

STUDIES IN THE EUPATORIEAE (ASTERACEAE). CXXI.

ADDITIONS TO THE GENUS FLEISCHMANNIA.

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The genus Fleischmannia has received some limited study in previous years but only in the last few months has the taxonomic complexity of the group become fully apparent. The following new species, new combinations and new synonymy are provided here to be available for cytological and floristic studies that are in progress.

Fleischmannia allenii R.M.King & H.Robinson, sp. nov.

Plantae erectae herbaceae vel suffrutescentes usque ad 1.5 m altae perennes pauca ramosae. Caulis virides vel fulvi teretes leniter exarati dense rubro-puberuli. Folia opposita anguste petiolata, petiolis 1-5 cm longis; lamina late elliptica papyracea usque ad 15 cm longa 9 cm lata base cuneata vel anguste acuminata margine duplicato-crenata ad apicem acuta vel vix acuminata supra sparse puberula subtus glandulo-punctata, nervis plerumque pinnatis. Inflorescentiae late corymboso-paniculatae, ramis dense corymbosis, pedicellis 2-4 mm longis dense puberulis. Capitula ca. 5 mm alta; flores 20-25; squamae involucri ca. 28-30 subimbricatae vel imbricatae 3-4-seriatae inaequilongae plerumque 4-costatae extus puberulae exteriores breviter acutae margine late scariosae interiores lineari-oblongae ad apicem plus scariosae obtuse vel minute apiculatae; corollae ca. 3 mm longae lavendulae extus multo setiferae; filamenta antherarum in parte superiore ca. 250 μ longa; thecae 700-800 μ longae, appendicibus ovatis ca. 1 $\frac{1}{2}$ longioribus quam latioribus; rami stylorum vix incrassati; achaenia nigra 1 mm longa superne et in costis sparse setifera; setae pappi ca. 30 contiquae dense scabrae. Grana pollinis 18-20 μ diam. breviter spinosa.

Type: PANAMA: Chiriqui: vicinity of "New Switzerland" central valley of Rio Chiriqui Viejo, alt. 1800-2000 meters, January 6-14, 1939, P.H.Allen 1347 (Holotype MO!). Paratypes PANAMA: Chiriqui: Bajo Mona, mouth of Quebrada Chiquero, along Rio Caldera, 1500-2000 meters, Woodson et al 1013 (MO); forested hill N of Audobon Cabin, Croat 13652 (MO); vicinity Methodist

Camp near Nueva Swissa, Croat 13516 (MO); ca. 2 mi W of Cerro Punta, ca. 1630 meters, McDaniel 10060 (FSU).

Fleischmannia capillipes (Benth. ex Oerst) R.M.King & H.Robinson, comb. nov. Eupatorium capillipes Benth. ex Oerst, Kjoeb Vidensk. Meddel. 79. 1852. Eupatorium jejunum Standley & Steyermark, Field Mus. Publ., Bot. 23: 183. 1944.
Fleischmannia microcephala T. Brandg. ined.

Known distribution: El Salvador: Morazan: ca. 15 km NE of San Miguel, ca. 200 meters, Tucker 439 (US); vicinity of San Salvador, 650-850 meters, Standley 19633 (US). Guatemala: Santa Rosa, Rinconcito, 4000 ft?, Heyde & Lux 4206 (US). Mexico: Chiapas: 11 mi SE of Tapanatepec, 2300 ft., Breedlove & Raven 13713 (NY); Sierra de Tonala, Purpus 6791 (US); Guerrero: Temisco, 320-600 meters, Mexia 8799 (US). Nicaragua: Realejo, Oerst 9569 (isotype US!).

