MIKANIA URCUENSIS, A NEW SPECIES FROM ECUADOR (EUPATORIEAE: ASTERACEAE)

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ABSTRACT

Mikania urcuensis is described as new from the Province of Napo in Ecuador.

KEY WORDS: *Mikania*, Eupatorieae, Ecuador. new species.

A major effort in the last decade has resulted in submission of a treatment of the tribe Eupatorieae for the Flora of Ecuador. The genus *Mikania* in that treatment was prepared by the present authors with recognition of 59 species for the country. Fifteen of these were described as new and one previous herbarium name was validated in preparation for the treatment (Robinson & Holmes 2002). Since that time, material has continued to be examined and additions to the flora have been found. These include an undescribed species from the Province of Napo described here to make it available for the revised flora manuscript. The present total of species recognized from Ecuador is 61.

Mikania urcuensis H. Rob. & W.C. Holmes, **sp. nov.** TYPE:
Ecuador. Napo: Slopes of Guagra Urcu, on the loma above upper Río Borja, SE exposed montane forest, scandent, inflorescence white, 00°28'S, 77°44'W, 2600 m, 25 Sep 1980, *L.B. Holm-Nielsen, J. Jaramillo, F. Coello & E. Asanza 26986* (holotype US, isotypes AAU, QCA).

A Mikaniam bogotensis in ramis inflorescentis spicato-racemosis et in limbis corollarum salverformibus superficialiter simila sed in nodis non disciferis in laminis foliorum subglabris base non truncatis vel cordatis in bracteis involucri acutis et in lobis corollarum interne non papilliferis distincta.

Vines with sparingly branched, slender, flexuous stems; internodes often 9-12 cm long, terete, striate, densely puberulous with minute worm-like hairs, narrowly fistulose; nodes without discs, with only a tranverse ridge between leaves. Leaves opposite, petioles 0.5-1.5 cm long, densely puberulous with stout short hairs; blade ovate, mostly 33.0-8.5 cm long, 1.5-3.5 cm wide, base broadly obtuse to rounded, margins entire, apex acute, surfaces nearly concolorous, upper surface glabrous and smooth, with main veins minutely puberulous, veinlets prominulous, glandular dots sparse, obscure, lower surface dull, with more numerous, minute glandular dots, with few minute hairs mostly on veins; venation with two pairs of subparallel, ascending, arching secondary veins from 1-5 mm and 5-15 mm above base of blade. Inflorescences in pairs from axils of leaves, pyramidally thyrsoid with spiciform branches, a few small foliiform bracts at lower branches 7-15 mm long, distal bracteoles narrowly subulate, 3-7 mm long; with heads 7-17 on a branch, in spiciform or racemose groups, 1 erect and terminal, others spreading at 90° angles, mostly separated by 3-5 mm, sessile to subsessile; peduncles 1-2 mm long. Heads ca. 5 mm high, 2-3 mm wide; subinvolucral bract at base of peduncle, subulate, ca. 1.5 mm long, involucral bracts 4, narrowly oblong, ca. 4 mm long, 0.8 mm wide, apex short-acute, base narrow, gibbous, minutely puberulous, outside mostly glabrous. Florets 4; corollas white, 3.3-3.5 mm long, glabrous, basal tube slender, tubular, ca. 2 mm long, limb ca, l.3 mm long, salverform, throat ca. 0.3 mm, lobes oblong-ovate, ca. 0.8 mm long, smooth on both surfaces; anther collar ca. 0.3 mm long; thecae ca. 0.8 mm long; apical appendage ca. 0.2 mm long, 1.7 mm wide; style base plain; style branches mamillose, more strongly at base. Achenes prismatic, 5-angled, 1.6-1.9 mm long, mostly glabrous, with some slender unseriate hairs in distal 1/5; pappus of ca. 35 slender white bristles, ca. 3 mm long, broadened distally. Pollen grains ca. 18 µm in diam.

