

STUDIES IN THE EUPATORIEAE (ASTERACEAE). CLXIX.

TWO NEW SPECIES OF FLEISCHMANNIA FROM GUATEMALA.

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Continuing studies of the genus Fleischmannia in Central America have revealed the following two undescribed species.

Fleischmannia deborabellae R. M. King & H. Robinson, sp. nov. Plantae herbaceae perennes usque ad 1 m altae subscandentes paucè ramosae. Caules fulvescentes vel rubrescentes teretes dense minute pilosuli. Folia opposita, petiolis 1-5 cm longis; laminae herbaceae ovatae vel subdeltoideae plerumque 3-8 cm longae 1.5-5.0 cm latae base valde trinervatae plerumque subtruncatae margine crenato-serratae apice breviter acutae vel vix acuminatae utrinque dense minute pilosulae supra sparse glanduliferae subtus dense glandulo-punctatae. Inflorescentiae laxè corymboso-paniculatae, ramis corymbosis, ramis ultimis 2-6 mm longis dense minute puberulis. Capitula 4-5 mm longa et 3-4 mm lata; squamae involucris subimbricatae omnino persistentes 20-30 valde inaequales ovatae vel anguste oblongae 1-4 mm longae plerumque 0.8-1.0 mm latae margine distincte scariosae exteriores apice acutae interiores plerumque rotundatae vel subtiliter retusae extus bicostatae exteriores puberulae. Flores 17-22 in capitulo; corollae pallide lavandulae 2.2-2.5 mm longae, tubis ca. 0.5 mm longis paucè glanduliferis, faucis anguste infundibularibus ca. 1.5 mm longis extus non papillosis glabris, lobis ca. 0.4 mm longis et 0.35 mm latis utrinque papillosis extus glanduliferis; filamenta in parte superiore 0.25-0.30 mm longa; thecae 0.35-0.65 mm longae; appendices antherarum oblongo-rotundatae ca. 0.13 mm longae et latae; rami stylorum superne latiores; achaenia 1.3-1.6 mm longa in costis et superne dense setifera in costis persistentiter flava; setae pappi ca. 22 plerumque ca. 1.8 mm longae base non contiguae. Grana pollinis 18-20 μ in diametro.

TYPE: Dec. 15, 1977. R. M. King 7346A (Holotype, US) greenhouse grown progeny of King 7346 from GUATEMALA: Alta Verapaz: along road to Sacapulas, ca. 16 kms generally W of San Cristobal Verapaz. Elev. ca. 4000 ft., occasional herbs 1/4 m tall, flowers white. 31 January 1977 (US). Additional paratypes: GUATEMALA: Chimaltenango: Chichavao, alt. 2400-2700 m. Stem 4 ft.

high, flowers white, the pistils very pale lavender. Oak-pine woods. Feb. 16, 1933, Skutch 242 (US); About 10 km northwest of Tecpán, barrancos in Cerro Chichoy, Sierra Madre Mountains, wet mixed forest, 2200-2300 m. Flowers pale lavender, herb 1 m tall. Dec. 25, 1972, Williams, Molina & Williams 41793 (US). El Progreso: between Calera and middle slopes of quebradas of Volcán Siglo, alt. 2000-2200 m. Leaves thin, flowers pale lilac. Jan. 20, 1942, Steyermark 43023 (US). Sololá: Near Nahuala, Sierra Madre Mountains, ravines, alt. 2500 m. Flowers pale lilac. Dec. 17, 1962, Williams, Molina & Williams 23192 (US).

Fleischmannia deborabellae is one of the many close relatives of F. pycnocephala (Less.) K. & R. and would key in existing treatments to F. antiquorum (Standl. & Steyermark) K. & R. because of its lax inflorescence. The new species differs from both related species by the soft dense puberulence of the leaf surfaces which is like a fine peach-fuzz. The numerous glands on the leaves including some on the upper surface are also a partial distinction. Such glands are not seen on the coarsely scabrid leaves of F. antiquorum and they are lacking in most but not all specimens of F. pycnocephala. The leaves also lack the strong acuminations of F. antiquorum.

