

the quantity present in leaves from the same tree collected during the preceding September. The quantities of HCN obtained from these samples are, however, well below the toxic limit of 20 mg provisionally established as the minimum concentration of HCN in sorghum that will cause poisoning in animals. There is little danger of poisoning of livestock by leaves of the tulip tree.

The distillates from the analytical samples were tested for benzaldehyde and acetone and none was found. No clue was obtained as to the nature of the cyanogenetic compound present in the leaves.

BOTANY.—*Eleven new American Asteraceae*.<sup>1</sup> S. F. BLAKE, Bureau of Plant Industry.

Of the eleven new species of Asteraceae described in this paper, four were collected by Mrs. Ynes Mexia in Ecuador, in the course of her work for the Division of Plant Exploration and Introduction, Bureau of Plant Industry, United States Department of Agriculture, and four in Chiapas by E. Matuda. The others are from Costa Rica, Texas, and Mexico, collected by A. F. Skutch, B. H. Warnock, and Mrs. Ruth Q. Abbott respectively. A few minor forms and new combinations are included.

***Vernonia polypleura* Blake, sp. nov.**

Frutex (?); caulis et inflorescentia densissime rufescenti-pilosula; folia oblonga majuscula utroque acuminata obscure callososerrulata chartacea supra lucidula in pagina subdense pilosula pilis mox deciduis basibus minutis exceptis in costa pilosa subtus dense griseo-pilosa pilis patentibus penninervis nervis ca. 13–15-jugis subtus prominentibus; cymae racemiformes axillares et terminales subpedales subrectae v. parum curvatae saepius basi semel furcatae hinc illinc bracteatae; capitula sessilia subremota 21-flora mediocria; involucri ca. 7-seriati valde gradati 6 mm alti subcampanulati appressi phyllaria exteriora anguste triangularia ad lanceolata acuminata media oblongo-lanceolata acuta interiora anguste oblonga mucronulata infra apicem paulum contracta, omnia subcoriacea pallide brunnea prope apicem laxe pilosa; achenia erecto-pilosa; pappi pallide brunneo-albidi squamellae persistentes lineari-lanceolatae acutae ca. 0.5 mm longae 0.15 mm latae, setae facile deciduae 4 mm longae ad apicem paullulum clavellatae.

Probably shrubby; stem herbaceous above, solid, with pale brown pith, bluntly sulcate-angled, 5 mm thick, very densely and softly pilosulous with straight spreading brownish hairs; leaves alternate; internodes 1–1.5 cm long; petioles slender, naked, densely pubescent like the stem, 1.5–2.8 cm long; blades oblong or elliptic-oblong, 15–18 cm long, 3.8–5 cm wide, acuminate and somewhat falcate, at base acuminate, plane, above brownish green, somewhat shiny, at first rather densely pilose, the hairs quickly deciduous leaving small light-colored bases, along the costa persistently pilose,

<sup>1</sup> Received July 23, 1938.

not glandular, beneath on surface densely and softly griseous-pilose and sessile-glandular, on the costa densely spreading-pilosulous, on the veins densely pilose with mostly antrorse hairs, penninerved, the chief veins subparallel, prominulous above, prominent beneath, the secondaries prominulous-reticulate; cymes solitary in the upper axils and terminal, 15-32 cm long (including peduncle, this 3-7 cm long), the heads mostly 1-1.5 cm apart, frequently in part subtended by reduced leaves (0.8-6 cm long); heads in fruit (as pressed) 7 mm high, 8-11 mm thick; receptacle shallowly alveolate; corollas (not normally developed?) erect-puberulous on teeth, 4.8 mm long (tube 2.3 mm, throat 0.5 mm, teeth triangular, 2 mm long); achenes oblong, 10-ribbed, brownish, 1.8 mm long, rather densely erect-pilose chiefly between the ribs, eglandular; pappus double, the squamellae numerous, the bristles about 50.

MEXICO: Mt. Orando, Chiapas, 23 Dec. 1936, *E. Matuda* 730 (type no. 1,686,105, U. S. Nat. Herb.; dupl., herb. Univ. Mich.).

Despite its occasionally but never uniformly bracteate cymes, this species is evidently a member of the *Scorpioideae aphyllae*, related to *Vernonia brachiata* Benth. and *V. scorpioides* (Lam.) Pers. In *V. brachiata* the leaves are larger, obovate, sessile or subsessile, sharply serrate or serrulate, and, like the stem, only sparsely pubescent. In *V. scorpioides* the leaves are smaller, shorter-petioled, mostly broader in proportion to their length, variable in pubescence but never with that of *V. polypleura*, and with much less numerous and less conspicuous veins; the cymes are much shorter; the involucre is shorter and much more densely and evenly pubescent, and the inner phyllaries are acuminate.

#### *Eupatoriastrum opadoclinium* Blake, sp. nov.

Frutescens?; caulis (v. ramus) infra inflorescentiam simplex densissime brunneo-pilosus, internodiis foliis multo brevioribus; folio oblongo-ovata ca. 12 cm longa 4 cm lata decussate opposita obtuse acuminata basi leviter cordata brevissime petiolata crenata subcoriaceo-chartacea penninervia utrinque prominulo-reticulata supra brunneo-pilosula subtus dense brunneo-pilosa; capitula subcylindrica ca. 12 mm alta 43-47-flora dense et fastigiata cymoso-paniculata, pedicellis capitulis subaequalibus; involucri ca. 11 mm alti ca. 10-seriati valde gradati phyllaria oblonga v. oblongo-ovalia in linearia transeuntia apice rotundata straminea albida 3-vittata margine crispe ciliolata ceterum glabra dorso rotundato-convexa; receptaculum ubique paleatum, paleis angustissime lineari-spathulatis glabris flores subaequantibus; corollae ut videtur albidae; achenia tenuia in costis hispidula.