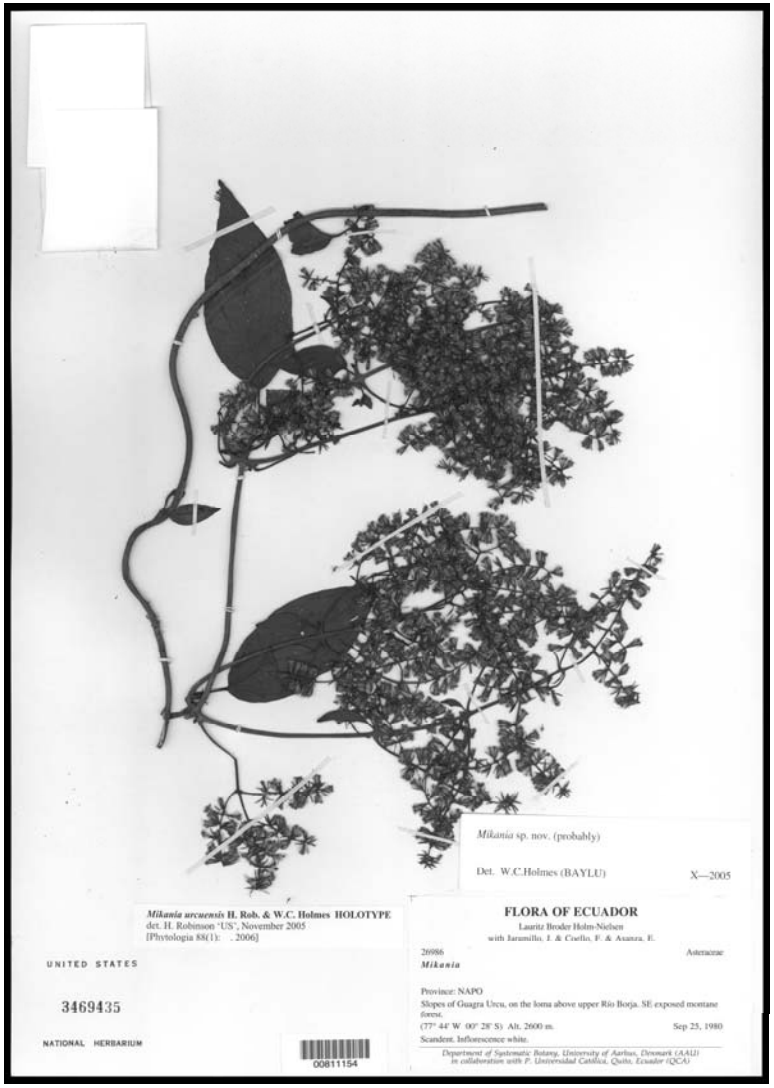

Fig.1. *Mikania urcuensis* H.Robinson & W.C. Holmes, holotype, United States National Herbarium (US).

Paratype: Ecuador. Napo: Guagra Urcu, the pass between Río Borja and Río Suno, montane forest, scandent, flowers white, 00°28'S, 77°43'W, 2700 m, 27 Sep 1980, *L.B. Holm-Nielsen, J. Jaramillo, F. Coello & E. Asanza 27309* (AAU, QCA, US).

Mikania urcuensis is presently known only from the type and 1 paratype specimen. It is named for the locality in which it was found. There is a superficial resemblance to *Mikania bogotensis* Benth. because of the racemose/spiciform inflorescence branches and the salverform limb of the corolla. However, the lack of nodal discs on the stem, the nearly glabrous leaves without truncate or cordate bases, and the lack of mamillae inside the limb of the corolla make close relationship very doubtful. The greater separation of the heads on the branches also distinguishes the species. The leaves show some resemblance to those of another group with racemose/spiciform inflorescence branches, the *M. houstoniana* (L.) B.L. Rob. group, but the leaves of the new species lack the attenuate tips and the highly ordered tranverse tertiary venation of the latter group, and the salverform limb of the corolla is totally different.

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A NEW COMBINATION IN *BRYUM* (MUSCI: BRYACEAE)

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ABSTRACT

A new combination in *Bryum* is provided for the Andean *Anomobryum worthleyi*.

