

**BRICKELLIA ENIGMATICA (ASTERACEAE: EUPATORIEAE),
A NEW SPECIES FROM NORTH-CENTRAL MEXICO**

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ABSTRACT

A new taxon, *Brickellia enigmatica* B.L. Turner, **sp. nov.**, is described from northeastern Sonora and western Chihuahua. It is closely similar to *B. simplex* but differs in a number of characters, including smaller, more numerous heads and smaller, more densely pubescent achenes. The two taxa might also be compared with *B. odontophylla* and *B. grandiflora*, but the latter two differ in having mostly alternate leaves and more numerous heads. A key to the taxa concerned is provided, along with maps showing their distributions. A photograph of the holotype of *B. enigmatica* is also provided. *Phytologia* 93(3): 322-329 (December 1, 2011).

KEY WORDS: Asteraceae, *Brickellia enigmatica*, Mexico, Chihuahua, Sonora

Routine identification of Mexican Asteraceae has occasioned the present paper, the novel species brought to my attention by recent collections assembled by Tom Van Devender and associates.

BRICKELLIA ENIGMATICA B.L. Turner, sp. nov. Fig. 1

Brickelliae simplici A. Gray similis sed capitulis plerumque lateralibus reflexis (vs. erectis) (2-)3-5 per caulem (vs. 1-2), involucralibus minoribus plerumque 10-13 mm in longitudine (vs. ca. 15 mm), et acheniis externis minoribus (2.5-3.0 mm in longitudine vs 3.5-4.0 mm) valde pubescentibus (vs. sparsim pubescentibus vel glabris).

TYPE: **MEXICO. SONORA.** Mpio. de Yecora: Rancho El Cuervo, Arroyo Escondido, near El Kipor, east of Maycoba; rocky stream canyon in pine-oak forest; 1560 m, 28° 25' 38" N, 108° 35' 58" W, 30 Sep 2003, *A.L. Reina 2003-1111* [with Van Devender, Emmitt & Eubanks] (holotype: TEX).

Perennial herbs, 30–60 cm high, from woody or somewhat tuberous rhizomes. Leaves (midstem) (2)3–9 cm long, 1–4 cm wide; petioles 1–4 cm long; blades triangular to subhastate, 3-nervate from the base, glabrous or nearly so, the lower surfaces glandular-punctate; margins irregularly dentate. Heads mostly (2)3–5, reflexed along the upper stems, the peduncles mostly 1–3 cm long; involucre bracts imbricate, the inner-most series, linear-lanceolate, 9–12 mm long. Florets white, mostly 30–35 per head; corollas glabrous, slender (ca 0.8 mm wide), 7–8 mm long; lobes 5, ca 0.5 mm long. Stamens 5, included within the corollas, extending from mid-length to near mouth. Styles swollen and pubescent at base. Achenes (outer) 2.0–2.5 mm long, markedly pubescent; pappus bristles 25–30, mostly 7–8 mm long.

Representative specimens: **MEXICO. SONORA.** 7 sheets from Mpio. de Yecora, all collected by *Reina G. & Van Devender* (96-614, 96-835, 97-1193, 98-1304, 98-1843; ARIZ, TEX); Rio Mayacoba, at crossing with new highway, 28° 23' N, 108° 46' W, 1200 m, 20 Oct 1991, *Joyal 1867* (TEX). **CHIHUAHUA.** Mpio. Madera: 11.8 mi W of Hwy 16 in Madera along the road to Rio Papigochic, 22 Sep 1984, *Sundberg 2794* (TEX); Mpio Nabogame: 1800 m, 28° 30' N, 108° 30' W, 12 Oct 1988, *Laferriere 1943* (TEX); Mpio. Ocampo: near Cascada de Basaseachic, 1950–2000 m, 17–20 Oct 1986, *Nesom & Vorobik 5606* (TEX).

Sonoran material cited above is very uniform; the Chihuahuan material is much more variable, but most key characters hold.

