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THREE NEW SPECIES OF *AGERATINA* (ASTERACEAE: EUPATORIEAE) FROM OAXACO, MEXICO AND A KEY TO THE *A. MAIRETIANA* COMPLEX

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Abstract: Three new species of *Ageratina* subg. *Neogreenella* are described from Mexico, as follows: **Ageratina mayajana,** from Mpio. San Miguel Chimalapa, Oaxaca; **Ageratina mazatecana,** from Mpio. Santa Maria Chilchotla, Oaxaca; and **Ageratina pochutlana** from Districto Pochutla, Oaxaca. Although all of the taxa belong to the *A.* subg. *Neogreenella,* only the latter two relate to the *A. mairetiana* complex as defined by Turner (1987, 1997). A revised key to that complex is provided.

Keywords: Asteraceae, Eupatorieae, *Ageratina,* Mexico, Oaxaca.

As treated by Turner (1997), the Mexican species of *Ageratina* number 131. The following three novelties bring the total to 134.

Ageratina mayajana B. L. Turner, sp. nov. (Fig. 1)

TYPE: **MEXICO. OAXACA.** Mpio. San Miguel, Chimalapa, Cerro Verde, al S del camino Benito Juarez-La Ciénega, ca. 8 km en línea recta al SE de Benito Juarez, ca. 24 km en liner recta al NNE de San Pedro Taparatepec, 16° 39′ N, 94° 05′ W, "Cañadas con bosque mesófilo y *Cedrela, Tapirira, Ficus,* aquacatillo y poco pino y encino. Pedientes fuertes, suelos negros," 1500–1600 m, "Planta 1.5 m, flor blanco, color a miel de castilla; abundante, en el borde del arroyo," 25 Mar 1986, *S. Maya J. 3053* (HOLOTYPE: TEX).

Ageratina rubricaulis (H.B.K.) King & H. Rob. similis sed differt foliis lanceolatis in petiolos gradatim angustatis (vs. deltoideis in petiolos abrupte confluentibus), involucris late campanulatis bracteis interioribus ca. 3.5 mm longis (vs. anguste campanulatis bracteis interioribus 5–7 mm longis), et acheniis glabris (vs. ciliatis).

Suffruticose HERBS 1.0–1.5 m high. STEMS purplish, sparsely pubescent. LEAVES opposite throughout; petioles 2–4 cm long; blades lanceolate, prominently 3-nervate from or near the base, 9–15 cm long, 2.5–3.5 cm wide, sparsely pubescent above and below to nearly glabrous, the margins remotely serrate. HEADS numerous, arranged in terminal rounded cymes 5–15 cm across, the ultimate peduncles sparsely hispidulous, mostly 2–10 mm long. INVOLUCRES broadly campanulate; bracts subimbricate, 2–3 seriate, the inner series ca. 3 mm long. RECEPTACLE convex, ca. 1 mm across, glabrous. FLORETS 40–50 per head; corollas ca. 3.5 mm long, glabrous, the tubes ca. 2 mm long, the throat with 5 deltoid lobes ca. 0.2 mm long. ACHENES brown, glabrous, ca. 1 mm long; pappus a single series of ca. 20 delicate bristles ca. 2 mm long, readily separating from a persistent basal crown.

ADDITIONAL COLLECTION EXAMINED: **MEXICO. OAXACA:** Mpio. San Miguel Chimalapa, Arroyo Rancho Quemado, afluente del Río Portamonedas, ca. 10 km en linea recta al S de Benito Juarez, ca. 28 km en linea recta al NNE de San Pedro Tapanatepec, "Bosque abierto con *Liquidambar, Ficus, Erythrina, Spondias, Salix, Acrocomia.* Terrenos planos con suelo blanco. Planta 1.10 m; flor blanco, color a miel virgen; escasa, en arroyo." 7 Apr 1987, *S. Maya J. 4360.*

The novelty is a very distinctive species of the genus *Ageratina,* not likely to be confused with another. In the treatment of Turner (1997) it will key to or near *A. rubricaulis* but is readily distinguished from that species and most others by its broadly

FIG. 1. Holotype of *Ageratina mayajana.*

campanulate involucres bearing numerous florets with glabrous achenes.