KEY WORDS: *Anomobryum, Bryum,* new combination.

Recent papers by John R. Spence (Spence and Ramsay 2002; Spence 2005a, b) mention problems concerning the typification of the genus *Bryum Hedw.*, and the resulting effects on the status of the genus *Anomobryum* Schimp. The papers accept the fact that *Anomobryum* is congeneric with the common *Bryum argenteum* Hedw. Unfortunately for the the generic status of *Anomobryum*, *Bryum argenteum* had been chosen by E.G. Britton as lectotype of the genus *Bryum* (Britton 1918). Such lectotypifications made by staff of the New York Botanical Garden during the early 20th Century were often arbitrary and sometimes so buried in the literature as to be easily overlooked. As such they were often later rejected even without resort to any committee. However, the selections were not always unreasonable, and such lectotypifications were not always rejected. The Britton lectotypification had been widely accepted, and was cited in Index Muscorum (Van der Wijk, Margadant and Florschütz 1959). It is only recently that the full possible consequences of the Britton lectotypification have become apparent, for *Anomobryum* and for other elements traditionally placed in *Bryum*. Spence and Ramsay (1999) proposed conservation of the name *Bryum* with another type, but as indicated by Spence (2005), this has been rejected.

The consequences of the typification of *Bryum* by *B. argenteum* are most noticeable in many other parts of what has been called *Bryum,*

with the resurrection of such genera as *Ptychostomum* Hornsch., the description of new genera such as *Gemmabryum* J.R. Spence and H.P. Ramsay, *Ochiobryum* J.R. Spence and H.P. Ramsay, *Plagiobryoides* J.R. Spence, and the elevation of *Leptostomopsis* (Mull.Hal.) J.R. Spence & H.P. Ramsay (see Spence 2005a, b). These are added to the earlier new genus *Rosulobryum* J.R. Spence (1996).

The consequences of the synonymy of *Anomobryum* with *Bryum* are not as great, since the number of species of *Anomobryum* is limited, and many of those species have preexisting combinations in a broader concept of *Bryum* (Allen 2002; Ochi 1980). One South American species where a combination is required is treated below.

Bryum worthleyi (H. Rob.) H. Rob., **comb. nov.** basionym: *Anomobryum worthleyi* H. Rob., Bryologist 70: 320 (1967). Bolivia, Peru.

This is the same species treated by Ochi (1980) as *Bryum albo-imbricatum* Ochi, nom. nov. for *Bryum albidum* Broth. in Herz.., Biblioth. Bot. 87: 81 (1916), *hom. Illeg*., non P. Beauv. 1805; nec Copp. 1911. When Ochi (1980) provided the nom. nov. he was evidently unaware of the already existing name *Anomobryum worthleyi* (Robinson 1967) which had priority.

The name of the species honors the late Elmer Worthley, who collected the type near Machu Picchu, Peru in 1962.

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BIOGEOGRAPHICAL OBSERVATIONS ON LOUISIANA AND TEXAS RARE AND ENDEMIC PLANTS

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ABSTRACT

Using state rare and endemic plant lists, we document the North American distribution of Louisiana and Texas rare plants and the distribution of Texas endemic plants. Because the Louisiana and Texas rare plant lists have been developed using different criteria, the North American distribution maps of each are distinctly different. Texas endemics are concentrated in the center of the state.

KEY WORDS: Louisiana, Texas, rare plants, endemic plants.

Because of conservation concerns, state agencies such as the Natural Heritage programs, Parks and Wildlife departments, and The Nature Conservancy produce rare and endemic plant lists. However, listed plants generally have not been subjected to biogeographical analysis. In this paper, we examine the Texas rare and endemic plant lists and the Louisiana rare plant list inorder to place listed taxa in a broader biogeographical context. We do not question what is on the lists, nor do we question taxonomic status. We simply use the lists as data.

