



Western Plant Studies. IV

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WESTERN PLANT STUDIES. IV

AVEN NELSON AND J. FRANCIS MACBRIDE

Plagiobothrys Harknessii (Greene), n. comb.—*Sonnea Harknessii* Greene, Pitt. 1: 23. 1887.—Quite distinct from *P. Kingii*, its nearest relative, as GREENE has well shown (*l.c.*). The following representative collections indicate that its range is much greater than originally supposed. NEVADA: Eagle Valley, Ormsby County, June 10, 1902, *C. F. Baker* (1046); CALIFORNIA: Sierra County, 1875, *J. G. Lemmon* (794); OREGON: near Desert Well, 8 miles south of Big Springs, July 5, 1894, *J. B. Leiber* (403).

Plagiobothrys foliaceus (Greene), n. comb.—*Sonnea foliacea* Greene, Pitt. 1: 222. 1888.—This seems to be a well marked species, the dorsal depression of the nutlets being particularly unique, but it is apparently still known only from the original collection.

The maintenance of *Sonnea* Greene (*l.c.* 22) does not seem to be at all desirable. Although, as pointed out by GREENE, the character of the scar in this group is somewhat different from that of the other species of *Plagiobothrys*, the plants are habitually the same when one takes the genus into consideration in its entirety. Moreover, the scar character is not so characteristic in all the species as might be desired if they are to be removed from true *Plagiobothrys*. In this connection JONES has called attention to the fact that *P. Jonesii* (*S. Jonesii* [Gray] Greene) is an *Amsinckia* in everything but its white flowers (*Contrib. West. Bot.* 12: 57. 1908). The pubescence of *P. Jonesii* and the tessellated nutlets surely suggest a relationship to *A. tessellata*, but the white and short corollas that are so widely at variance with the long yellow ones of *Amsinckia* are perfectly congeneric with the SONNEA section of *Plagiobothrys*. Altogether, *Sonnea* would seem superfluous in a group of genera already merging, but which, with *Sonnea* eliminated, seem well enough marked when dealt with in their aggregates.

Cryptantha vinctens, n. sp.—Annual, 10–15 cm. high, rather sparsely pilose or hispidulous, the leaves more or less papillose;

leaves essentially oblong, 1-2 cm. long, 2-3 mm. broad: inflorescence about 1 cm. long, peduncled, terminating the main stem and its lateral branches, mostly 2-forked, close even in age: corollas minute: calyx persistent and often in fruit very finely appressed-hispid, without a lens appearing silky; sepals ovate-lanceolate, 2.5-3.5 mm. long, the midrib pronounced but not cartilaginous: nutlets 3-4, nearly 2.5 mm. long, mainly ovate, lustrous brown, or gray-spotted with brown, very smooth, acutely angled, but not margined; groove closed or slightly open near the forked and closed base.

Rocky slopes Malheur Valley, near Harper Ranch, Oregon, alt. 1100 ft., June 10, 1896, *J. B. Leiber* 2235 (type in Gray Herb.).

This specimen was distributed as *C. submollis* (Gray) Coville (*C. utahensis* [Gray] Greene), and that species is its nearest ally. However, the perfectly smooth, less sharply angled nutlets, with closed or nearly closed groove, and the larger sepals are some of the characters which forbid its being referred to *C. utahensis*. The larger calyces suggest *C. mohavensis* Greene, but in that species and in its near relative *C. oxygona* (Gray) Greene the flowers are conspicuous and the nutlets broader and acutely margined. *C. vincens* and *C. utahensis* occupy positions analogous to those of *C. mohavensis* and *C. oxygona*, except that the two former are more distinct from each other than are the two latter. Furthermore, *C. vincens* and *C. Bartolomaei* Greene (the only other member of the group) are (as pointed out by GREENE in regard to his species) connecting links between the smooth-fruited species in the deciduous calyx and persistent calyx groups. *C. Bartolomaei* is apparently confined to Lower California, and there it is unique in its pubescence and minute nutlets. None of the species, except *C. vincens*, has been secured farther north than Utah or Nevada, the distribution of the group apparently centering in the desert areas of the southwest.