Fleischmannia chiriquensis R.M.King & H.Robinson, sp. nov. Plantae herbaceae vel subscandentes usque ad 3 m altae perennes pauce ramosae. Caules virides vel leniter rubescentes teretes minute striati leniter pilosi vel glabrescentes. Folia opposita anguste petiolata, petiolis 1.0-2.5 cm longis; lamina late ovata papyracea usque ad 6 cm longa 5 cm lata base late cordata valde trinervata margine valde obtuse serrato-crenata ad apicem aliquantum abrupte breviter acuminata supra et subtus sparse pilosa subtus non glandulo-punctata. Inflorescentiae late corymboso-paniculatae, ramis dense corymbosis, pedicellis 2-4 mm longis dense puberulis. Capitula ca. 5 mm alta; flores 20-25; squamae involucri ca. 20 subimbricatae ca. 3-seriatae inaequilongae plerumque bicostatae extus pilosae vel sparse puberulae plerumque breviter acutae margine late scariosae interiores lineari-oblongae ad apicem plus scariosae rotundatae vel minute apiculatae; corollae ca. 3.0-3.5 mm longae lavendulae, lobis extus multo breviter setiferis; filamenta antherarum in parte superiore ca. 250 μ longa; thecae ca. 1200 μ longae, appendicibus ovatis ca. 1 1/3 longioribus quam latioribus; rami stylorum ad apicem leniter clavati; achaenia nigra 1.2-1.3 mm longa, costis sparse scabris vel pauce breviter setiferis; seti pappi 27-30 contiguae scabrae. Grana pollinis 18-20 μ diam. breviter spinosa.

Type: PANAMA: Chiriqui: along Boquete Trail, Cerro Respinga, alt. ca. 2000-2500 meters. East of town of Cerro Punta, September 11, 1972, Gentry 5928 (Holotype MO!). Paratypes PANAMA: Chiriqui: above Cerro Punta, 6300 ft, D'Arcy 5372 (MO); slope of Cerro Respinga above town of Cerro Punta, 8400 ft, D'Arcy & D'Arcy 6545 (MO).

The new species is presently known only from the Cerro Punta area of Chiriqui Province. The species is most closely related to F. tysonii of Vulcan Chiriqui but also resembles superficially F. plectranthifolia Benth. of Costa Rica. The later species is readily distinguished by the more elongate usually non-cordate leaves having 5-7 veins prominently concentrated at the base. The inner phyllaries of the latter species are also much more pointed and the achene ribs sometimes yellow.

Fleischmannia ciliolifera R.M.King & H.Robinson, sp. nov. Eupatorium cilioferum Standley & L.O.Williams, ined. Plantae erectae herbaceae usque ad 1 m altae perennes pauca ramosae. Caules fulvi teretes vix striati sparse minute puberuli. Folia opposita anguste petiolata, petiolis 0.5-3.5 cm longis; lamina ovata papyracea usque ad 6 cm longa 3 cm lata base rotundata trinervata margine argute multo serrata ad apicem anguste leniter acuminata, superficiis glabris vel subglabris. Inflorescentiae paniculatae, ramis dense corymbosis vel aliquantum subumbellatis, pedicellis 1-3 mm longis puberulis. Capitula ca. 6 mm alta; flores 20-25; squamae involucri ca. 20-25 subimbricatae 3-4-seriatae inaequilongae bicostatae margine aliquantum late scariosae ad apicem plus scariosae breviter acutae vel rotundatae saepe apiculatae extus sparse minute puberulae vel glabrae; corollae 3.5-4.0 mm longae lavendulae extus glabrae; filamenta antherarum in parte superiore ca. 350 μ longa; thecae ca. 1.1 mm longae, appendicibus oblongo-ovatis vix longioribus quam latioribus; rami stylorum angustati; achaenia nigra ca. 1.5 mm longa in costis setifera; carpodia prominentia, cellulis subquadratis vel brevioribus; setae pappi ca. 30 vix contiguae regulariter scabrae. Grana pollinis ca. 18 μ diam. breviter valde spinosa.

Type: HONDURAS: Sta. Barbara: Forested ridge south side of Montana Sta. Barbara, alt. 2350 meters, April 7, 1951, Allen, Armour, & Shable 6134 (Holotype GH!).

