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RECOGNITION OF *CHAETOPAPPA MODESTA* (ASTERACEAE) IN TEXAS AND TAMAULIPAS

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ABSTRACT

Chaetopappa asteroides var. *grandis* is allopatric with typical *C. asteroides* and discontinuously distinct in features of leaves, flowers, and fruits — the two entities are justifiably regarded as separate species. The name for var. *grandis* at specific rank is *C. modesta* (DC.) A. Gray. *Chaetopappa modesta* is known from five counties in the Rio Grande region of southern Texas and from one locality in adjacent Tamaulipas, Mexico.

In his taxonomic revision of *Chaetopappa*, Shinners (1946) reckoned that the entity previously identified as *Chaetopappa modesta* (DC.) A. Gray was better treated at varietal rank within *C. asteroides*, but regarding the evolutionary and taxonomic status of *C. modesta*/var. *grandis*, plain-to-see evidence has been missed by him and subsequent botanists studying *Chaetopappa*, especially the current author (Nesom 1988, 2006). For *Chaetopappa* in the Texas flora (Correll & Johnston 1970), the concept of *C. asteroides* included the epappose *C. imberbis* as well as *C. modesta*. But in addition to the allopatric distribution of typical *C. asteroides* and var. *grandis* (Fig. 1), the two differ in morphology and biology, further than quantitative differences that have been previously noted, and are justifiably treated as distinct species.

1. Leaves minutely glandular; involucres 1.6–3.6 mm wide (pressed); ray florets 5–13, disc florets 6–15; central disc achenes functionally staminate, epappose; fertile achenes 1.6–2 mm long, ellipsoid, slightly compressed but subterete (or prismatic), 5(–6)-nerved; pappus of 4−6 awnlike bristles 1.5−2.3 mm long and a series of narrow scales 0.1–0.8 mm long ..... **Chaetopappa asteroides**

1. Leaves eglandular; involucres 3.5–5.5 mm wide (pressed); ray florets 10–18, disc florets 15–25; disc achenes all completely fertile, pappose; achenes 2.0–2.2 mm long, mostly narrowly obovate, flat, with a pair of thickened, whitish, lateral ribs (or one of the lateral ribs actually 2 closely set ribs); pappus of 6–8 thick bristles and a series of narrow scales (0.5–)0.7–1.4 mm long ..... **Chaetopappa modesta**

Differences in glandularity, achene and pappus morphology, and reproductive biology, along with quantitative differences and allopatric geography, indicate that these two entities are not the same species. Remarkably, de Candolle himself (Prodr. 5, 1836) distinguished his new genus *Distasis* (p. 279) from new genus *Chaetopappa* (p. 301) by achene morphology — "Achaenia subcompressa" (*Distasis*) vs. "Achaenia teretiuscula" (*Chaetopappa*). Asa Gray (1881) noted for *C. modesta* "acheniis magis compressis." Occurrence of functionally staminate, epappose central disc florets in typical *C. asteroides* has been noted by various authors (Shinners 1946 and subsequent, e.g., Yatskievych 2006; Gibson 2021).

In review, there is no compelling evidence even to suggest that *Chaetopappa asteroides* and *C. modesta* are most closely related to each other. *Chaetopappa bellioides* is the most similar to *C. modesta* in achene morphology and is likely its closest relative. The geographic range of *C. bellioides* is much wider, and it occurs in sympatry, apparently without intermediacy, with *C. modesta* at least in Starr and Zapata counties. The two can be separated by the following contrasts.

1. Plants with numerous ascending stems/branches mostly from the caudex area and forming a bowl-like shape; involucres 4–10 mm wide (pressed); disc florets 33–106 ..... **Chaetopappa bellioides**
1. Plants with diffusely arranged branches mostly from above the base of the stem; involucres 3.5–5.5 mm wide (pressed); disc florets 15–25 ..... **Chaetopappa modesta**