The species is named for its primary collector, Sr. S. Maya J. According to Tom Wendt, Curator of the Plant Resources Center, he is an astute and prolific local collector of Benito Juarez, Oaxaca, of the eastern Chimalapa area.

Ageratina mazatecana B. L. Turner, sp. nov. (Fig. 2)

TYPE: **MEXICO. OAXACA.** Mpio. Santa María Chilchotla, NE de la comunidad de Agua de Gancho. Agencia Municipal Maria Luisa (8 km del Puente de Fierro, por la terraceria a Sta. María Chilchotla). 18° 11′ 55.8″ N, 96° 49′ 50.5″ W, Ladera con exposicion W, ca. 1466 m, 1 Apr 2001, *X. Munn-Estrada 981* [con *E. Juarez* y *J. Juarez*] (HOLOTYPE: TEX).

Ageratina chiapensi (B.L. Rob.) King & H. Rob. extrinsecus similis sed differt foliis integris (vs. denticulatus) et involucris minoribus (3–4 mm altis vs. 6–8 mm).

Suffruticose HERBS or SHRUBS to 2 m high. STEMS densely pubescent with stiff spreading short brownish hairs ca. 0.25 mm high. LEAVES opposite throughout; petioles stout, 1.0–1.4 cm long; blades ovate, 13–19 cm long, 5–7 cm wide, prominently 3-nervate from well above the base (1–2 cm), their margins entire. HEADS numerous, arranged in broad terminal cymes ca. 15 cm across, the ultimate peduncles mostly 1–5 mm long. INVOLUCRES subimbricate, 2–3 seriate, linear-lanceolate, the inner series ca. 3 mm long. RECEPTACLE convex, ca. 1 mm across, sparsely pubescent. FLORETS ca. 30 per head; corollas white, 4–5 mm long, glabrous, the tubes ca. 1 mm long, grading into the 5-lobed throats. ACHENES linear-oblanceolate, sparsely hispidulous along the 5 angles; pappus double, an outer series of 5–10 short bristles 1–2 mm long, an inner series of 20–30 fragile bristles ca. 3 mm long.

The species is named for the Sierra Mazateca, whence the type.

Ageratina pochutlana B. L. Turner, sp. nov. (Fig. 3)

TYPE: **MEXICO. Oaxaca.** Distr. Pochutla, "Puente Jalatengo," 39.7 km al N de Candelaria Loxicha (carr. Pochutla-Oaxaca), 1300 m, Pine-oak forests with *Alnus* and *Chiranthodendron,* 20 Feb 1984, *R. Torres C. & P. Tenorio 4709* (HOLOTYPE: TEX; ISOTYPE: MEXU, not seen).

A *Ageratina pringlei* (B.L. Rob.) King & H. Rob. similis sed differt foliis ovatis (vs. triangularibus), involucris 5–7 mm altis (vs. 8–10 mm), et acheniis hispidis (vs. viscidis vel glanduli-pubescentibus).

SHRUB to 2 m high. STEMS having upswept purplish hairs, with age becoming glabrate and corky. LEAVES 7–9 cm long, 3.0–3.5 cm wide; petioles 1.5–2.0 cm long; blades ovate, 3-nervate from above the base, sparsely pubescent, mostly along the veins, the margins serrate. HEADS arranged in terminal congested cymes, the ultimate peduncles ca. 1 cm long, densely glandular-pubescent. INVOLUCRAL BRACTS linear-lanceolate, greenish, mostly 5–6(7) mm long, ca. 0.5 mm wide. RECEPTACLE plane, glabrous. FLORETS 30–50; corollas white, ca. 5 mm long, glabrous, the tubes ca. 2.5 mm long, gradually grading into the 5-lobed throats. ACHENES brownish, ca. 4 mm long, hispidulous; pappus 2-seriate, a weakly developed outer series of bristles 1–3 mm long, an inner series of ca. 40 bristles 5–6 mm long.