The species is named for its enigmatic nature, standing somewhere between *B. simplex* and *B. odontophylla*, its phyletic position uncertain.

In my treatment of *Brickellia* for Mexico (Turner 1997), this novelty will key to *B. simplex*, largely because I accepted a broad

circumscription of the species, as espoused by most workers at the time. Additionally, I had not examined typical elements of the latter, such plants not being on file at LL-TEX. Thanks to recent collections of *Brickellia* from northern Mexico by Van Devender and colleagues, I have had occasion to review the taxonomy of those taxa centering about *B. simplex*, the results presented here. Distributions of *Brickellia enigmatica* and closely related taxa are shown in Fig. 2.

Key to *Brickellia enigmatica* and closely related taxa

- 1. Leaves alternate throughout, or seemingly so (3)
- 1. Leaves opposite below, alternate above (2)
- 2. Involucres ca 15 mm long; heads 1 or 2, terminal, on mostly elongate, erect or semierect peduncles; outer achenes sparsely pubescent to glabrate.....**B. simplex**
- 2. Involucres mostly 9–12 mm long; heads 3–6, lateral on pendulous peduncles; outer achenes markedly pubescent.....**B. enigmatica**
- 3. Heads 5-numerous, not noticeably pendulous, arranged in terminal clusters; pappus bristles mostly 5–6 mm long**B. grandiflora**
- 3. Heads 5–10, pendulous, arranged in terminal racemes; pappus bristles (7–)8–10 mm long**B. odontophylla**

BRICKELLIA GRANDIFLORA (Hook.) Nutt., Trans. Amer. Phil. Soc., Ser. 2, 7: 287. 1841.

This widespread (Fig. 2), highly variable taxon is readily distinguished from *Brickellia enigmatica* by its terminal, numerous-headed capitulescence among yet other features. However, occasional specimens of *B. grandiflora* with few-headed capitulescences will mimic *B. enigmatica*. Much as with *B. simplex*, since the two taxa grow in close proximity, it is likely that hybrids between these occur. Scott (2006) has an excellent treatment of *Brickellia* for the Flora of North America; in this, *B. simplex* is keyed out adjacent to *B. grandiflora*. Mexican material of the latter from Nuevo León and Tamaulipas (Fig 3) might ultimately prove to represent a distinct taxon.

BRICKELLIA ODONTOPHYLLA A. Gray, Proc. Amer. Acad. Arts 17: 206. 1882.

As noted by Turner (1997), this taxon is “closely related to *B. simplex* [= *B. enigmatica* of present paper].” *Brickellia odontophylla* is poorly collected but appears to occur largely south of *B. grandiflora*, as shown in Fig. 2.

BRICKELLIA SIMPLEX A. Gray, Pl. Wright. 2: 73. 1853.

Type material of this taxon was collected by Wright in the “Hills east of Santa Cruz,” Sonora, Mexico (holotype: GH!). Most subsequent collections were obtained from the USA. Relatively few Mexican collections exist, most of these recent accessions, as follows: CHIHUAHUA. Mpio. Casas Grandes: “Ca. 2 miles E of Colonia Pacheco,” 4 Sep 1979, *Keil 13349* (ASU); 7 mi up grade from Mata Ortiz junction in oak/manzanita/grass woodland, *Spencer & Atwood 984* (TEX). SONORA. Near Observatorio Astrofisico, Sierra la Mariquita, 9.4 km (by air) NNW of Cananea, 2440 m, pine-oak forests, 19 Sep 2010, *Reina G. et al. 2010-865* (TEX).

The Sonoran collection listed in the preceding is similar to that of the holotype. The two Chihuahuan collections have 2–several-headed capitulescences approaching those of *B. enigmatica*, but their more stiffly erect peduncles and larger heads and achenes are more like those of *B. simplex*, and these are mapped as such (Fig. 3).