Oreocarya dura, n. sp.—Perennial, the single caudex densely clothed with leaf bases of many years: stems usually single, 1-1.5 dm. high, strigillose and densely hispid with widely spreading hairs: leaves oblanceolate or nearly oblong, about 3 cm. long and 5 mm. wide, not greatly reduced on the stem except in the inflorescence and there bractlike, densely shaggy with an indument of fine tangled hairs almost concealed by numerous pustulate-based spreading hirsute hairs: inflorescence a thrysoid glomerule: calyx densely hispid with greenish yellow hairs, the linear divisions about 4.5 mm. long, a little longer than the corolla tube: corolla white; appendages prominent: fruit unknown.

Although it is not possible to state definitely the relationship of this plant, since the fruit is not known, it is probably nearest those species characterized by muriculate not at all rugose nutlets, such as *O. Shantzii* and *O. nana*. However, its shaggy pubescence and simple perennial caudex mark it as distinct from any species of the short corolla section of the genus. The type, in the Rocky Mt. Herb., is *E. T. Johnson* 418, 1907, Central Colorado.

Oreocarya propria, n. sp.—Cespitose perennial: branches of the woody caudex densely clothed with the bases of past seasons' leaves: leaves numerous, 3–6.5 cm. long, half of this length gradually narrowed from the spatulate blade portion into a petiole which abruptly widens into a fibrosely woolly base; stem leaves mostly much reduced and bractlike; pubescence very appressed, finely strigose, on the upper leaf surfaces, also sparsely hispid, the appressed hispid hairs inconspicuously pustulate at base: stems 1–2 dm. high, floriferous above the basal leaves: inflorescence spikelike, consisting of axillary racemes or clusters, the lower often reduced to a single flower in a leaf axil: calyces on distinct pedicels, strigose and densely covered with spreading yellowish bristles; divisions linear, open in fruit, 3–5 mm. long: corolla white, the tube very slightly exceeding the calyx: nutlets ovate, 3–4 mm. long, evenly roughened with very fine intersecting and sinuous ridges, so as to appear irregularly foveolate; ventral groove enlarging toward the base.

This species is most closely related to *O. nana* Eastw. It is very distinct, however, in its racemose inflorescence, with different pubescence. The old leaves are covered with argillaceous soil in which the plant grew. OREGON: Vale, Malheur County, May 14, 1896, *J. B. Leiberg* 2049 (type in Gray Herb.); chalky hillsides, Malheur Valley, near Harper Ranch, June 8, 1896, *J. B. Leiberg* 2223.

Amsinckia carinata, n. sp.—Foliage, pubescence, calyx, corolla, etc., of *A. vernicosa* H. and A.: nutlets lustrous, smooth, very dark gray with a few darker markings, not less than 5 mm. long, not at all triquetrous, the angles obtuse (almost rounded), the back somewhat concave but distinctly carinate by reason of a raised but rounded ridge; ventral surface sharply keeled, the acute edge, including the linear scar, ending abruptly near the base where there are two distinct depressions, giving the impression of an open bifurcation.

OREGON: rocky soil, Malheur Valley, near Harper Ranch, alt. 1100 ft., June 10, 1896, *J. B. Leiberg* 2234 (type in Gray Herb.). It is surprising indeed to find a representative of this alliance so far north. *A. grandiflora* Kleeb, the species which *A. carinata* so closely simulates in habit, has not been collected north of San Francisco or Monterey. The Oregon species does not seem to differ from *A. vernicosa* except in its fruit; it is only related to *A. grandiflora* in a general way; its nutlets are radically different from both. Mature nutlets of *A. vernicosa* are bright gray, speckled with black, 4-4.5 mm. long, sharply triquetrous (like monster buckwheat grains), and with no obvious scar.

Mertensia Palmeri, n. sp.—Apparently tufted on a woody root: stems ascending, 2-3 dm. high, ciliate-hirsute: leaves ciliate-hirsute below, minutely hispid above; radical leaves ovate, obtusish, 2-5 cm. long, on stout petioles somewhat shorter; stem leaves broadly ovate, 5-10 cm. long, cuneately tapering to the acute apex, the stout margined petioles very short: inflorescence appressed-strigose, paniculate, few-flowered: calyx cleft to the base; the sepals linear-lanceolate, 6-7 mm. long: corolla with broad tube only as long as the calyx, the limb with rather strongly dilated throat and nearly 1 cm. long.

The type was collected somewhere in Arizona by *E. Palmer*, 1869 (no other data). It was distributed as *M. paniculata* Don.? It is deposited in the National Herbarium, the sheet bearing the accession no. 46975, and apparently is related to *M. pratensis*, but is remarkable because of the hirsute stems.

