

**CIRSIUM NOVOLEONENSE, SP. NOV. (ASTERACEAE),
FROM NORTHEASTERN MEXICO**

GUY L. NESOM

Research Associate

Academy of Natural Sciences of Drexel University

Philadelphia, Pennsylvania

guynesom@sbcglobal.net

LECCINUM J. GARCÍA MORALES

Herbario, Depto. de Posgrado e Investigacion

Instituto Tecnológico de Ciudad Victoria

Ciudad Victoria

Tamaulipas, México

lexgarcia@yahoo.com

ABSTRACT

Cirsium novoleonense Nesom & García-Mor., **sp. nov.**, is a species of montane habitats in southeastern Coahuila (Coahuilón, La Marta, La Nieve, La Viga, Zapalinamé), Nuevo León, and adjacent Tamaulipas. It is similar to *C. subcoriaceum* and *C. ehrenbergii* (sect. *Erythrolaena*) of central Mexico in its very large heads with red phyllaries but appears to be more closely related to species of the Mexican *Radiata* group, the similarities with sect. *Erythrolaena* independent in origin. Included are a distribution map of *C. novoleonense* and photos of representative collections and plants in natural habitats.

Taxonomic studies of *Cirsium* in Mexico were begun by Nesom several decades ago and left unfinished, including the description of a remarkable species from Coahuila, Nuevo León, and Tamaulipas. Recent collections and field observations of this species by García, especially in Tamaulipas and adjacent Nuevo León, and his forthcoming summary of the Miquihuana area (Tamaulipas) flora, have prompted this long overdue formal description. Additional studies on *Cirsium* of Mexico will be forthcoming in early 2022.

CIRSIUM NOVOLEONENSE Nesom & García-Mor., **sp. nov.** **TYPE: MEXICO. Nuevo Leon. Mpio.** Galeana: Cerro Potosí, along road to summit, common along roadside at 10,000 ft, subalpine forest dominated by *Pinus culminicola* and lower slopes dominated by *Pinus hartwegii*, 27 Aug 1987, D. Bogler and T. Atkins 205 (holotype: TEX; isotypes: MEXU, NY, US).

Similar to *Cirsium ehrenbergii* Sch.Bip. in its large heads with red inner phyllaries, leaves with permanently cottony undersurfaces, and clasping, non-decurrent base but different in its strongly keeled, spiny-margined phyllaries evenly graduate in length, longer corollas, and much longer stigmatic branches.

Perennials herbs, rhizomatous. **Stems** ca. 1–1.5 m tall, thinly cottony, quickly glabrescent, multicellular hairs abundant. **Leaves** permanently white-tomentose abaxially, glabrescent adaxially with prominent multicellular hairs, lower and middle cauline leaves 15–33 cm long, 3–8 cm wide, lanceolate-elliptic, lobed 1/2–2/3 to the midvein, base clasping, slightly auriculate, not decurrent, marginal spines stout, 6–15 mm long, upper leaves similar in shape but 3–10 cm long and 1–2 cm wide. **Heads** in a loose panicle, nodding. **Involucre**s hemispheric, 4–5 cm high, 5–9 cm wide (pressed), immediately subtended by leaflike, spiny-margined bracts; phyllaries in 6–8 graduate series, eglandular, basally narrowly ovate-lanceolate and 3–3.5 mm wide, lanceolate and evenly tapered above, with a thick, keel-like midrib, with multicellular hairs on the inner surface, outer permanently cottony adaxially, spreading to reflexed, outermost with prominent spines on the margins, inner erect with relatively stiff to flexuous apices and lacerate-ciliate distal margins. **Corollas** whitish to pink, 25–35(–41) mm long, tube 8–13 mm long, throat 7–12(–18) mm long, lobes 8–12(–15) mm long, lobe:throat ratio 1–1.6; anthers white, 7.5–10 mm long, including the apical appendages, apical appendages 1.5–2.5 mm long with narrowly attenuate apices; filaments glandular; style red to pink,

stigmatic branches connate, 3.8–6.5 mm long, annulus barely exerted from the anthers. **Achenes** elliptic-obovate, 6–6.5 mm long, 3–3.2 mm wide; pappus 22–30 mm long.