The new species has been grown from achenes collected in Guatemala and in two plantings has grown well while achenes from Guatemala of both the more widely distributed species F. pycnocephala and F. pratensis (Klatt) K. & R. did not germinate. The reliability or significance of the difference is unknown. The species is named for Debora Bell of the Herbarium Services staff of the Smithsonian who has shown both care and interest in her work with the greenhouse material.

Fleischmannia bohlmanniana R. M. King & H. Robinson, sp. nov. Plantae herbaceae perennes usque ad 2 m altae paucè ramosae. Caules flavo-virides vel fulvescentes teretes subtiliter striati minute puberuli et glabrescentes. Folia opposita, petiolis 0.5-3.0 mm longis; laminae herbaceae ovatae plerumque 2.0-5.5 cm longae et 1.5-3.7 cm latae base trinervatae late acutae vel subtruncatae margine serratae vel crenato-serratae apice breviter leniter acuminatae supra breviter sparse pilosae subtus plerumque in nervis et nervulis puberulae non vel sparse glanduliferae. In-

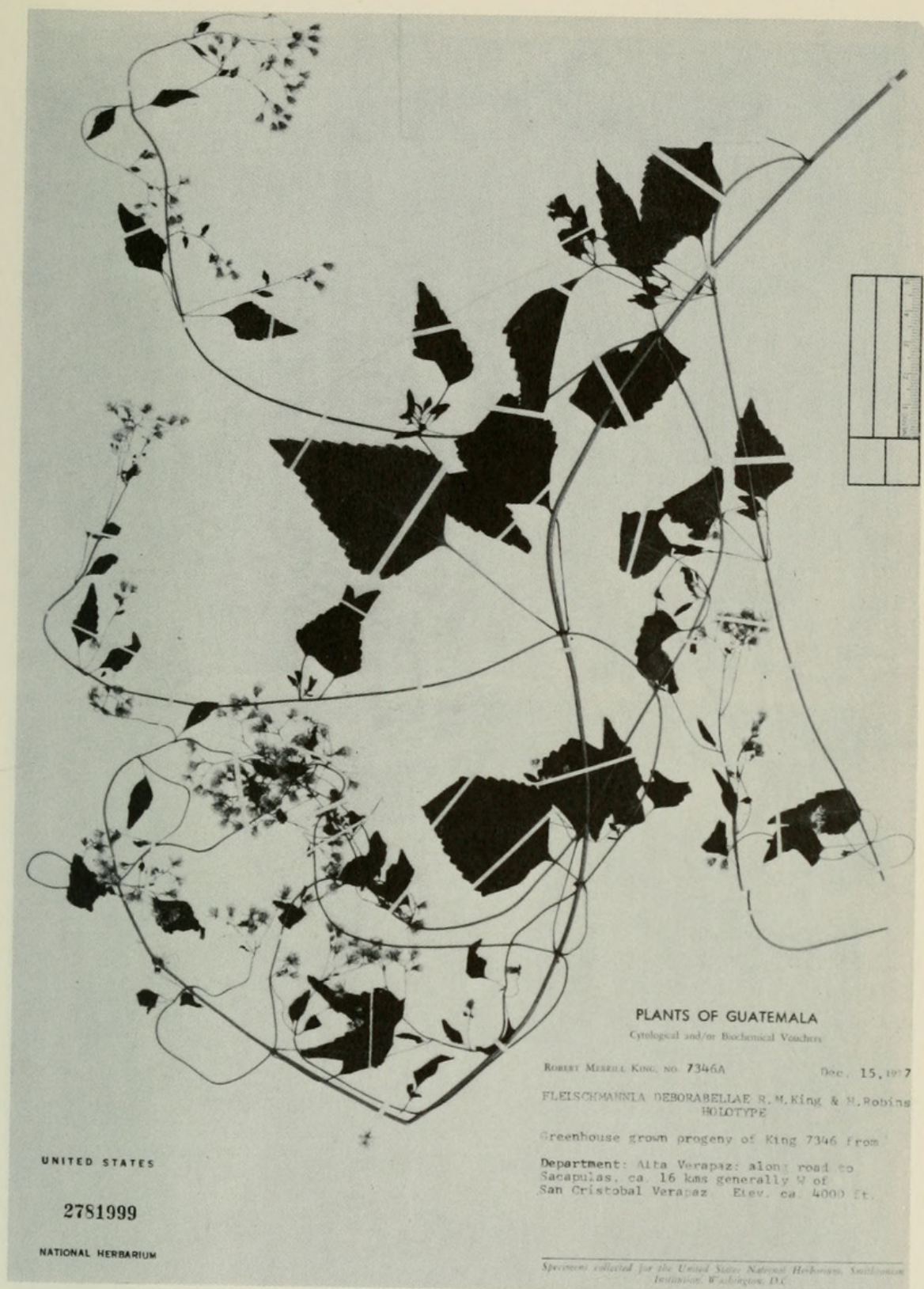
florescentiae laxae thyrsoidae-paniculatae, ramis dense corymbosis, ramis ultimis 1-2 mm longis dense puberulis. Capitula 4-5 mm alta et 3-4 mm lata; squamae involucri subimbricatae omnino persistentes ca. 30 valde inaequales 1.5-3.5 mm longae plerumque 0.8 mm latae exteriores laxae insertae ex bracteis subinvolucris indistinctae ovatae margine scariosae apice argute acuminatae, interiores anguste oblongae margine scariosae apice obtusae mucronatae extus bicostatae subglabrae vel in medio puberulae. Flores 22-25 in capitulo; corollae lavandulae ca. 2.7 mm longae, tubis ca. 0.5 mm longis glabris, faucis anguste infundibularibus ca. 1.8 mm longis extus non papillois glabris, lobis ca. 0.4 mm longis et ca. 0.3 mm latis utrinque papillois extus pauca glanduliferis; filamenta in parte superiore 0.25-0.30 mm longa; thecae ca. 0.7 mm longae; appendices antherarum oblongo-rotundatae 0.15-0.20 mm longae et 0.13-0.15 mm latae; rami stylorum superne non vel vix latiores; achaenia 1.0-1.5 mm longa plerumque in costis breviter setifera in costis persistentiter flava; setae pappi plerumque 20-25 ca. 2.0-2.5 mm longae base non contiguae; achaenia exteriores saepe calva. Grana pollinis ca. 20 μ in diametro.

