TAXONOMY OF *LYGODESMIA* (ASTERACEAE)

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Lygodesmia (Asteraceae: Lactuceae) is a small genus of eight herbaceous perennials. Most are distributed in the western half of the United States, with the exceptions of *L. aphylla* of Florida and Georgia, and *L. ramosissima,* mostly of north central Mexico. *Lygodesmia* is related to two genera of the western United States, *Chaetadelpha* with one species and *Stephanomeria* with 23 species. These genera were placed in the subtribe Stephanomeriinae, which Stebbins (1953) erected to house 11 genera mostly from the southwestern United States. *Lygodesmia* is also related to *Marshalljohnstonia,* a monotypic Chihuahuan desert genus recently described by Henrickson (1976).

Lygodesmia was selected for study because of its small number of species, conspicuousness in the field, reported variation in chromosome numbers, and the absence of a recent comprehensive taxonomic treatment. The study began as a monographic study of *Lygodesmia* including *Stephanomeria,* because Shinners (1950) had merged the two. It soon became evident, however, that *Lygodesmia* and *Stephanomeria* were quite distinct, being separated by consistent differences in cotyledon, achene, and pollen morphology as well as base chromosome numbers ($x=9$ in *Lygodesmia;* $x=8$ in *Stephanomeria*). Subsequently, the study was restricted to *Lygodesmia* excluding *Stephanomeria* but with a conscious effort to define the generic limits of *Lygodesmia* and its relatives.

This study is based on extensive field work undertaken from 1968 to 1974. It is Contribution No. 79–267–j from the Division of Biology and Kansas Agricultural Experiment Station. This is a revised part of a doctoral dissertation submitted to the Graduate School of the University of Texas at Austin. Field studies from 1968–1970 were supported by National Science Foundation systematic and environmental traineeships (GB 6914 and GB 15479). Other support for the study has been received from a Sigma Xi grant-in-aid to research and the Kansas Agricultural Experiment Station.

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Durango: Durango, Apr-Nov 1896, *Palmer s.n.* (GH, MO, NY, UC, US); Ramos to Inde, 11–14 Aug 1898, *Nelson 4710* (GH, NY, US); Tepehuanes, 4–25 Jun 1906, *Palmer s.n.* (NY, MO, US); Inde, Jul 1927, *Reko 5168* (US); near Ignacio Allende, 24 Aug 1939, *Shreve 9152* (ARIZ, GH, PH, UC); Tepehuanes, 28 Jul 1944, *Fisher 44227* (GH, MO, NY); 15.5 km S of Chihuahua 29 May 1978, *Lehto & Broome 22882* (ASU).

Nuevo Leon—San Luis Potosi: Between Doctor Arroyo, N. L., and Matehuala, San Luis Potosi, 17–18 Jun 1898, *Nelson 4516* (GH, NY, US).

United States. Texas: Brewster Co., 29 km S of Ft. Davis, 26 May 1969, *Tomb 486* (TEX); Jeff Davis-Culberson Counties, plains between Van Horn Wells and Muerta, 1 Jul 1852, *Parry, Bigelow, Wright, & Schott 681* (NY, US); Jeff Davis Co., *Hinckley 250* (NY); 0.4 km W of Barrel Springs, 8 Aug 1968, *Tomb 250* (TEX); Presidio Co., near Vieja, Tierra Vieja Mtns., 23 Jun 1941, *Hinckley 1815* (NY, SMU, TEX).

III. Section DIANTHOPSIS Tomb, sect. nov.

Rosula basalia nulla; flores saepe magni; achenia magna crassa varie sculpta; succus lacteus; plantae regionis intermontanis. Type species: *Lygodesmia dianthopsis* (Eaton ex King) Tomb.

5. LYGODESMIA GRANDIFLORA (Nutt.) Torr. & Gray, Fl. N. Amer. 2:485. 1842. *Erythremia grandiflora* Nutt., Trans. Amer. Philos. Soc. N.S.: 445. 1841. Wyoming, Natrona Co.? "In the Rocky Mountain Range, on the borders of the Platte," 1834, *Nuttall s. n.* (holotype: PH!; isotype: GH!). The type specimens were probably collected between Casper and Independence Rock, presumably between the 2nd and 9th of June (McKelvey, 1955). *Lygodesmia grandiflora* var. *stricta* Maguire, Amer. Midl. Naturalist 37:145. 1947. Utah, Carbon Co., 1.6 km S of Price, 5 Jun 1940, *Maguire 18417* (holotype: UTC?; isotypes: UC!, US!).

Herbaceous perennial 1.1–4.5 dm tall (usually ca. 3.0 dm tall); roots vertical, 4–7 mm wide, herbaceous, bearing one to several rhizomes; rhizomes usually unbranched, 3–8 cm long, covered with a thin, dark brown periderm; stems usually paniculate-branched from the base, green, glabrous, obscurely striate; basal leaves linear, 5–16 cm long, 2–4 mm wide, not forming a persistent rosette, glabrous, thick, midrib absent; cauline leaves similar to basal, progressively reduced upward and scale-like at the summit; heads few to numerous, 6–12-flowered (usually 9); involucre subcylindrical to cylindroid, 1.8–2.1 cm long, 6–8 mm wide; the 8 or 9 principal involucral bracts linear, 1.8–2.2 cm long at maturity, midrib obscure, outer surface scabrate, apex ciliate and bearing a small keel-shaped appendage; calyculate bracts subulate, scabrate, ciliate, in ca. 1 series, apex often bearing an appendage similar to that of the principal bracts; ligules pink to lavender, 1.6–1.9 cm long, ca. 6 mm wide; corolla tube 1.1–1.3 cm long; anthers 6–7 mm long, pale lavender, exserted ca. 5 mm beyond the tube; style column lavender to purple, exserted ca. 6–7 mm above the anthers; style branches ca. 2 mm long; receptacle 4–5 mm wide; achenes subcylindric, 1.0–1.3 cm long, obscurely 4–5 angled, striate, smooth and slightly expanded on the abaxial surface; pappus 1.0–1.3 mm long, often basally connate; sap milky white; pollen