ACKNOWLEDGEMENTS

I am grateful to my colleague Guy Nesom for the Latin diagnosis and for reviewing the paper. Distribution maps of Mexican taxa are based upon specimens housed at ARIZ, ASU, LL-TEX, and those reported in Robinson (1917) and the USDA web sites. Specimens of *Brickellia simplex* from Arizona and New Mexico were also examined, thanks to material on loan from ARIZ, ASU and UNM.

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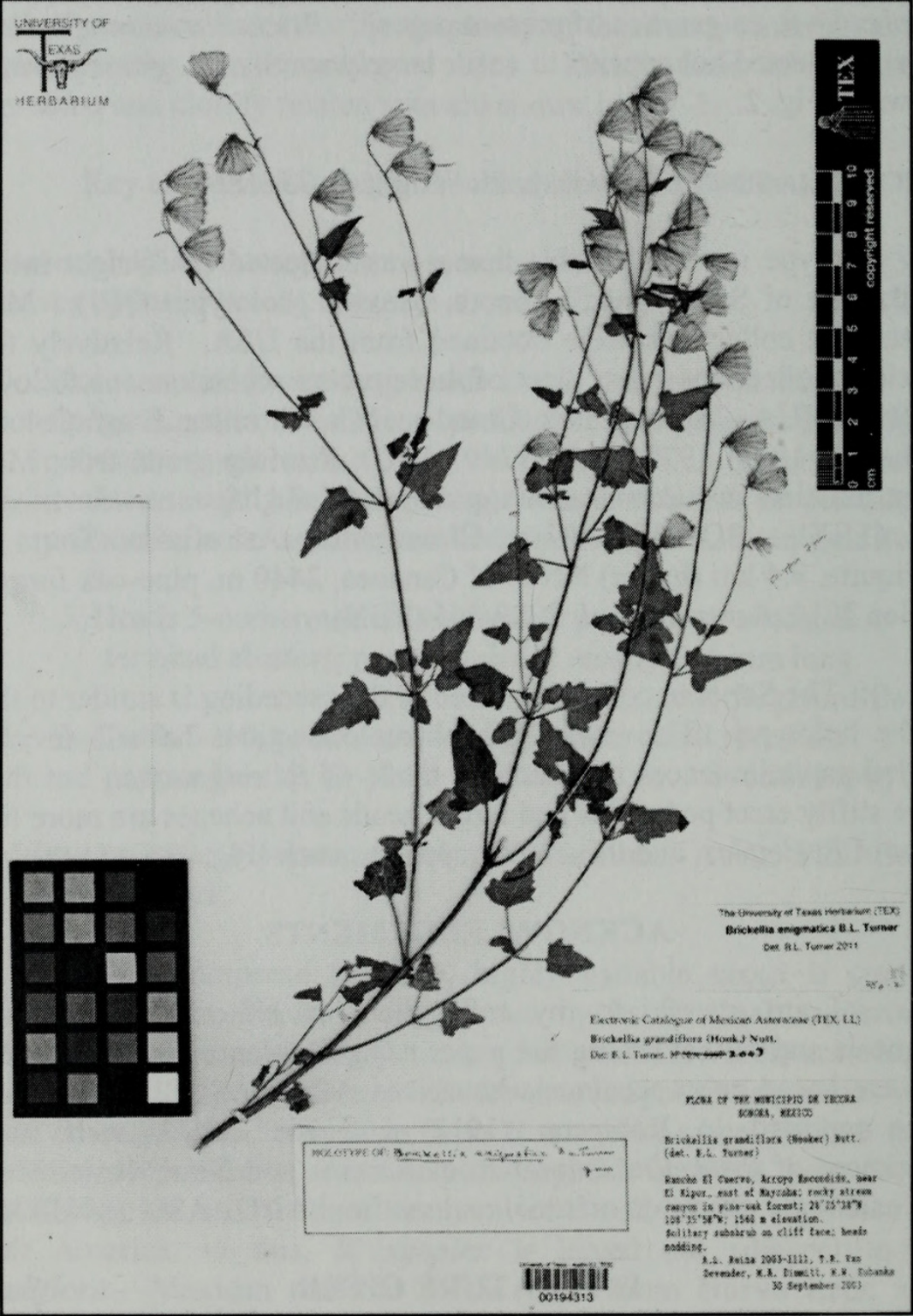


Fig. 1. *Brickellia enigmatica* (holotype).