Stem (or branch) solid, terete, 5 mm thick, very densely and sordidly subtomentose-pilose with spreading somewhat matted many-celled acuminate brownish hairs about 1 mm long; internodes 2-4 cm long; petioles broad, thick, unmarginated, densely pubescent like the stem, 2-4 mm long; leaf blades oblong-ovate, 10-12.5 cm long, 3.2-5.2 cm wide, broadest near the middle, rather shortly acuminate to an obtuse apex, crenate throughout except toward apex with rounded or obtuse teeth or toward base crenate-serrate with obtusely callous-pointed teeth (teeth 12-15 pairs, 0.5-1 mm high, mostly 4-7 mm apart), above brownish green, somewhat shining, brownish-pilosulous chiefly along veins and veinlets (densely so along costa) with many-celled spreading hairs, beneath somewhat yellowish brown, densely pilose with spreading lax many-celled hairs, feather-veined, the chief lateral

veins about 5-7 pairs, curved-anastomosing, 2 or 3 pairs near middle of leaf stronger than the others; panicle terminal, rounded, many-headed, dense, 12-15 cm wide, densely pubescent like the stem, the lowest branches subtended by not reduced leaves, the uppermost bracts linear to lanceolate, 5-10 mm long, the pedicels slender, densely pubescent like the stem, 5-10 mm long, often bearing a linear bract; heads (moistened) campanulate-cylindric, 12-13 high, 5 mm thick; phyllaries very numerous, the outermost oblong, about 3 mm long, 1.5 mm wide, pilosulous on back and ciliate, the middle ones oblong to oval, 3.5-5 mm long, about 2 mm wide, laxly ciliate but otherwise glabrous, the inner linear or linear-spatulate, about 7.5 mm long, 1-1.3 mm wide, obscurely ciliate, the inmost narrowly linear-spatulate, similar to the pales of the disk; all the phyllaries except the inmost shallowly boat-shaped, the upper ones in the dried state somewhat lax at tip but not spreading; receptacle flattish, foveolate, 1.5 mm wide; pales of the receptacle very narrowly linear-spatulate, nearly equaling the flowers, stramineous, 1-nerved, 9-9.5 mm long, glabrous except for the obscurely ciliate, obtuse or rounded, somewhat inflexed apex, this about 0.7 mm wide; corollas apparently whitish, subcylindric, without distinct throat, subsessile-glandular below and on teeth, 6 mm long (tube 2.8 mm, throat 2.8 mm, teeth deltoid-ovate, acute, 0.4 mm long); achenes brownish black, slender, 4.3 mm long, with stipitiform base (0.7 mm long), sparsely hispidulous on the 5 whitish ribs; pappus 1-seriate, persistent, of about 34 whitish, minutely hispidulous, not apically thickened, somewhat unequal bristles, the longest 5 mm, the few shorter ones about 3.5 mm long; anther tips ovate, obtuse or slightly emarginate; style branches linear, not evidently clavate, the finely papillose appendage 2 mm long, slightly longer than the stigmatic lines.

Mexico: Mt. Orando, Chiapas, *E. Matuda* 702 (type no. 1,685,252, U. S. Nat. Herb.).

In external appearance this is very similar to the section *Cylindrocephala* of *Eupatorium* and utterly distinct from the two species of *Eupatoriastrum* hitherto known (from southern Mexico and El Salvador), which have broadly ovate or deltoid, slender-petioled leaves, broad heads in looser inflorescences, and broad involucre of acute or acuminate phyllaries of different texture and either subequal or much less conspicuously graduate. Careful dissection, however, shows that every flower in the head is subtended by a pale, and it is necessary to refer the species to *Eupatoriastrum* or to suppress the latter genus, a course which seems unjustified. Separation of the species as a new genus based on the differences mentioned would certainly not be advisable in this group. In the texture and convexity of its phyllaries *E. opadoclinium* is very similar to the Brazilian *Eupatorium epaleaceum* (Gardn.) Robinson. *Eupatorium epaleaceum* and *E. horminoides* (DC.) Baker, both Brazilian, constitute the section *Chromolaena* of *Eupatorium*, which makes a definite approach to *Eupatoriastrum* in having the receptacle paleaceous here and there but never, apparently, throughout as in *Eupatoriastrum*.

***Mikania melastomacea* Blake, sp. nov.**

Scandens; caulis firmus medullosus (medulla solida alba) dense sessili-

glandulosus ceterum glaber, nodis brunneo-pilosulis exceptis; folia ovalia mediocria brevipetiolata breviter et obtuse acutata basi late rotundata v. rotundato-cuneata integra pergamentacea 5-plinervia supra dense subtus densissime sessili-glandulosa; capitula parva racemosa, racemis laxis paniculatis; involucri 4.5 mm alti phyllaria linearia obtusa ad apicem pilosula; corolla albida, tubo fauce campanulata longiore, dentibus fauce subduplo brevioribus; achenia 2.5 mm longa apice puberula; pappus albidus corollam aequans.

Series *Racemosae*; stem herbaceous above, subterete or obscurely hexagonal, multistriatulate, with solid white or in age brownish pith, 4 mm thick, light brown, apparently rarely branched below the inflorescence; leaves opposite; internodes 3–8 cm long; petioles slender, naked, not appendaged, densely sessile-glandular and rather densely but inconspicuously hirsute-pilose with several-celled mostly appressed hairs, 1–1.5 cm long; blades oval, 6.5–10.5 cm long, 3.5–6 cm wide, rather abruptly and very obtusely short-pointed, above dark green, scarcely or not at all shining, on surface densely dotted with shining brown glands and sparsely and inconspicuously puberulous with several-celled hairs, along the chief veins hirsute-pilose, glabrescent, beneath brownish green, very densely dotted with sessile brownish yellow glands, sparsely and obscurely puberulous on surface and more densely so on veins, 5- or obscurely 7-plinerved within 0.5–1.5 cm of base, the nerves prominulous beneath, flattish above, the chief veinlets rather numerous, somewhat prominulous on both sides, spreading from the costa at nearly a right angle, with the tertiaries loosely and inconspicuously reticulate; racemes rather sparsely puberulous with weak mostly incurved hairs and sparsely sessile-glandular, loosely flowered (internodes mostly 2–4 mm long), mostly 4–8 cm long, compounded into a large convex terminal panicle about 30 cm long and 18–30 cm wide; bracts of inflorescence minute, subulate, 1.5 mm long, the pedicels very slender, 2–3 mm long; heads 4-flowered, slender, 5–6 mm high; involucre ebracteolate, 4.5–4.8 mm long, the phyllaries 4, subscarious, brownish, obscurely ciliolate, sparsely sessile-glandular, toward apex pilosulous, at base corky-thickened and shortly calcarate; corollas "whitish," sparsely subsessile-glandular on tube and teeth, about 3.4 mm long (tube 1.7 mm, throat campanulate, longer than wide, 1.2 mm, teeth deltoid-ovate, acute, 0.5 mm long); achenes olivaceous, 5-ribbed, at apex minutely puberulous and with a few sessile glands, 2.2–2.5 mm long; pappus whitish, 3–3.5 mm long, the bristles about 38–39, minutely hispidulous, clavellate at apex.

