

ANNOTATED DISTRIBUTION OF THE MONOTYPIC GENUS *LINDHEIMERA* (ASTERACEAE: HELIANTHEAE)

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ABSTRACT

The monotypic genus *Lindheimera*, based upon *L. texana*, a common spring-flowering annual with the common name, Texas Star, occurs in mostly heavy clay or silty-clay soils of Central Texas and closely adjacent Oklahoma and the state of Coahuila, Mexico. A single record from the state of Arkansas is believed to have been introduced. A map showing the distribution of this species is provided, along with the citation of representative specimens from each of the counties in which it has been collected.

KEY WORDS: Asteraceae, *Lindheimera*, Texas, Oklahoma

RESUMEN

El género monotípico *Lindheimera*, basado en *L. texana*, es una planta frecuente anual de floración primaveral, de nombre vulgar Estrella de Texas (Texas Star), que vive normalmente en suelos calcáreos del centro de Texas y en Oklahoma, así como en el estado de Coahuila, México. Una única cita del estado de Arkansas se cree que se trata de una planta introducida. Se ofrece un mapa que muestra la distribución de la especie junto con la cita de los especímenes representativos de cada uno de los condados en que ha sido colectada.

Lindheimera texana A. Gray & Engelman is a common annual herb of central Texas and adjacent Oklahoma, occurring mostly in heavy clay or silty-clay soils. The genus name commemorates Ferdinand Lindheimer, an early botanist of central Texas who made many collections while residing in New Braunfels, Comal County, Texas (Geiser 1937). The genus contained but a single species until 1880 when Asa Gray proposed a second species from south central Mexico which he called *Lindheimera mexicana* A. Gray. Almost immediately thereafter (in 1882), he referred the latter to the newly erected genus *Dugesia* A. Gray where it has been retained by most workers, including the present (Turner, in prep.), although Stuessy (1977) retained both taxa in *Lindheimera*.

Lindheimera superficially resembles *Dugesia*, but the latter is readily distinguished by its perennial habit and prostrate stems (vs annual and stiffly erect) and free achenes (vs achenes with basal attachments to adjacent palea, these falling as a unit), and base chromosome number of $x = 18$ (vs $x = 8$ in *Lindheimera*). Controversies regarding the possible generic alignments of the two genera are briefly reviewed by Hind (1990). He also has provided an excellent descriptive

account, along with illustrations (including both habit and detailed floral drawings) made from living material. According to Hind, the plant has been in cultivation at Kew for more than 20 years. He also notes that in its natural habitat the species tends to flower in early spring (March to May), but in cultivation at more northern latitudes it generally flowers between July and August, as was earlier noted by Asa Gray, who cultivated the plant in the Cambridge Botanical Garden at Harvard.

While Hind and others have commented casually upon the distribution of *Lindheimera texana*, no one has attempted to provide a detailed, documented, distributional account of the species, although a rather crude undocumented mapping was provided by Turner & Johnston (1957). The purpose of the present paper, then, is to provide a more detailed documented account of its natural distribution.

MATERIALS

This study is based upon approximately 389 specimens on deposit at the following herbaria (numbers in parenthesis refer to the sheets on loan): GH (38), LL (30), OKL (80), SMU (114), TAES (45), TEX (82). We are grateful to the directors of these institutions for the loan of material.

RESULTS

Distributional results (by county, cf. appendix, specimens cited), are presented in Fig. 1. The great mass of the borrowed material was obtained from grassland habitats of central Texas, mostly occurring in heavy calcareous clays or silty-clay soils. The species is also relatively abundant in south central Oklahoma where it occurs in similar habitats (cf. also Taylor and Taylor, 1991). The collection of a single plant from Benton Co., Arkansas (*Demaree* 55532 BRIT/SMU) is surely a chance roadside introductant, although Smith (1988), commenting upon the collection concerned, notes that "several typically Texas plants have been collected in this area." The rather isolated collections of *Lindheimera texana* from Payne County, Oklahoma (cited below) might also be an introduction. Only a single collection is known from Mexico (as cited), but this area is poorly collected, especially during the springtime, although it is possible that the collection concerned is also a chance introduction.