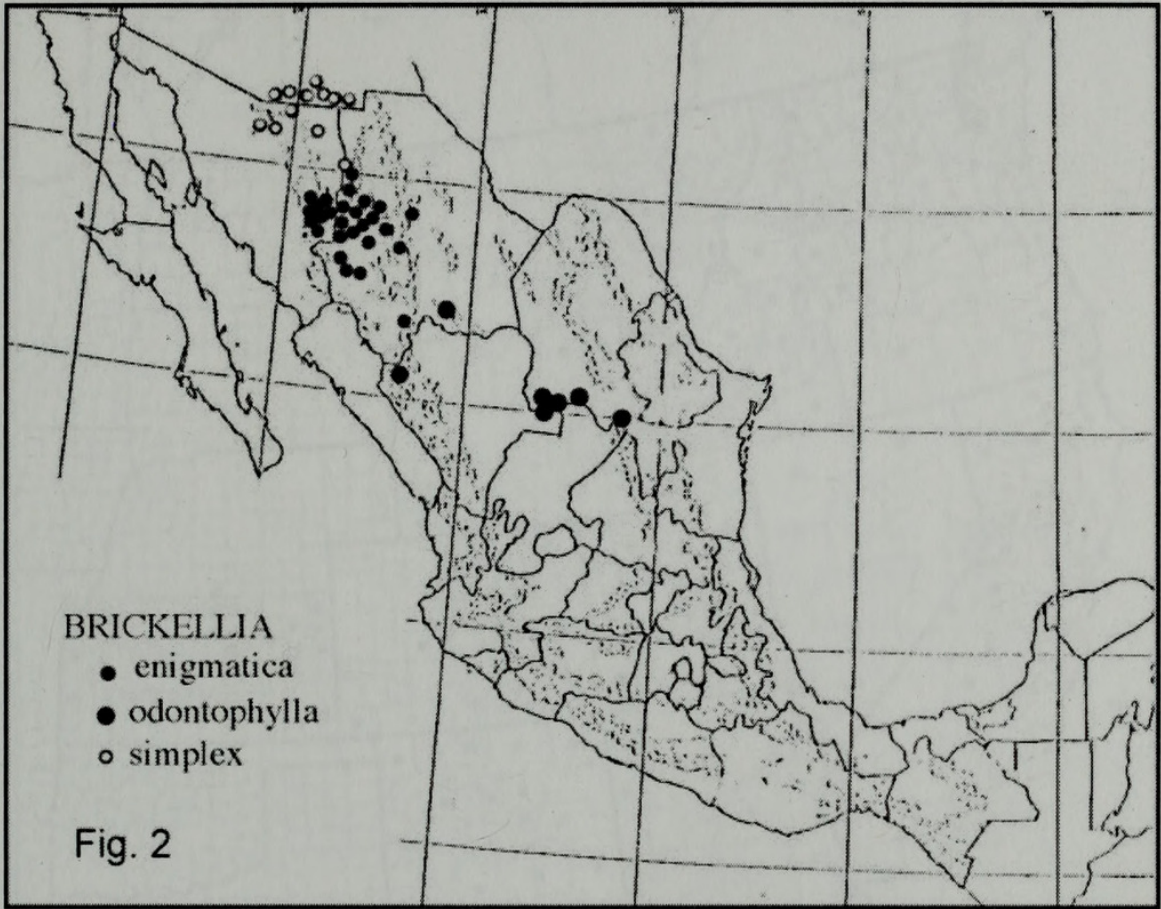


Fig. 2. Distribution of *Brickellia enigmatica*, *B. odontophylla*, and *B. simplex*.