ECUADOR: Vine climbing small trees, in clearing in forest, near Puyo, Prov. Napo-Pastaza, alt. ca. 400 m., 20 Feb. 1935, *Ynes Mexia* 6947 (type no. 1,692,970, U. S. Nat. Herb.).

A member of the series *Racemosae*, nearest *Mikania houstoniana* (L.) Robinson. In that species the stem is hollow and weak and the leaves are normally ovate, thinner, and longer-petioled, although exhibiting considerable variation.

#### *Mikania eupatorioides* Blake, sp. nov.

Frutex scandens; caulis teres multistriatus cavus pilosulus; folia ovata v. lanceolato-ovata petiolata mediocria longe acuminata basi cuneata prope basin 5-plinervia subintegra tenuiter herbacea supra dense in venis et sparse in pagina subglandulari-puberula et sparse pilosula subtus obscure pilosula et glandulis flavulis adspersa; capitula mediocria cymoso-paniculata saepius

breviter pedicellata, paniculis specialibus parvis terminalibus et axillaribus incurvo-puberulis cunctis paniculam thyrsoideam foliosam efformantibus; bracteola ovata v. oblongo-ovata acuta herbacea apice puberula 2.6–3 mm longa; involucri 6 mm alti phyllaria oblonga acutiuscula basi suberosa prope apicem sparse puberula; corollae anguste infundibuliformes, dentibus erectis fauce triplo brevioribus.

Series *Thyrsigerae*; “woody vine, with white flowers”; stem 5 mm thick, brownish, glabrescent; branches slender, essentially straight, greenish or brownish, rather densely pilosulous with several-celled spreading or up-curved hairs and somewhat dotted with sessile glands; internodes of branches 3–5 cm long; leaves opposite; petioles slender, naked, 1–1.8 cm long, pilosulous or puberulous chiefly above, connected at base by a narrow pilosulous line but not appendaged; blades 11.5–15 cm long, 3–6 cm wide, long-acuminate with somewhat falcate tip, sharply cuneate or the larger rounded-cuneate at base, entire or very obscurely denticulate with small remote teeth, thin, not thickened on the obscurely ciliolate margin, green on both sides, quintuplinerved within 1–2 cm of base, above densely subglandular-puberulous on the chief veins and sparsely so on surface, also sparsely pilosulous on surface, beneath sparsely and obscurely pilosulous or puberulous on veins and surface with several-celled hairs and dotted with sessile yellowish glands, the primary nerves and their chief lateral veins prominulous beneath, the veinlets translucent; individual panicles convex, pubescent like the stem, small, 3–5 cm wide, the lower and middle ones surpassed by the subtending leaves, the whole forming an open leafy thyrsoid panicle (7) 15–24 cm long and 8–15 cm wide; ultimate bracts of inflorescence lanceolate, 3–10 mm long, mostly shorter than the peduncles; pedicels slender, 2 mm long or less, often bearing a small bract; heads 4-flowered, 7–9 mm high; involucre 5.5–6 mm high, the phyllaries 4, narrowly oblong, acutish, thin, greenish with narrow pale thinner margin, weakly about 5-nerved, puberulous toward tip, glabrous below, corky-thickened at base but not calcarate; corollas more or less gland-dotted, sparsely puberulous below or subglabrous, about 4.5 mm long (tube 1–1.2 mm, throat narrowly funnelform, 2.5 mm, teeth 5, broadly ovate, acutish, 0.8 mm long, erect or somewhat inflexed below the apex); achenes slender, 5-angled, toward apex puberulous and with a few sessile glands, 3 mm long; pappus flesh-colored, 4.2 mm long, of 47–50 minutely hispidulous bristles, very obscurely thickened toward apex.

COSTA RICA: Edge of forest, vicinity of El General, Prov. San José, alt. 1525 m., Dec. 1936, A. F. Skutch 3041 (type no. 1,643,504, U. S. Nat. Herb.); same data, alt. 1070 m., Skutch 3017.

The gross appearance of this plant, with its straight branches, is very suggestive of *Eupatorium*. Its only close allies in Central America are *Mikania hylibates* Robinson, *M. nubigena* Robinson, and *M. pittieri* Robinson, the types or type collections of which are all in the United States National Herbarium. In *M. hylibates* the leaves are thin-coriaceous and 3–5-nerved from the very base, with thickened, nerviform, glabrous margin, and the stem is glabrous. In *M. nubigena* the stem and petioles are completely glabrous, the leaves are coriaceous and conspicuously thickened but not ciliolate on margin, the (young) inflorescence is much looser and more open, and the heads are sessile. In *M. pittieri* the stem, petioles, and leaves are glabrous, the leaves are coriaceous and with a perceptibly thicker and paler

margin, the heads are sessile, and the proper tube of the corolla is nearly as long as the campanulate limb.

***Mikania iodotricha* Blake, sp. nov.**

Scandens; caulis dense longe villosus pilis purpureis vel interdum brunneis; folia deltoideo-ovata acuta basi cordata v. subtruncata grosse crenato-serrata v. majora dupliciter crenato-serrata bene petiolata crassiuscula supra viridia bullata hirsuta pilis basi incrassatis subtus purpureo-villosa lacunos-reticulata e basi 3-5-nervia; capitula majuscula 10-12 mm alta numerosa pedicellata cymoso-paniculata, paniculis majusculis rotundatis; involucri 10 mm alti phyllaria lineari-oblonga acuta medio suberosa margine submembranacea purpurascens purpureo-pilosa; corolla 7 mm longa purpurea, tubo faecem campanulata aequante, dentibus fauce triplo brevioribus; achaenia glabra.

