACILIS** (Hook.) W. A. Weber, **comb. nov.** Hieracium gracile Hook., Fl. Bor.-Amer. 1:298. 1834. The genus Chlorocrepis was proposed by Grisebach to include species usually placed in Hieracium, Subgenus Stenotheca. The species are characterized by having a single pappus, and strongly dimorphic phyllaries (inner and outer ones of very different lengths). The achenes have the ribs anastomosing at the apex to form a thickened annular ring.

CILIARIA AUSTROMONTANA (Wiegand) W. A. Weber, **comb. nov.** Saxifraga austromontana Wiegand, Bull. Torrey Bot. Club 27:389. 1900. Even on morphological grounds, the genus Saxifraga is a highly unnatural assemblage. It is unfortunate that Haworth's proposals (Saxifrag. Enum. 1821) of segregate genera have been ignored. Hara (in Nakai & Honda, Nov. Fl. Jap. No. 3, Saxifragac. 59. 1939) recognized this genus and dealt with C. cherleroides, but the other North American representatives should be transferred.

CILIARIA FUNSTONII (Small) W. A. Weber, **comb. nov.** Saxifraga funstonii Small, N. Amer. Fl. 22:154. 1905.

CILIARIA TRICUSPIDATA (Retz) W. A. Weber, **comb. nov.** Saxifraga tricuspidata Retz, Prodr. Fl. Scand. ed. 2. 104. 1795.

CILIARIA VESPERTINA (Small) W. A. Weber, **comb. nov.** Saxifraga vespertina Small, N. Amer. Fl. 22:153. 1905.

CLEMENTSIA SEMENOVII (Regel & Herder) W. A. Weber, **comb. nov.** Umbilicus semenovii Regel & Herder, Bull. Soc. Nat. Mosc. 39:65. 1886. This is the Asiatic vicariad of the Rocky Mountain Clementsia rhodantha.

CORIFLORA, gen. nov. Ranunculacearum. Viorna sensu Small, Fl. S. E. U. S. p. 437-439. 1903, non Reichenb., 1837. Lectotype species: Clematis viorna L., Sp. Pl. p. 543. 1753.

I am indebted to Carl S. Keener for furnishing me with the complicated history of the name Viorna which shows why the name is untenable on the genus level for the leatherflowers. His reasoning is as follows:

"1. "Viorna" appeared first as a supraspecific name in Persoon's Synopsis Plantarum (2:98. 1806) in which he described "Viorna" as a subgenus under Atragene (two species were listed, which now pass as Clematis cirrhosa L.).

"2. "Viorna" appeared first as a genus in Reichenbach's Handbuch des naturlichen Pflanzensystems (277. 1837) in which he listed Viorna as a genus under his "Gruppe" Clematideae. Viorna was listed in this way: "Viorna Pers. (Cheiropsis DeC.)". Earlier, deCandolle had erected Cheiropsis as a section under Clematis. So far, one would have to conclude that if Viorna is recognized at the genus level, it would include only a few species, none of which occurs native to North America.

"3. In an admirable treatment of Les Clematidees", Spach recognized six genera: Atragene, Cheiropsis, Viticella, Viorna, Meclatis, and Clematis (see Histoire naturelle des vegetaux 7:257-284. 1839). Viorna sensu Spach received a thorough treatment, with two sections. Unfortunately, he refers to Reichenbach as the source of the genus ("Genre VIORNA. - Viorna Reichenb."). Unfortunately, Viorna as a genus already had nomenclatural status, but for species not included in Spach's Viorna [species of Viorna (Pers.) Reichenb. appear under Spach's genus Cheiropsis (DC.) Spach].

"I conclude, therefore, that Viorna at the genus level has been used for two different groups and that Spach's use of Viorna is illegitimate. So far as I know, there is no name at the genus rank for the American leatherflowers. Perhaps "Coriflora" (Lat., cori = leather + flos, flower) might do."

