

## Notes on Texas Compositae — IV<sup>1</sup>

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**VERNONIA vulturina** Shinners, sp. nov. *V. fasciculatae* Michx. affinis, robustior, caule stramineo foliis (superioribus solum visis) lanceolatis acuminatis serratis brevissime petiolatis (petiolis 2-3 mm. longis), capitulis grandioribus 25-floris involucris 9-10mm. altis phyllariis ovato vel oblongo-lanceolatis subacutis, pappo paulum rufescente, TYPE: Swamp, Buzzards' Spring, Dallas Co., very scarce, *J. Reverchon* 404 (field no.), without date (in Herb. Missouri Botanical Garden.)

*Vernonia vulturina* shares with *Dalea Reverchoni* (Wats.) Shinners the distinction of being one of the most restricted endemics of north Texas. The type is the only specimen of it known. This consists of the top of an apparently robust plant in early flower. It suggests the midwestern prairie species *V. fasciculata*, but is much larger in all parts, with more broadly pointed phyllaries, and leaves on distinct though very short petioles, the blades up to 16.5 cm. long. The exact location of Buzzards' Spring (where Reverchon collected a number of rare species) is not known, although Dr. S. W. Geiser (personal communication) conjectures that it might have been in what is now Exall Park, well inside the present city of Dallas, but near the eastern city limits in Reverchon's time (not later than 1905). It probably was at some spot on the sandy Trinity River terrace, since some of the plants collected there (e.g., *Isopappus divaricatus*) are typically sandy land species. On the type specimen of *Vernonia vulturina* is penciled in an unidentified hand "Vernonia n. sp.?"

**VERNONIA MARGINATA** (Torr.) Raf. var. **tenuifolia** (Small) Shinners, comb. nov. *V. tenuifolia* Small, Bull. Torr. Bot. Club 25: 145. 1898. No type was cited by Small, who states merely that the species grows in "dry soil, western

<sup>1</sup>Grateful acknowledgment is made to Miss Ruth D. Sanderson, Librarian, Gray Herbarium, for a copy of the original description of *Xanthocephalum* Willd.; to Dr. G. L. Wittrock, New York Botanical Garden, for the loan of the types of *Prenanthes? pauciflora* and *p.? tenuifolia*; and to Dr. Robert E. Woodson, Missouri Botanical Garden, for many courtesies during visits at St. Louis, and for the loan of collections of *Greenella*, *Gymnosperma*, and *Xanthocephalum*.

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Texas." Ten sheets of *Vernonia marginata* (in Herb. Southern Methodist University) from Trans-Pecos Texas have involucre 7.0-8.5 mm. high, larger phyllaries 2.3-2.8 mm. wide, and lower leaves (when present) 4-9 mm. wide, agreeing with descriptions of *V. tenuifolia* given by Small and by Gleason (N. Amer. Fl. 33: 92, 1922). Eleven sheets of *V. marginata* from the Panhandle (in or near which was the type locality of the species) and South Plains of Texas have involucre 8-10 mm. high, larger phyllaries 2.0-2.5 mm. wide, and lower leaves (when present) 7-14 mm. wide. So similar are the two in most respects that Small's species seems better treated as a variety of *V. marginata*.

×VERNONIA GUADALUPENSIS Heller, *Muhlenbergia* 1: 28. 1901. This is without much doubt a hybrid of *V. Baldwinii* Torr. and *V. Lindheimeri* Engelm. & Gray. It is known from the rather narrow belt in central and north Texas in which the ranges of the two latter species overlap; collections have been seen from Dallas, Gillespie, Kerr (isotype, *Heller 1909*, from Kerrville, in Herb. Missouri Botanical Garden), and Travis counties. Some specimens show greater resemblance to one or the other putative parent, and presumably are the offspring of back-crosses. *Vernonia Reverchonii* Gleason, Bull. N.Y. Bot. Gard. 4: 208, 1906 (see also N. Amer. Fl. 33: 87, 1922), of which I have seen only an isotype (from Seymour, Baylor Co., in Herb. Missouri Botanical Garden), suggests a hybrid of *V. Baldwinii* and *V. marginata*, and occurs in an area in which the ranges of these two meet.