THE LISTS

The Louisiana rare plant list is produced by the Louisiana Natural Heritage Program. The 2004 edition consists of 368 taxa (Reid 2004) and includes both globally rare (G1-G3/T1-T3) and locally rare taxa (S1-S3) that might not be rare elsewhere but that are rare in Louisiana. The Texas rare plant list is produced by the Texas Parks and Wildlife Department and The Nature Conservancy of Texas. The 2004 edition

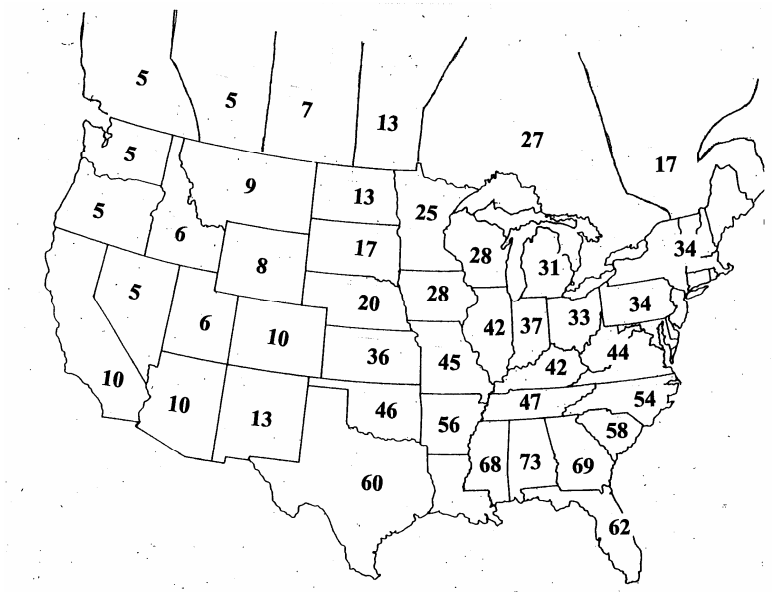

Figure 1. North American distribution (as percentage of total) of taxa on the Louisiana rare plant list.

consists of 454 taxa and includes only G3/T3 and rarer plant taxa (Carr 2004, Poole et al. 2004). The Texas endemic list is produced by the Nature Conservancy of Texas; the 2002 edition consists of 271 taxa (Carr 2002). Sixty-six percent of Texas endemics are listed as rare in Texas, the remaining 34% are G4 or G5 and thus do not classify for inclusion on the rare list (Appendix 1 explains G, S, and T ranks).

METHODS

1. Using Kartesz and Meacham (1999), we determined the North American distribution of taxa on the Louisiana rare plant list.

2. Using Carr (2004) and Kartesz and Meacham (1999), we determined the North American distribution of taxa on the Texas rare plant list.

3. Using Carr (2004) and Turner et al. (2003), we plotted the distribution of Texas endemics by county.

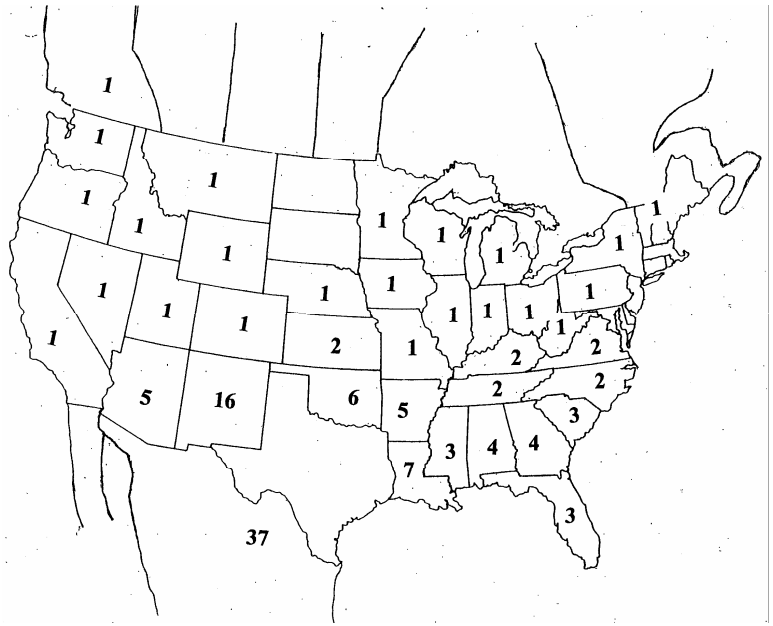

Figure 2. North American distribution (as percentage of total) of taxa on the Texas rare plant list.