Flowering June–October. Oak to pine, pine-oak, and pine-fir woods, or subalpine to alpine; 2650–3700 meters; mountains of southeastern Coahuila (La Nieve, La Viga, Coahuilón, La Marta, Zapalinamé), Nuevo León, and adjacent Tamaulipas.

Additional collections. Coahuila. Mpio. Arteaga: Ca 1 km W Renacer de La Sierra, chaparral de *Quercus* y coníferas, 2900 m, 20 Sep 2020, *García-Morales 6581* (ITCV); Sierra de Coahuilón, pine woods, 2350 m, 25 Aug 1985, *Hinton 18917* (GBH, TEX, MEXU); Sierra Zapalinamé, pine and oak woods, 2930 m, 22 Aug 1990, *Hinton 20503* (GBH); Sierra de la Nieve, pine woods on ridge of sierra, 3190 m, 22 Sep 1990, *Hinton 20733* (GBH); S side of Sierra La Viga, 22 Aug 1986, *McDonald 2091* (TEX, XAL); cumbre de Sierra La Marta, S and SE sides, 22 Aug 1986, *McDonald 2149* (TEX, XAL); SE of Sierra Coahuilón, *McDonald 2158* (TEX, XAL); Cerro de la Viga, 4.7 mi SE of Jame, along a private road to the summit, 23 Oct 1982, *Sundberg 1764* (TEX). **Nuevo León.** Mpio. Aramberri: Cerro El Viejo, oak and pine woods, 2400 m, 7 Jul 1992, *Hinton 22113* (GBH); Cerro El Viejo, oak and pine woods, 1275 m, 2 Oct 1993, *Hinton 23832* (GBH, MEXU). Mpio. Galeana: Near top of Cerro Potosí, 1 Jul 1959, *Beaman 2647* (MSC); near summit of Cerro Potosí on NE side, 26 Jun 1960, *Beaman 3340* (GH, MSC); orilla de camino a la cumbre del Cerro Potosí, matorral de *Pinus culminicola*, 3500 m, 4 Aug 1988, *García 83* (MEXU); 2 mi below summit of Cerro Potosí, subalpine, *Pinus-Abies-Symphoricarpos*, 23 Aug 1984, *Lavin 4790* (MEXU, TEX); above and below microwave station on summit of Cerro Potosí, 2 Aug 1975, *Lewis & Bierner 127* (LL-2 sheets); Cerro Potosí, ladera norte, pastizal de alta montaña con bosque de *Pinus culminicola*, 3000 m, Sep 2010, *Mastretta 29* (MEXU); ascent to Sierra Infernillo, ca. 15 mi SW of Galeana, 16 Jun 1934, *Mueller 839* (GH, MICH, TEX); Cienguillas to Puerto de Santa Ana, 28 Jun 1934, *Muller 889* (GH); E face of peak of Cerro Potosí, 20 Jul 1938, *Schneider 1034* (F). Mpio. General Zaragoza: Picacho San Onofre, pine and fir forest, 3140 m, 18 Jun 1979, *Hinton 17580* (GBH, TEX); El Pame to La Joya, oak and arbutus woods, 2685 m, 3 Oct 1998, *Hinton 27283* (GBH); 8 mi E of Dulces Nombres, 23 Jun 1948, *Meyer & Rogers 2631* (GH); between Siberia and Cerro Peña Nevada, 15 Sep 1988, *Nesom 6715* (ANSM, ENCB, GH, MEXU, NY, TEX, US); La Encantada, 20 Jun 1988, *Patterson s.n.* (TEX). **Tamaulipas.** Mpio. Hidalgo: 3 km E de Puerto Purificación, porción N del area quemada de bosque de pine y encino, 2000 m, 2 Jun 1990, *Medrano 17328* (MEXU); road from Sta. Engracia toward Dulces Nombres, N.L., Arroyo Oscuro, 2.0 road mi NE of Paraje Los Caballos, toward Canada El Mimbre, 5.0 road mi from lowermost crossing of Arroyo El Mimbre, humid woods with *Carya myristiciformis*, *Carya ovata*, *Cornus*, *Carpinus*, *Dirca*, 1800 m, rosettes common but none in flower, 23 Sep 1994, *Nesom 7501* (MEXU, TEX). Mpio. Jaumave: 2 km N Rancho El Molino, bosque *Pinus-Quercus*, 1520 m, 19 May 2019, *García-Morales 6596* (ITCV). Mpio. Miquihuana: km 19 camino de La Peña al Aserradero, bosque de coníferas, 3030m, 26 Jul 2014, *García-Morales 3216* (ITCV); Cerro El Picacho, 6 km al sur de Rancho La Saga, 1150 m 10 Mar 1969, *Medrano 2095* (MEXU); Joya de Gomez a 25 km NE de la Peña, 2500-2700 m, bosque de pino-encino, 25 May 1974, *Medrano 7090* (MEXU); E and S slopes and summit of Peña Nevada, 19 Jul 1949, *Stanford, Lauber, & Taylor 2533* (NY, US); 7 km SW of Miquihuana, 8 Aug 1941, *Stanford, Retherford, & Northcraft 766* (GH). [Mpio. Tula], road between Tula and Ocampo, 13-16 mi E of Tula, tropical montane forest, ca. 4500 ft, 21 Jul 1978, *Daniel 314* (MICH). Mpio. Victoria: Rancho El Molino, ca. 25 km W Cd. Victoria, 1500 m, bosque mesófilo *Pinus-Quercus-Liquidambar-Magnolia*, 29 Mar 2009, *García-Morales 859* (ITCV); km 25 Cañón de La Peregrina, bosque *Pinus-Quercus*, 1200 m, 1 May 2016, *García-Morales 5432* (ITCV); 2 km S Rancho El Molino, ca. 25 km W Cd. Victoria, 1550 m, bosque *Pinus-Quercus*, 28 Mar 2018, *García-Morales 6263* (ITCV).