CORIFLORA ADDISONII (Britt. ex Vail) W. A. Weber, **comb. nov.** Clematis addisonii Britt. ex Vail, Mem. Torr. Bot. Club 2:28, footnote and pl. 3. 1890.

CORIFLORA ALBICOMA (Wherry) W. A. Weber, **comb. nov.** Clematis albicoma Wherry, J. Wash. Acad. Sci. 21:198, fig. 1. 1931.

CORIFLORA BALDWINII (T. & G.) W. A. Weber, **comb. nov.** Clematis baldwinii T. & G., Fl. N. Am. 1:8. 1838.

CORIFLORA BEADLEI (Small) W. A. Weber, **comb. nov.** Viorna beadlei Small, Man. Southeast. Fl. 527, 1504. 1933.

CORIFLORA BIGELOVII (Robinson ex A. Gray) W. A. Weber, **comb. nov.** Clematis pitcheri var. bigelovii Robinson ex A. Gray, Syn. Fl. N. Am. 1:6. 1895.

CORIFLORA CRISPA (L.) W. A. Weber, **comb. nov.** Clematis crispa L., Sp. Pl. 543. 1753.

CORIFLORA FREMONTII (James) W. A. Weber, **comb. nov.** Clematis ochroleuca var. fremontii James, J. Cincin. Soc. Nat. Hist. 6:120. 1883.

CORIFLORA GATTINGERI (Small) W. A. Weber, **comb. nov.** Clematis gattingeri Small, Bull. Torr. Bot. Club 24:209. 1897.

CORIFLORA GLAUCOPHYLLA (Small) W. A. Weber, **comb. nov.** Clematis glaucophylla Small, Bull. Torr. Bot. Club 24:337. 1897.

CORIFLORA HIRSUTISSIMA (Pursh) W. A. Weber, **comb. nov.** Clematis hirsutissima Pursh, Fl. Amer. Sept. 2:385. 1814.

CORIFLORA INTEGRIFOLIA (L.) W. A. Weber, **comb. nov.** Clematis integrifolia L., Sp. Pl. 544. 1753.

CORIFLORA OCHROLEUCA (Ait.) W. A. Weber, **comb. nov.** Clematis ochroleuca Ait., Hort. Kew. 2:260. 1789.

CORIFLORA PALMERI (Rose) W. A. Weber, **comb. nov.** Clematis palmeri Rose, Contr. U. S. Nat. Herb. 1:118. 1891.

CORIFLORA PITCHERI (T. & G.) W. A. Weber, **comb. nov.** Clematis pitcheri T. & G., Fl. N. Am. 1:10. 1838.

CORIFLORA RETICULATA (Walt.) W. A. Weber, **comb. nov.** Clematis reticulata Walt., Fl. Carol. 156. 1788.

CORIFLORA SCOTTII (Porter) W. A. Weber, **comb. nov.** Clematis scottii Porter, Synops. Fl. Colorado, p. 1. 1874.

CORIFLORA TEXENSIS (Buckl.) W. A. Weber, **comb. nov.** Clematis texensis Buckl., Proc. Acad. Nat. Sci. Phila. 13:448. 1862.

CORIFLORA VERSICOLOR (Small ex Britt.) W. A. Weber, **comb. nov.** Clematis versicolor Small ex Britt., Man. Fl. Northern States and Canada, 421. 1901.

CORIFLORA VIORNA (L.) W. A. Weber, **comb. nov.** Clematis viorna L., Sp. Pl. 543. 1753.

CORIFLORA VITICAULIS (Steele) W. A. Weber, **comb. nov.** Clematis viticaulis Steele, Contr. U. S. Nat. Herb. 13:364. 1911.

CRITESION MURINUM ssp. **GLAUCUM** (Steud.) W. A. Weber, **comb. nov.** Hordeum glaucum Steud., Syn. Pl. Gram. 1: 352. 1854.