The new species is a member of the group with totally dark achenes and is very distinct in the nearly glabrous leaves and the large size of the heads.

Fleischmannia croatii R.M.King & H.Robinson, sp. nov.

Plantae erectae herbaceae vel suffrutescentes usque ad 1.5 m altae perennes. Caules obscuro-virides teretes vix striati infirme hirsuti. Folia opposita anguste longe petiolata, petiolis usque ad 5 cm longis; lamina ovata papyracea usque ad 7 cm longa 4.5 cm lata base subtruncata trinervata margine multo crenato-serrata ad apicem breviter distincte acuminata supra sparse breviter pilosa subtus glandulo-punctata et plerumque in nervis longe pilosa. Inflorescentiae late subplanate corymboso-paniculatae, pedicellis 1-4 mm longis hirtellis. Capitula ca. 6 mm alta; flores ca. 20; squamae involucris 20-25 eximbricatae ca. 3-seriatae inaequilongae bicostatae margine anguste scariosae ad apicem breviter acutae extus manifeste puberulae; corollae 3.5-4.0 mm longae lavendulae, lobis extus setiferis et pauca glanduliferis, setis subargutis; filamenta antherarum in parte superiore 350-400 μ longa; thecae 800-900 μ longae, appendicibus oblongo-ovatis ca. 250 μ longis 150 μ latis; rami stylo- rum non incrassati; achaenia nigra ca. 1 mm longa subglabra in costis perpauca scabrida; carpopodia prominentia, cellulis subquadratis; setae pappi 25-30 contiguae inferne dense scabrae. Grana pollinis ca. 18-20 μ diam. breviter spinosa.

Type: PANAMA: Chiriqui: primary forest and adjacent cut over areas; vicinity of Las Nubes; 2.7 mi NW of Rio Chiriqui Viejo W of Cerro Punta; alt. 2200 meters, February 27, 1973, Croat 22400 (Holotype MO!).

The species is most distinct in the broadly corymbose-paniculate inflorescence and in the abrupt compact base of the involucre.

Fleischmannia granatensis R.M.King & H.Robinson, sp.

nov. Plantae erectae herbaceae usque ad 1 m altae perennes pauca ramosae. Caules plerumque pubescentes teretes minute striati dense puberuli vel pilosi. Folia opposita anguste petiolata, petiolis 0.5-2.0 cm longis; lamina ovata papyracea usque ad 4 cm longa ca. 3 cm lata base plerumque breviter cuneata vel truncata valde trinervata margine crenata ad apicem anguste breviter acuminata supra sparse

setifera subtus sparse hirsuta obscure vel prominente glandulo-punctata in nervis subtomentosa. Inflorescentiae paniculatae ramis dense glomerato-corymbosis, pedicellis 1-4 mm longis dense puberulis. Capitula ca. 5 mm alta; flores ca. 20-25; squamae involucri ca. 20 subimbricatae ca. 2-3-seriatae inaequilongae bicostatae anguste ovatae vel lineari-lanceolatae anguste acutae vel apiculatae margine distincte scar-iosae extus sparse et distincte puberulae; corollae ca. 3 mm longae lavendulae extus plerumque in lobis setiferae; filamenta antherarum in parte superiore 250-300 μ longa; thecae ca. 1 mm longa, appendicibus oblongo-ovatis ca. 1 1/3 longioribus quam latioribus; rami stylorum angustati; achaenia nigra ca. 1.5 mm longa plerumque in costis setifera; carpodia prominentia, cellulis breviter oblongis; setae pappi 27-30 contiguae dense scabrae. Grana pollinis ca. 18 μ diam. breviter spinosa.

Type: COLOMBIA: El Valle: La Cumbre, alt. 1550-1700 meters, May 7-10, 1922, Pennell 5019 (Holotype US!). Paratypes: COLOMBIA: Antioquia: Chigorodo; carretera a Turbo, alt. 100-200 meters, Garcia-Barriga 17638(US); Choco: Alto Guillermo, over Rio Arquia behind Sautata, Premontane Forest, el. ca. 1500', Duke 15394(FSU); El Valle: San Antonio, alt. 6800 ft, Miller & Miller 28(US).