RESULTS

Figure 1 shows the North American distribution (as percentage) of taxa on the Louisiana rare plant list. Figure 2 shows the North American distribution (as percentage) of taxa on the Texas rare plant list. Figure 3 shows the distribution of Texas endemics by counties.

DISCUSSION

As Figures 1 and 2 show, there are marked differences between the North American distribution of Louisiana and Texas rare plants. Of the 454 taxa on the Texas rare plant list, 40% are endemics and the remaining 60% occur in one or more other states or countries: 37% in Mexico, 16% in New Mexico, and so on. Of the 368 taxa on the Louisiana rare plant list (Louisiana has few endemics), 60% occur in

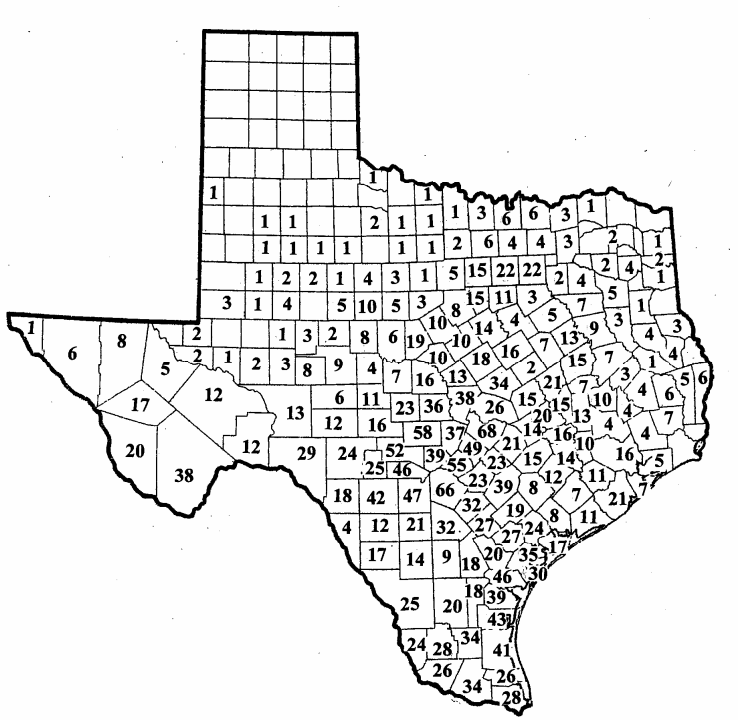

Figure 3. Number of Texas endemics by county. No number means no endemics.

Texas, 68% in Mississippi, 56% in Arkansas, and so on. The North American distribution of Louisiana rare plants is much wider than that of Texas rare plants. This is, of course, because 82% of the Louisiana list are G4-G5/S1-S3 and about 90% of all taxa on this list are at the edge of their range; only about 20% of Texas taxa are edge of range.

The biogeographic pattern of Texas endemics shows the highest incidence of endemism in the central portion of the state, including the Texas Coastal Bend region and along the Mexican border, with virtually no endemics occurring along the northern, western, and eastern borders (this pattern is also evident in the TAMU [2005] "Texas Endemism" map). This distribution pattern is interesting given

that we know that there are about 100 endemics in the West Gulf Coastal Plain (MacRoberts et al. 2002). Only 28% of these appear on the Texas endemic list. The remaining 72% have a two or more state range: southeastern Oklahoma, southern Arkansas, and/or western Louisiana. The high incidence of Texas endemics along the Mexican border is probably explained, a least in part, by the fact that northern Mexico has not been as thoroughly collected as southern Texas, and many seeming Texas endemics will be found to occur in Mexico as well.

