

Notes on Texas Compositae—III

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CHAETOPAPPA PARRYI Gray. BREWSTER Co.: Frequent in deep limestone canyon on east side of Mt. Ord, Gage Estate, Del Norte Mts., alt. 4700 ft., *Barton H. Warnock 6420*, July 14, 1947.² In my *Revision of the genus Chaetopappa* (*Wrightia* 1: 71, 1946), this species is reported only from the nearby Mexican states of Coahuila, Nuevo Leon, and Tamaulipas, although the type locality is within sight of the Texas border.

HELEASTRUM **hemisphericum** (Alexander) Shinnery, comb. nov. *Aster hemisphericus* Alexander in Small, Man. S.E. Fl. 1391-1392 and 1509. 1933. TYPE: Wills Point, Van Zandt Co., Texas, *J. Reverchon 4363*, Oct. 18, 1902 (in Herb. N.Y. Bot. Gard.). Including *Aster Gattingeri* Alexander, l.c. (TYPE: Tullahoma, Tennessee, *Gattinger*, Aug. 19; now deposited in Herb. N.Y. Bot. Gard.), and *Aster pedionomus* Alexander, l.c. (TYPE: Dry soil, Cheatham Co., Tennessee, *Eggert*, Aug. 19, 1897; in Herb. N.Y. Bot. Gard.). Svenson (*Journ. Tenn. Acad. Sci.* 16: 158, 1941) observed that *Aster Gattingeri* and *A. pedionomus* represented variations of the same species, and adopted the former name, which is antedated however by *Aster Gattingeri* Kuntze, 1891. Cronquist (*Bull. Torr. Bot. Club* 74: 144-145, 1947) merged both species with *A. hemisphericus*, and treated them as a subspecies of *A. paludosus* Ait. (with spelling improperly altered to *hemisphaericus*). I agree with Cronquist that all three of Alexander's species should be treated as one, but prefer to follow De Candolle (*Prodr.* 5: 263-264, 1836) and Greene (*Pittonia* 3: 48-50, 1896) in recognizing the segregate genus *Heleastrum*, and do not concur in Dr. Cronquist's adoption of the Du Rietzian usage of the subspecific category. *Heleastrum* differs from *Aster* proper in the unique tuberiform woody corm or woody crown, the phyllaries with green tips not formed by expansion of the midvein, and the more or less clavate pappus bristles—

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²Unless otherwise stated, cited specimens are in the Herbarium of Southern Methodist University.

surely more positive technical differences than are to be found between *Aster* and *Erigeron*, or *Erigeron* and *Conyza*, or *Solidago* and *Haplopappus* (in the impossible broad interpretation of the latter genus). To these differences may be added the marked homogeneity of *Heleastrum*, and the similarity of its species to those of *Prionopsis*, *Pyrrcoma*, and other homochromous *Astereae*, already noted by Gray (who first described *Heleastrum Chapmanii* as a species of *Prionopsis*, with query; in T.&G., Fl. N.A. 2: 245, 1842), and by Greene. In addition to the species listed by Greene, and *H. hemisphericum*, the genus includes the peculiar and quite distinct *H. verutifolium* (Alexander) Shinnors, comb. nov. (*Aster verutifolius* Alexander in Small, Fl. S.E. U.S. 1392 and 1509. TYPE: Ocean Springs, Mississippi, Earle, Sept. 11, 1899; in Herb. N.Y. Bot. Gard.)

Heleastrum hemisphericum develops an elongate-ovoid woody corm, from which appear shallow rhizomes. The older of these also become woody, and have swollen nodes which produce roots and flowering stems, as well as secondary rhizomes, eventually forming a clone³ of indeterminate age and size. Specimens of one of the vegetatively produced offspring will not show the ovoid corm, but will have an irregular woody crown, which is not present on most herbarium specimens. The type specimen of *Aster Gattingeri* shows no evidence of a swollen woody rootstock, though described as having one. Alexander's recognition of three different species was due to the small number and fragmentary nature of the specimens he examined.

Heleastrum hemisphericum is a showy plant with violet-blue or purple-blue rays, flowering in September and October, in the sandy pine region of east Texas, preferring somewhat damp soils. Specimens are at hand from Brazos, Cass, Hardin, Red River, Shelby, Smith, and Van Zandt counties. It is possible that the eastern plants described as *Aster Gattingeri* and *A. pedionomus*, said to grow in dry soil, represent a distinct variety, but I am not acquainted with them in the field and have seen very few properly collected specimens.

³The Greek original of this word, *klon*, is spelled with omega (long o) instead of omicron (short o). In English, this distinction is made by adding a terminal *e*. The preferable English form is therefore *clone*, not *clon*, which was used by Webber in introducing the term (Science n.s. 18: 501-503, 1903) and is still more frequently used than *clone*.

