

A NEW SPECIES OF *CHAPTALIA* (ASTERACEAE) FROM OAXACA, MEXICO

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ABSTRACT

Two collections of *Chaptalia* from southeastern Oaxaca are described as ***Chaptalia exazurea*** Hinton & Nesom, **sp. nov.** It is most closely related to four other Mexican species of sect. *Chaptalia* — *C. estribensis*, *C. lyratifolia*, *C. hidalgoensis*, and *C. hintonii* and is keyed in the context of those as well as the whole section. A map and illustrations are provided.

In an earlier study of *Chaptalia* (Nesom 1995), a collection from Cerro Azul in southeastern Oaxaca was identified as a long-disjunct population of *C. estribensis* Nesom, which otherwise is endemic to Hidalgo and adjacent Veracruz. Hinton (GSH) recognized that a second collection of the same entity from southern Oaxaca exists and that together the Oaxacan plants are morphologically distinct from *C. estribensis*. This is confirmed in the present study and the Oaxacan plants are formally described and named below as *Chaptalia exazurea*.

Chaptalia exazurea, *C. estribensis*, *C. lyratifolia* Burkart, *C. hidalgoensis* Cabrera & Nesom, and *C. hintonii* Bullock comprise a strongly defined group of Mexican species marked by their rhizomatous, colonial habit, cordate leaf bases, bisexual flowers with sterile ovaries, and pistillate flowers with markedly foreshortened style branches. Additionally, the ligules are whitish with (except in *C. exazurea*) a purple abaxial midstripe and the achenes unbeaked and pubescent over the whole surface with short, inflated trichomes. These have been placed as a subgroup within sect. *Chaptalia* (Nesom 1995, 2004; Cabrera & Nesom 2003).

Morphological distinctions among these five species are not great (see key below) but consistent. Each has a discrete geographic range, not overlapping any of the other four (Figure 3).

CHAPTALIA EXAZUREA G.S. Hinton & Nesom, **sp. nov.** **TYPE: MEXICO. Oaxaca.** Mpio. San Juan Ozolotepec: La Sirena, mixed forest, colony on cliff, 2525 m, 23 Oct 1995, *Hinton et al.* 26408 (holotype: TEX; isotypes: ANSM, GBH). Figures 1, 2.

Similar to *Chaptalia hintonii* in its strongly graduated phyllaries but different in its coriaceous leaf blades with tawny undersurface and lyratiform extensions at the base and its greater number of ray flowers; similar to *C. estribensis* in its slightly retrorse marginal teeth, relatively broad involucre, and 22–28 ray flowers but different in its lyratiform leaf bases, even-length phyllaries, shorter, white ray corollas with narrower ligules, and shorter achenes.

Plants colonial through rhizomes. **Scapes** 16–20 cm tall, ebracteate. **Leaves** coriaceous, glabrescent above, densely and closely matted-tomentose below, blades ovate to oblong-ovate, 3–7 cm long, 2.5–5 cm wide, base cordate, margins shallowly dentate-serrate to widely crenate with apiculate, slightly retrorse teeth, narrowly revolute; petiole sharply delimited, as long or longer than the blade, bare or narrowly winged or sometimes with lyratiform extensions below the blade base. **Involucre** 14–16 mm wide (pressed); phyllaries 13–14 mm long, in ca. 3 series of even to subequal length, margins minutely glandular. **Pistillate flowers** in 2 series, those of the inner with ligules absent or greatly reduced; ligulate pistillate flowers 22–28 in 1(–2) series, small staminodes sometimes present, corollas 9.5–12.5 mm long, ligules 0.8–1.3 mm wide, white and apparently without a purple midstripe. **Bisexual**

flowers with sterile ovaries. **Fertile achenes** not beaked, 2–2.5 mm long, pubescent over the whole surface with inflated, apiculate to blunt-tipped trichomes.