Series *Corymbosae*; "vine, climbing 2 m"; stem herbaceous above, subterete, striatulate, hollow, 3.5 mm thick, opposite-branched, densely spreading-villous with many-celled purple hairs (or sometimes light brown) becoming brown and 3-4 mm long in age, pilosulous between them, in age glabrescent, light-brown-barked, and roughened with the persistent bases of the longer hairs; leaves opposite; internodes of main stem 4-10 cm long, those of the branches shorter; petioles stout, unmarginated, densely purple-villous, those of the larger leaves 8-18 mm long, slightly enlarged at base and connected by a fringe of cilia but not appendaged; blades 2.8-4 cm long, 2.6-3.6 cm wide, merely acute, at base shallowly cordate or truncate-rounded and usually very shortly cuneate-decurrent on the petiole, above evenly but not densely hirsute with spreading brownish hairs with conspicuously thickened yellowish white persistent bases, beneath densely purple-villous especially on the exerted veins and veinlets; leaves of the inflorescence similar but smaller, the uppermost reduced to lanceolate or linear-spatulate bracts 7 mm long or less; panicles terminal and in the upper axils, trichotomously divided, 6-15 cm wide, purple-villous, the pedicels slender, sparsely villous, 2-10 mm long; involucre obconic, 10 mm high, slightly shorter than the flowers, ebracteolate, 4-flowered, the phyllaries 4, linear-oblong, about 2 mm wide, merely acute but often involute-margined above and appearing acuminate, usually purple-tinged especially above, with somewhat corky-thickened body extending about half their length and submembranous greenish margin, obscurely 5-nerved, scarcely calcarate, thinly pilosulous with white hairs and slightly ciliate, the outer purple-pilose especially above the middle, the inner very sparsely so at apex; corollas mulberry-purple, about 7 mm long, glabrous except on teeth (tube 3 mm, throat campanulate, considerably longer than wide, 2.7-3 mm, teeth ovate, erectish, 1-1.2 mm long, puberulous with few-celled blunt hairs); achenes brownish with 5 white ribs, 5.2 mm long, 1.3 mm wide, essentially glabrous or with a very few hairs on the ribs; pappus brownish, purplish-tinged, 6-6.5 mm long, of about 89 subequal minutely hispidulous bristles, not thickened at apex.

ECUADOR: Occasional in open woods, trail from Olivos to Morán, Cantón Tulcán, Prov. Carchí, alt. 3400 m., 12 July 1935, *Ynes Mexia* 7469 (type no. 1,692,986, U. S. Nat. Herb.).

A very distinct species of the series *Corymbosae*, resembling *Mikania aristei* Robinson of the series *Thyrsigerae* in pubescence and foliage. In all features except its 5-ribbed achenes the plant so much more closely re-

sembles such species of the genus *Kanimia* (distinguished by having 7–10-ribbed achenes) as *K. corymbulosa* (Benth.) B. & H. and *K. violascens* Robinson, particularly the latter, as to suggest that the generic distinction is a rather artificial one.

***Mikania napensis* Blake, sp. nov.**

Scandens; caulis et rami subglabri, ramulis inconspicue puberulis; folia ovata majuscula pergamentacea petiolata acuta v. breviter acuminata base late rotundata or cuneato-rotundata in margine leviter revoluta obscure callososerrulata 5–9-plinervia supra lucida utrinque inconspicue puberula; capitula mediocria 8–9 mm alta cymoso-paniculata, paniculis rotundatis; involucri 4 mm alti phyllaria oblonga rotundata puberula; corolla ca. 5.3 mm longa “virescenti-lutea,” tubo faucem infundibuliformi-campanulatam aequante, dentibus deltoideis fauce subquintuplo brevioribus; achenia sparse puberula; pappus pallide brunneus.

Series *Corymbosae*; stem herbaceous above, subterete, multistriatulate, hollow, olivaceous, 5 mm thick, sparsely and obscurely puberulous with many-celled subappressed hairs, spreading-branched, the branchlets more densely but still inconspicuously puberulous; leaves opposite; internodes mostly 5–12 cm long, shorter or longer than the leaves; petioles rather stout, naked except at apex, not appendaged at base, finely subappressed-puberulous, those of the larger leaves 12–18 mm long; blades ovate to broadly ovate, 8–13.5 cm long, 4–9.5 cm wide, at base very shortly cuneate-decurrent on the petiole, above shining, light green and appearing glabrous but under a strong lens sparsely subappressed-puberulous, beneath dull green, evenly but not densely puberulous with several-celled subappressed hairs, 5–7 (–9)-plinerved within 1–2 cm of the base, loosely prominulous-reticulate beneath, not punctulate, the veinlets by transmitted light appearing densely dotted by orange glands; panicles terminal and in the upper axils, compounded, 4–5 cm wide, densely but inconspicuously sordid-puberulous with mostly incurved hairs, essentially ebracteate; heads 4-flowered, mostly in ultimate groups of 2–3, sessile or on pedicels 2 mm long or less; bractlet linear-lanceolate, acute, 1–1.5 mm long; phyllaries 4, oblong or obovate-oblong, 1.5–1.8 mm wide, broadly rounded at apex, corky-thickened but not calcarate at base, with thickish greenish about 7-vittate body and thinner paler narrower margin, ciliolate, rather sparsely subappressed-puberulous below, densely so above; corollas “greenish yellow” (appearing yellowish white when dry), sparsely puberulous toward tip, about 5.3 mm long (tube 2.3–2.5 mm, throat funnelform-campanulate, 2.5–2.7 mm, teeth deltoid, 0.3–0.5 mm long); achenes greenish, 5-ribbed, sparsely erectish-puberulous, 3 mm long; pappus brownish, 5–5.3 mm long, of about 58–63 minutely hispidulous bristles, not thickened at apex; style appendages densely hispidulous, the hairs about as long as the breadth of the branches.

ECUADOR: Vine, climbing small trees in forest border, frequent near Archidona, Cantón Napo, Prov. Napo-Pastaza, alt. 650 m, 19 Apr. 1935, *Ynes Mexia* 7259 (type no. 1,692,951, U. S. Nat. Herb.).

A species of the series *Corymbosae*, allied to *Mikania seemannii* Robinson and *M. tafalla* Humb. & Bonpl., but distinct from both in its much shorter involucre; related about as closely to several other species of western South America, such as *M. aschersonii*, *M. lehmannii*, and *M. multinervia*, but distinguished from all of these by features of foliage, involucre, or corolla.

*Aplopappus trianthus* Blake, sp. nov.

Frutex tenuis cortice albo, ramis erectiusculis tenuibus hornotinis pallide viridibus viscidis paullum striatis sparse scabro-tuberculatis; folia alterna sparsa lineari-filiformia semiteretia supra sulcata subtus rotundata subpollicaria apice saepius breviter recurva et subobtusae callosa-apiculata sparse tuberculata obscurissime punctata; capitula minima 3-flora homogama discoidea sessilia v. brevissime pedicellata in apicibus ramulorum pollicarium per 3-5 coartata; involucri obconici appressi 4 mm alti ca. 5-seriati valde gradati phyllaria pauca (ca. 12-13) linearia obtusa chartacea albida apice viridia et incrassata infra apicem breviter ciliata ceterum glabra; corollae aureae bilabiatae; achenia oblonga 5-nervia dense erecto-pilosa 2 mm longa; pappi straminei subseriati 4 mm longi setae ca. 30 subrigidae minute hispidulae; appendices ramorum styli subulato-lineares subacuminatae hispidulae partem stigmatiferam subaequant.