I shall doubtless be charged with inconsistency for separating *Leucelene*, *Machaeranthera*, *Heleastrum*, and other genera from *Aster*, while merging *Bourdonia* (*Keerlia*) with *Chaetopappa*, *Serinea* with *Krigia*, and *Franseria* with *Ambrosia*. There are two general reasons for doing so, apart from any question of morphological differences or resemblances. First, to place species together in a genus is to indicate a belief that they are phylogenetically closely allied. In Asa Gray's time, before phylogeny had become an essential part of taxonomic thinking, it was (and often still is) the accepted practice to assign anomalous species to a large and varied genus, as a more or less avowedly temporary expedient. Technical morphological differences (in the Compositae, especially in the pappus) were of paramount importance, in considerable part because of the absence of other bases for taxonomic judgment. Now, sixty to more than a hundred years after Gray, we have discovered more species, we have vastly more and better study material, we have much more detailed knowledge of geographic distribution, and phylogeny, ecology, and geological history have become essential tools in taxonomic investigation.⁴ A large genus which has grown like *Aster* by accretion of anomalies and under compulsion of temporary expedience will inevitably require reorganization and dismemberment—not because it is too large, but because it does violence to any reasonable modern evaluation of relationships to keep in it all the species that have been placed there.

When taxonomic arguments are inconclusive or indecisive, then other arguments may be brought up: precedent, established usage, convenience, or utility. These are a second group of reasons prompting me to actions that at times appear inconsistent. There was no really good taxonomic argument, for example, for maintaining *Kuhnia* distinct from *Brickellia*, but there were very strong arguments of

⁴Cytology is essentially an extension of morphology, and just as with any particular morphological feature, cytological peculiarities are sometimes of value, sometimes not. Though cytotaxonomy is currently the leading taxonomic fad (as the word is used by Stevens, *Chronica Botanica* 11, no. 3: 147-154, 1947; reprinted from *Science* n.s. 75: 499-504, 1932), I hardly think it will replace the broader "orthodox" ("old-fashioned") taxonomy. It is inconceivable that all the non-professional users of floras and monographs will be trained in cytology, or that there will ever be any practical reason or even any practical possibility of monographing the entire flora of the entire world on a cytological basis—or on the basis of mass collections, or any other so-called biosystematic method. These are of much greater importance to the theoretical evolutionist than to the practicing taxonomist, for whom they are incidental tools. Modern taxonomists, self-consciously eager to be up to date with everybody else, are apt to forget their own field and stray into neighboring pastures.

precedent, established usage, and above all, of convenience. I would extend the argument of convenience by saying that it may be local or regional, not necessarily cosmopolitan. To leave the Compositae for a moment, a South African botanist might oppose any fragmentation of the huge and diverse genus *Euphorbia*. But in Texas, where it is very much smaller, and one of the larger groups of species in it (*Chamaesyce*) is homogeneous, distinct, and easily recognizable, and already segregated in several standard floras, it is convenient to recognize a separate genus. To insist that there must be only one interpretation for all times, places, and persons is to deny relativity, abolish perspective, and refuse to permit taxonomy to be geared to the use of ordinary human beings.

FACELIS RETUSA (Lam.) Schultz-Bip. *F. apiculata* Cass. This little annual, native of southeastern South America, was listed as established in Florida, Alabama, and Georgia in Small's *Manual of the Southeastern Flora* (p. 1404, 1933). It was not listed in Cory and Parks' *Catalogue of the Flora of Texas*, but has become rather common and widespread in sandy soil along roadsides or in disturbed places throughout southeastern Texas. Earliest collections were: POLK Co.: Indian Village, B. C. Tharp, April 10, 1936 (in Herb. Univ. of Texas). TYLER Co.: 2 miles southeast of Chester, V. L. Cory 22161, May 13, 1937 (in Gray Herb.). There are collections in the Herbarium of Southern Methodist University from Harrison, Jasper, Newton, Panola, Sabine, and Shelby counties, taken in early and mid-May.

FRANSERIA Cav., *Icones* 2: 78. 1793. This genus cannot be distinguished from *Ambrosia* except by mature fruit, and the difference (greater development of teeth or hooked spines on the fruits) warrants the recognition of a subgenus at most. The species of *Franseria* assigned to Texas or nearby areas by Rydberg (N. Amer. Fl. 33 pt. 1: 22-37, 1922) are listed below with the appropriate names under *Ambrosia*:

AMBROSIA ACANTHICARPA Hook. *Franseria acanthicarpa* (Hook.) Coville. *Gaertneria acanthicarpa* (Hook.) Britton.

AMBROSIA CONFERTIFLORA DC. *Franseria confertiflora* (DC.) Rydb.

