

## NOTES ON *THAMNOSMA TEXANA* (RUTACEAE) WITH THE DESCRIPTION OF A NEW VARIETY

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### ABSTRACT

A lectotype is provided for *Thamnosma texana* (A. Gray) Torrey, **Thamnosma texana** (A. Gray) Torrey var. **purpurea** (Woot. & Standl.) L. Woodruff, **comb. et stat. nov.**, formally recognizes a geographical variant, and intergradation in the two varieties of *T. texana* is discussed.

*Thamnosma* (Rutaceae) is one of only a few genera of herbaceous plants (e.g. *Menodora*, *Selinocarpus*) whose distribution is disjunct between North America and Africa/southwest Asia (Thiv et al. 2011). Five species occur in North America: *T. montana* Torr. & Fremont and *T. texana* (A. Gray) Torrey (southwestern USA and Mexico), *T. pailensis* M.C. Johnst. and *T. stanfordii* I.M. Johnst. (northeastern Mexico), and *T. trifoliata* I.M. Johnst. (Baja California Sur).

In preparing a taxonomic treatment of *Thamnosma* for the forthcoming Volume 13 of Flora of North America North of Mexico, several details are attended to here. A lectotype is provided for *Thamnosma texana*, a name for a geographical variety of *T. texana* is formalized as a new combination, and intergradation between varieties of *T. texana* is discussed.

**Thamnosma texana** (A. Gray) Torrey in W.H. Emory, Rep. U.S. Mex. Bound. 2(1): 42. 1859 (as *texanum*). *Rutosma texana* A. Gray, Gen. Amer. Bor. 2: 143, pl. 155. 1849. **LECTOTYPE** (designated here): **USA. Texas**. Without specific locality, without date, *C. Wright s.n.* (GH 00044214!; isoelectotypes: GH 00044215!, NY 3787945!, NY 3787946!).

Asa Gray mentioned three collections in his protologue for *Rutosma texana*: those of Mr. Lindheimer, Mr. Wright, and Dr. Gregg. Although Lindheimer's collection was acknowledged for the illustration plate, Wright's material has "nov. gen." (or "n. g.") written on the label in Gray's handwriting. The Wright specimen kept by Gray in his herbarium is selected here as lectotype. Isoelectotypes include a specimen ex herb. John A. Lowell transferred from the Boston Society of Natural History to GH in 1941 and two specimens at NY. Although not on Gray's label, the GH database gives 1848 as the year of collection (GH Specimen Database 2013).

### Geographical variation in *Thamnosma texana*

A yellow-flowered entity is found generally east of the 100<sup>th</sup> Meridian in the Edwards Plateau of central Texas and to slightly farther west in the Rio Grande valley at 50–500 m. Its range extends south to the Mexican states of Coahuila, Nuevo León, and Tamaulipas at elevations to 2500 m. The Edwards Plateau is a grassland with stands of scattered to dense oak and juniper, along with many other woody species, and underlain by shallow, limestone- or granite-derived, well-drained soil. Further south near the Texas-Mexico border, pockets of tall, dense Tamaulipan thorn scrub vegetation are habitat for var. *texana* (see Correll & Johnston 1970 for further description of the vegetation of these areas).



Figure 1. *Thamnosma texana* var. *purpurea*, Big Bend National Park. Photo by Roy Morey.



Figure 2. *Thamnosma texana* var. *texana*, central or south Texas. Photo by Steven Schwartzman.

