

WESTERN PLANT STUDIES. II

AVEN NELSON AND J. FRANCIS MACBRIDE

PENTAMERIS.—As shown by PIPER in his Flora of Washington (Contrib. Nat. Herb. 11:122), the name *Danthonia* is not available for the American species that have passed under that name. In choosing among the several later names that have been proposed, he selects *Merathrepta* Raf. in Seringe, Bull. Bot. 1:221. 1830, apparently because the type species of the genus was *M. spicata*, an American species closely congeneric with ours. But will this fact permit our ignoring *Pentameris* Beauv. Agrost. 92. t. 18 1812, the type species of which is accepted as a *Danthonia*, as that genus has until lately been understood? Recent students of this genus recognize two sections, but so long as both remain as sections merely, all the species must be retained under the oldest available name that has had generic rank. This seems to be *Pentameris*, published as shown above, and attested by the many species subsequently referred to it. The types of the two sections are given along with the American species, and one other to show the synonymy.

PENTAMERIS THUARII Beauv. Agrost. 93. t. 18. 1812.—*P. tortuosa* Nees, in Linnaea 7:311. 1832; *Danthonia tortuosa* Trin. Sp. Gram. t. 68. 1828–1836; not *D. Thuarii* Desv. Opusc. 99. 1831.

Pentameris provincialis, n. comb.—*Danthonia provincialis* DC. Fl. Fr. ed. 3. 3:33. 1809 (?).

Pentameris americana, n. comb.—*Danthonia americana* Scribn. U.S. Dept. Agric. Circ. Agrost. 30:5. 1901; *D. grandiflora* Philippi, Anal. Univ. Chile 568, 1873, not Hochst. 1851.

Pentameris californica, n. comb.—*Danthonia californica* Boland. Proc. Cal. Acad. 2:182. 1863.

Pentameris compressa, n. comb.—*Danthonia compressa* Aust. Bull. Torr. Bot. Club 3:21. 1872.

Pentameris epilis, n. comb.—*Danthonia epilis* Scribn. U.S. Dept. Agric. Circ. Agrost. 30:7. 1901.

Pentameris grandiflora, n. comb.—*Danthonia grandiflora* Hochst. ex A. Rich. Tent. Fl. Abyss. 2:418. 1851.

Pentameris intermedia, n. comb.—*Danthonia intermedia* Vasey, Bull. Torr. Bot. Club 10:52. 1883.

Pentameris sericea, n. comb.—*Danthonia sericea* Nutt. Gen. Am. 1:71. 1818.

Pentameris spicata, n. comb.—*Avena spicata* L. Sp. Pl. 80. 1753.

Pentameris thermale, n. comb.—*Danthonia thermale* Scribn. U.S. Dept. Agric. Circ. Agrost. 30:5. 1901; *Merathrepta pinetorum* Piper. Contrib. Nat. Herb. 11:122. 1906.

Pentameris unispicata, n. comb.—*Danthonia unispicata* Thurb. Bot. Cal. 2:294. 1880.

Allium textile, n. n.—*A. reticulatum* Fraser in Mem. Wern. Soc. 6:36. 1827; not *A. reticulatum* J. and C. Presl. Fl. Cech. 73. 1819.

Our collections made in 1912 show that this species has a wider distribution than heretofore assigned to it. Specimens having been secured on the Snake River, at Shoshone Falls, it seems probable that it may extend quite into eastern Oregon.

ALLIUM FIBRILLUM Jones, Contrib. Bot. 10:24. 1902.—*A. collinum* Dougl. in Wats. Proc. Am. Acad. 14:228. 1889; not *A. collinum* Guss. in Tenore Syl. Pl. Vas. Fl. Neap. 169. 1831.

PIPER, in his Flora of Washington, is undoubtedly right in citing the specimens of HORNER (nos. 190, 193, and 470) from the Blue Mountains (type locality) as representative of the heretofore poorly understood species published by WATSON for DOUGLAS.

Allium incisum, n. sp.—Bulbs large, 1–1.5 cm. broad, outer coats brown or pinkish, reticulation obscure: scapes 5–8 cm. high, stout, 1.5–2.5 mm. broad, narrowly winged: leaves 3–5 mm. broad, thick, and slightly falcate, attenuate to a long point, distinctly exceeding the scape, rather strongly nerved: spathe 2–several valved or at least one or all of the bracts deeply incised so as to appear distinct: bracts and their divisions ovate or broadly lanceolate at base, gradually long-acuminate, the margins of each often incurved and united near the tip: umbel globose, many-flowered: pedicels slender and flexuous, 1–2 cm. long: flowers white: segments shorter than the stamens, narrowly lanceolate,

acute, 1-nerved, not rigid but weak and crinkled in fruit: capsule very obscurely crested.