TETRACLEA COULTERI Gray, var. *angustifolia* (Wooton and Standley), n. comb.—*Tetradlea angustifolia* Wooton and Standley, Contrib. Nat. Herb. 16:170. 1913.—Usually readily distinguished from the species by the narrowly oblong leaves. *T. Coulteri* varies in leaf shape considerably, however, and its leaves are often as strongly toothed as are those of the variety. The narrow leaved plants exhibit no other differences that are worthy of note and that may not be found in any representative series of the species.

At present known only from southern New Mexico, by *E. O. Wooton* (*l.c.*); and more recently by *A. Davidson*, of Los Angeles, who secured specimens at Summit, October 1, 1900, no. 352a, and at Duncan, September 1, 1902, no. 1078.

A new section of *Pentstemon*

In BOT. GAZ. 55:381. 1913 we published a species of *Pentstemon* (*P. rex*) in which the anther cells remain closed and saccate at the apex. As stated there, this character seems to have been noted

heretofore only in the red-flowered group, some of which have the anther cell saccate at base and some at apex. It is interesting, therefore, to find two more very distinct species having this unusual anther structure. It is of further interest that, so far, all the species of the section or subsection are from Idaho and have been evolved under similar environments.

The three species may be discriminated as follows:

- Herbage more or less puberulent; corolla large (3-4 cm. long); sterile filament glabrous or nearly so. *P. rex*
 Herbage glabrous; sterile filament bearded
 Flowers about 12 mm. long, in a dense slender thyrses. *P. minidokanus*
 Flowers about 18 mm. long, few, subsessile in axils of linear bracts
P. payetensis

Pentstemon minidokanus, n. sp.—Glabrous throughout, pale: stems slender, 3-5 dm. high: basal leaves narrowly oblanceolate; stem leaves linear-oblong, passing into linear-lanceolate upward: flowers in a long narrow more or less drooping thyrses, deep blue, small for the *P. rex* section: corolla only 12-15 mm. long, gradually dilated, glabrous within and without: sepals ovate, acute, purplish, about 3 mm. long: anthers cells rather short and thick, not exaplate, dehiscent from the base to a closed saccate apical portion of about one-fourth their length; sterile filament moderately bearded at the apex.

Based on specimens secured in the Minidoka, Idaho, National Forest, by *Geo. D. Crockett* of the Forest Service, July 17, 1913 (type in Rocky Mt. Herb.).

Pentstemon payetensis, n. sp.—Glabrous throughout, 3-5 dm. high: leaves rather few and remote; the basal lance-oblong, 4-6 cm. long, on slender petioles more than half as long; the cauline oblong, acuminate, passing into the linear bracts: flowers few, subsessile in the subsessile axillary cymes: sepals 6-9 mm. long, the very slender acumination about twice as long as the ovate oblong body: corolla blue, 20 mm. or less long, its tube about half as long as the moderately dilated limb, glabrous: anther cells as in the preceding; sterile filament scarcely dilated, sparsely bearded toward the apex with strongly refracted hairs.

Communicated to the Rocky Mt. Herb. by *G. B. Mains*, Supervisor of the Payette National Forest, being no. D-73 of the collection in the Supervisor's office at Payette; type in Rocky Mt. Herb. bearing accession no. 72941.

Machaeranthera rhizomata, n. sp.—Perennial from such a running rootstock as is often seen in *Solidago* and *Aster*, with numerous slender roots: stem strict and simple, very leafy, 3–5 dm. high, minutely glandular with some scattered moniliform hairs: leaves quite entire, oblong-lanceolate to broadly linear, up to 3 cm. long, rather densely scabrous: heads few to several, in a short compact corymb with foliar bracts, scabrous-glandular especially on the involucre; involucre bracts linear-lanceolate with long dark-colored slender reflexed or refracted acuminations: rays linear: pappus sordid.

The rootstock, the entire leaves (the bristly tipped teeth wanting), the strict stem, and the compact terminal corymb readily distinguish this species. The type is *C. L. Shear* 3461, West Cliff, Colorado, August 13, 1896, and in the National Herbarium bears accession no. 835200.

Machaeranthera inops, n. sp.—A depauperate perennial, from a tap root, with few to several short widely divaricate or ascending stems from its crown: stems slender, simple or branched, 5–12 cm. long, densely canescent, as are also the leaves: leaves small, from obovate to spatulate-lanceolate, some of them crenately toothed around the summit: heads few, medium size; involucre bracts linear-oblong, subacute, minutely pubescent, obscurely or not at all glandular, some of the tips refracted: rays wanting: pappus fuscous.