Cirsium novoleonense was identified as *C. subcoriaceum* (Less.) Sch.Bip. by Beaman & Andresen (1966) in their study of the vegetation and flora of Cerro Potosí. More recent collections of this species accessioned at TEX have been identified as *C. ehrenbergii* Sch.Bip. Both species are similar to *C. novoleonense* in their tall stature and very large heads with prominently red inner phyllaries but neither occurs north of the trans-volcanic ranges from Michoacan to Veracruz — they are members

of sect. *Erythrolaena*, which comprises 12 species (Nesom in prep.). In a suite of diagnostic features, however, *C. novoleonense* is out of place in sect. *Erythrolaena*.

Cirsium novoleonense

- * all phyllaries linear-lanceolate, evenly graduate in length, the inner series not discontinuously longer than the outer
- * all phyllaries indurate and strongly keeled
- * corolla lobes about the same length as the throat
- * stigmatic branches of the style 3.8–6.5 mm long, annulus barely or not at all exerted

Cirsium* sect. *Erythrolaena

- * outer phyllaries lanceolate to ovate-lanceolate, inner series discontinuously longer than the outer and extending well above them
- * at least the inner phyllaries herbaceous, not indurate and keeled
- * corolla lobes longer than the corolla throat
- * stigmatic branches of the style 1–3 mm long, annulus exerted 4–8 mm

Instead, *Cirsium novoleonense* appears to be more similar and closely related to species of the "Radiata group" (subject. *Radiata* of Petrak 1917, at least 11 species including *C. radians*, the type; Nesom in prep.) in its linear-lanceolate, indurate, and strongly keeled phyllaries evenly graduate in length and floral features (corollas, stigmas). In the hypothesis here, the large, red involucre of *C. novoleonense* originated independently of those of sect. *Erythrolaena*.