VERNONIA BALDWINII Torr., Ann. Lyc. N.Y. 2: 211. 1827. *V. interior* Small, Bull. Torr. Bot. Club 27: 279. 1900. *V. Baldwinii* var. *interior* (Small) Schubert, *Rhodora* 38: 370. 1936. According to Gleason (N. Amer. Fl. 33: 58, 1922), *V. interior* differs from *V. Baldwinii* in having "principal involucre scales erect or slightly spreading, glabrous within," instead of "squarrose or recurved, pubescent within." The tips of the phyllaries vary from loosely appressed to squarrose, and from puberulent to almost completely glabrous on the inner face. The geographic distribution of the extremes is nearly identical (according to Gleason, Iowa, and eastern Nebraska to Arkansas and Texas for *V. interior*, Illinois to Arkansas and Oklahoma for *V. Baldwinii*; the latter is found also in Texas). I consider the two to be merely forms of one species. So-called *V. interior*, with ap-

pressed phyllaries, is more common in Texas.

**ISOCOMA Palmeri** (Gray) Shinners, comb. nov. *Aster Palmeri* Gray, Proc. Amer. Acad. 17: 209. 1882. A low shrub from a woody taproot, the involucre glutinous, the phyllaries with dark tips like those of other species *Isocoma*, and wholly unlike those of true asters; the rays are said to be white, in the original description. Of the five specimens at hand, one is noted as having "heads yellowish white." The others bear no notes as to flower color, but one was misidentified as *Euthamia gymnospermoides*. The genus *Euthamia* (more closely allied to *Isocoma* and *Xanthocephalum*, including *Gutierrezia*, than to *Solidago*) has horizontal rhizomes instead of a taproot. In his account of *Isocoma* (as a section of *Haplopappus* in *The genus Haplopappus*, Carn. Inst. Wash. Publ. 389: 222, 1928), H. M. Hall remarks "the species of this section are so few and so detached from one another that it is difficult to determine the sequence in which differentiating characters have been evolved." *Aster Palmeri* seems not out of place in the somewhat diverse genus *Isocoma*, whose other species it greatly resembles in involucre, habit, and vegetative features; an *Aster* it certainly is not. The species is endemic in the Rio Grande Plain, growing in damp ground. Specimens have been seen from La Salle, McMullen, Nueces, San Patricio, and Willacy counties. According to the original description, it has also been collected at Eagle Pass, Maverick County.

**ERICAMERIA laricifolia** (Gray) Shinners, comb. nov. *Aplopappus laricifolius* Gray, Pl. Wright, 2 (Smithsonian Contrib. vol. 5 art. 6): 80. 1853. TYPE: Guadalupe Pass, "New Mexico" (Culberson Co., Texas), *Wright 1188*, Oct. 1851 (isotype in Herb. Missouri Botanical Garden). This species has also been collected in the Franklin Mountains, El Paso Co., and in the Chinati Mountains, Presidio Co.; it extends westward through New Mexico and Arizona to southeastern California.

**XANTHOCEPHALUM GYMNOSPERMOIDES** (Gray) Benth. & Hook. JEFF DAVIS Co.: infrequent in moist igneous soil along highway, Limpia Canyon 14 miles north of Fort Davis, Davis Mts., alt. 4700 ft., *Barton H. Warnock 7206*, Sept. 4, 1947. Not previously reported from Texas.

*Gymnosperma*, *Xanthocephalum*, *Gutierrezia*, and *Amphichyris* were maintained as "very close" genera by Gray in

the Synoptical Flora, differing mainly in the quite variable features of pappus, size of heads, and number of rays. Bentham and Hooker (Gen. Pl. 2: 250, 1873) and more recently Blake (Contrib. U.S. Nat. Herb. 22: 592, 1924) merged *Amphiachyris* with *Gutierrezia*, but did not go far enough. All four, and with them the heterochromous *Greenella* (as Greene himself suspected; Leaf. Bot. Obs. & Crit. 1: 43, 1910) constitute a single perfectly coherent genus, allied to *Isocoma* and *Euthamia*, from which it differs in having a scaly pappus (reduced or wanting in some species) instead of a pappus of hairs. The five genera here combined all have glutinous, coriaceous-chartaceous phyllaries with green or dark tips not formed by expansion of a midrib; all show variation in number of rays and development of pappus; all have a taproot system, and rather similar narrow leaves; and all are characteristic of the Southwestern-North Mexican desert flora and its derivatives. That they represent one phylogenetic stock is unquestioned, and in view of the very slight differences between them, they seem best treated as a single genus, less diverse than *Helianthus*, *Rudbeckia*, *Solidago*, *Aster*, and other large genera of *Compositae*. Since *Xanthocephalum* Willd., Magazin für die neuesten Entdeckungen in der gesammten Naturkunde (Gesellschaft Naturforschender Freunde zu Berlin) 1: 140, 1807, is the earliest name in the group, the following transfers are necessary for Texas plants:<sup>3</sup>