This species seems unique in its incised bracts. No. 1790 from barren gumbo clays, probably soft in the spring but becoming very hard, wholly devoid of other vegetation, House Creek, Owyhee Co., Idaho, June 29, 1912, is the type.

Calochortus maculosus, n. sp.—Bulb narrowly ovate, about 1 dm. below the surface, this and the underground part of the stem covered with coarse thick barklike coats: stems rather stout, smooth, 3–4 dm. high: leaves several (4–6), all abruptly expanded and scarious at the sheathing base: flowers 2, one on a spreading pedicel opposite the last bractlike leaf and also bracted; the other surmounting the main stem on a longer pedicel: sepals narrowly lanceolate, gradually long acuminate, 4–5 cm. long, greenish within and without: petals longer, 4.5–6 cm. long, abruptly acute and slightly crenate, white, or very pale blue, with a green band from apex to the large purple splotch above the yellow cuneate base, on which is the large gland, all the yellow area with long crinkled hairs: anthers 2 or 3-ribbed; obtuse, yellow, about equaling the filaments: capsule narrowly oblong.

This, the fourth member of the *macrocarpus* group, is easily distinguished from *C. bruneauensis* Nels. and Macbr., its nearest relative, by the hairy lower part of the petal and the color, and from the others by the large purple blotch. In aspect it somewhat resembles the *nitidus* group, from which the elongated capsule readily separates it. The characteristic green band and the few-ribbed anthers are some of the characters which forbid its being referred to the *Nuttallii* group. The type is no. 2727 by HENDERSON, in loose soil on the hills near Lewiston, Nez Perce Co., Idaho, June 17, 1894.

EPIPACTIS Adans. evidently cannot stand (see TORRE and HARMS Gen. Siph. nos. 1482 and 1504, and DRUCE's illuminating paper, Bull. Torr. Bot. Club 36:543. 1909). But is *Helleborine* more truly available? This question it seems to us DRUCE has partly answered by his own arguments and statements of fact. We note that while *Helleborine* was in use before 1753, it was not published with species until DRUCE gives us the list that falls into the genus, restricted as now understood. DRUCE's aim was to bring his work into harmony with the Vienna rules, but these deny validity to *uninominal* nomenclature, a principle reasserted by the Brussels Congress. This seems long to have been an unwritten law, for we

are told that JOHN HILL'S work (British Herbal, 1756) remained unquoted even in the *Index Kewensis* because he had not adopted the *binomial* system. The only other name possibly available for the *Epipactis* of Adanson is *Limonias*, a name to be rejected primarily according to law, because it is a name published without species, and secondarily in harmony with common sense, because it might result in confusion, owing to *Limonia*, a valid genus in the *Rutaceae*, and *Limonium*, a genus in the *Plumbaginaceae*. There seems to be no alternative, therefore, except to select a new name, and in recognition of the splendid work by OAKES AMES in the *Orchidaceae*, we have chosen the following, to which all the species listed by DRUCE are transferred.

Amesia, n. n.—*Epipactis* Adans. Fam. 2:70. 1763, not *Epipactis* (Haller) Boehm. in Ludw. Definit. Gen. Pl. 1760, nor *Epipactis* Zinn, Cat. Pl. Hort. Acad. 85. 1757; *Helleborine* Hill and *Limonias* Ehrh. (see preceding paragraph).

Amesia africana, n. comb.—*Epipactis africana* Rendle, Jour. Bot. 33:252. 1895.

Amesia atropurpurea, n. comb.—*Epipactis atropurpurea* Raf. Car. 87. 1810.

Amesia babianifolia, n. comb.—*Epipactis babianifolia* Roxb. Hort. Bengal. 63. 1814.

Amesia consimilis, n. comb.—*Epipactis consimilis* Wallich, Cat. no. 7403.

Amesia gigantea, n. comb.—*Epipactis gigantea* Dougl. in Hook. Fl. Bor. Am. 2:202. 1830.