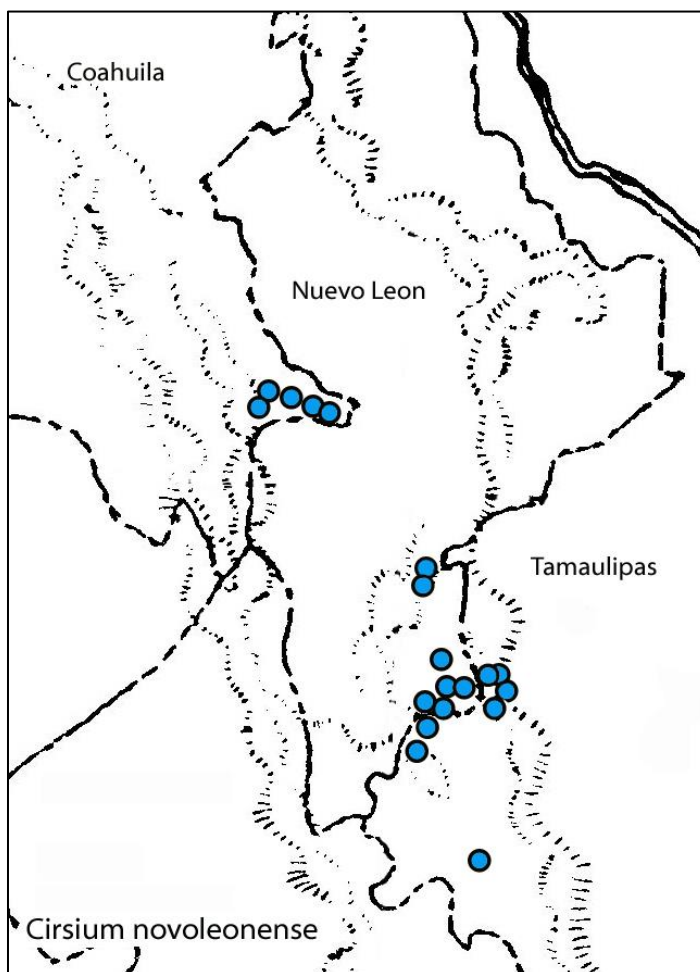


Figure 1. Distribution of *Cirsium novoleonense*.



Figure 2. *Cirsium novoleonense*. Mpio. Miquihuana, La Peña, Tamaulipas. Photo by L. García-Morales, 16 May 2015.



Figure 3. *Cirsium novoleonense*. Mpio. Arteaga, Sierra de la Marta, Coahuila. Photo by L. García-Morales, 3 Oct 2020.



Figure 4. *Cirsium novoleonense*. Sierra El Coahuilón, Coahuila, Hinton 18917 (GBH).



Figure 5. *Cirsium novoleonense*. Detail from Figure 4, Hinton 18917.



Figure 6. *Cirsium novoleonense*. Sierra Zapalinamé, Coahuila, Hinton 20503 (GBH).



Figure 7. *Cirsium novoleonense*. Detail from Figure 6, Hinton 20503.



Figure 8. *Cirsium novoleonense*. Picacho San Onofre (Cerro Peña Nevada), Nuevo León, Hinton 17580 (GBH).



Figure 9. *Cirsium novoleonense*. Detail from Figure 8, *Hinton 17580*.

Figure 10. *Cirsium novoleonense*. Cerro El Viejo, Nuevo León, Hinton 22113 (GBH).

ACKNOWLEDGEMENTS

Thanks to staff at TEX-LL and ITCV for assistance, to ANSM, ENCB, F, GH, MEXU, MSC, NY, US, and XAL for loans to TEX-LL, and to George Hinton for images of collections in the Hinton herbarium (GBH).

LITERATURE CITED

- Beaman, J.H. and J.W. Andresen. 1966. The vegetation, floristics, and phytogeography of the summit of Cerro Potosí, Mexico. *Amer. Midl. Nat.* 75: 1–33.
- Petrak, F. 1917. Die nordamerikanischen Arten der Gattung *Cirsium*. *Beih. Bot. Centralbl.* 35 (Abt. 2): 223–567.