The species is named for the District of Pochutla, where collected.

The type, was originally identified as *Ageratina mairetiana* (DC.) King & H. Rob., but the plant concerned is more similar to *A. pringlei* and will key to that taxon in my recent treatment of the genus for Mexico (Turner, 1997).

As already noted, both *Ageratina pochutlana* and *A. mazatecana* belong to the *Ageratina mairetiana* complex as treated by Turner (1997), which is largely defined by its dimorphic pappus and the 12 species

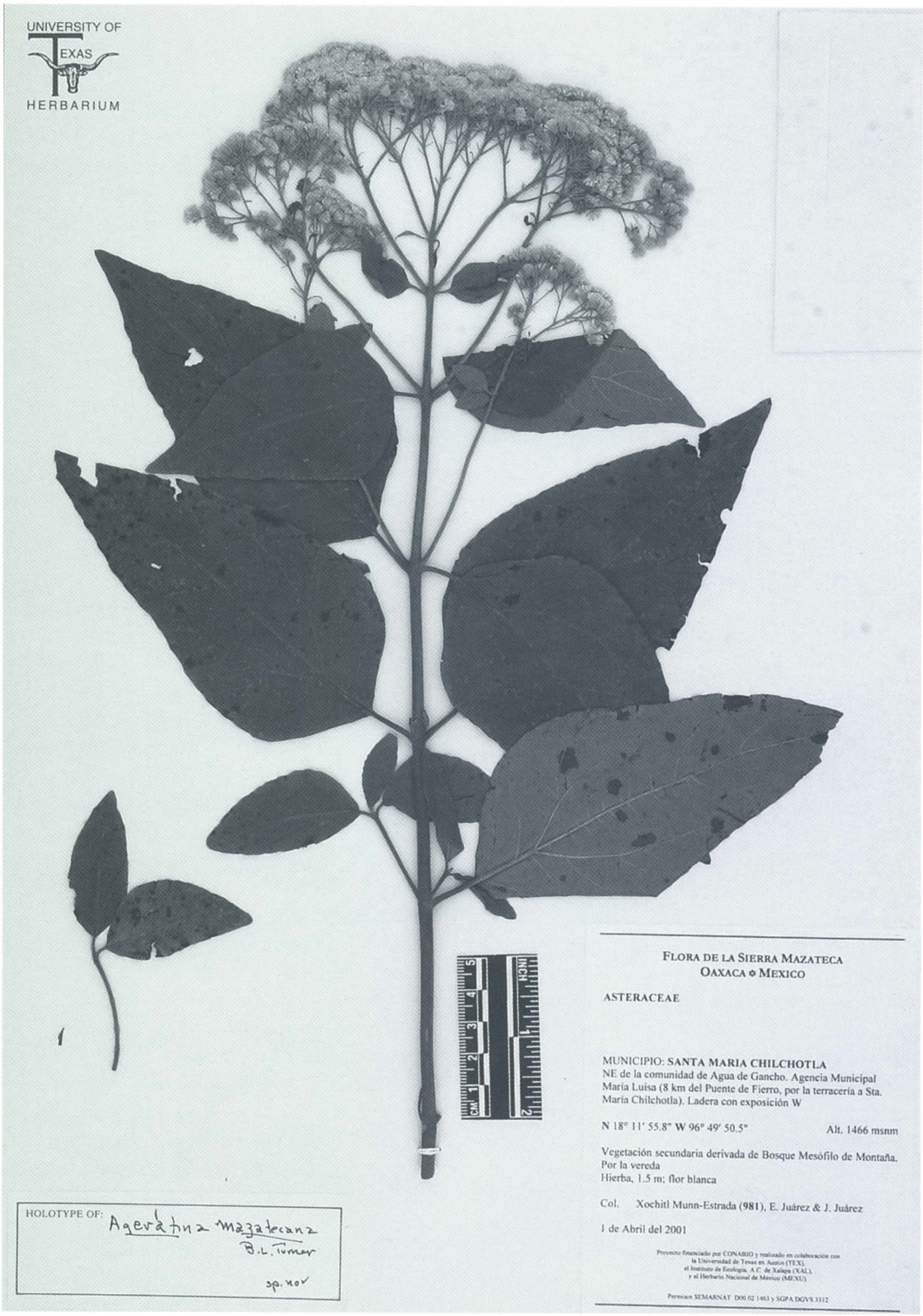

FIG. 2. Holotype of *Ageratina mazatecana.*

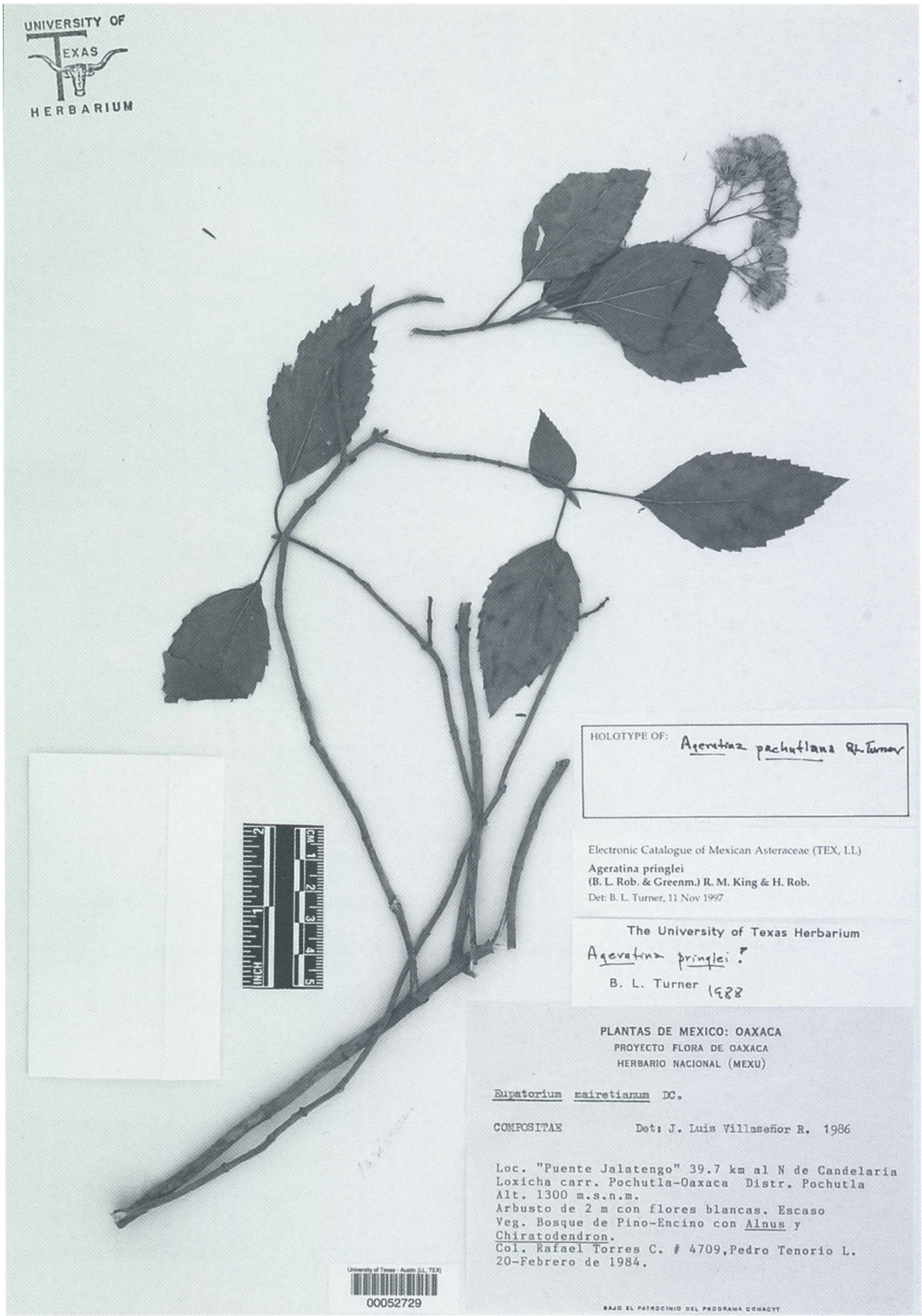

FIG. 3. Holotype of *Ageratina pachutlana*

concerned are separated from the remainder of the species of *A.* subg. *Neogreenella* (including *A. mayajana*) in the very first key lead in the Turner (1997) treatment. The present descriptions bring to 14 the number of species recognized in the complex. The following key will help identify the taxa concerned.

1. Pappus in 1–2 series of bristles, these all alike or nearly so [Turner, 1997, leading to couplet 14 in that key] ..... *A. mayajana* [and all other species of *Neogreenella*]
1. Pappus dimorphic, an outer series of short narrow scales or setae, 1–2 mm long, and an inner series of bristles 4–7 mm long ..... [*A. mairetiana* complex]
   2. Leaves sessile or nearly so ..... *A. collodes*