The species seems restricted to lower elevations in western Colombia. The species has sharply pointed involucre bracts and has been previously determined as F. pycnocephaloides (B.L.R.) K. & R., but it is distinct by the totally black achenes, the contiguous pappus setae and the very slender style braches. Of the associated Colombian species, F. magdalenensis (B.L.R.) K. & R. differs by glabrous rather succulent leaves, F. klattiana (Hieron.) K. & R. differs by glabrous achenes and white flowers and F. pennellii (B.L.R.) K. & R. differs by blunt phyllaries and very broad styles.

Fleischmannia haughtii R.M.King & H.Robinson, sp. nov.

Plantae erectae herbacea usque ad 50 dm altae perennes multo ramosae. Caules fulvi teretes vix striati minute puberuli. Folia opposita anguste breviter petiolata, petiolis 2-3 mm longis; lamina anguste elliptica membranacea 1-2 cm longa 3-5 mm lata base anguste cuneata trinervata margine superne paucе serrulata ad apicem anguste acuta supra perpaucе breviter pilosa subtus sparse puberula vel subglabra, nervis puberulis. Inflorescentiae laxе cymosae, pedicellis 2-12 mm longis minute puberulis. Capitula

ca. 3.5 mm alta; flores ca. 20; squamae involucri ca. 20 eximbricatae ca. 2-seriatae inaequilongae bicostatae margine anguste scariosae ad apicem anguste acutae vel apiculatae extus ad medium plerumque puberulae; corollae ca. 1.5 mm longae lavendulae vel albae, lobis extus breviter setiferis; filamenta antherarum in parte superiore 250 μ longa; thecae ca. 600 μ longae, appendicibus breviter oblongis crenulatis vix longioribus quam latioribus; rami stylorum non incrassati; achaenia nigra ca. 1.2 mm longa glabra; carpodia prominentia cellulis subquadratis; setae pappi ca. 35-40 vix contiguae ca. 1 mm longae inferne dense scabrae. Grana pollinis ca. 18 μ diam. breviter spinosa.

Type: COLOMBIA: Choco: Cupica, altitude about 100 m, February 10, 1947, Haight 5560 (Holotype US!).

The new species is from the same general area as F. misera (B.L.R.) K. & R. and has a very similar appearance with small narrowly elliptical leaves and very narrow sharply pointed involucreal bracts. The new species is distinct by the leaves lacking glandular punctations, the pappus only half to two-thirds as long as the corolla and the glabrous achenes.

Fleischmannia imitans (B.L.Robinson) R.M.King & H.Robinson, Phytologia 19: 203. 1970. Eupatorium rivulorum B.L.Robinson, Contr. Gray Herb. n.s. 77: 34. 1926.

Fleischmannia matudae R.M.King & H.Robinson, sp. nov.

Plantae erectae vel subscandentes herbaceae perennes pauca ramosae. Caules flexuosi subfulvi teretes vix striati sparse minute puberuli vel subglabri. Folia opposita peranguste petiolata, petiolis usque ad 4 cm longis; lamina anguste ovata vel lanceolata membranacea usque ad 8 cm longa 3.7 cm lata base rotundata vel subtruncata trinervata margine multo serrulata ad apicem caudato-acuminata, superficiis glabris vel subglabris. Inflorescentiae delicate paniculatae, ramis corymbosis, corymbis aliquantum densis pauca capitatis, pedicellis plerumque 2-3 mm longis subglabris. Capitula ca. 4 mm alta; flores 10-12; squamae involucri ca. 15 subimbricatae 2-3-seriatae, inaequilongae bicostatae glabrae margine distincte scariosae exteriores ovatae breviter acuta, interiores oblongae apice rotundatae vel apiculatae; corollae ca. 1.5 mm longae plerumque albae? extus glabrae;

filamenta antherum in parte superiore ca. 200 μ longa; thecae ca. 700-800 μ longae, appendicibus quadrato-ovatis parum latioribus quam longioribus; rami stylorum ad apicem parum clavati; achaenia ca. 1.0-1.3 mm longa multo setifera in costis persistentiter flava; carpodia brevia, cellulis quadratis vel brevioribus; setae pappi ca. 20 distincte parum non contiguae angustatae regulariter minute scabrae. Grana pollinis ca. 18 μ diam. breviter spinosa.