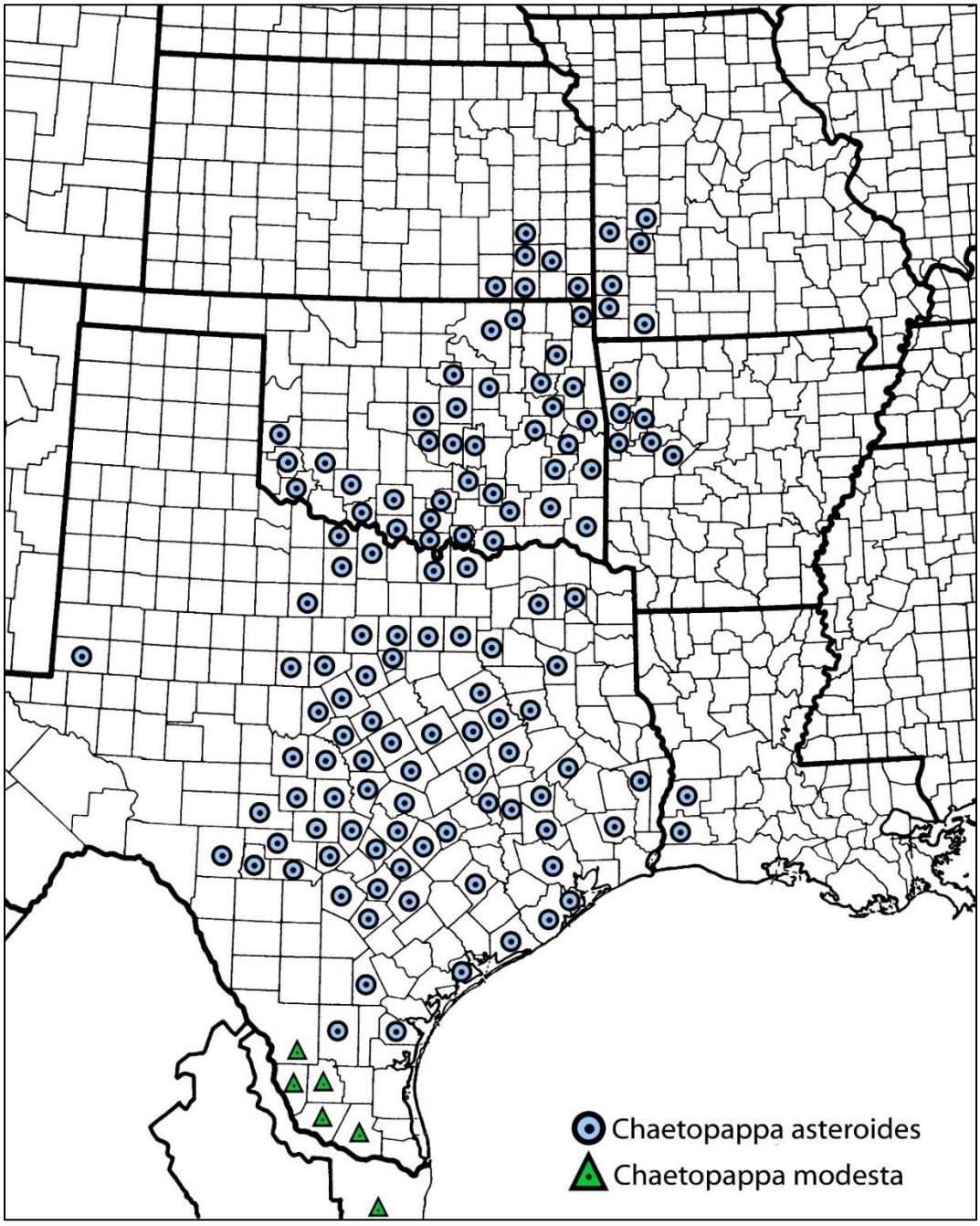

Figure 1. Distribution of *Chaetopappa asteroides* and *C. modesta*. Records are from TEX-LL (pers. observ., 2021) and from other herbaria via images through herbarium consortia. A database record of *C. asteroides* from Frio Co., Texas, is *Aphanostephus* sp.; records from Garland and Pulaski cos., Arkansas, are *Soliva* sp. The far-out-of-range locality in Andrews Co., Texas, is likely from a mislabeled collection: "Northeast Andrews county," *Ballinger s.n.* (TEX) — I have searched in Andrews County and been unable to find any species of *Chaetopappa*.

Chaetopappa modesta (DC.) A. Gray, Proc. Amer. Acad. Arts 16: 82. 1881. *Distasis modesta* DC., Prodr. 5: 279. 1836. **TYPE**: **USA**. **Texas**. [Webb Co.]: Laredo, 1828, *J.L. Berlandier 1416* (holotype: GDC G00494267 image; isotypes: BM image, GH image, GH-fragment and sketch, HAL image, P-3 sheets images, US-fragment).