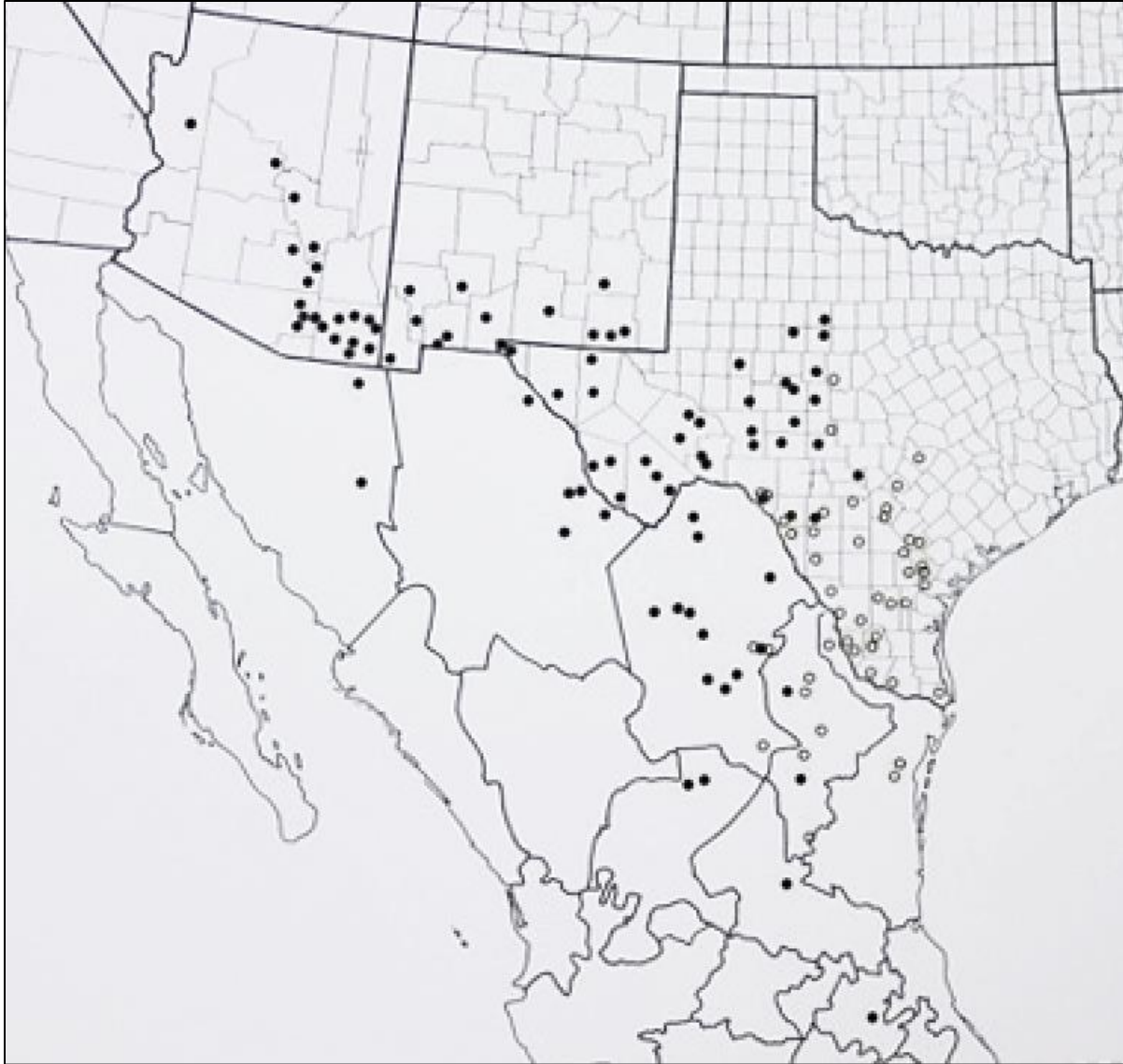


Figure 3. *Thamnosma texana*, intergrading varieties. Open circles are var. *texana*; closed circles are var. *purpurea*.

Plants with maroon-tinged flowers have a wider distribution and occur west of the 100<sup>th</sup> Meridian in Texas to New Mexico and mostly southeastern Arizona (western Arizona documented in Anderson & Francois 2013) at 300–1700 m. The area falls largely within the Chihuahuan Desert. In Mexico, *Thamnosma texana* var. *purpurea* occurs in Chihuahua, Coahuila, Durango, Hidalgo, Nuevo León, Querétaro, San Luis Potosí, Sonora, and Zacatecas at elevations up to 2000 m. A chromosome count of  $n = 9$  was made for var. *purpurea* (Ward 1984). Only one other count from another species of *Thamnosma* has been reported, *T. montana* with  $n = 10$  (Parfitt et al. 1990).

No other character differences other than flower color could be found (Figs. 1, 2), but the two taxa are separated geographically (Fig. 3). Both color forms have been observed together at a site near (aptly named) Junction, Texas.

**Thamnosma texana** (A. Gray) Torrey var. **purpurea** (Woot. & Standl.) L. Woodruff, **comb. et stat. nov.** *Rutosma purpurea* Woot. & Standl., Contr. U.S. Natl. Herb. 16(4): 143. 1913 (as *purpureum*). *Thamnosma texana* f. *purpurea* (Woot. & Standl.) Lundell, Amer. Midl. Naturalist 29: 475. 1943. **TYPE: USA. New Mexico.** Doña Ana Co.: Bishops Cap at the S end of the Organ Mountains, 4 Apr 1903, *E.O. Wootton s.n.* (holotype: US 00101542! [old US #560630]; isotypes: ARIZ-2 sheets!, CAS 0006015!, CAS 213696!, MIN 1002245 (image, JSTOR 2020), RM 0003823 (image, JSTOR 2020), TEX 00371479!, UC!, US 00101542!).