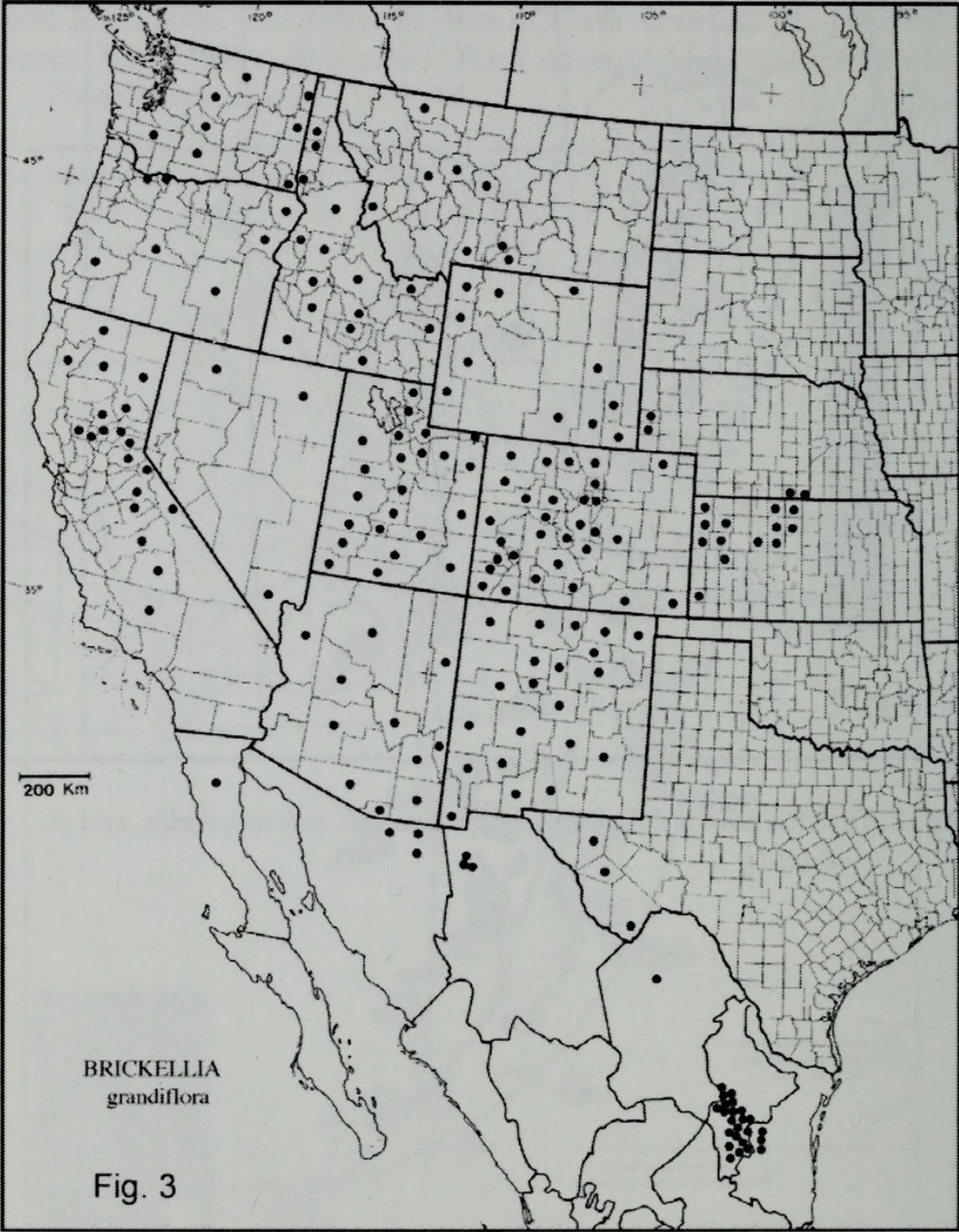


Fig. 3. Distribution of *Brickellia grandiflora*.