The type sheet is no. 417219 in the National Herbarium, collected by *F. A. Walpole* on Glacier Mountain, Oregon, in the Crater Lake region, August 21, 1902, no. 2288.

MACHAERANTHERA INOPS Nels. and Macbr., var. **atrata**, n. var.—Closely resembling the species but with fewer stems and fewer, larger heads: involucre broadly turbinate rather than hemispheric, and bracts with dark-purple bands or margins.

Crater Lake Park, on firm pumice gravel at the summit of Llao Rock. It is *F. V. Coville* 1470, September 14, 1902. The type sheet bears no. 415285 in the National Herbarium.

Macronema filifomis, n. sp.—Low freely branched undershrub with the aspect of *Chrysothamnus*, 2–3 dm. high; herbage from glabrate to softly lanulose: leaves numerous, linear-filiform, 2–4 cm. long: heads numerous, paniculate, 8–10 mm. high, 10–15-flowered;

involucral bracts in 3 unequal series, linear-acuminate, with delicate membranous ciliolose margins: ray flowers few (1-4 or wanting), ligule oblong, 6-8 mm. long; disk flowers slender, tube longer than the slightly dilated throat: linear-acuminate anthers and stigmas well exerted: achenes brownish, softly pubescent becoming glabrate.

The material seen by the writers consists of two fine sheets collected by *F. V. Coville* and *Elmer I. Applegate*, under nos. 544 and 545, August 16, 1897 in *Pinus Murrayana* forest, on the headwaters of the Deschutes River, Crook County, Oregon. These are the type sheets and bear accession nos. 380795 and 380796 in the National Herbarium.

Macronema glomerata, n. sp.—Low undershrub, freely branched, whitened throughout with short dense woolly pubescence, 2-3 dm. high: leaves linear, 2-4 cm. long, 1-2 mm. broad, callous-tipped: heads few (4-10), crowded at the summit of the stems, 10-14 mm. high; involucral bracts unequal, resembling the leaves into which they pass: rays conspicuous, 2-5, linear-oblong; disk flowers about twice as many as the rays, their slender tubes longer than the fusiform throat: fuscous pappus about as long as the corollas: achenes silky, less than half as long as the pappus.

The splendid sheet of this species, accession no. 401293 in National Herbarium, is named as the type. It is *F. A. Walpole* 370, secured at Ashland, Oregon, September 12, 1899.

Macronema Walpoliana, n. sp.—An undershrub but probably taller than the preceding, the stems simple up to the narrow thyrsoid panicle of numerous heads, glabrate or with a minute lanate pubescence persisting in the inflorescence: leaves linear, subcuspidate, glabrate and subglutinous, 2-4 cm. long: involucre turbinate, its bracts scarious, sublanate or ciliate, in 2 or 3 series; number of flowers as in the last: rays with conspicuous oblong-linear ligules 10-14 mm. long: achenes brownish, sparsely pubescent, a little shorter than the copious fuscous pappus.

Distributed under *Aplopappus* without specific determination. From Klamath County, Oregon, *F. A. Walpole* 387 and 406, collected September 19 and 27, respectively, 1899. These two sheets bear accession nos. 401312 and 401334 in the National Herbarium, the latter being designated as the type.

Macronema scoparia, n. sp.—A profusely and fasciculately branched undershrub; the old stems with a grayish-brown shreddy

bark; the herbaceous stems slender, very leafy, greenish brown: leaves narrowly linear, glabrous and subglutinous, 1-3 cm. long: heads few, subracemose at the ends of the twigs; involucre bracts glabrous or obscurely ciliate on the scarious margins: rays none or only 1 or 2 in each head, the ligule oblong-linear and conspicuous; disk flowers not more than 5-8: the brown glabrous achenes not more than half as long as the pappus.

This was also secured by *Walpole* in Oregon. It bears his no. 386, Hunt's Ranch, Dead Indian Road, Jackson County, September 18, 1899. The type is on sheet no. 401311, National Herbarium.