Twiggy shrub, the main stem up to 3 mm thick, subterete, with fissured white glabrous bark, the erectish branches about 30 cm long, whitish below, pale green above; internodes mostly 4-8 mm long; leaves erectish to somewhat spreading, without axillary fascicles, 8-20 mm long, about 0.7 mm wide, rounded and nerveless beneath, flattish and slenderly sulcate above, or the smaller subterete, the upper gradually reduced, the younger obscurely punctate; heads in flower 7-8 mm high, sessile or on pedicels up to 2.5 mm long, crowded in groups of about 3-5 at tips of naked or few-leaved branchlets, the branchlets usually about 5-7, racemously arranged toward tip of branches, mostly 8-25 mm long, their bracts much shorter than the heads; involucre 4-4.5 mm high, 2 mm thick (when moistened), the phyllaries sometimes in rather definite vertical ranks, somewhat boat-shaped, 0.5-0.7 mm wide, whitish, chartaceous, and 1-nerved below, thinner and subscariosus toward margin, with much shorter, thickened, not evidently glandular green tip, short-ciliate below the apex; receptacle small, naked; corollas glabrous or sparsely hispidulous on lower part of throat, 4.8-5.2 mm long (tube about 2-2.2 mm, throat cylindrical-funnelform, not sharply delimited from tube, about 1.3-1.7 mm, teeth unequal, one on outside of the flowering head 1.5 mm long, the others united into a 3-4-toothed lamina with essentially equal teeth 0.5-0.7 mm long); pappus 4 mm long, somewhat graduated, rather indefinitely about 2-seriate, the principal bristles slightly but definitely flattened, a few shorter outer ones capillary, half as long as the inner; style branches 2-2.7 mm long, the linear-subulate subacuminatae hispidulous appendages (1-1.3 mm long) equaling or very slightly longer than the stigmatic area.

TEXAS: Frequent along road from Study Butte to Terlingua, Chisos Mountains area, Brewster Co., 31 Aug. 1937, *B. H. Warnock* 1126 (type no. 1,728,979, U. S. Nat. Herb.).

The affinities of this species are unquestionably with *Aplopappus sonoriensis* (Gray) Blake of Lower California and islands, Sinaloa, and Sonora, a member of the section *Ericameria*. In habit, foliage, inflorescence, and involucre the two plants are strikingly similar, the most significant difference being that the young branches and foliage of *A. sonoriensis* are profusely glandular-punctate, while *A. trianthus*, although viscid on the younger parts, is only very obscurely impressed-glandular. In *A. sonoriensis* the receptacle normally bears one or few subulate pales, undoubtedly representing that excessive development of the walls of the alveolae which is not infrequent



in Astereae, and not to be regarded, as Hall suggested, as "remnants" of walls of the alveolae; the flowers are more numerous (about 4-7); the corolla teeth are normally equal and rather longer; the pappus is more copious and less stiff, all the bristles being essentially capillary; and the style appendages are rather broadly triangular and several times shorter than the stigmatic lines. The tendency of the phyllaries in *A. trianthus* to fall into rather definite vertical ranks, suggesting relationship with the very poorly differentiated genus *Chrysothamnus*, is found to a less extent in *A. sonoriensis* and was commented on by Hall.

The apparently normally bilabiate corollas of *A. trianthus* constitute a rather striking feature, which is probably correlated with the reduced number of flowers in the head. Those flowers in which the larger (inner) lip is made up of only 3 teeth are tetramerous, having only 4 stamens. Flowers with the inner lip 3- or 4-toothed occur in the same head. It is surprising that Hall<sup>2</sup> was unable to detect the presence of ray flowers in *A. sonoriensis*, since they are by no means of rare occurrence. In his original description of *Ericameria diffusa* (a synonym of *A. sonoriensis*) Bentham described the disk flowers as 4-5 and the ligule as solitary, shorter than the disk, sub-bilabiate, often with two linear lobes at base; Gray in 1873 mentioned the occasional presence of one or two imperfectly ligulate marginal flowers; and I described the rays as 0-2, small, in my treatment of the Asteraceae in Standley's *Trees and shrubs of Mexico*. In the specimens in the U. S. National Herbarium of Palmer 815 (of 1890) and Brandegee (20 Nov. 1904, Altata, Sinaloa), both examined and cited by Hall, rays are present and can be seen with the hand lens. A typical head examined contained 7 flowers, 4 tubular and hermaphrodite, 3 pistillate and imperfectly ligulate, the lamina of the ray in each being 1-1.5 mm long, in two cases shorter than the style branches, in the other longer. In one the lamina was 3-toothed and bore 2 linear lobes at the base, just as described by Bentham; in another the outer lip was unequally 3-toothed, with a single inner lobe of nearly the same length; and in the third the lamina was deeply 2-lobed with one of the divisions 2-toothed and there were no inner lobes. In another head one of the pistillate flowers had an unequally 4-toothed outer lip and a considerably shorter inner lobe, and there were 3 style branches. The significant differences between such flowers and the bilabiate ones of *A. trianthus* are that in *A. sonoriensis* such flowers are pistillate and the large lip is exterior, while in *A. trianthus* the flowers are hermaphrodite and the large lip is interior.

#### ***Aplopappus viscidus* (Woot. & Standl.) Blake**

*Sideranthus viscidus* Woot. & Standl. Contr. U. S. Nat. Herb. 16: 180. 1913.

In his monograph of "Haplopappus," Hall did not give this plant independent rank, but regarded it a form of his *Haplopappus spinulosus* ssp. *scabrellus* (Greene) H. M. Hall, listing it as "minor variation 32" of *H.*

<sup>2</sup> *The genus Haplopappus* 272. 1928.

*spinulosus*. The specimens on the type sheet in the U. S. National Herbarium, collected by E. O. Wooton near Hope, Eddy County, New Mexico, 3 August 1905, all lack the root. A specimen in the National Arboretum Herbarium (no. 33,359), collected near edge of Caprock, Lea County, New Mexico, 5 September 1937, by Dan King (no. 72), agrees with the type in all essential characters and possesses the greater part of its root, which is clearly annual. All the forms of *Aplopappus spinulosus* are perennial. *Aplopappus viscidus* appears to be a fairly distinct species, marked not only by its annual root but by its dense glandularity, its oblong or obovate merely serrate primary leaves, and its lack of any bristle on the tip of the phyllaries.