Additional collection examined. Oaxaca. [Mpio. Santa María Chimalapa:] Cerro Azul, cima, cerca del Rio Grande, al N de Niltepec, 2100 m, 7 Mar 1956, *MacDougall s.n.* (CAS, MEXU). Cerro Azul is one of the two main peaks of the Sierra Atravesada, about 18 mi NE of Niltepec. The two collections of *Chaptalia exazurea* are about 180 miles apart, suggesting that localities exist between them.

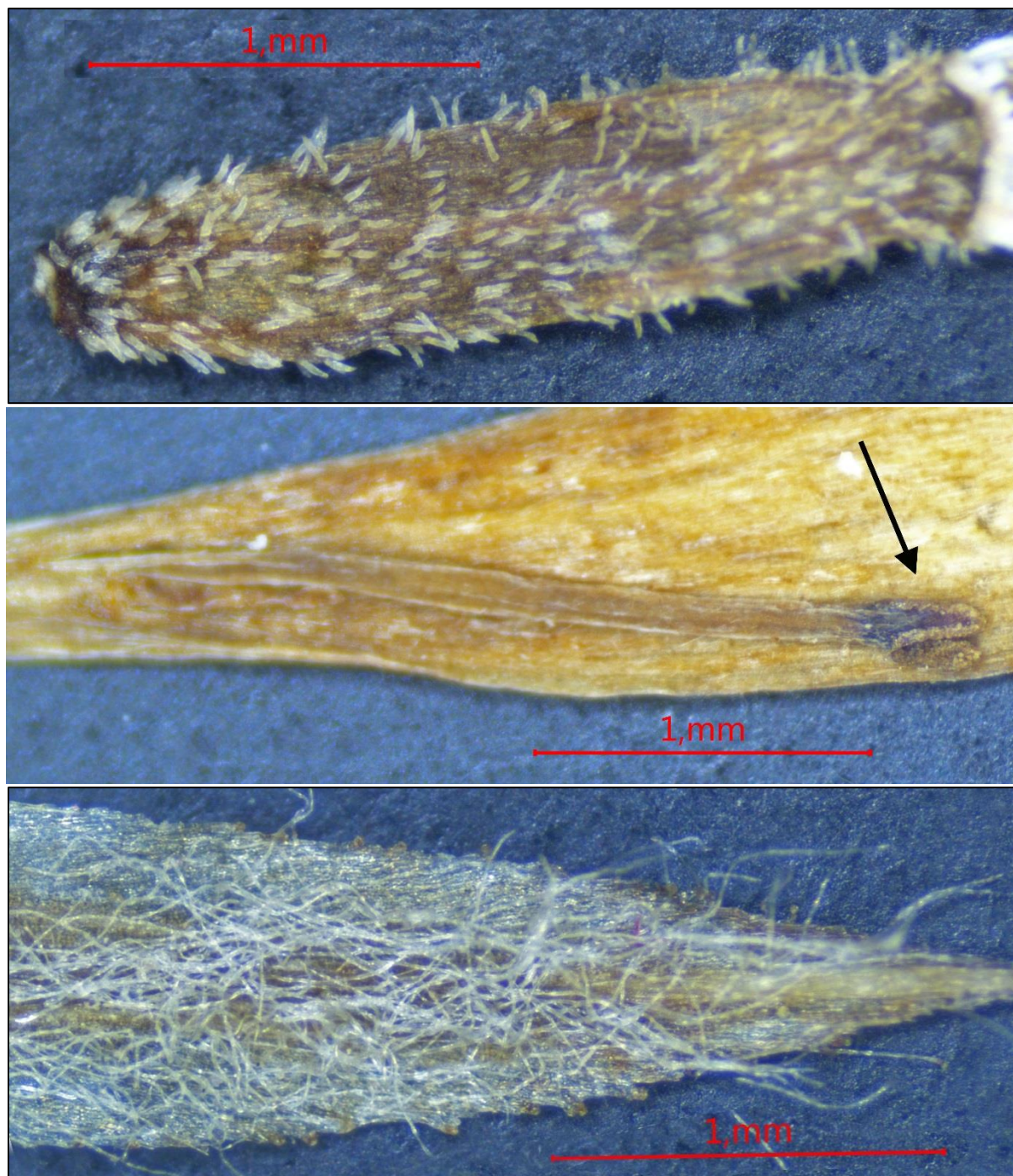


Figure 1. *Chaptalia exazurea* details. Top: pubescent surface of fertile achene. Middle: short style branches of ligulate pistillate flower. Bottom: glandular margins of phyllary. Photos by G.S. Hinton.