Macronema pulvisculifera, n. sp.—Base evidently shrubby, the numerous branches 1-2 dm. high, naked below, very leafy toward the racemose-paniculate inflorescence, glabrous but covered with dustlike resinous or glandular particles even on the involucre: heads mostly terminal on the branchlets of the inflorescence, rather large (1 cm. or more), the narrowly linear foliar bracts passing into those of the involucre: rays conspicuous, 2-5, the ligule about 1 cm. long; disk flowers 10 or more, with slender achenes a little shorter than the pappus and slender corolla.

Based on a full sheet of specimens, no. 401010 in the National Herbarium collected by *F. A. Walpole*, on Mount Hood, Oregon, near Cloudleap Inn, no. 98, September 7, 1898.

Macronema imbricata, n. sp.—A pale green spreading shrub, glabrous but for a sparse glandular puberulence on leaves and involucre; main stems 2-3 dm. long, stout and prostrate, their numerous branches and the season's growth erect, about 1 dm. high, very leafy: leaves crowded and strongly overlapping, obovate-spatulate, the rounded apex tipped with a short tooth: heads solitary or very few at the ends of the branches, variable in size (7-12 mm. high); outer involucre bracts foliar, smaller but similar to the leaves with which they connect; inner bracts lanceolate, greenish with scarious margins: rays none, solitary, or very few, relatively short and broad; disk flowers many (15-25), the limb short and erect: achene brown, strigose, as long as the dingy pappus.

The type sheet is *Heller* 7182, "ridge south of Donner Pass, Nevada County, California, at about 8500 ft.," August 17, 1903. Deposited in the National Herbarium and bearing accession no. 467563. Originally distributed as *M. suffruticosa*.

CHAENACTIS MAINSIANA Nels. and Macbr. *BOT. GAZ.* 56:478. 1913.—In the recent treatment of this genus in the *North American Flora*, the above species is reduced to *C. pumila* Greene (34:73. 1914). The latter is described as having the leaves “broadly obovate in outline,” but in the key (*l.c.* 66) it is placed under the subdivision “leaves oblanceolate or elliptic in outline.” The subdivision parallel to this reads “leaves obovate cuneate or flabelliform in outline.” Under this heading are placed *C. nevadensis* and *C. Evermannii*. The latter is scarcely more than a variety of the former, and in our publication we compared *C. Mainsiana* to these species, and according to the key referred to, it would have to be placed with these species because it has flabelliform leaves. But admitting that the key is fallacious (witness the disposition of *C. pumila*), let us compare *C. Mainsiana* with that species. *C. pumila* Greene, Leaflets 2:221 (not 223 as in *North American Flora*) 1912, has “densely glandular-hirsute involucre” and “densely glandular peduncles” which are only 2–4 cm. long. These are characters which belong to *C. alpina* in greater or less degree, but are absolutely at variance with the characters of *C. Mainsiana*. The latter species, even when young, is greenish gray with a lepidote tomentum which is sprinkled with resinous atoms as in *Artemisia atomifera* Piper, and the peduncles, which usually bear more than one head, rise 5–10 cm. above the leaves. It is evident, therefore, that the nearest relative of this species is *C. nevadensis*, the species to which we originally compared it (*l.c.*); and it is very much more distinct from *C. nevadensis* than is *C. Evermannii* Greene, maintained in the *North American Flora*.

Evax breviflora (Gray), n. comb.—*E. caulescens* (Benth.) Gray, var. *brevifolia* Gray, *Syn. Fl.* 1:229. 1888; *Hesperevax brevifolia* Greene, *Fl. Fran.* 402. 1897.—JEPSON has raised the var. *sparsiflora* Gray to specific rank, and it seems to us that the above variety deserves equal recognition. *E. brevifolia* has the heads in terminal clusters as in the species, but the leaves resemble those of *E. sparsiflora*. As a result, the aspect of the plant is distinctive. Furthermore, each species is confined to its own range; *E. brevifolia* grows in northern California and southwestern Oregon, and is the northernmost species of this group of curious composites.

LACTUCA SPICATA (Lam.) Hitch., var. **multifida** (Rydb.), n. comb.—*L. multifida* Rydb. Mem. N.Y. Bot. Gard. 484. 1900.—The salient character of this plant (linear or narrowly lanceolate leaf divisions) is a striking one, but except for this foliar difference the plant is referable to *L. spicata*. Accordingly, its relationship is better indicated if it is treated as a variety of that species. The variety is found throughout the Northwest, but it is not frequent.

ROCKY MOUNTAIN HERBARIUM
UNIVERSITY OF WYOMING, LARAMIE