Lea County, where this specimen was collected, is of relatively recent creation, and is not shown on older maps. It is the southeasternmost county in New Mexico, and was formed from about the eastern two-fifths of Eddy and Chaves Counties. Caprock is in the northwestern part, in the Staked Plains, in what was formerly Chaves County, and is in about the same latitude as Roswell.

*Erigeron inornatus* f. *pseudoradiatus* Blake, forma nov.

Capitula pseudoradiata, corollis exterioribus 10–12 radiiformibus parvis discum paullum superantibus 5.4–6 mm longis lavandulaceis, staminibus abortivis liberis donatis, tubo 1.5–1.8 mm longo, fauce tubulosa 1.5–3.5 mm longa, lamina 1.5–3.5 mm longa elliptica concava 3-denticulata interdum prope basin dentibus 1–2 minoribus donata.

NEVADA: Open sunny places among rocks, public camp ground, Mt. Rose, 7 miles west of Reno Hot Springs, Washoe Co., alt. 1700 m. (6100 ft.), 12 July 1937, W. A. Archer 5580 (type no. 37,207, Nat. Arboretum Herb.).

This rather insignificant form is given a name only because it so simulates *Erigeron foliosus* Nutt. in its pseudoradiate heads that it might be confused with that species. Other collections by Dr. Archer in the National Arboretum Herbarium (nos. 5595, 5668, 5807) from the same general region agree precisely in every way except in having discoid heads, and show that the plant should be appended as a form to *E. inornatus* and not to *E. foliosus*, which is not known from Nevada. Forma *pseudoradiatus* is very similar to *E. inornatus* f. *subradiatus* Blake,<sup>3</sup> but in that plant the false rays are pale yellow; in both forms the disk is yellow as normal in *E. inornatus*. The type locality (Tahoe Tavern) of f. *subradiatus* was wrongly given as in Eldorado County in the original description; it is really in Placer County. All these plants agree in being referable to the var. *viscidulus* Gray, as at present understood, rather than to the typical form, having the stem and leaves densely pubescent and the involucre hispidulous or both glandular and hispidulous. P. B. Kennedy 1913, also from Washoe County, the basis for the inclusion of the species in Tidestrom's "Flora of Utah and Nevada," is similar. Typical *E. inornatus* Gray, with the stem glabrous at least above and the involucre glabrous, is not known from Nevada.

<sup>3</sup> This JOURNAL 19: 270. 1929.

*Desmanthodium caudatum* Blake, sp. nov.

Herbaceum (?) verisim. elatum subglabrum, ramis inflorescentiae lineatim pilosulis exceptis; folia ovata pro genere maxima subpedalia falcate caudato-acuminata in basim late alata abrupte angustata conspicue connato-perfoliata papyracea crenato-serrata e basi laminae trinervia supra subglabra subtus in nervis laxe brunneo-pilosa v. subglabra; capitula parva 9-11-flora glomerulata, glomerulis numerosissimis paniculam subnudam v. foliaceo-bracteata pro genere laxam 23-28 cm latam efformantibus.

Upper part of stem herbaceous, 4-6 mm thick, with solid or hollow pith, brown, rounded-striate, glabrous below the inflorescence; leaves opposite; internodes 5-8 cm long; leaves at base of branches of inflorescence 22-30 cm long (including the winged petiole), 7-13 cm wide, gradually narrowed into a long falcate attenuation with obtusish callous tip, broadly cuneate at base into the winged petiole, rather coarsely crenate-serrate except at lower part of base of blade and at apex (teeth about 20-35 pairs, 1-2.5 mm high, 4-7 mm apart, with very blunt mostly incurved callous tips), above deep green, slightly shining, obscurely puberulous along costa and chief veins or there essentially glabrous, toward margin somewhat bullate and sparsely hirsutulous with slightly tuberculate-based hairs, beneath somewhat lighter green, laxly sordid-pilose along the chief veins and veinlets or essentially glabrous, 3-nerved from base of proper blade and lightly prominulous-reticulate beneath; petioles broadly winged throughout and conspicuously connate-clasping at base, 5-7.5 cm long, 1.3-2.5 cm wide, entire or with one or two small teeth above, the abruptly dilated clasping base about 1-1.8 cm wide; leaves of the inflorescence smaller, not connate-perfoliate, subsessile or very short-petioled; panicle somewhat convex, the primary branches erectish, the others divergent-ascending, all usually densely sordid-pilosulous in 1 or 2 lines, the ultimate ones more or less compressed, slender, 2-20 mm long, the ultimate bracts lance-ovate, acute, subcoriaceous, about 3 mm long; glomerules 6-10 mm thick, 4-5 mm high, composed of several or many heads and subtended by about 2 appressed bracts, these ovate, 3-4 mm long, obtuse or acutish, subcoriaceous, thinner-margined, about 7-nerved, sparsely pilosulous on base of midrib and slightly ciliate at base; heads about 4-5 mm high, 3 mm thick; involucre of 3-5 bracts (each subtending a pistillate flower inclosed in its phyllary), these ovate to lance-ovate, acute or acutish, 3-5-nerved, glabrous or sparsely pilosulous on midrib above, 3-4 mm long; pistillate flowers 3-5 (usually 3), each enclosed in a sac-like, submembranous, short-beaked, more or less compressed or trigonous phyllary about 3.5 mm long and 1.5 mm wide, ciliate on the angles, short-pilose above outside; corolla cylindrical, fleshy, whitish, obscurely 3-denticulate at apex, 0.7 mm long, less than half as long as the style; achenes slenderly obovate, plano-convex or 3-angled with concave sides, blackish, glabrous, epappose, 2-2.5 mm long; receptacle naked inside the pistillate flowers; hermaphrodite (sterile) flowers 6-7, their ovaries stipitiform, subglabrous or slightly hispidulous above, up to 3.5 mm long, their corollas white, sparsely hispidulous above, 3.2 mm long (tube 1 mm, throat campanulate, 1.2 mm, teeth 5, ovate, erect, 1 mm long).

MEXICO: Finca Juarez, Escuintla, Chiapas, 12 Aug. 1937, *E. Matuda* 1750 (type no. 1,689,119, U. S. Nat. Herb.); same locality and date, *Matuda* 1756.