Type: MEXICO: Chiapas: Sta. Rita, Mapastepec, Enero 1938, Matuda 2019 (Holotype US! Isotype US!).

The new species is distinct in the lax habit and the small number of flowers and involucre bracts in the head. The Costa Rican F. valeriana (Standley) K. & R. has also been described with ca. 10 flowers per head but the type specimens prove to be indistinguishable from F. hymenophylla (Klatt) K. & R. which has ca. 20 flowers per head and glandular punctations on the under surface of the leaves.

Fleischmannia monagasensis (Badillo) R.M.King & H.Robinson, comb. nov. Eupatorium monagasense Badillo, Bol. Soc. Venez. Cienc. Nat. 10: 293. 1946. Venezuela.

Fleischmannia nix R.M.King & H.Robinson, sp. nov.
Eupatorium nix Standley & L.O.Williams, ined.
Plantae erectae vel decumbentes herbaceae usque ad 1 m altae perennes paucis ramosae. Caulis flavo-virides vel rubescentes teretes minute striati puberuli vel pilosi. Folia opposita anguste petiolata, petiolis 0.5-1.0 cm longis; lamina ovata papyracea 1.5-2.5 cm longa 1.0-2.0 cm lata base truncata valde trinervata margine multo crenata apice argute acuta vel vix acuminata supra et subtus plerumque dense hirsuta subtus glandulifera. Inflorescentiae laxae paniculatae, ramis remotis, corymbis aliquantum densis pauci-capitatis, pedicellis 1-3 mm longis puberulis, bracteis subinvolucratis paucis. Capitula ca. 4 mm alta; flores ca. 20-25; squamae involucri ca. 18-20 subimbricatae 2-3-seriatae inaequilongae bicostatae margine aliquantum late scariosae extus parce vel dense pilosae, exteriores ovatae apice anguste acutae vel aristatae; interiores anguste oblongae apice plus scariosae vix vel distincte apiculatae; corollae 2.0-2.5 mm longae plerumque albae extus non setiferae,

lobis extus pauce glanduliferis; filamenta antherarum in parte superiore ca. 200 μ longa; thecae ca. 600 μ longae, appendicibus oblongo-ovatis vix longioribus quam latioribus; rami stylorum ad apicem latiores; achaenia ca. 1.3-1.5 mm longa superne et in costis setifera in costis persistentiter flava; carpodia prominentia, cellulis quadratis vel brevioribus; setae pappi ca. 20-25 vix contiguae vel distincte non contiguae per angustatae scabrae base scabriores. Grana pollinis ca. 18 μ diam. breviter spinosa.

Type: HONDURAS: El Paraiso: near Manzaragua, alt. 1400 meters, February 7, 1956, L.O. Williams & Molina 19020 (Holotype US!). Paratypes: HONDURAS: El Paraiso: Cuesta Galeras road to Guinope, 1400 meters, Molina 25911 (US); Guinope, 1400 meters, Williams & Molina 11515 (US); 5 km W of Guinope, near Manzaragua, Williams & Molina 23256 (US). Morazan: between Montana Uyuca and La Montanita, 1500 meters, Williams et al 23238 (US). Comayagua: vicinity of Siguatepeque, Standley 55892, 56007, 56531 (all US).