   2. Leaves clearly petiolate.
      3. Peduncles and phyllaries densely stipitate-glandular
         4. Involucres 3–4 mm high; Oaxaca ..... *A. pochutlana*
         4. Involucres 4–9 mm high.
            5. Pubescence of foliage a dense tomentum of brownish or tawny hairs up to 2 mm long; leaf-blades broadest at or near the middle ..... *A. chiapensis*
            5. Pubescence of foliage not as above; leaf-blades broadest at or near the base.
               6. Involucral bracts ovate-lanceolate, 1.5–2.0 mm wide; Chiapas to Jalisco .... *A. lasioneura*
               6. Involucral bracts linear-lanceolate, 0.5–1.5 mm wide; Oaxaca, Chiapas
                  7. Leaves ovate; involucres 5–7 mm high; achenes hispid ..... *A. mazatecana*
                  7. Leaves more or less deltoid; involurcres 7–10 mm high; achenes glandular .. *A. pringlei*
      3. Peduncles and phyllaries variously pubescent to glabrous, but not densely stipitate-glandular, i.e., plants sparsely stipitae-glandular will key here.
         8. Involucres 4–6(9) mm long.
            9. Capitulescence a large ovoid or subcylindric, paniculate thyrse formed by both terminal and axillary corymbs; Jalisco, Michoacan, Mexico, Morelos ..... *A. cylindrica*
            9. Capitulescence a simple rounded, terminal corymbose panicle or an axillary lax corymb.
               10. Involucres 4–5 mm high; Oaxaca, Chiapas.