The only other species of *Desmanthodium* with connate-perfoliate leaves, *D. perfoliatum* Benth. of Guerrero and Oaxaca, has much smaller leaves (not over 14 cm long and 4.5 cm wide), strongly glaucous beneath and not cau-

date-tipped, a relatively dense and much smaller panicle (about 10 cm wide or less), and hermaphrodite corollas that are densely short-pilose on the limb.

***Clibadium mexiae* Blake, sp. nov.**

Caulis supra densissime molliter breviterque subtomentoso-pilosus pilis patentibus griseis; folia magna longe petiolata late ovata acuminata basi late rotundata v. obscure cordata (minora breviter cuneata) grosse crenato-serrata triplinervia tenuiter papyracea supra scabriuscula dense hirsutula et sparsius hirsuta pilis patentibus basi tuberculatis subtus in pagina subdense et juvenate subgriseo hirsuto-pilosa pilis patentibus basi vix incrassatis et glanduloso-adpersa in nervis densissime pilosula et hirsuto-pilosa; capitula minima sessilia irregulariter approximata 3–3.5 mm alta; phyllaria 3 ovata ad suborbicularia acuta v. acutiuscula hispidula et ciliolata 3–7-nervia; fl. fem. 3, hermaph. 6; receptaculum intra fl. fem. nudum v. subnudum; achenia late ovalia basi rotundata apice pilosa et glandulosa 2.3 mm longa.

“Perennial herb, 4 m high”; stem herbaceous above, subterete, white-pithy, 4 mm thick, opposite-branched above; leaves opposite; upper internodes 3–13 cm long; petioles slender, naked, densely pubescent like stem, those of the leaves of the main stem directly below the inflorescence 7–10.5 cm long, of the rameal leaves 1.3–4 cm long; blades of the larger leaves (directly below the inflorescence) broadly ovate, 18 cm long and more (tip wanting), 10–16 cm wide, broadly rounded or obscurely cordate at base, not at all decurrent on the petiole, loosely prominulous-reticulate beneath, 3- or 5-plinerved, coarsely crenate-toothed (teeth depressed, mucronulate, 1.5 mm high or less, 3–5 mm apart); branch leaves ovate, 8–15 cm long, 5–10.6 cm wide, with falcate-acuminate subtentire tip, subtruncate to bluntly short-cuneate at base; panicles terminating stem and branches, convex or flattish, 6–11 cm wide, many-headed, densely and griseously subtomentose-pilose with spreading hairs, their branches divergent, their bracts minute, subulate, about 1 cm long or less; heads very small, obovoid-subglobose, 3–3.5 mm high (corollas fallen), 2–2.5 mm thick; phyllaries 3, whitish, the outermost ovate, acute, 3–4-nerved, hispidulous and short-ciliate, 2–2.5 mm long, 1.6–1.8 mm wide, the others broadly oval to suborbicular, 3–3.3 mm long, 2–2.8 mm wide, 5–7-nerved, acutish or abruptly short-pointed, hispidulous toward apex and short-ciliate; receptacle naked inside the pistillate flowers or with a single oblong pale, the pales of the pistillate flowers suborbicular, obtuse, about 5–7-nerved, short-ciliate, 2.5–3.3 mm long; pistillate corollas white, 1.5 mm long, sparsely sessile-glandular above, otherwise glabrous, subequally 5-toothed, the ovaries densely pilose at tip; hermaphrodite corollas (scarcely mature) rather densely short-pilose above, 2 mm long, the ovaries linear, densely long-villous above, sparsely so below, 1.8 mm long; achenes broadly oval-obovate, rounded at base, obcompressed, densely short-pilose and white-glandular toward apex, 2.3 mm long, 1.8 mm wide.

ECUADOR: Common in forest clearing, near Puyo, Prov. Napo-Pastaza, alt. ca. 400 m., 20 Feb. 1935, *Ynes Mexia* 6946 (type no. 1,692,969, U. S. Nat. Herb.).

A species of the general group of *C. surinamense*, most nearly allied to *C. sodiroi* Hieron. and *C. oligandrum* Blake, the former Ecuadorian, the latter Guatemalan. All three agree essentially in the small number of flowers in the heads (3–5 pistillate, 4–6 hermaphrodite). In *C. oligandrum* the leaves

are much narrower (3–6.5 cm wide) and acutely cuneate at base, and the heads are larger; in *C. sodiroi* (from description) the branches are setose-hirtous with reclinate hairs, the leaves are smaller, on shorter petioles (1–1.5 cm long), and the heads are much larger (5 mm long).

***Rumfordia media* Blake, sp. nov.**

Caulis subsparse pilosus; folia deltoidea v. triangulari-ovata utroque latere 1–2-hastato-dentata callososerrulata acuminata in petiolos ubique alatos basi connatos abrupte angustata membranacea 3-nervia supra sparse pilosa basi dense cinerascens subtomentoso-pilosula; capitula radiata aurea majuscula parum numerosa cymoso-paniculata, pedicellis glanduloso-pilosis; phyllaria exteriora ovata acuminata 1.5 cm longa 4–8 mm lata extus puberula et glandulosa, interiora stipitato-glandulosa et sparse pilosa; radii 10–11 mm longi.