**XANTHOCEPHALUM dracunculoides** (DC.) Shinnery, comb. nov. *Brachyris dracunculoides* DC., "Not. VII. Jard. Gen. p. 1" (Mém. Soc. Phys. Hist. Nat. Genève 7: 268). 1836. (Reference not seen.) Also Prodr. 5: 313. 1836. *Amphiachyris dracunculoides* (DC.) Nutt., Trans. Amer. Philos. Soc. n.s. 7: 313. 1840. *Gutierrezia dracunculoides* (DC.) Blake, Contrib. U.S. Nat. Herb. 22: 592. 1924.

**XANTHOCEPHALUM texanum** (DC.) Shinnery, comb. nov. *Hemiachyris texana* DC., Prodr. 5: 313-314. 1836. *Gutierrezia texana* (DC.) T.&G., Fl. N.A. 2: 194. 1842.

<sup>3</sup>To these may be added a few names of species not found in Texas:

**XANTHOCEPHALUM arizonicum** (Gray) Shinnery, comb. nov. *Greenella arizonica* Gray, Proc. Amer. Acad. 16: 81-82. 1880.

**XANTHOCEPHALUM discoideum** (Gray) Shinnery, comb. nov. *Greenella discoidea* Gray, Proc. Amer. Acad. 19: 2. 1883.

**XANTHOCEPHALUM ramulosum** (Greene) Shinnery, comb. nov. *Greenella ramulosa* Greene, Pittonia 1: 302-303. 1889.

**XANTHOCEPHALUM digynum** (Blake) Shinnery, comb. nov. *Gutierrezia digyna* Blake, Contrib. U.S. Nat. Herb. 22: 591. 1924.

**XANTHOCEPHALUM grande** (Blake) Shinnery, comb. nov. *Gutierrezia grandis* Blake, Contrib. U.S. Nat. Herb. 22: 592-593. 1924.

**XANTHOCEPHALUM sphaerocephalum** (Gray) Shinners, comb. nov. *Gutierrezia sphaerocephala* Gray, Pl. Fendl. (Mem. Amer. Acad. n.s. 4) : 73-74. 1849. Heads rather broad for a *Gutierrezia*, not congested, but solitary as in *Xanthocephalum* proper, though numerous; small plants have exactly the appearance of *Greenella arizonica* except for having yellow instead of white rays. Sandy soils in the Panhandle, southward to Mitchell Co.

**XANTHOCEPHALUM SPHAEROCEPHALUM** var. **eriocarpum** (Gray) Shinners, comb. nov. *Gutierrezia eriocarpa* Gray, Pl. Wright. 1 (Smithsonian Contrib. vol. 3 art. 5) : 94. 1850. Sandy or gravelly soil, Trans-Pecos and southern Rio Grande Plain.

**XANTHOCEPHALUM Sarothrae** (Pursh) Shinners, comb. nov. *Solidago Sarothrae* Pursh., Fl. Am. Sept. 2: 540. 1814. *Gutierrezia Sarothrae* (Pursh.) Britton & Rusby, Trans. N.Y. Acad. Sci. 7: 10. 1887.

**XANTHOCEPHALUM microcephalum** (DC.) Shinners, comb. nov. *Brachyris microcephala* DC., Prodr. 5: 313. 1836. *Gutierrezia microcephala* DC., Gray, Pl. Fendl. (Mem. Amer. Acad. n.s. 4) : 74. 1849.

**XANTHOCEPHALUM tenue** (Greene) Shinners, comb. nov. *Gutierrezia tenuis* Greene, Pittonia 4: 55-56. 1899. Probably other perennial or shrubby species of *Gutierrezia* named by Greene are to be credited to Trans-Pecos Texas.

**XANTHOCEPHALUM longipappum** (Blake) Shinners, comb. nov. *Gutierrezia longipappa* Blake, Journ. Wash. Acad. Sci. 33: 266-267. 1943.