The Texas endemic list is largely artificial and artifactual, or as Carr (2002:1) has written, the list "has no biological significance, since political boundaries do not correspond to biotic and abiotic forces that effect plant distribution." Aside from the Gulf of Mexico, there is no natural ecological boundary between Texas and adjacent regions. The Red, Rio Grande, and Sabine rivers present little or no obstacle to plant dispersal. Further, while Texas is made up of many ecoregions, none is restricted to Texas with the possible exception of the Edwards Plateau and the Coastal Bend depending on how these regions are defined. Does the Edwards Plateau include the Stockton Plateau, does it cross the Rio Grande and thus is not restricted to Texas, or does it only extend to the Pecos River and not enter Mexico? And is there any ecological uniqueness to the Coastal Bend?

While the Edwards Plateau is often said to be a region of high plant endemism, its endemism has not been thoroughly studied (Amos and Rowell 1988). However, on the basis of a preliminary survey using Carr (2002) and Turner et al. (2003) and a map of the Edwards Plateau that excludes the Stockton Plateau and Mexico, we found that the region had 28 endemics (e.g., *Carex edwardsiana, Tradescantia pedicellata*) and 23 near-endemics (e.g., *Euphorbia roemeriana, Galactia texana*) (see MacRoberts et al. 2002, Zollner et al. 2005 for terminology and studies of local endemism), or about two percent of the native flora. But all Texas endemics occurring in the Edwards Plateau are not endemic to that region. Kerr County, in the center of the Edwards Plateau, illustrates this. It has 52 Texas endemics of which 35 (67%) are Edwards Plateau endemics or near-endemics while 17 (32%) are not (e.g., *Lesquerella densiflora*, *Salvia engelmannii*). This

situation also characterizes the Coastal Bend region.

Clearly, studies of endemism in all regions of Texas are indicated, but these should be based on ecologically meaningful boundaries.

ACKNOWLEDGMENTS

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APPENDIX 1. Each taxon is assigned a global rank and a state rank. Global ranks are given by NatureServe; state ranks by each state's Natural Heritage Program. G1 = Critically imperiled globally, 5 or fewer known extant populations. G2 = Imperiled globally, 6 to 20 known extant populations. G3 = Either very rare and local throughout its range or found locally (even abundantly at some locations) in restricted range (e.g., a single physiographic region) or because of other factors making it vulnerable to extinction throughout its range, 21-100 known extant populations. G4 = Secure globally although it may be rare on periphery of range, 101-1000 extant populations. G5 = Demonstrably secure globally although it may be rare on periphery of range, 1001 or more known extant populations. T ranks follow the same pattern except they refer to subspecies and varieties. S ranks refer to state ranks and follow the same pattern as G and T ranks but refer to taxa within states. Thus, a taxon could be G5T5S2 (as is *Houstonia purpurea* var. *calycosa* in Louisiana), meaning that the taxon is secure globally but rare locally.

A NEW SPECIES OF *VERBESINA* (ASTERACEAE: HELIANTHEAE) FROM GUERRERO, MEXICO

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ABSTRACT

A collection by Breedlove from near Puerto El Gallo, Guerrero, Mexico is described as **Verbesina elgalloana** B. L. Turner, **sp. nov.** Its relationship appears to be with *V. gracilipes* and cohorts.

KEY WORDS: *Verbesina*, Asteraceae, Mexico, Guerrero

Preparation of a treatment of the genus *Verbesina* for the Comps of Mexico (cf. Turner 1997, Phytologia Memoirs 11: 1) has prompted description of the following:

VERBESINA ELGALLOANA B. L. Turner**, sp. nov.**

V. gracilipi B. L. Rob. similis sed differt caulibus appressi-hispidis (vs longi-hirsutis), pedunculis ultimis brevioribus (1-3 cm longis vs. plerumque 4-10 cm), et foliis majoribus fere glabris (vs. inferne dense pubescentibus).