                  11. Leaves ovate, 3–4 cm wide ..... *A. chimalapana*
                  11. Leaves elliptic, 1–2 cm wide ..... *A. kochiana*
               10. Involucres 6–9 mm high; Pacific slopes, Jalisco to Guerrero.
                  12. Heads in tight terminal corymbs, the ultimate peduncles 3–10 mm long .. *A. cerifera*
                  12. Heads in lax corymbs, the ultimate peduncles (5)10–20 mm long.
                     13. Leaves lanceolate, 3–4 times as long as wide; Guerrero ..... *A. cremasta*
                     13. Leaves ovate, 1.5–2.0 times as long as wide; Jalisco ..... *A. manantlana*
         8. Involucres (7)8–12 mm long.
            14. Flowers (10)15–35 per head; achenes either viscid-glabrous or with atomiferous unstalked glands (rarely a few hispid hairs) ..... *A. mairetiana*
            14. Flowers (30)45–70 per head; achenes with stipitate-glandular hairs or with hispid hairs intermixed.
               15. Involucral bracts ca. ½–⅔ as long as the heads, the middle series elliptical, 2–4 mm wide ..... *A. yecorana*
               15. Involucral bracts as long as the heads, the middles series linear-lanceolate, 1–2 mm wide ..... *A. lasioneura*

Distribution maps for all of the above taxa, except for the newly described species, can be found in Turner (1997).

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