Amesia latifolia, n. comb.—*Epipactis latifolia* All. Fl. Pedem. 2:151; Sieb. in Sv. Vet. Akad. Nya Handl. 232. 1800.

Amesia microphylla, n. comb.—*Epipactis microphylla* Sieb. loc. cit.

Amesia orbicularis, n. comb.—*Epipactis orbicularis* C. Richt. Vehr. Zool.-Bot. Ges. Wien. 37:190. 1887.

Amesia palustris, n. comb.—*Helleborine palustris* Schrank, Fl. Monac. 2:190. 1814.

Amesia papillosa, n. comb.—*Epipactis papillosa* Franch. and Sav. Enum. Pl. Jap. 2:519. 1879.

Amesia pycnostachys, n. comb.—*Epipactis pycnostachys* C. Koch, Linnaea 22:289. 1849.

Amesia somaliensis, n. comb.—*Epipactis somaliensis* Rolf, Fl. Trop. Afr. 7:189. 1897.

Amesia Thunbergii, n. comb.—*Epipactis Thunbergii* Perry, Exp. Jap. 2:319. 1857.

Amesia trinervia, n. comb.—*Epipactis trinervia* Roxb. Fl. Ind. 3:455. 1832.

Populus fortissima, n. n.—*P. angustifolia* James ex Torr. Am. Lyc. N.Y. 2:249. 1828; not *P. angustifolia* Weinm. Elench. Hook. Palowsk. 451. 1824.

Salix columbiae, n. n.—*S. pyrifolia* Anders. Vet. Handl. Stockh. 6:162. 1867; not *S. pyrifolia* Schleich, Cat. Pl. Helv. ed. 3:26. 1815.

CARDIONEMA DC. Prod. 3:372. 1828.—*Pentacaena* Bartl. in Presl. Rel. Haenk. 2:5. 1830.

Cardionema ramosissima, n. comb.—*Loeflingia ramosissima* Weinm. Bot. Zeit 3:608. 1820; *Pentacaena ramosissima* Hook. and Arn. in Hook. Bot. Misc. 3:338. 1833; *Pentacaena polycnemoides* Bartl. in Presl. Rel. Haenk. 2:5. 1830.

Cardionema camphorosmoides, n. comb.—*Pentacaena camphorosmoides* Walp. Rep. 1:261. 1842.

Cardionema rosetta, n. comb.—*Pentacaena rosetta* Walp. loc. cit.

Cardionema congesta, n. comb.—*Pentacaena congesta* Benth. Pl. Hartw. 186. 1839.

Cardionema andina, n. comb.—*Pentacaena andina* Phil. in Anal. Mus. nac. Chile 26. 1891.

Aconitum Howellii, n. n.—*A. bulbiferum* Howell, Fl. N.W. Am. 25. 1897; not *A. bulbiferum* Reichb. Nebers. Acon. 55. 1819.

Ranunculus reconditus, n. n.—*R. triternatus* Gray, Proc. Am. Acad. 21:370. 1886; not *R. triternatus* Poir. Encyc. Supl. 4:662. 1815.

Arabis crypta, n. sp.—Biennial, stellate-pubescent throughout; stems one or two from the simple crown, branched above, 3 dm. high, greenish, the pubescence not so dense nor so perfectly stellate as that of the leaves and pods: basal leaves numerous, nearly linear, acutish, narrowed to a slender petiole, the midvein prominent, 2-3 cm. long; cauline distant, narrowly lanceolate, 3-nerved, slightly auriculate: flowers rather few, white or faintly tinted: petals 3-4

mm. long, scarcely twice the length of the green pubescent scarious-margined sepals: pods remote on the elongated rachis, white with the close pubescence, closely refracted at maturity, only 1-1.5 cm. long by 2 mm. broad or nearly that near the base, barely tapering to the apex: pedicels 2-3 mm. long: seeds few (2-6), orbicular, large, narrowly winged, uniserial or imperfectly biserial.

Secured at Jarbridge, Elko County, Nevada, July 4, 1912; the habitat not noted.

▷ **Idahoa**, n. n.—*Platyspermum* Hook. Fl. Bor. Am. 1:68. 1830; not *Platyspermum* Hoffmann, Genera Plantarum Umbelliferum 58. 1814.

✓ **Idahoa scapigera**, n. comb.—*Platyspermum scapigerum* Hook. loc. cit.