TYPE: GUATEMALA: Chimaltenango: Along the road to Chimaltenango, ca 9 kms generally NW of Antigua. El. ca. 5800 ft. Abundant roadside weeds, flowers light lavender. January 24, 1977, King 7190 (Holotype, US). PARATYPES: GUATEMALA: Chimaltenango: Along the road to Patzun, ca 14 kms generally NW of the Pan-American Highway. El. ca. 7300 ft. herb to 1 m tall, flowers light lavender. Jan 24, 1977, King 7201 (US); flowers dark lavender, King 7202 (US). Quezaltenango: Along the road to Quezaltenango, ca 28 kms generally S of Quezaltenango. El. ca 4800 ft. Occasional herbs, flowers blue. Jan. 26, 1977, King 7255 (US). Quiche: Along the road to Chichicastenango, ca 18 kms generally SE of Santa Cruz del Quiche. El. ca. 6700 ft. Locally abundant herbs to 2 m tall, flowers lavender. Jan. 27, 1977, King 7287 (US). Sacatepequez: Along the road to Antigua, ca 19 kms generally N of Escuintla. El. ca 3700 ft. Abundant herbs, flowers lavender. Jan 23, 1977, King 7182 (US). Santa Rosa: Volcan Jumaytepeque, alt. 6000 pp. Jan. 1893, Heyde & Lux 4219 (US). Solola: Along the road to Panajachel, ca 3 kms generally SE of Panajachel. El. ca 5650 ft. Abundant herbs 1 m tall, flowers lavender. Jan. 25, 1977, King 7220 (US). Suchitepequez: Along the road to Cocales, ca 20 kms generally N of Patulul, El. ca 3700 ft. Occasional herbs up to 1/2 m tall, flowers