**XANTHOCEPHALUM glutinosum** (Spreng.) Shinners, comb. nov. *Selloa glutinosa* Spreng., Nov. Prov. Hal. 36. 1819. (*Fide* Blake, Contrib. U.S. Nat. Herb. 26: 230-231. 1930.) *Gymnosperma corymbosum* DC., Prodr. 5: 312. 1836.

**VERBESINA MICROPTERA** DC., Prodr. 5: 616. 1836. *V. texana* Buckley, Proc. Phila. Acad. 13 (1861) : 458. 1862. Small uses Buckley's name (Fl. S.E. U.S. 1272, 1903 and 1913), which is not mentioned by Robinson and Greenman in their *Synopsis of the genus Verbesina* (Proc. Amer. Acad. 34: 560, 1899; reprinted as Contrib. Gray Herb. n.s. 16). The type was collected by Berlandier between Laredo and San Antonio ("Bexar"). There are collections in the Herbarium of Southern Methodist University from Aransas, Cameron, Hidalgo, and San Patricio counties.

*XIMENESIA nana* (Gray) Shinnners, comb. nov. *X. encelioides* var. *nana* Gray, Pl. Wright. 2 (Smithsonian Contrib. vol. 5 art. 6) : 92. 1853. (Excluding apparent type in Gray Herb.; see remarks by Robinson and Greenman on mixup of labels, Proc. Amer. Acad. 34: 543.) *Verbesina nana* (Gray) Robinson & Greenman, Proc. Amer. Acad. 34: 543. 1899. *Ximenesia nana* is a dwarf perennial of the southwestern Edwards Plateau and Trans-Pecos Texas, and adjacent Mexico. *X. encelioides* Cav. is an annual, chiefly of sandy soils, widespread in west and south Texas, spreading eastward along railroads and about cities. The rays are deeply cut at apex, unlike those of our species of *Verbesina*.

*HELIANTHUS PRAETERMISSUS* E. E. Wats., Papers Michigan Acad. Sci. 9: 335. 1929. Watson saw only the type specimen, collected near Rio Laguna between the Zuñi and Little Colorado Rivers, New Mexico, *Sitgreaves* (in Gray Herb.). The following collection (determined by Dr. C. B. Heiser, Jr., 1949) extends its range into Texas. PECOS Co.: 7 miles west of Fort Stockton, *H. R. Reed* 188, Sept. 11, 1947 (in Herb. Southern Methodist University). The plant superficially resembles the Rocky Mountain *H. Nuttallii* T.&G., a rhizomatous perennial, but is an annual with a taproot.

*LYGODESMIA pauciflora* (Torr.) Shinnners, comb. nov. *Prenanthes?* *pauciflora* Torr., Ann. Lyc. N.Y. 1: 210. 1824. TYPE: Base of the Rocky Mountains, *Dr. James* (in Herb. N.Y. Bot. Gard.). *Ptiloria scabrella* Greene, Pittonia 3: 311. 1898. TYPE: Texas, *G. C. Nealley* ("S. C. Neally"), in 1888 (in Greene Herb., University of Notre Dame). *Stephanomeria pauciflora* (Torr.) A. Nels., Coulter & Nelson's New Man. Rocky Mt. Bot. 588. 1909.

*Stephanomeria* and *Lygodesmia* differ solely in the presence of a plumose instead of a simple pappus in the former, a difference I do not consider sufficient basis for maintaining separate genera. *Lygodesmia pauciflora* is a common roadside weed in the Texas Panhandle, the numerous densely tangled branches forming bushy clumps 15-36 cm. high. The type specimen is a fragment of stem approximately 50 cm. long, larger than average, but having the same coarse, zig-zag, thick stem (4 mm. thick at lowest part) of the Panhandle plant. The few branches are mostly broken off, suggesting that Dr. James experienced the difficulties I did in trying to untangle the bushy clumps to make herbarium

specimens. Only two heads are present; involucre 9 mm. high, pappus bristles 7-8 mm. long, with branch hairs 1.0-1.4 mm. long, these reduced to scabrous pubescence in the basal 0.5-0.75 mm. of the bristle. Judging from the distribution of the two forms, I would surmise that the type of *Prenanthes? pauciflora* came from some locality along the Canadian River en route to the Rocky Mountains, and the type of *P.? tenuifolia* was obtained nearer the "base of the Rocky Mountains." In Torrey's account, both are said to have come from "near the Rocky Mountains."