This peculiar and well known crucifer occurs sparingly in Washington, Oregon, and Idaho, but apparently is met with most frequently in western Idaho (from the Panhandle to Nevada), hence the choice of name.

✓ **Lepidium papilliferum**, n. comb.—*L. montanum papilliferum* Henderson, Bull. Torr. Bot. Club 27:342. 1900.—Biennial, densely papillose-pubescent, especially the stems; intricately branched, forming compact spherical clumps, consisting of a central stem with numerous lateral branches from its base to a point about one-third or one-half the height of the plant, where it in turn branches several times: lower leaves pinnatifid, even the uppermost deeply toothed: racemes short, dense: petals conspicuous, twice the length of the sepals: pods on slender, widely spreading, often even recurving pedicels, suborbicular, not at all narrowed to the notched apex, faintly glutinose-papillose: style well exerted.

No. 1068, Nampa, Idaho, distributed as *L. montanum* Nutt. is the type. No. 91, New Plymouth, and 880, Emmett, both by MACBRIDE and distributed as *L. Jonesii* Rydb., are typical.

L. papilliferum is distinguished at once from the species to which it has been referred by its distinctive habit of growth, its merely biennial duration and its unusual pubescence. *L. montanum* and *L. Jonesii* are perennial, the several stems spreading from a branched caudex, the plant possessing no main axis.

✓ **Lepidium philonitrum**, n. sp.—Slender glabrate biennial with a slim tap root, 3-4 dm. high, the single sparingly branched stem simple below: leaves remote, the lower irregularly pinnate; the

cauline mostly trifid, the middle tooth the largest; the uppermost tridentate: flowers showy, the broad petals about twice the length of the sepals: fruiting pedicels slender, spreading, about three times the length of the pod: pod ovate, 3-4 mm. long by about 2 mm. broad, the narrow blunt apex slightly notched, the style less than twice the length of the scarcely involute apical wings.

No. 32, from alkaline bottom lands, Falk's Store, Idaho, May 17, 1910, by MACBRIDE, is the type. No. 2023 by CUSICK, near McDermitt, Oregon, may possibly be a pubescent form.

This is another member of the *alyssoides* group. Its pod allies it to *L. alyssoides* and *L. Jonesii*; its leaves to *L. papilliferum*; its aspect and habitat differ from all relatives.

Much has been made of differences shown by *Sisymbrium* and *Sophia* in the field, but, in common with many others, the writers are unable to see that each has vegetative characters so marked as to constitute generic differences. Believing that one genus should include them all, the following are transferred to *Sisymbrium*. In this connection it may be noted that *Descurainia* should replace *Sophia* only in the event that the latter is kept distinct.

✓ *Sisymbrium paradisum*, n. comb.—*Sophia paradisa* Nels. and Ken. Proc. Biol. Soc. Wash. 19:155. 1906.

✓ *Sisymbrium leptophyllum*, n. comb.—*Sophia leptophylla* Rydb. Bull. Torr. Bot. Club 29:239. 1902.

✓ *Sisymbrium ochroleucum*, n. comb.—*Sophia ochroleuca* Woot. Bull. Torr. Bot. Club 25:455. 1898.

✓ *Sisymbrium obtusum*, n. comb.—*Sophia obtusa* Greene, Leaflets 1:96. 1904.

COTYLEDON AND ITS SEGREGATES.—There being substantial agreement among botanists now in excluding the genus *Cotyledon* from this continent, the question arises as to the disposition of the species formerly referred to it and to *Echeveria*. This question has recently been answered by reestablishing *Echeveria* for a part and creating new genera for some of the more aberrant forms. It seems, however, that the differences relied upon to sustain some of these segregates are at best merely relative, and often inconsequential and unreliable, in this group. These characters are the shape of the leaves, the length or breadth of the corolla, its angulation and the

position of its lobes, characters good enough were they constantly found in one and never in another. Such, however, is not the case. For instance, the delimited *Echeveria* rests primarily upon its 5-angled corolla, but to *Dudleya* have been assigned species showing this character to some degree. In similar manner, the corolla of *Gormania* is said to be campanulate with spreading lobes, while in *Dudleya* it is tubular and the lobes erect. But in many of the species of *Dudleya* the tips of the lobes, at any rate, are spreading, while corollas occur in both to which the expression short-tubular or narrowly-campanulate might be applied with equal appropriateness. Thus, it appears that through the corolla of *Gormania*, at least, we are back to typical *Echeveria*. Since the characters thus overlap, it would seem best to refer all the species to the oldest genus, in accordance with which view some of the representative ones are here transferred.