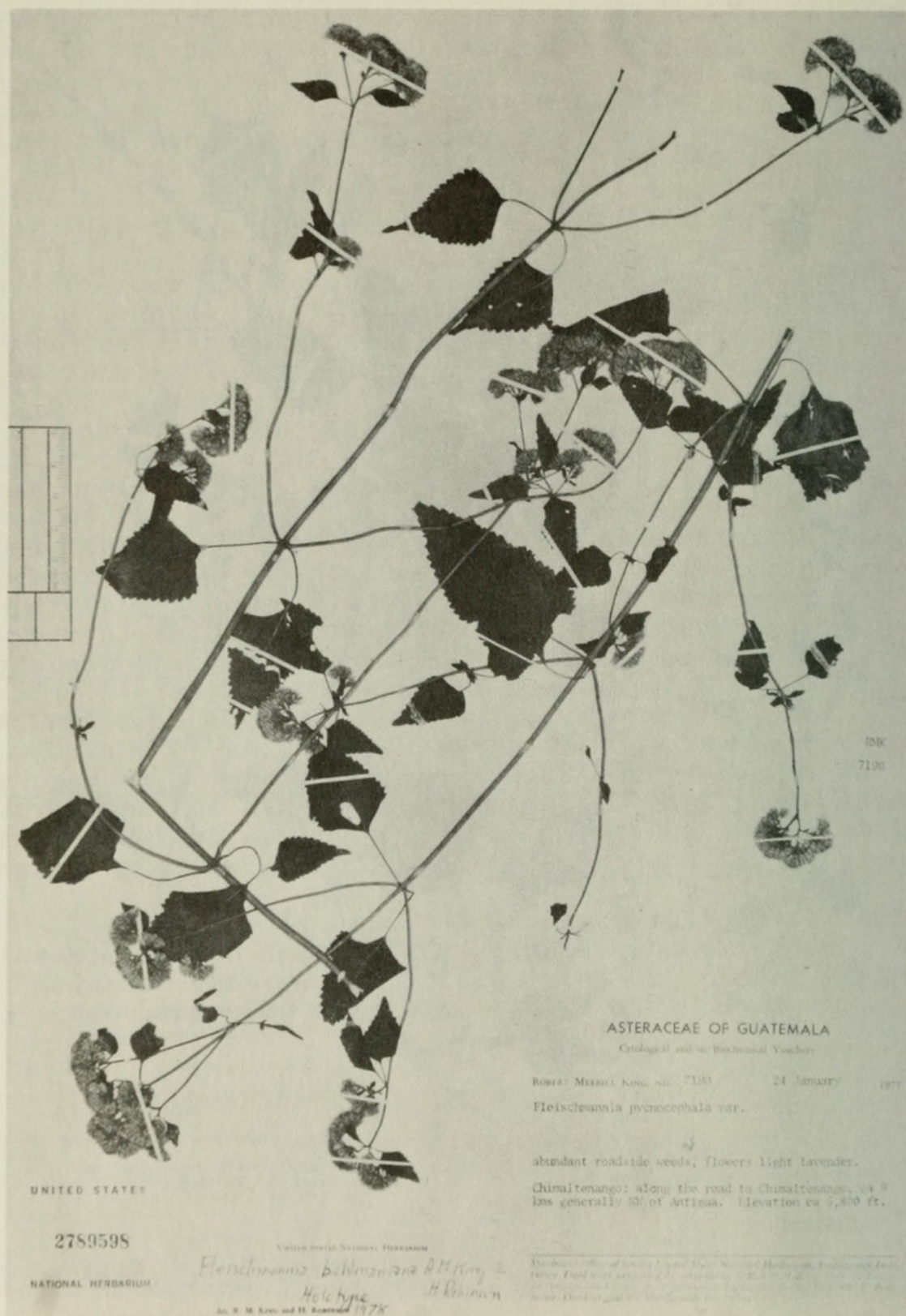
lavender. Jan. 25, 1977, King 7238 (US); Along the road to Mazatenango, ca 30 kms generally W of Mazatenango. El. ca 2700 ft. Common herbs 1 m tall, flowers blue. Jan. 26, 1977, King 7247 (US). Totonicapan: Along the Pan-American Highway, ca 3 kms generally S of the border of Huehuetenango. El. ca 6200-6300 ft. Herbs to 1 m tall, flowers lavender. Jan. 28, 1977, King 7299 (US).