EUCEPHALUS PERELEGANS (Nels. & Macbr.) W. A. Weber, **comb. nov.** Aster perelegans Nels. & Macbr., Bot. Gaz. 56:477. 1913.

GASTROLYCHNIS KINGII (S. Wats.) W. A. Weber, **comb. nov.** Lychnis kingii S. Wats., Proc. Amer. Acad. 12:247. 1877.

GERANIUM VISCOSISSIMUM F. & M. ssp. **NERVOSUM** (Rydb.) W. A. Weber, **comb. nov.** Geranium nervosum Rydb., Bull. Torr. Bot. Club 28:34. 1901.

GILIASTRUM RIGIDULUM (Benth.) Rydb. ssp. **ACEROSUM** (A. Gray) W. A. Weber, **comb. nov.** Gilia rigidula var. acerosa A. Gray, Proc. Amer. Acad. Arts Sci. 8:280. 1870.

LIGULARIA PORTERI (Greene) W. A. Weber, **comb. nov.** Senecio porteri Greene, Pittonia 3:186. 1897.

LIGULARIA WEBSTERI (Greenm.) W. A. Weber, **comb. nov.** Senecio websteri Greenm., Bot. Gaz. 53:511. 1912.

NEGUNDO ACEROIDES (L.) Moench ssp. **VIOLACEUS** (Kirchner) W. A. Weber, **comb. nov.** Acer negundo var. violaceum Kirchner in Petz & Kirchner, Arb. Musav. 190. 1908.

OPUNTIA FRAGILIS Haw. ssp. **BRACHYARTHRA** (Engelm. & Bigel.) W. A. Weber, **comb. nov.** Opuntia brachyarthra Engelm. & Bigel., Pacific R. R. Rep. 4(3): 47. 1857.

OXYTROPIS LAMBERTII Pursh ssp. **BIGELOVII** (A. Gray) W. A. Weber, **comb. nov.** Oxytropis lambertii var. bigelovii A. Gray, Proc. Amer. Acad. Arts Sci. 20: 7. 1884.

PADUS VIRGINIANA (L.) M. Roem. ssp. **MELANOCARPA** (A. Nels.) W. A. Weber, **comb. nov.** Cerasus demissa var. melanocarpa A. Nels., Bot. Gaz. 34:25. 1902.

PINUS PONDEROSA Laws. ssp. **SCOPULORUM** (S. Wats.) W. A. Weber, **comb. nov.** Pinus ponderosa var. scopulorum S. Wats., Geol. Surv. Calif., Bot. 2:126. 1880.

POA CUSICKII Vasey ssp. **EPILIS** (Scribn.) W. A. Weber, **comb. nov.** Poa epilis Scribn., U.S.D.A. Div. Agrost. Circ. 9:5. 1899.

POA GLAUCA M. Vahl ssp. **RUPICOLA** (Nash) W. A. Weber, **comb. nov.** Poa rupicola Nash, Mem. N. Y. Bot. Gard. 1:49. 1900.

POA NEMORALIS L. ssp. **INTERIOR** (Rydb.) W. A. Weber, **comb. nov.** Poa interior Rydb., Bull. Torr. Bot. Club 32:604. 1905.

PSYCHROPHILA INTROLOBA (F. Muell.) W. A. Weber, **comb. nov.** Caltha introloba F. Muell., Trans. Phil. Soc. Vict. 1:98. 1855.

PSYCHROPHILA LEPTOSEPALA (DC.) W. A. Weber, **comb. nov.** Caltha leptosepala DC., Syst. Veg. 1:310. 1818. A. P. deCandolle characterized the section Psychrophila of Caltha by drawing attention to the persistent sepals, the one-flowered leafless scape, the sagittate basal leaves with auriculate bases. To this can be added the white tepals with blue dorsal faces, and the ecology, which is probably always snowbed sites in mountains. Psychrophila is well distinct from Caltha on these counts, and with the addition of this species, demonstrates an ancient distribution running from the North American Cordillera to the southern tip of South America, over to the high mountains of Australia and New Zealand. Rafinesque recognized the genus in 1832 (his P. auriculata is synonymous with P. leptosepala).