Echeveria DC.—*Gormania* Britton, Bull. N.Y. Bot. Gard. 3:29. 1903; *Dudleya* Britton and Rose, *loc. cit.* 12; *Cotyledon* L. as to Am. Auth.; *Sedum* L. in part.

✓ **Echeveria Watsonii**, n. comb.—*Gormania Watsonii* Brit. Bull. N.Y. Bot. Gard. 3:29. 1903; *Cotyledon oregonensis* Wats. 1882; not *Sedum oreganum* Nutt.

✓ **Echeveria obtusata**, n. comb.—*Sedum obtusatum* Gray, Proc. Am. Acad. 7:342. 1868.

✓ **Echeveria debilis**, n. comb.—*Sedum debile* Wats. Bot. King's Exp. 102. 1871.

✓ **Echeveria oregana**, n. comb.—*Sedum oreganum* Nutt., in T. and G. Fl. 1:559. 1840.

✓ **Echeveria Gormanii**, n. n.—*Gormania laxa* Britton, Bull. N.Y. Bot. Gard. 3:29. 1903; not *Echeveria laxa* Lindl. 1849.

✓ **Echeveria Brittonii**, n. n.—*Gormania Hallii* Britton, Bull. N.Y. Bot. Gard. 3:29. 1903; not *Dudleya Hallii* Rose, Bull. N.Y. Bot. Gard. 3:17. 1903.

✓ **Echeveria Hallii**, n. comb.—*Dudleya Hallii* Rose, *loc. cit.*

✓ **Echeveria Rusbyi**, n. comb.—*Cotyledon Rusbyi* Greene, Bull. Torr. Bot. Club 10:125. 1883.

✓ **Echeveria saxosa**, n. comb.—*Cotyledon saxosum* Jones, Contr. West. Bot. 8:28. 1898.

- ✓ *Echeveria nevadensis*, n. comb.—*Cotyledon nevadensis* Wats. Bot. Cal. 1:212. 1876.
- ✓ *Echeveria plattiana*, n. comb.—*Cotyledon plattiana* Jepson, Fl. West. Middle California 267. 1901.
- ✓ *Echeveria Palmeri*, n. comb.—*Cotyledon Palmeri* Wats. Proc. Am. Acad. 14:292. 1879.
- * *Echeveria Rosei*, n. n.—*Echeveria Palmeri* Rose, Bull. N.Y. Bot. Gard. 3:10. 1903; not *E. Palmeri* (Wats.) Nels. and Macbr.
- ✓ *Echeveria lingula*, n. comb.—*Cotyledon lingula* Wats. loc. cit. 293.
- ✓ *Echeveria Cotyledon*, n. comb.—*Sedum Cotyledon* Jacq. Eclog. 1:27. 1811.
- ✓ *Echeveria Setchellii*, n. comb.—*Cotyledon laxa Setchellii* Jepson, Fl. Middle California 267. 1901.
- ✓ *Echeveria Jepsonii*, n. n.—*Cotyledon caespitosa paniculata* Jepson, loc. cit.; not *Echeveria paniculata* Gray, Pl. Wright. 1:76. 1852.
- ✓ *Aster siskiyouensis*, n. n.—*Eucephalus glabratus* Greene, Pitt. 3:56. 1896; not *Aster glabratus* Kuntze.
- ✓ *Aster perelegans*, n. n.—*A. elegans* T. and G. Fl. 2:159. 1842; not *A. elegans* Willd.
- ✓ *Aster kootenayi*, n. n.—*A. Cusickii Lyallii* Gray, Syn. Fl. 1:195. 1884; not *A. Lyallii* Kuntze.
- ✓ *Chaenactis Mainsiana*, n. sp.—Low tufted perennial from a slender woody caudex, more or less branched upward: stems few, decumbent, naked-pedunculate above: leaves clustered toward the base, 3–5 cm. long, including the slender winged petiole, oblanceolate to obovate in outline, once or rarely twice pinnatifid or parted into blunt oblong or spatulate lobes, greenish-gray with a minute lepidote tomentum, sprinkled with resinous atoms: peduncles floccosely-pubescent, exceeding the leaves by 5–10 cm., bearing one or often two heads and then subtended by an entire or parted bract: heads 1–1.5 cm. high: bracts oblong, obtuse, sometimes with one or two shorter and spreading ones: pappus-paleae oblong, obtuse, more than half the length of the flower: achene brown, sparingly soft-pubescent, about 6 mm. long, distinctly longer than the pappus.