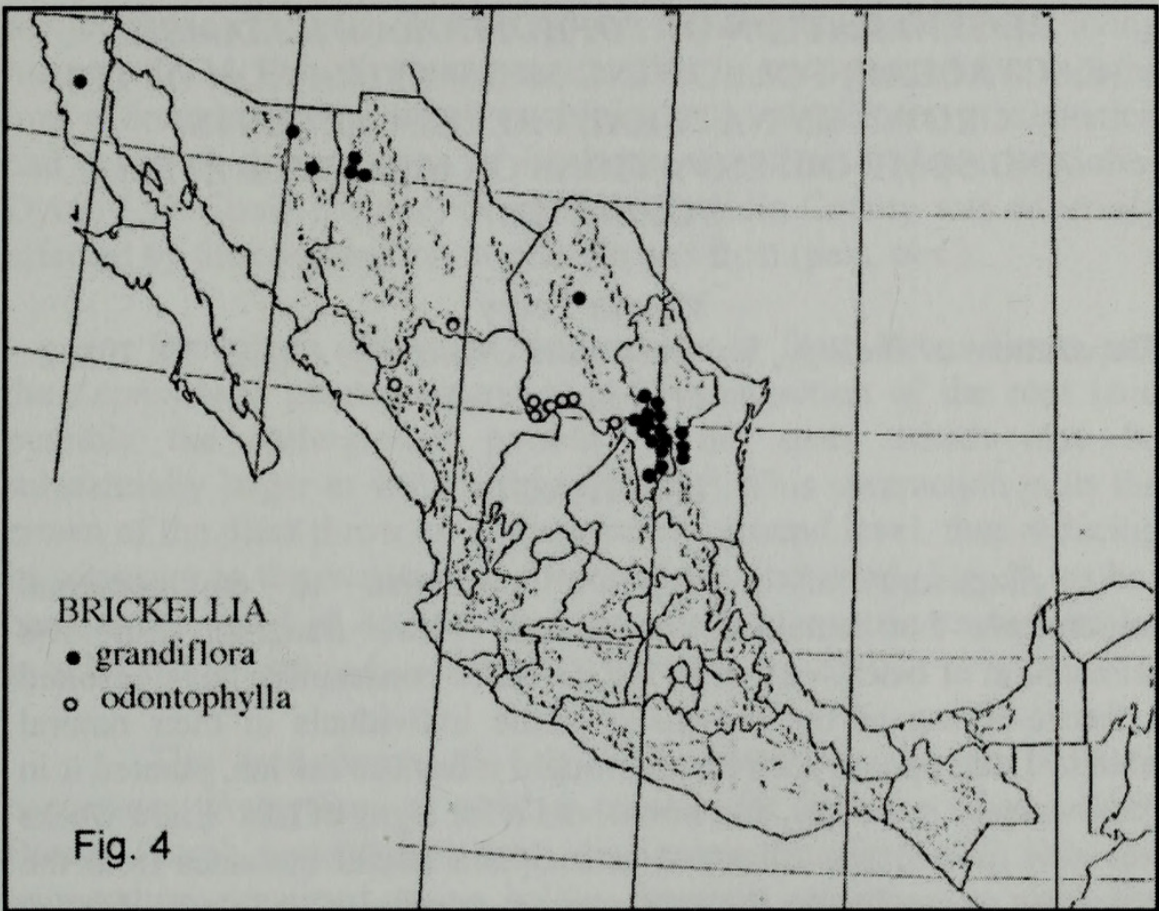


Fig. 4. Distribution of *Brickellia grandiflora* and *B. odontophylla* in Mexico.



Turner, B. L. 2011. "Brickellia enigmatica (Asteraceae: Eupatorieae), a new species from north-central Mexico." *Phytologia* 93(3), 322–329.

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