PSYCHROPHILA NOVAE-ZEALANDIAE (Hook.f.) W. A. Weber, **comb. nov.** Caltha novae-zealandiae Hook. f., Fl. Nov. Zeal. 1:12. t.6. 1856.

PSYCHROPHILA OBTUSA (Cheesem.) W. A. Weber, **comb. nov.** Caltha obtusa Cheesem., Trans. Proc. N. Z. Acad. Inst. 3:312. 1870.

RHUS AROMATICA Ait. ssp. **TRILOBATA** f. **SIMPLICIFOLIA** (Greene) W. A. Weber, **comb. nov.** Rhus canadensis var. simplicifolia Greene, Bull. Torr. Bot. Club 17:13. 1890.

RUDBECKIA LACINIATA L. ssp. **AMPLA** (A. Nels.) W. A. Weber, **comb. nov.** Rudbeckia ampla A. Nels., Bull. Torrey Bot. Club 28:234. 1901. Jones (Madrono 14:132-133. 1957) argued that this should be regarded as a species distinct from R. laciniata and presented significant distinguishing details. Future research may confirm his opinion.

STELLARIA LONGIPES Goldie ssp. **STRICTA** (Rich.) W. A. Weber, **comb. nov.** Stellaria stricta Rich., App. 15. Franklin Journal, 2nd ed. 743. 1823.

STELLARIA LONGIPES Goldie ssp. **MONANTHA** (Hultén) W. A. Weber, **comb. nov.** Stellaria monantha Hultén, Bot. Notiser 1943:265. fig. 7e,f. 1943.

References

Löve, Áskell & Doris Löve. 1976. Nomenclatural notes on Arctic plants. Bot. Not. 128:497-523.

Rollins, Reed C. 1973. Purple-flowered Arabis of the Pacific Coast of North America. Contrib. Gray Herb. 204:149-154.

Rollins, Reed C. & Lily Rudenberg. Chromosome numbers of Cruciferae III. Contrib. Gray Herb. 207:101-116. 1977.

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ADDITIONS TO THE FLORA OF COLORADO--VIII

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The last number of this series was published in Brittonia 3: 325-331.

NEW RECORDS FOR COLORADO

INDIGENOUS TAXA

ARTEMISIA PYGMAEA A. Gray, Proc. Amer. Acad. 21:413. 1886 (CMP). RIO BLANCO CO.: just N of the White River on the Colorado-Utah border, NE 1/4 S15. T1N R 104W; barren shale knolls in Artemisia tridentata association, Uinta formation, 27 May 1981, L. M. & J. S. Shultz s.n. (COLO 352726).

CAREX CRAWEI Dewey, Amer. J. Sci. (2)2:246. 1846 (CYP). EL PASO CO.: crossing of Black Squirrel Creek on old road 7 mi N of Falcon toward Eastonville, in streamside meadow, periodically inundated, 21 July 1962, Weber & Willard 11548 (COLO). The site is well-known for the presence of midwestern prairie-woodland disjuncts.

CAREX PAYSONIS Clokey, Am. J. Sci. (5)3:89. 1922 (CYP). ROUTT CO.: mountain meadow on west slope of Rabbit Ears Pass, 9600 ft. alt., 26 June 1950, Penland 2360 (KHD). MESA CO.: Grand Mesa, T11S R96W S31, 10,000 ft. alt., lava cliff, 30 June 1981, Siplivinsky 1430 (COLO).

CIRSIUM CHELLYENSE Moore & Frankton, Can. J. Bot. 52:547. 1944. (CMP). MOFFAT CO.: Cross mountain Gorge, T6N, R97-98W, 1800 msm; steep-sided canyon of sedimentary bedrock; on talus