The species seems endemic to Honduras and is superficially similar to many other species of the area some of which remain undescribed at this time. The new species has a lax habit similar to F. viscidipes (B.L.R.) K. & R. and F. multinervis (Benth.) K. & R. both of Guatemala. The former is clearly distinct in the totally dark achenes and the more scabrous more contiguous pappus setae. The more closely related F. multinervis is distinct by the leaves lacking glands below, by the longer nearly glabrous pedicels and by the even thinner less scabrous bases on the pappus setae. The material of the new species shows variation in the form of the glands on the leaves. The specimens from Siguatepeque have smaller distinctly stipitate glands while the glands on the other specimens are essentially sessile.

Fleischmannia panamensis R.M.King & H.Robinson, sp. nov. Plantae erectae grosse herbaceae usque ad 2 m altae perennes pauce ramosae. Caules plerumque fulvi teretes minute striati glabrescentes vel dense puberuli. Folia opposita anguste petiolata, petiolis 1.0-3.5 cm longis; lamina late rhomboidi-ovata papyracea usque ad 8 cm longa 6.5 cm lata base late cuneata valde trinervata margine leniter vel valde crenata ad apicem late acuta supra sparse grosse setifera subtus glandulo-punctata in nervis puberula. Inflorescentiae corymboso-paniculatae, ramis dense

corymbosis, pedicellis 1-4 mm longis puberulis. Capitula ca. 5 mm alta; flores ca. 15-20; squamae involucri ca. 18-20 subimbricatae ca. 2-3-seriatae inaequilongae bicostatae breviter acutae margine anguste scariosae extus glabrae vel minute sparse puberulae interiores ad apicem plus scariosae plus rotundatae vel mucronatae; corollae ca. 3 mm longae lavenderulae, lobis extus non setiferis; filamenta antherarum in parte superiore ca. 300 μ longa; thecae ca. 750 μ longae, appendicibus oblongo-ovatis ca. 1 1/3 longioribus quam latioribus; rami stylorum aliquantum incrassati; achaenia nigra ca. 1.5 mm longa superne et in costis sparse setifera; seti pappi 20-22 vix contiguae scabrae. Grana pollinis 18-20 μ diam. breviter spinosa.

Type: PANAMA: Cocle: in cloud forest near La Mesa, February 11, 1971, Croat 13354 (Holotype MO!). Paratypes: PANAMA: Cocle: La Mesa above El Valle, 900 meters, Liesner 749 (MO); Panama: Cerro Campana, ca. 75 meters, Kennedy et al 2063 (MO), Cerro Campana, Lazor 3322 (FSU, MO), Porter et al 4254 (MO), Busey 859 (MO); Cerro Pilon; 900-1173 meters, Liesner 759 (MO).

The plants are very coarse large leaved herbs apparently endemic to Central Panama. The species most resembles a large F. microstemon, but is more closely related to the widely distributed F. pratensis. The new species is distinct by its narrow nearly glabrous outer involucreal bracts with only narrow scarios margins, by the corolla lobes lacking hairs and by the somewhat thicker style branches.

Fleischmannia purpusii R.M.King & H.Robinson, sp. nov. Plantae erectae herbaceae usque ad 50 dm altae perennes multo ramosae. Caules fulvi teretes vix striati sparse minute puberuli vel subglabri. Folia opposita peranguste petiolata, petiolis 0.5-2.2 cm longis; lamina anguste ovata vel lanceolata membranacea vel tenuiter papyracea 2.2-4.5 cm longa 0.9-2.0 cm lata base breviter cuneata trinervata margine multo serrata vel serrulata ad apicem anguste acuminata supra sparse pilosa subtus sparse puberula vel subglabra, nervis pilosis. Inflorescentiae laxae cymosae, pedicellis 7-33 mm longis sparse puberulis. Capitula ca. 5 mm alta; flores ca. 20; squamae involucri ca. 20 subimbricatae 2-3-seriatae inaequilongae bicostatae margine anguste scariosae extus glabrae, exteriores lanceolatae argute acutae, interiores anguste oblongae breviter acutae; corollae ca. 2.5 mm longae lavenderulae,

lobis extus pauce setiferis; filamenta antherum in parte superiore 250-300 μ longa; thecae ca. 700 μ longae, appendicibus subquadratis vix latioribus quam longioribus; rami stylorum aliquantum incrassati; achaenia ca. 1.5 mm longa superne et in costis dense breviter setifera in costis late persistentiter flava; carpodia prominentia, cellulis subquadratis; setae pappi ca. 25 vix contiguae angustatae inferne dense scabrae. Grana pollinis ca. 18 μ diam. breviter valde spinosa.