Chaetopappa asteroides var. *grandis* Shinners, Wrightia 1: 76. 1946. **TYPE**: **USA**. **Texas**. Hidalgo Co.: Off US Hwy 83, 3 mi E of Sullivan City, gravelly hill, 5 Apr 1941, *C.L. Lundell 9982* (holotype: SMU as cited by Shinners; isotypes: LL!, MICH image).

"Rather than perpetuate a name based on the inadequate scraps which constituted the type and isotypes, and which were largely responsible for the long misunderstanding as to the proper identity of the plant, I have deliberately chosen a new name based on a new and better type specimen" (Shinners 1946, p. 76).

Collections examined. **USA**. **Texas**. Brooks Co.: Ca. 0.2 mi WSW of Agua Dulce Windmill, ca. 1.7 air mi N of R.M. 755 culvert on Vargas Creek, Encinitos Ranch, along minor road through deferred pasture, occasional in opening in mesquite-colima shrubland on deep loose loamy sand, 225-230 ft, 20 Mar 2007, *Carr 25523* (TEX). Hidalgo Co.: Ca. 1.7 air mi SSW of jct of Hidalgo, Kenedy, and Willacy counties, Hunke Ranch, openings in mesquite savanna on loose hummocky sands, 45-50 ft, 15 Mar 2004, *Carr 22771* (TEX); ca. 1 mi N of Los Ebanos, hills about small lake, 18 Mar 1966, *Correll 32340* (LL); La Joya, 6 Feb 1942, *Walker 26* (TEX). Jim Hogg Co.: ca. 10 mi NE of Randado, Rte 496, grassy sandy flat, 5 Apr 1959, *Correll 20800* (LL); 7 2/3 mi E of Hebbronville, infrequent on sandy roadside, 31 Mar 1949, *Cory 55303* (SMU). Starr Co.: Falcon Lake, 15 Jun 1966, *Wood 774* (MEXU, TEX). Webb Co.: SW part of Treviño Ranch, high E bank of Rio Grande, ca. 4 mi N of Villa Hidalgo, Mexico, local in sparse herbaceous vegetation on tight silt loam, 4 Aug 2010, *Carr 29078* (TEX); SW corner of Treviño Ranch (30-35 mi NNW of Laredo), flat top of ridge of Bigford Sandstone, E side of Arroyo Grande just upstream from its mouth at the Rio Grande, 520-530 ft, 16 Mar 2005, *Carr 23715* (TEX); Laredo, sands, 21 Mar 1903, *Reverchon 4007* (NY image). Zapata Co.: 1 mi S of San Ygnacio, sparse short brush, calcareous sandstone upland, crevices, 30 Mar 1959, *Johnston 3791* (TEX). **MEXICO. Tamaulipas**. 48 mi from Reynosa on the San Fernando road, 27 mi from Matamoros-San Fernando hwy turnoff, brush on caliche spot, 19 Oct 1959, *Johnston 4374* (MEXU, TEX).

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LITERATURE CITED

Gibson, A.C. 2021. *Chaetopappa asteroides* var. *asteroides*. Studies on the Vascular Plants of Williamson County, Texas [online]. Biodiversity Center, Univ. of Texas, Austin. <http://w3.biosci.utexas.edu/prc/K12/search.php#U>

Gray, A. 1881. Contributions to North American botany. I. Notes on some Compositae. Proc. Amer. Acad. Arts 16: 78–102.

Nesom, G.L. 1988. Synopsis of *Chaetopappa* (Compositae: Astereae) with a new species and the inclusion of *Leucelene*. Phytologia 64: 448–456.

Nesom, G.L. 2006. *Chaetopappa*. Pp. 206–209, in Flora of North America North of Mexico, Vol. 20. Oxford Univ. Press, New York and Oxford.

Shinners, L.H. 1946. Revision of the genus *Chaetopappa* DC. Wrightia 1: 63–81.

Yatskievych, G. 2006. Steyermark's Flora of Missouri (rev. ed.), Volume 2. Missouri Botanical Garden Press, St. Louis, and Missouri Dept. of Conservation, Jefferson City.