*Thamnosma aldrichii* Tharp, Amer. Midl. Naturalist 33: 667. 1945. **TYPE: USA. Texas.** Pecos Co.: 6 Jun 1943, *B.C. Tharp 43990* (holotype: TEX!; isotypes: CAS!, GH!, MO!, NY!, TEX!, US!).

The two varieties are distinguished as follows:

1. Petals yellow throughout ..... **Thamnosma texana** var. **texana**
1. Petals creamy white with a broad maroon area (may be variable) on adaxial surface  
..... **Thamnosma texana** var. **purpurea**

Both varieties are among the earliest spring flowers (February–March) in the region and each may continue to flower sporadically throughout the year after rains.

**Representative specimens.** Although many other collections exist, one specimen from each state is listed as reference. The author has seen material of all of the specimens cited, but the presence of duplicates in some herbaria is based on online databases including SEINet (2020) and UNAM (2018). The author has seen no material from Durango, but Villaseñor (2016) lists the species from that state.

**Thamnosma texana** var. **texana.** **USA. Texas.** Kinney Co.: Hwy 277, 8.7 mi SE of Kinney Co. line, 1.8 mi NW of Maverick Co. line, 19 Mar 1983, *Barnett & Dorr 83039* (MEXU, MO, TEX). **MEXICO. Coahuila.** Sierra de La Rata, 27°05'–27°03' N, 101°02'–101°05' W, 550–1700 m, 14 Mar 1973, *Johnston et al. 10170A* (TEX). **Nuevo León.** Mpio. Rayones: Santa Rosa -> Ciénega del Toro, 1400 m, 19 Feb 1992, *Hinton et al. 21785* (MO, TEX). **Tamaulipas.** 6 mi N of Santander Jiménez, 800 ft, 9 Dec 1959, *Johnston 4898* (LL, TEX).

**Thamnosma texana** var. **purpurea.** **USA. Arizona.** Pima Co.: Coronado National Forest, on Forest Rte 371 (Redington Rd), ca. 3 mi E of National Forest boundary, 32°15'36" N, 110°39'12" W, 1100–1300 m, 13 Apr 1998, *Schmidt et al. 2643* (ARIZ, MO, TEX). **New Mexico.** Doña Ana Co.: NE Robledo Mtn, 11 mi NW of Las Cruces, 5100 ft, 23 Apr 1983, *Ward & Soreng 83-019, n=9II* (NMC, NY, TEX). **Texas.** Val Verde Co.: Devil's River, Dolan Falls, Nature Conservancy Property, 29°53.07' N, 100°59.37' W, 10 Mar 2003, *Simpson 10-III-03-6* (TEX). **MEXICO. Chihuahua.** N end of E side of Sierra del Cuchillo Parado, 29°37' N, 104°55' W, 1000–1300 m, 21 Oct 1972, *Wendt et al. 9789* (CAS, NY, TEX). **Coahuila.** La Favorita Ranch on N slope of the Cañón Bonanza, SE end of Sierra de la Purísima, 26°25'–26°26' N, 101°30'–101°28' W, 1300–1650 m, 19 Mar 1973, *Johnston et al. 10293* (CAS, F, MO, NY, TEX). **Hidalgo.** Mpio. Actopan, El Capulín, near km 134 on hwy between Actopan and Ixmiquilpan, ca. 1800 m, 4 Aug 1948, *Moore & Wood 4252* (A, MEXU). **Nuevo León.** Mpio. Galeana, S of Rancho Aguililla, 2000 m, 8 Jul 2000, *Hinton et al. 27626* (MO, TEX). **Querétaro.** Mpio. Cadereyta de Montes, 15 km al N de Cadereyta, alrededores de Corral Blanco, 2000 m, 31 Jul 1990, *Rzedowski 49624* (MEXU). **San Luis Potosí.** Minas de San Rafael, Nov 1910, *Purpus 4835* (F, MO, UC, US). **Sonora.** Mpio. Agua Prieta, flats N of airstrip N of Rancho La Calera, NE of Sierra Anibacacachi, ca. 7 km (by air) SW of Agua Prieta, 31°14'57" N, 109°37'01" W, 1256 m, 24 Apr 2004, *Van Devender et al. 2004-335* (ASU, TEX, USON). **Zacatecas.** 18 mi SW from Cedros turnoff at Estación Margarita, 1 Aug 1975, *Engard & Gentry 679* (ASU, DES, LL).

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