This is allied to *C. nevadensis* (Kell.) Gray and *C. Evermannii* Greene, but both of these are dwarf alpine plants with monocephalous peduncles scarcely exceeding the leaves, which show a tendency to be more or less pedately parted and flabelliform. In both the leaves are white with tomentum (at least when young), and the achenes are densely silky-pubescent.

Dedicated to the Supervisor of the Payette National Forest, G. B. MAINS, who is each year adding much to the knowledge of his district by the excellent specimens prepared by him and his associates. The type is no. D-34, from the Payette National Forest.

✓ **Tonestus linearis**, n. sp.—Branches of caudex very slender, brown with remnants of dead petioles: leaves narrowly linear, slightly broadened upward, subacute, 3-nerved, minutely crisped-pubescent, 2–4 cm. long (including the petiole-like base): stems very slender, few-leaved, about 10 cm. long: heads as high as broad; bracts linear, about 10 mm. long, subequal, softly herbaceous, with narrow scarious margins, in two rows, with one or more looser outer ones: rays 10–15, broadly linear, a half longer than the disk; disk flowers more numerous: achene narrowly oblong-cylindric, minutely pubescent.

This new species illustrates the generic characters perfectly, yet by its slenderly linear parts throughout is quite distinct from *T. pygmaeus* and *T. Lyallii*.

Secured by G. B. MAINS, Supervisor Payette National Forest, 1912.

✓ **Balsamorhiza rosea**, n. sp.—Low, acaulescent from a short, thick warty root crowned with leaf bases: leaves somewhat cinereous with a rather long fine but stiff pubescence, including the short petioles 4–10 cm. long, irregularly pinnately divided, the broad short blunt divisions coarsely toothed: scapes few, monocephalous, the pubescence longer and looser than that of the leaves, about 1 dm. high, bearing at base a pair of linear acute bracts 1 cm. long, with scarious clasping bases: heads 3–4 cm. broad, the very crowded persistent or very tardily deciduous rose or purplish rays oval, crenately and irregularly few-toothed at the summit, pubescent with long soft hair, especially on the prominent parallel veins beneath and around the short tube: bracts lanceolate, acute, rather loose, the outer shorter, densely ciliate with long glistening soft pubescence, that of the surface somewhat appressed: chaff of the receptacle broadly scarious-margined three-fourths of the length,

the scarious portion fimbriate at its junction with the herbaceous ciliate tip: ray achenes somewhat compressed, carinate on both sides, hirsute near the top, the pubescence shorter and sparser downward, those of the disk similar but glabrous or nearly so except for the ciliate summit.

This is the second member in the section *KALLIACTIS* Gray. No. 568 by J. S. COTTON, from rocky ridges of the Rattlesnake Mountains, Yakima County, Washington, May 8, 1902, is the type.

✓ ***Balsamorhiza serrata***, n. sp.—Low, acaulescent, from a thick short tuber-like root: leaves crowded on the small crown, green but appressed pubescent with minute rigid hairs, the short petioles enlarged and sheathing at base, the blades 3–8 cm. long, much exceeding the petioles, strongly veined, ovate, sharply and closely serrate, the cuspidate teeth longest at the middle, diminishing toward the acute tip and the subcordate base: scapes few (1–3), 1–2 dm. high, monocephalous, naked, or sometimes with a pair of opposite long-petioled laciniately cleft or serrate leaflike bracts below the middle, the pubescence spreading, of two kinds, a fine dense indument and a soft long hirsute form which becomes most pronounced at the base of the heads and on the bracts: heads 4–6 cm. broad, the numerous yellow rays about 3.5 cm. long; bracts linear or linear-lanceolate, acute or acuminate, of nearly equal length: chaff of the receptacle little shorter than the flowers: disk achenes very flat, faintly nerved on each side of the low carinate ridge.

Perhaps nearest *B. deltoidea* Nutt. No. 83 by J. B. LEIBERG, from Morrow County, Oregon, May 19, 1894, is the type. Equally representative is his no. 58 from the same county, May 12, 1894.

ROCKY MOUNTAIN HERBARIUM
UNIVERSITY OF WYOMING, LARAMIE



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