AMBROSIA simulans Shinnery, nom. nov. *Franseria tenuifolia* Harvey & Gray ex Gray, Pl. Fendl. (Mem. Amer. Acad.

n.s. 4) : 80. 1849. Not *Ambrosia tenuifolia* Spreng., 1826.

AMBROSIA caudata (Rydb.) Shinnery, comb. nov. *Franseria caudata* Rydb., N. Amer. Fl. 33 : 29. 1922.

AMBROSIA Grayi (A. Nels.) Shinnery, comb. nov. *Gaertneria Grayi* A. Nels., Bot. Gaz. 34 : 35. 1902. *Franseria tomentosa* Gray, Pl. Fendl. (Mem. Amer. Acad. n.s. 4) : 80. 1849. Not *Ambrosia tomentosa* Nutt., 1818.

AMBROSIA TOMENTOSA Nutt., Gen. 2 : 186. 1818. *Franseria discolor* Nutt., Trans. Amer. Philos. Soc. n.s. 7 : 345. 1840.

MARSHALLIA CAESPITOSA Nutt. ex DC., Prodr. 5 : 680. 1836. "In Amer. bor. ad Red-River legit cl. auctor." The type locality was probably in what is now eastern Oklahoma, part of the Arkansas Territory of Nuttall's time. A common and characteristic species of chalk and limestone outcrops and calcareous soils through central Texas, flowering in late April and May. The florets are completely white (corolla, anthers, and style), and have a sickly sweet odor like that of *Hymenopappus*, *Laphamia*, and *Parthenium argentatum*.

MARSHALLIA CAESPITOSA var. *SIGNATA* Beadle & Boynton, Biltmore Bot. Studies 1 : 9-10. 1901. TYPE : Kerrville, Kerr Co., Texas, A. A. Heller 1618, April 19-25, 1894 (not seen; the actual type presumably was lost when the Biltmore Herbarium was destroyed by flood, but duplicates were widely distributed). This variety was noted but not named by Gray, Pl. Lindh. 2 (Boston Journ. Nat. Hist. 6) : 231, 1850, under no. 647, as "Var. caule folioso! Rocky soil on the Upper Guadalupe. April." Beadle & Boynton distinguish it as being very leafy and usually much-branched. Three sheets from Blanco and Travis counties referable to the variety show 8-11 leaves below the first branch, and 5-9 heads on well-developed stems, but immature or small plants show as few as 1 or 2 heads. Twenty sheets of typical *M. caespitosa* show 4-8 leaves below the first branch, and 1-2 heads (3 on one plant), even on robust plants. Of the collections cited by Beadle & Boynton, those whose localities could be determined were from Burnet, Gillespie, Kerr, and Travis counties, in the same area as the three collections mentioned above. This area, the "Hill Country" of central Texas, a dissected portion of the Edwards Plateau, is one of the most notable areas of plant endemism in Texas. *Chaetopappa bellidifolia*, *Chaetopappa effusa*, *Kuhnia leptophylla*, *Cirsium Helleri*, and *Rudbeckia Coryi* in the Compositae are a

few of the many species and varieties known only from the southeastern portion of the Edwards Plateau. Though the morphological distinctions of *Marshallia caespitosa* var. *signata* are rather weak, and scarcely evident on small plants, its geographic localization make it worthy of recognition.

MARSHALLIA GRAMINIFOLIA (Walt.) Small, Bull. Torr. Bot. Club 25: 482. 1898. *Athanasia graminifolia* Walt., Fl. Carol. p. 200. 1788. In sandy pine woods in extreme southeast Texas occurs a second species of *Marshallia*, this one with smaller heads of rose-pink flowers, blooming from mid-August to mid-November. The phyllaries are subulate-tipped, and the plants are clearly referable to the complex of *Marshallia graminifolia*, a species not previously reported from Texas. Whether they represent the typical variety of the species is a question which cannot be settled until the entire group is revised. The following collections are in the Herbarium of Southern Methodist University. HARDIN Co.: Southeast of Kountze, Mrs. L. J. Hooks, Sept. 10, 1932. Near Ariola, in pineland, C. L. & A. A. Lundell 11492, Aug. 18, 1942. Two and a half miles west of Silsbee, frequent in moist sandy soils in woods, V. L. Cory 49895, Oct. 2, 1945. NEWTON Co.: East of Newton, in wet area in forest, Lundell & Lundell 11883, Sept. 10, 1942. State Forest No. 1, 5 miles east of Kirbyville, frequent along roads in pineland, Cory 49802, Sept. 30, 1945. Same locality, Cory 49959, Oct. 2, 1945. Same locality, still generally in bloom, frequent in pineland, Cory 50937, Nov. 17, 1945.