APPENDIX

Representative specimens examined: U.S.A. OKLAHOMA. Caddo Co.: 10 mi W of Apache, 3 Jun 1954, *Waterfall* 11934 (GH, OKL, TEX). Carter Co.: Criner Hills, 1.5 mi NE of Brock, 31 May 1968, *Goodman* 7852 (OKL). Comanche Co.: McKenzie Hill, Ft. Sill Army Base, 2 May 1989, *Thompson et al.* S0302 (OKL). Harmon Co.: 14 mi S of Erick, 25 May 1940, *Waterfall* 2001 (OKL). Jackson Co.: 7.8 mi W of jct 62 and 283, 19 Apr 1975, *Barber* 658 (OKL). Jefferson Co.: N of Red River bridge, 22 Apr 1957, *Robrbaugh* 497 (OKL). Johnston Co.: 0.8 mi W of Wapanucka, 25 Apr 1971, *Perino & Williams* 695 (OKL). Love Co.: Rte. 32, 1.8 mi W of I-35,

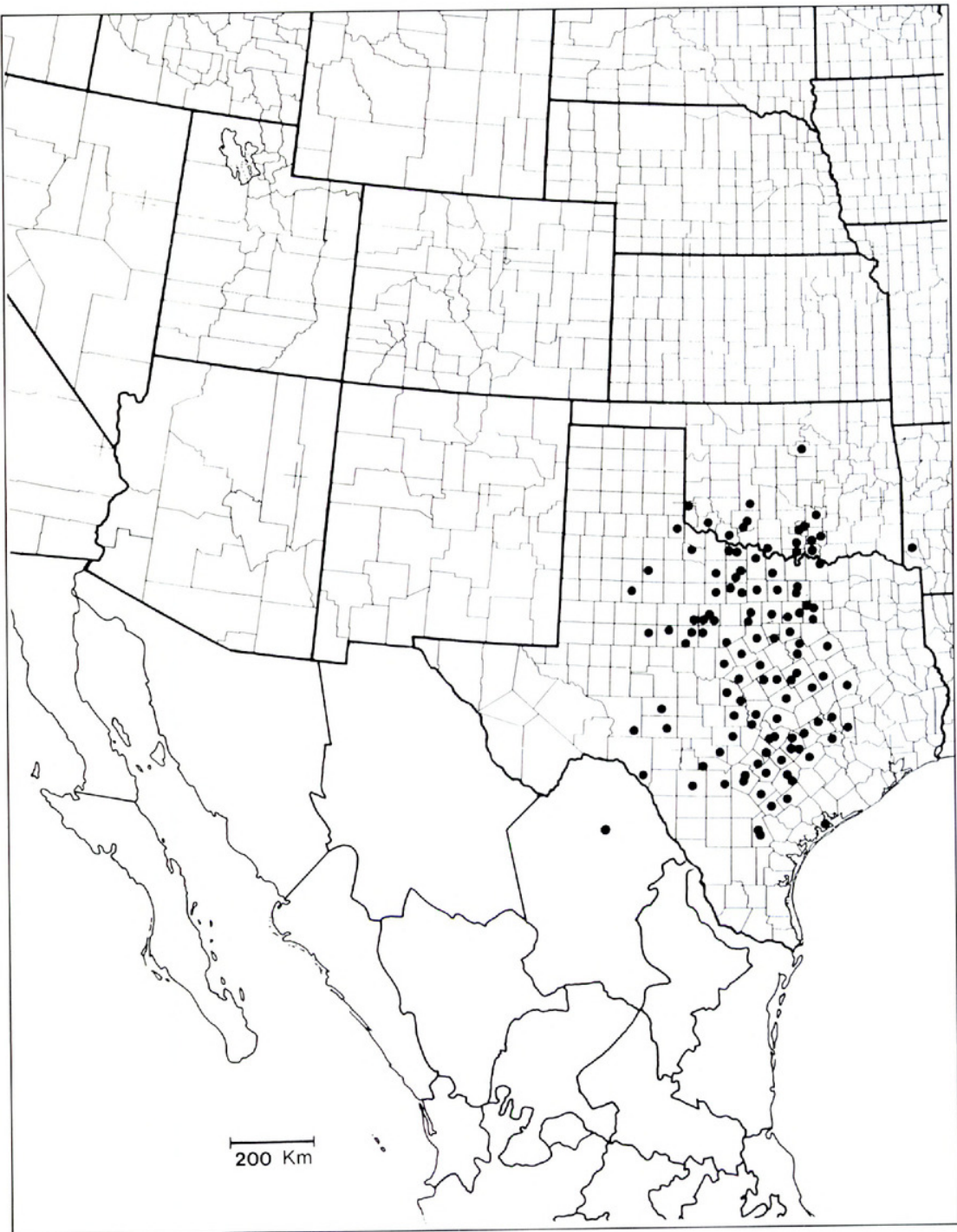


FIG. 1. Documented occurrence of *Lindheimera texana*.

3 May 1980, *Huft* 1023 (OKL). Marshall Co.: 3 mi W of Kingston, 19 Jun 1968, *Johnson* 297 (OKL). Murray Co.: Arbuckle Mts., 3 mi W of Dougherty, 2 May 1940, *Hopkins et al.* 1100 (GH, LL, OKL, TEX). Payne Co.: 1 mi W of Stillwater, 16 Jun 1938, *McLean* 146 (TEX). Pontotoc Co.: 1.5 mi S of Ada, 28 Apr 1948, *Robbins* 2957 (OKL). Tillman Co.: 4.5 mi S of Hollister, 5 Jun 1948, *Waterfall* 7818 (GH, OKL, TEX).

TEXAS. Archer Co.: 4 mi N of Olney, 8 Apr 1966, *Seigler* 887 (OKL). Bander Co.: 2 mi N of Utopea, Mar 1965, *Ramirez & Cardenas* 41 (TEX). Bastrop Co.: 5 mi E of Elgin, 1 Apr 1984,