Figure 2. *Chaptalia exazurea*, GBH isotype (using mounting paper with TEX logo).



Figure 4. *Chaptalia exazurea* from Cerro Azul, northeast of Niltepec, Oaxaca. McDougall s.n., MEXU.

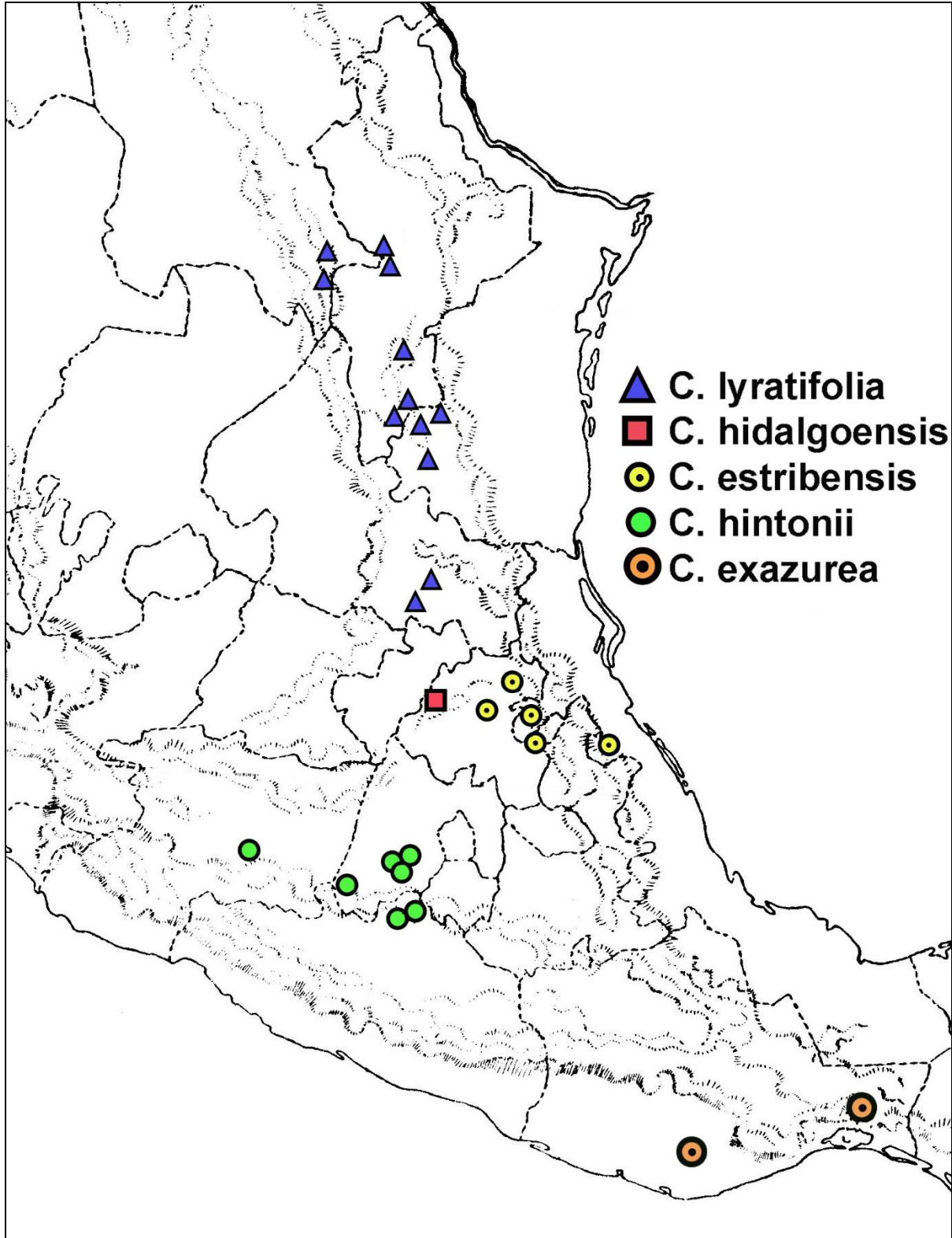


Figure 3. Distribution of the cordate-leaved species of sect. *Chaptalia*.



Figure 5. *Chaptalia estribensis*, holotype.

Synoptic key to the species of sect. *Chaptalia*

1. Leaves basally attenuate; plants without rhizomes, occurring individually.
 2. Scapes bracteate; achenes fusiform or with only a short, slightly constricted neck
 3. Pistillate florets in 1 series, prominently ligulate; fertile achenes fusiform, with a short, slightly constricted neck, papillate only on the neck; leaves narrowly oblanceolate with shallowly sinuate to retrorsely dentate margins; Oaxaca and Puebla **Chaptalia pringlei**
 3. Pistillate florets in 2 series, those of the outer series ligulate, those of the inner series with ligules absent or greatly reduced; fertile achenes fusiform, without a neck or beak, sparsely papillate over the whole surface; leaves dissected into 5–7 pairs of somewhat retrorse lobules, these increasing in size distally; Querétaro **Chaptalia mexicana**
 2. Scapes ebracteate; achenes with a relatively long, prominently constricted neck.
 4. Leaves oblanceolate-spatulate with a narrowly attenuate petiolar region; fertile achenes 6–9 mm long, including the slender neck 1/3–1/2 as long as the achene, sparsely papillate over the whole surface; northeastern Mexico **Chaptalia madrensis**