LACTUCA SERRIOLA L., Centuria II Plantarum p. 29. June 11, 1756. Reprinted in Amoen. Acad. 4: 328, 1759 (this article bearing original title page date, 1756), without change of spelling; and again in ed. 2 of Amoen. Acad., same volume and page, 1788, still without change of spelling. In Species Plantarum ed. 2, vol. 2: 1119, 1762, the spelling is "*Lactuca Scariola*," and this altered form has been the one almost universally followed. By present rules, however, even the author of a new species cannot alter its name, unless there was unintentional error in its first publication. Since Linnaeus permitted *Lactuca Serriola* to stand through three printings of Centuria II Plantarum, over a period of 32 years, *Lactuca Scariola* must be considered an illegitimate substitute name. There is a collection of L.

Serriola var. *integrata* Gren. & Gron. (which hardly deserves recognition as more than a form) from Dallas, collected by Reverchon in 1899 (in Herb. Mo. Bot. Gard.), with the note that it was "introduced about 1895, also seen at Ennis." At present both entire-leaved and pinnatifid-leaved forms occur in Texas, the latter much more frequent, throughout central, west, and north Texas, chiefly about cities and farms, or along railroad and highways. As represented in Texas, the plant has heads with 16-21 florets, though both Gray's Manual (7th ed.) and Britton and Brown's Illustrated Flora (2nd ed., under *L. virosa*) describe it as 6-12—flowered.

NEW SPECIES, TRANSFERS, ETC. IN VOLUME XVII

Plants

- AMBROSIA *caudata* (Rydb.) Shinnery (p. 173), *Grayi* (A. Nels.) Shinnery (173), *simulans* Shinnery (173).
 ARENARIA *Drummondii* Shinnery (89).
 ASCLEPIAS *tuberosa* var. *interior* (Woodson) Shinnery (89), *tuberosa* var. *Rolfzii* (Britton) Shinnery (89).
 CAREX *muriculata* Hermann (132).
 CASSIA *Orcuttii* (Britton & Rose) Turner (144).
 CASTILLEJA *indivisa* f. *virida* Cory (65).
 CHAMASYCE *Fendleri* var. *chaetocalyx* (Bossier) Shinnery (70), *Fendleri* var. *triligulata* (L.C. Wheeler) Shinnery (70), *Golondrina* (L.C. Wheeler) Shinnery (70), *missurica* (Raf.) Shinnery (69), *missurica* var. *calpicola* Shinnery (69), *polycarpa* var. *simulans* (L.C. Wheeler) Shinnery (70), *theriaca* (L.C. Wheeler) Shinnery (70).
 CIRSIUM *terrae-nigrae* Shinnery (27).
 DALEA *Drummondiana* Shinnery (83), *emarginata* (T.&G.) Shinnery (84), *glandulosa* (Coulter & Fisher) Shinnery (83), *grisea* (T.&G.) Shinnery (84), *multiflora* (Nutt.) Shinnery (82), *obovata* (T.&G.) Shinnery (84), *oligophylla* (Torr.) Shinnery (82), *phleoides* (T.&G.) Shinnery (83), *Reverchoni* (Wats.) Shinnery (84), *sabinalis* (Wats.) Shinnery (83), *Standfieldii* (Small) Shinnery (84), *tenuifolia* (Gray) Shinnery (84), *tenuis* (Coulter) Shinnery (84).
 DELPHINIUM *virescens* var. *Wootoni* (Rydb.) Shinnery (89).
 HEDYOTIS *angulata* Fosberg (166), *Croftiae* (Britton & Rusby) Shinnery (167), *Greenmanii* Fosberg (167), *nigricans* var. *filifolia* (Chapman) Shinnery (168), *nigricans* var. *rigidiuscula* (Gray) Shinnery (168), *polypremoides* (Gray) Shinnery (168), *salina* (Heller) Shinnery (169), *subviscosa* (Wright) Shinnery (169), *Taylorae* Fosberg (169).
 HELEASTRUM *hemisphericum* (Alexander) Shinnery (170), *verutifolium* (Alexander) Shinnery (171).
 MONARDA *punctata* var. *maritima* Cory (52).
 LINUM *rigidum* var. *rigidum* Shinnery (136), *rigidum* var. *filifolium* Shinnery (136).
 MACHAERANTHERA *Correllii* Shinnery (55).
 PALAFOXIA *cyanophylla* Shinnery (25), *Liebmanii* (Schults-Bip.) Shinnery (25), *pedata* (Cav.) Shinnery (25), *tripteris* (D.C.) Shinnery (24).
 PSILACTIS *lepta* Shinnery (as *leptos*) (53).
 RUBECKIA *Coryi* Shinnery (59).
 SALVIA *dolichantha* (Cory) Whitehouse (162), *dolichantha* var. *parviflora* Whitehouse (163).