Steck & Berger 8401 (TEX). Baylor Co.: S of Seymour, 26 May 1932, *Clark* 4688 (OKL). Brazos Co.: 1 mi E of Benchley, 1 May 1941, *Timmons s.n.* (TAES). Brown Co.: 5 mi E of Bangs, 17 Apr 1966, *Johnson* 64 (OKL). Burleson Co.: 3 mi N of Caldwell, 26 Apr 1958, *Filer* 114 (TAES). Caldwell Co.: Chesser Farm, 18 Apr 1964, *Chesser s.n.* (TEX). Calhoun Co.: Indianola, *Pope s.n.* (GH). Callahan Co.: 0.5 mi E of Taylor Co. line, 27 Mar 1963, *Henderson* 63-81 (TEX). Childress Co.: Childress, 19 Apr 1932, *Tharp s.n.* (TEX). Comal Co.: Comanche Spring, New Braunfels, Mar 1850, *Lindheimer* 945 (GH, Okl). Dallas Co.: White Rock Lake, 23 Apr 1940, *Lundell & Lundell* 8537 (GH, LL). Denton Co.: Clear Creek near Bolivar, 30 Jun 1969, *Brown* 26 (OKL). De Witt Co.: western part of county, 29 Apr 1942, *Riedel s.n.* (GH, TEX). Eastland Co.: Rising Star, 21 Apr 1931, *Smith s.n.* (TEX). Erath Co.: college farm road in Stephenville, 20 Apr 1962, *Haile s.n.* (TAES). Grimes Co.: 9 mi S of Navasota, 11 Apr 1951, *Chang* 36 (TAES). Fayette Co.: just W of city limits of La Grange, 10 Apr 1954, *Turner & Johnston* 54318 (TEX). Foard Co.: 7 mi N of Crowell, 11 Apr 1966, *Turner* 15 (LL, TAES). Garza Co.: 7.4 mi E of Post, 2600 ft, 11 Apr 1966, *Hutchins* 1039 (LL). Gonzales Co.: 6 mi NW of Hochheim, 11 Apr 1964, *Gentry & Smith* 20543 (LL). Grayson Co.: 1 mi NE of Denison, 14 Jun 1948, *Gentry* 301 (TEX). Guadalupe Co.: 7 mi SW of Seguin, 10 Jul 1973, *Patterson* 170 (LL). Hays Co.: intersection of RR 12 and 214 (Hugo Rd.), 27 Mar 1986, *Lenke* 395 (TAES). Hill Co.: 0.8 mi E of McCown, Valley State Park, 20 Apr 1986, *Nesom* 5404 (TEX). Johnson Co.: Hwy 67, 1 mi S of Cleburne, 14 Apr 1957, *Chambers* 1116 (LL). Karnes Co.: 14.7 mi from jct with Hwy 181 at Karnes City, 19 Apr 1957, *Chambers* 11823 (LL). Kerr Co.: 4.2 mi E of Hunt, 16 Apr 1957, *Rollins & Chambers* 15917 (LL). Lee Co.: 1.4 mi NW of Lexington, 14 Apr 1967, *Lonard* 1842 (TAES, TEX). Leon Co.: 3 Jun 1954, *Tharp et al.* 54989 (TEX). Limestone Co.: 6.5 mi S of Thornton, 20 Apr 1957, *Correll et al.* 16088 (LL). Llano Co.: 10 mi W of Llano, 14 Apr 1950, *Gould et al.* 5497 (TAES, TEX). McCulloch Co.: 3 mi SE of Brownwood, 26 Apr 1966, *Horne* 13 (LL, TAES). Mills Co.: 20 mi W of Goldthwaite, 22 May 1972, *Briggs* 318 (TAES). Mitchell Co.: Colorado, 17 May 1902, *Tracy* 7888 (TEX). Montague Co.: 8.3 mi W of Bowie, 19 Apr 1968, *Janne* 163 (TAES). Navarro Co.: Corsicana, Mar 1933, *Homblin s.n.* (TEX). Nolan Co.: Sweetwater, 29 Apr 1931, *Tharp* 35 (TEX). Palo Pinto Co.: 0.5 mi E of Strawn, 11 Jun 1955, *Gould* 6845 (TAES, TEX). Parker Co.: Weatherford, 27 Jun 1931, *Shaw* 43 (TEX). San Saba Co.: Leonard ranch, 10 mi S of Richland Springs, 26 Mar 1966, *Calhoun* 12 (LL, TAES). Schleicher Co.: 9 1/3 mi S of Eldorado, 27 Apr 1942, *Cory* 39005 (TEX). Shackelford Co.: SW corner of county, 30 Mar 1959, *Correll* 20578 (LL). Tarrant Co.: 2.5 air mi SW of Benbrook, 15 May 1948, *Cory* 54452 (LL). Taylor Co.: 1 mi E of Hwy 277 on Hwy 1086, W of Bradshaw, 6 Apr 1963, *Mabler* 3174 (TEX). Throckmorton Co.: 10 mi N of Throckmorton near headquarters of TAES Ranch, 30 Apr 1960, *Gould* 9113 (TAES). Travis Co.: ca. 0.5 mi NE of Loop 360 bridge over Barton Creek, 19 Apr 1989, *Orzell & Bridges* 9333 (TEX). Val Verde Co.: 0.5 mi E of dam, 20 mi NNW of Del Rio, 31 Mar 1947, *McVaugh* 7735 (GH, TEX). Washington Co.: 30 Mar 1938, *Brackett s.n.* (TEX). Wichita Co.: 15 mi NW of Wichita Falls, 5 Jun 1976, *Higgins* 100304 (TEX). Young Co.: 15 mi NE of Throckmorton, 8 May 1960, *McCoy* 3772 (OKL).

MEXICO. COAHUILA: Muzquiz, 5 Dec 1936, *Marsh* 1051 (TEX).

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