 4. Leaves narrowly elliptic to elliptic-obovate, without a petiolar region; fertile achenes 3.5–5.2 mm long, including the slender neck 1/4–1/5 as long as the achene, glabrous except for the sparsely papillate neck; southeastern USA **Chaptalia tomentosa**
1. Leaves basally cordate; plants rhizomatous, colonial.
 5. Scapes bracteate from near base to apex, bracts 6–9, linear-lanceolate, 3–5.2 mm long **Chaptalia hidalgensis**
 5. Scapes ebracteate or with 1–3 small, linear bracts near the head.
 6. Leaf blades thin-herbaceous, (3–)4–8 cm long, usually whitish beneath, petioles often short-winged, rarely with lyratiform extensions below the blade base; phyllaries strongly graduated in length; ray flowers 14–20 **Chaptalia hintonii**
 6. Leaf blades thick-coriaceous, 4.5–6.5 cm long, whitish or tawny beneath, petioles bare or with lyratiform extensions below the blade base; phyllaries strongly graduated or even in length; ray flowers 12–25 or 22–28.
 7. Scapes 4–20 cm tall; leaves whitish beneath; involucre 8–15 mm wide; phyllaries strongly graduated in length; ligulate flowers 12–25 **Chaptalia lyratifolia**
 7. Scapes 10–20 cm tall; leaves tawny beneath; involucre 14–18 mm wide; phyllaries strongly graduated or even in length; ligulate flowers 22–28.
 8. Phyllaries strongly graduated in length; ligulate flowers with corollas 12.5–19 mm long, ligules 1.3–2 mm wide, white with a purple midstripe abaxially; achenes 4–4.5 mm long **Chaptalia estribensis**
 8. Phyllaries even in length; ligulate flowers with corollas 9.5–12.5 mm long, ligules 0.8–1.3 mm wide, white, without an abaxial midstripe; achenes 2–2.5 mm long **Chaptalia exazurea**

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