Type: MEXICO: Veracruz: Zacuapan, August 1906, Purpus 1868 (Holotype US!).

The new species is one of many showing narrowly acute involucreal bracts with very narrow scarious margins and a lax rather cymose inflorescence. Two related Mexican species, F. trinervia (Sch.-Bip.) K. & R. and F. holwayana (B.L.R.) K. & R., differ by their very short acute rather than acuminate leaves. The latter species also differs by the presence of prominent glandular punctations on the lower surface. The new species is somewhat similar to F. imitans (B.L.R.) K. & R. of Guatemala, El Salvador, Honduras and Nicaragua. This last species is distinct in the great number of flowers per head, 30-60, and has leaves and pedicels usually densely stipitate glandular. The new species seems particularly distinct in the usually wide and pubescent pale ribs of the achene.

Fleischmannia sonorae (A.Gray) R.M.King & H.Robinson, comb. nov. Eupatorium sonorae A.Gray, Pl. Wright 2: 74. 1853. Mexico, Arizona.

Fleischmannia tysonii R.M.King & H.Robinson, sp. nov.
Plantae erectae suffrutescentes usque ad 2 m altae perennes pauce ramosae. Caules virides vel fulvi teretes minute striati dense hirtelli. Folia opposita anguste petiolata, petiolis 1.0-2.5 cm longis; lamina late ovata papyracea usque ad 9 cm longa 7 cm lata base late rotundata vel cordata valde trinervata margine obtuse serrato-crenata vel duplicato serrato-crenata ad apicem acuta vel vix acuminata supra pilosa subtus dense pilosa non glandulo-punctata in nervis tomentosa. Inflorescentiae late corymboso-paniculatae, ramis dense corymbosis, pedicellis 2-4 mm longis hirtellis. Capitula 5-6 mm alta; flores 20-25; squamae involucri ca. 20 subimbricatae ca. 3-4-seriatae inaequilongae bicostatae plerumque breviter acutae vel

minute mucronatae margine late saepe prominentiter scariosae extus pilosae vel puberulae interiores ad apicem plus rotundatae plus scariosae minute fimbriatae; corollae ca. 3 mm longae lavenderae, lobis extus paucè vel multo breviter setiferis; filamenta antherarum in parte superiore ca. 250 μ longa; thecae ca. 900 μ longae, appendicibus oblongo-ovatis ca. 1 1/3 longioribus quam latioribus; rami stylorum ad apicem leniter clavati; achaenia nigra 1.2-1.5 mm longa, costis dense setiferis; setae pappi 22-25 non contiguae dense scabrae. Grana pollinis 18-20 diam. breviter spinosa.

Type: PANAMA: Chiriqui: West slope of El Baru between 8000-9000 ft elevation, March 27, 1970, Tyson & Loftin 6116 (Holotype US!). Paratypes: PANAMA: Chiriqui: W slopes of El Baru between 8000-9000 ft, Tyson & Loftin 6117 (FSU,MO); W slope of El Baru between 7000-8000 ft, Tyson & Loftin 5982 (FSU); 8 mi NE of El Volcan, 8100-8400 ft, Tyson 843 (FSU,MO).

The new species is apparently endemic to the Volcan Chiriqui. Closest relationship is to F. chiriquensis from the nearby Cerro Punta area. The present species is distinct by the shrubby rather than subscandent habit, by the densely pubescent leaves, by the non-contiguous pappus setae and by the prominently setiferous ribs of the achene.