The new species is closely related to Fleischmannia pycnocephala (Less.) K. & R., having the densely corymbose branches of the inflorescence, the mostly nonglandular leaves, the corolla lobes without hairs and the ribs of the achene persistently yellow as in that species. The pappus setae are also non-contiguous at the bases but less widely separated than in most species of F. pycnocephala. The primary distinction of the new species is the lax insertion of the basal bracts of the involucre with no obvious differences from the subinvolucral bracts. The species also apparently differs by having a basic chromosome number of $n=10$ or 12 . All material counted of F. pycnocephala has had numbers of 20, 30 or near 40. It seems likely that the various species of Fleischmannia in Guatemala can form hybrids but the new species would seem to represent a basic element in the F. pycnocephala complex. The calvous outer achenes in many specimens of the new species are like those seen in a number of other species of the genus in Guatemala including a few specimens of F. pycnocephala.

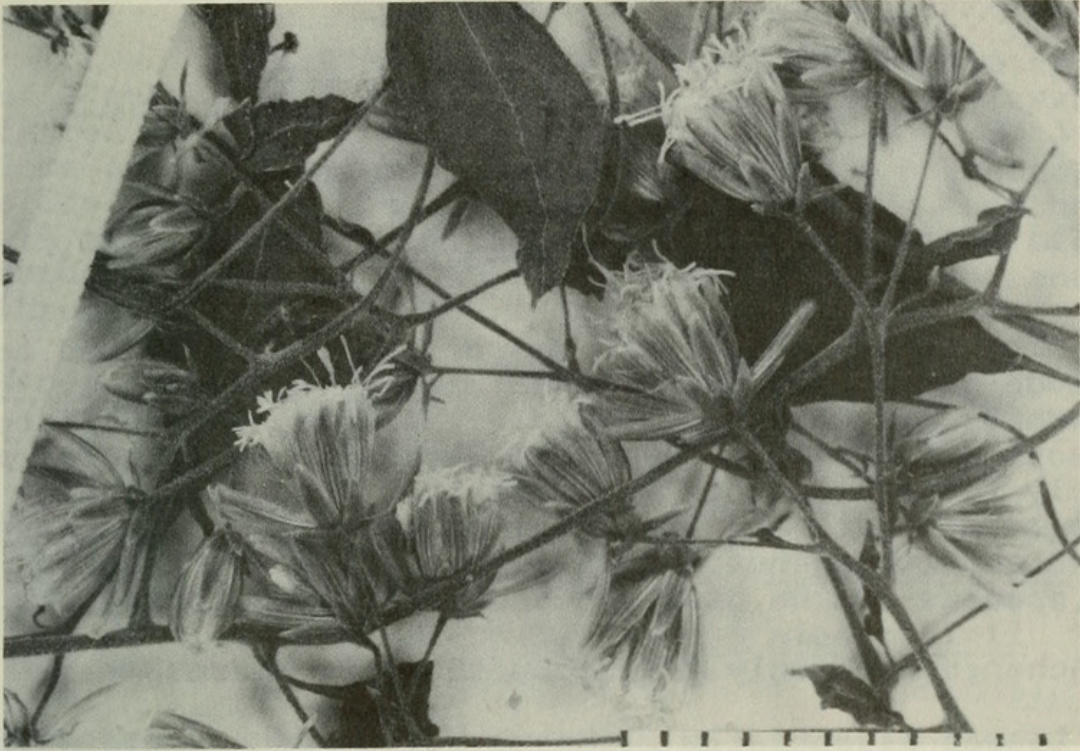
The species is named after Prof. Dr. F. Bohlmann, Direktor of the Institut für Organische Chemie der Technischen Universität Berlin whose support of field work has been very valuable.



Fleischmannia deborabellae R.M. King & H. Robinson,
Holotype, United States National Herbarium. Photos by
Victor E. Krantz, Staff Photographer, National Museum
of Natural History.



Fleischmannia bohlmanniana R.M. King & H. Robinson,
Holotype, United States National Herbarium.



Enlargements of heads of Fleischmannia. Top; F. deborabellae. Bottom; F. bohlmanniana.



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