Shrubs to 2 m high. Stems 5-sided, minutely appressed-hispid, the angles with corky wings. **Leaves** thin, alternate; petioles 2-4 mm long, the blades lanceolate-ovate, pinnately nerved, 11-14 cm long, 3-5 cm wide, sparsely hispidulous beneath, especially along the major veins, the margins remotely serrulate. **Capitulescense** terminal, 5-headed, subumbellate, the ultimate peduncles finely appressed-strigose, 1-3 cm long. Involucres 5-6 mm high, ca 10 mm across, the bracts in 3-4 subequal series, the outermost loose and subfoliose. **Receptacle** conical, ca 3 mm high, 3 mm across; bracts spatulate, ca 3 mm long,

abruptly acute at the apex. **Achenes** (immature), flattened, ca 2 mm long, the pappus of two rigid awns ca 1.6 mm long.

TYPE: **MEXICO. GUERRERO**: "W of Puerto El Gallo along road to Toro Muerto," along ridge with *Pinus, Quercus, Clethra* and *Cleyera*, 2530 m, 9 Oct 1986, *Breedlove & Almeda 65043* (Holotype: TEX; isotypes CAS).

Verbesina is perhaps the most speciose genus of the tribe Heliantheae in North America. The present novelty brings to 142 the number of species to be recognized by me in my forthcoming treatment of the group for Mexico. Numerous additional novelties are to be anticipated.

The species name is derived from the village of Puerto El Gallo, Guerrero.

ACKNOWLEDGMENTS

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A NEW SPECIES OF *TETRACHYRON* (ASTERACEAE: HELIANTHEAE) FROM MEXICO

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ABSTRACT

A new species, **Tetrachyron chimalapanum** B.L. Turner **sp. nov**., is described from the more montane regions of eastern Mexico (Veracruz to Oaxaca). The present novelty brings to eight the number of species to be recognized in my forthcoming treatment of the genus for Mexico. A key to the eight taxa concerned is provided

KEY WORDS: Asteraceae, *Tetrachyron*, Mexico

Wussow and Urbatsch (1979) provided a systematic study of *Tetrachyron* in which five species were recognized. The present author subsequently added two additional species (*T. oaxacanum* and *T. torresii*). The following novelty brings to eight the number of species to be recognized in the genus for my forthcoming treatment of the Comps of Mexico (tribe Heliantheae, in prep.).

TETRACHYRON CHIMALAPANUM B.L. Turner, **sp. nov.**

Tetrachyron orizabaense Klatt similis sed foliiis serratis in sicco nigrescentibus et caulibus perspicue villosis (vs. glabris vel glabresentibus) differt.

Shrubs 0.5-1.0 m high. Leaves opposite, 5-12 cm long, 2-4 cm wide (including petioles); petioles 4-20 mm long; blades ovate-lanceolate, markedly venose beneath and hirsute along the principal veins, their margins decidedly serrate. Capitulescence a terminal corymbose panicle of 10-50 heads, the ultimate peduncles bracteate, 1-10 mm long, variously hirsute. Involucres campanulate, ca. 5 mm high, 5-6 mm wide; bracts 3-4 seriate, lanceolate, imbricate, glabrous, their apices obtuse or rounded, the outer most series 1-4, mostly

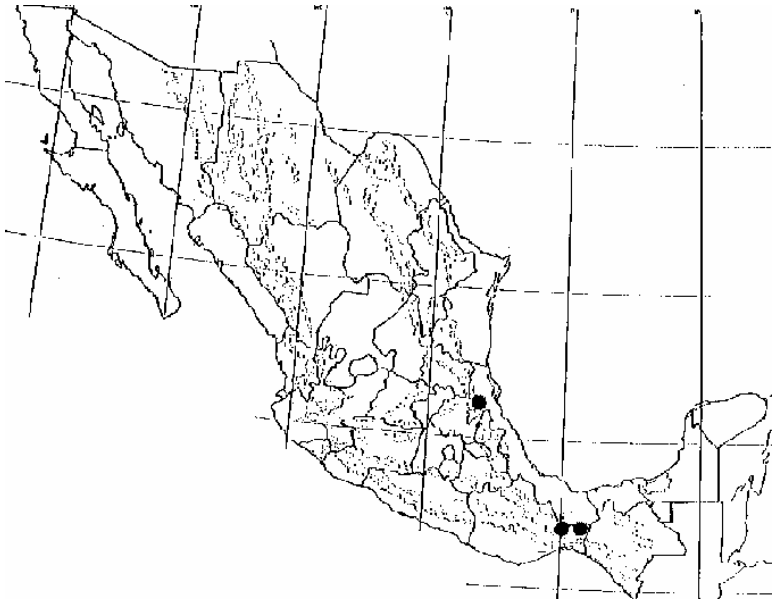

Fig. 1. Distribution of *Tetrachyron chimalapanum*.