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Fleischmannia allenii R.M.King & H.Robinson,
Holotype, Missouri Botanical Garden.



PLANTS OF PANAMA

Fleischmannia chiriquensis R.M.King & H.Robinson,
Holotype, Missouri Botanical Garden. Photos by
Victor E. Krantz, Staff Photographer, National
Museum of Natural History.



Fleischmannia ciliolifera R.M.King & H.Robinson,
 Holotype, Gray Herbarium.



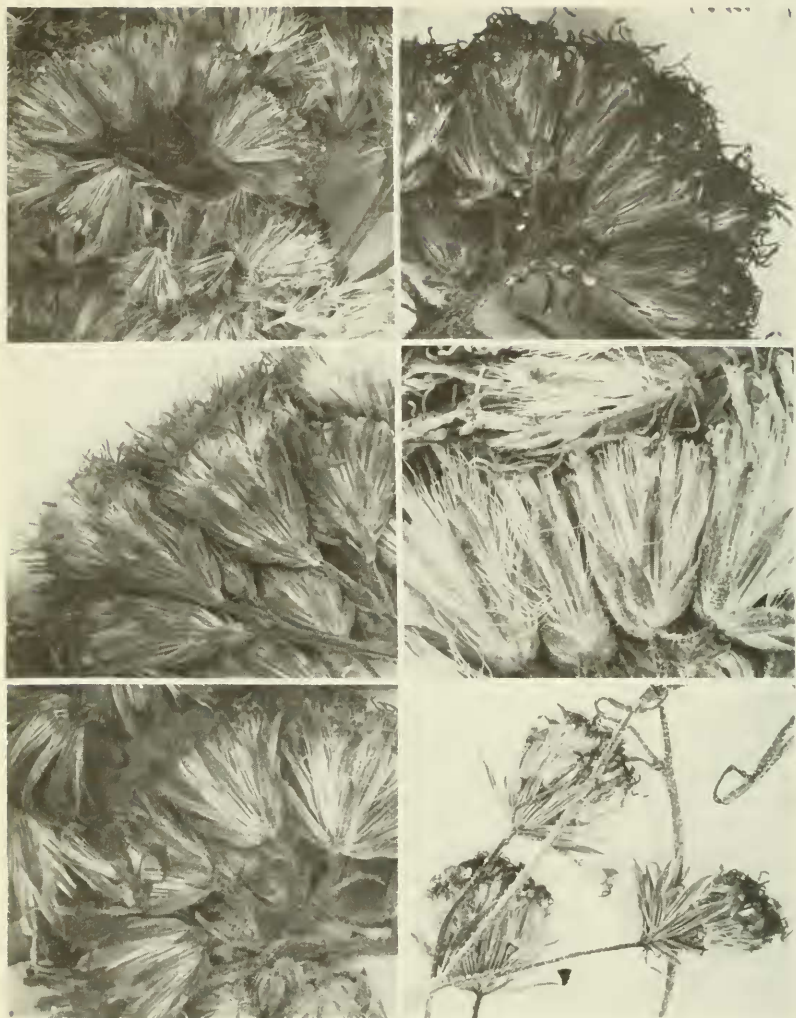
Fleischmannia croatii R.M.King & H.Robinson,
Holotype, Missouri Botanical Garden.



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



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



Enlargements of heads of Fleischmannia. Top left; F. allenii. Top right; F. chiriquensis. Middle left; F. ciliolifera. Middle right; F. croatii. Bottom left; F. granatensis. Bottom right; F. haughtii.



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



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



Fleischmannia panamensis R.M.King & H.Robinson,
Holotype, Missouri Botanical Garden.



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



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



Enlargements of heads of *Fleischmannia*. Top left; *F. matudae*. Top right; *F. nix*. Middle left; *F. panamensis*. Middle right; *F. purpusii*. Bottom left; *F. tysonii*.