**LYGODESMIA tenuifolia** (Torr.) Shinnery, comb. nov. *Prenanthes? tenuifolia* Torr., Ann. Lyc. N.Y. 1: 210. 1824. *Stephanomeria tenuifolia* (Torr.) Hall, Calif. Publ. Bot. 3: 256. 1907. TYPE [locality not stated on specimen]: *Dr. James* (in Herb. N.Y. Bot. Gard.). The type sheet bears three fragments 21, 23, and 18 cm. long. Superficially they are almost indistinguishable from the type of *P.? pauciflora*, but are more slender in appearance, and not at all zig-zag, with mostly long and slender branches as much as 14 cm. in length; heads few, long-peduncled, involucre 8.2 mm. high, pappus bristles 7.2 mm. long, the branch hairs 0.6 mm. long, dense to the base, though shorter and sparser in the basal 0.3 mm. of the bristle. These have the general appearance of a plant which is rather common in Trans-Pecos Texas, and which in the field is ordinarily of quite different appearance from the Panhandle plant: the stems 30-65 cm. high, branching chiefly in the upper part, not forming dense bushy clumps (though browsed or trampled plants take on the appearance of the Panhandle species). Specimens of the two are difficult to distinguish in the herbarium.

The types of the following species have not been examined:

**LYGODESMIA Bigelovii** (Gray) Shinnery, comb. nov. *Hemiptilium Bigelovii* Gray, Bot. Mex. Bound. Surv. (vol. 2) 105. 1859. Said to be annual or biennial; type from Frontera, New Mexico. Listed as a synonym of *Stephanomeria exigua* Nutt., 1841 (not *Lygodesmia exigua* Gray 1874), by Gray, Syn. Fl. 1 pt. 2: 414, 1884.

**LYGODESMIA Wrightii** (Gray) Shinnery, comb. nov. *Stephanomeria Wrightii* Gray, Proc. Amer. Acad. 19: 62. 1883. "Seemingly biennial"; type from stony bed of Howard's Creek, "West Texas" [Val Verde Co.], *Wright 1301*, 1852.

**LYGODESMIA Thurberi** (Gray) Shinners, comb. nov. *Stephanomeria Thurberi* Gray, Pl. Thurb. (Mem. Amer. Acad. n.s. 5) : 325. 1855. Type from the Sierra de los Alamos, Sonora; another collection cited from "the neighborhood of the Mimbres," New Mexico, *Dr. Henry*.

## Notes on Texas Compositae — V<sup>1</sup>

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**ASTER TEXANUS** Burgess in Small, Fl. S.E. U.S. 1214 and 1339. 1903. "Type, Tex., *Lindheimer*, 1842 (?) in Herb. Mo. B. G." I have endeavored without success to locate the type specimen in three separate visits to the Missouri Botanical Garden and one to the New York Botanical Garden. It is possible that it was loaned to Burgess and is now with his *Aster* collection, which was still crated and in storage at the time of my visit to New York (January, 1946). Since only two heterophyllous species of *Aster* occur in the areas in which Lindheimer collected, the present one and *A. vernalis* (Engelm.) Burgess, the disappearance of the type fortunately does not pose serious difficulties. *Aster texanus* is a very common species of thickets or less often of open ground along the Blackland Prairie belt and adjacent areas from Bexar and Kerr counties northward into Oklahoma and northeastward to Texarkana. Typically the plant is freely branched in the upper part, the branches elongate and spreading at right angles from the stem, often more or less arcuate, with long pedicels or secondary branchlets, the involucre broadly obconical, the phyllaries with prominent and rather broad though elongate green tips, the rays white (most commonly), varying to lavender or light violet-blue. In the field it is quite distinct from the midwestern *A. Drummondii* Lindl., which has a compact inflorescence with short, ascending branches, short pedicels, narrowly conical involucre, and phyllaries with slender green tips. Injured specimens of either, with abnormal branching, may take on something of

<sup>1</sup>Grateful acknowledgment is made to Dr. R. T. Clausen, Curator of the Herbarium, Cornell University, for the loan of specimens of *Aster praealtus* and varieties, and for a photograph of the type *A. praealtus* var. *imbricator* Wiegand; and to the Library of the University of Texas, for the loan of volume two of the *American Monthly Magazine and Critical Review*, containing Rafinesque's review of Pursh's *Flora Americae Septentrionalis*. As usual, unless otherwise indicated, cited specimens are in the Herbarium of Southern Methodist University.

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