reflexed. Receptacle conical, ca. 1 mm across, 2 mm high, paleate. Ray florets 8-11, pistillate; ligules yellow, 3-7 mm long, 2-3 mm wide, 4-5 nervate. Disk florets 20-40 per head; corollas yellow, glabrous, 5-lobed, ca. 3 mm long, the tube ca. 1 mm long. Achenes 3-4 sided, ca. 2.5 mm long, sparsely pubescent; pappus of 4 linear scales ca. 1.5 mm long, interspersed among these 4-8 shorter scales ca. 0.5 mm long.

TYPE: **MEXICO. OAXACA**: Mpio. San Miguel Chimalapa, ca. 3-4 km al O del paraje palmero " El Gringo," al N del cerro Tres Picos, 1550 m, 26 Aug 1986, *Tom Wendt, M. Ishiki I., & Solomon Maya J. 5448* (Holotype: TEX; isotype: CHAPA).

ADDITIONAL SPECIMENS EXAMINED: **MEXICO. OAXACA**: Mpio. San Miguel Chimalapa, Cerro Baul, ca. 23 km en linas recta al N de San Pedro Tapanatepec, 2050 m, 18 Jul 1985, Wendt et al. 4984 (TEX). **VERACRUZ:** Mpio Calcahualco, "cerca de Totosinapa, faldas

del Pico de Orizaba," 2100 m, 2 Jul 1985, M. Chazaro & M. Leach 3466 (TEX).

Tetrachyron chimalapanum is closely related to *T. orizabaensis* but clearly differs as noted in the above diagnosis. Indeed, it apparently occurs near or with the latter, but maintains its distinctive characteristics. Wussow and Urbatsch (1979) did not account for the taxon concerned in their treatment of the genus nor, to my knowledge, did they examine any of the specimens cited herein.

The species is named for the Mpio. Chimalapa, Oaxaca (Fig. 1) from whence first collected.

The following key will distinguish among the eight species to be recognized in my forthcoming treatment of the genus for Mexico.

1. Heads mostly solitary; involucral bracts densely white-tomentose……...*T. grayi*

1. Heads several or more in terminal clusters; involucral bracts glabrous to puberulent…….(2)

2. Blades broad, 2-3 times as long as wide, bi-colored, densely soft-pubescent beneath; Queretero and Hidalgo…….……*T. discolor*
2. Blades 3-7 times as long as wide, glabrous to softly puberulous beneath….…….(3)

3. Leaves linear to linear-oblanceolate, 2-8 mm wide……..*T. brandegei*
3. Leaves ovate to elliptical, 12-50 mm wide……...….....(4)

4. Leaves perfoliate, an interpetiolar flange or disk present…….……*T. manicatum*
4. Leaves not perfoliate, interpetiolar flanges absent.....(5)

5. Leaves ovate-deltoid, the blades widest at the base or nearly so; involucres 3-4 mm high; se Oaxaca.....*T. torresii*

5. Leaves ovate to ovate-lanceolate, the blades widest well above the base; involucres 4.5-8.0 mm high.....(6)

6. Involucres 6-8 mm high..... .....*T. websteri*
6. Involucres 4.5-5.5 mm high; southern Mexico.....…(7)

7. Leaves entire or nearly so, drying pallid-green; petioles and stems glabrous or nearly so.....*T. orizabaense*
7. Leaves decidedly serrate, drying blackish; petioles and stems decidedly villous.....*T. chimalapanum*

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LITERATURE CITED

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