Doubtless tall, the lower part not seen; upper part of stem herbaceous, bluntly 6-angled, somewhat compressed, striatulate, hollow, 3–4 mm thick, brownish green, not densely short-pilose and puberulous with several-celled mostly wide-spreading hairs with scarcely enlarged base; leaves opposite; internodes 6–8 cm long; petioles narrowly cuneate, winged throughout, 3–9 cm long, 1–2 cm wide at apex, 3–8 mm wide at base and there slightly ampliate and connate, remotely callous-serrulate, pubescent like the blade; leaf blades 10–17 cm long, 6–14 cm wide, callous-serrulate essentially throughout (teeth somewhat unequal, mostly 0.5 mm high or less and 2–5 mm apart), 1–2-hastate-toothed on each side at base of blade (teeth broadly triangular, acute, 1 cm long or less), above deep green, evenly but not densely short-pilose with several-celled lax spreading hairs slightly enlarged at base, beneath especially in youth densely and griseously subtomentose-pilosulous with lax several-celled hairs, somewhat pilose along costa, 3-nerved from base of blade, loosely prominulous-reticulate especially beneath; leaves at base of panicle much reduced, 3–4.5 cm long, their petioles connate at base; panicle terminal, about 15–20-headed, convex or flattish, 10–16 cm wide, the bracts very small, 1 cm long or less, the pedicels slender, 1.5–4.5 cm long, densely pilosulous with gland-tipped hairs and less densely pilose with several-celled longer hairs; heads about 2.8 cm wide at maturity, the spread involucre about 3.8 cm wide; disk 8–11 mm high, 1–1.8 cm thick; outer phyllaries 5, spreading or reflexed at maturity, ovate, lance-ovate, or elliptic-ovate (unequal in breadth in the same head), at maturity 15–17 mm long, 4–8 mm wide, thin-herbaceous, 3–5-plinerved and veiny, outside rather thinly puberulous and both stipitate- and sessile-glandular, densely and finely griseous-puberulous on margin, inside essentially glabrous; inner phyllaries (subtending the rays) ovate, acuminate, densely stipitate-glandular and sparsely pilose, ciliolate, 6 mm long; rays about 10–13, golden yellow, fertile, the tube at maturity 4.5–5 mm long, stipitate-glandular and sparsely hirsute, bearing 2 abortive stamens at apex, the lamina linear-elliptic, 10–11 mm long, 2–2.5 mm wide, pilosulous on back, 3-toothed (teeth blunt, 0.7–1.5 mm long), 8–9-nerved; disk corollas very numerous, fertile, their corollas golden yellow, about 6.5 mm long (tube much swollen at base, stipitate-glandular and sparsely hirsute, 3–3.2 mm, throat slender-campanulate, sparsely stipitate-glandular, 2.8 mm, teeth ovate, pilose, 0.7 mm long); pales membranous, oblong or obovate-oblong, obtuse to acute, subsessile-glandular, short-hirsute, and ciliate, 4–5 mm long; achenes of ray and disk similar, obovoid, plump, obscurely quadrangular, brownish black, glabrous, epappose, 2 mm long, 1 mm wide.

MEXICO: Mt. Orando, Chiapas, 20 Dec. 1936, *E. Matuda* 710 (type no. 1,686,103, U. S. Nat. Herb.; dupl., herb. Univ. Michigan).

This species is somewhat intermediate between *Rumfordia aragonensis* Greenm., of Costa Rica, and *R. attenuata* Robinson, of Michoacan or Guerrero, combining the connate-based, completely winged petioles of the former and the glandular-pubescent pedicels and longer rays of the latter species.

***Wulffia baccata* var. *discoidea* Blake, var. nov.**

Capitula discoidea.

ECUADOR: Scandent perennial herb up to 3 m. high, with orange flowers and black fruit, thicket along trail side, trail from Tena to Napo, Cantón Napo, Prov. Napo-Pastaza, alt. 400 m., 5 April 1935, *Ynes Mexia* 7170 (type no. 1,692,980, U. S. Nat. Herb.); leaning herb with orange flowers, in partial opening in forest, Hacienda Salento, Cantón Pujilí, Prov. León, alt. 1000 m., 19 Nov. 1934, *Mexia* 6702.

Beyond the discoid heads, I can find no character to distinguish this plant from the somewhat variable *Wulffia baccata* (L.f.) Kuntze, in which the rays are sometimes deciduous soon after flowering. Dissection of heads of the new form in which the flowers have not yet opened shows that no rays are present. The involucre is short (4–5 mm high) and the phyllaries rather broadly ovate or oblong-ovate, acute or sometimes obtuse, or the inner occasionally subacuminate.

***Psacalium mollifolium* Blake, sp. nov.**

Herba plusquam 70 cm alta, basi invisiva; folia basalia suborbicularia 17 cm longa et lata peltata 7-lobata supra viridia subaspere pilosa pilis multiloculatis subtus densissime mollissimeque albido-lanato-tomentosa, lobis late cuneatis 3–4.5 cm longis 3.5–5.5 cm latis 3-lobatis obtusis sparse mucronulato-denticulatis; caulis densissime glanduloso-puberulus sparse laxequ pilosus pilis multiloculatis infra inflorescentiam simplex infra medium folium peltatum 5-lobum 8 cm latum, supra medium folium non peltatum 3-lobum valde reductum gerens; inflorescentia racemiformis ca. 22 cm longa, ramis brevibus 1-2-cephalis, bracteis linearibus pedunculis subaequantibus dense glanduloso-puberulis piloso-ciliatis; capitula ca. 12 discoidea nutantia ca. 24-flora; bracteolae 5–6 lineares involucre paullo longiores, dense glanduloso-puberulae et piloso-ciliatae; involucri ca. 1.5 cm alti glanduloso-puberuli et sparsius pilosi phyllaria 13 oblongo-lanceolata subacuminata; tubus corollae limbo multo longior, limbo paene ad basin 5-partito; achenia glabra; pappus albus 11 mm longus.

Stem scapiform, rather slender (5 mm thick below), greenish white, subterete, multistriate, solid, pithy; basal leaf attached to the petiole 3.5 cm above base, palmately 7-nerved, papery, the callous mucronulations of the teeth 1 mm long or less, the petiole (incomplete) stout, densely lanate-tomentose, 10 cm long; petiole of the lower stem-leaf about equaling the blade; bracts of inflorescence linear, 2–4 cm long, 2.5–4 mm wide, acute, sessile, entire, somewhat pilose dorsally; peduncles mostly 2–4 cm long, naked or essentially so; disk in flower 1.8–2 cm high, 1.1–1.7 cm thick (as pressed), oblong-campanulate; bractlets of involucre linear or lance-linear, acuminate, 2–2.5 cm long, 1.5–2 mm wide, erectish, herbaceous; phyllaries

2–3 mm wide; corollas apparently white, about 14.3 mm long (tube 8.5 mm, throat campanulate, 0.8 mm, teeth narrowly triangular, acute, recurved, 5 mm long); achenes oblong, greenish white, somewhat flattened, multi-striate, 4.8 mm long; pappus pure white, rather copious, 11 mm long; style branches elongate, linear, recurved, obtuse, dorsally densely short-hispid, the hairs extending to slightly below the fork.

MEXICO: Taxco, Guerrero, 12 Aug. 1937, *Ruth Q. Abbott* 353 (type, Gray Herb.).

Nearest *Psacalium konzattii* (Rob. & Greenm.) Rydb., but readily distinguished by the dense, soft, lanate tomentum of the lower leaf surface. The specimen was sent for identification by Dr. I. M. Johnston. The genus *Psacalium* Cass., reestablished by Rydberg, seems to be well defined, and the following species from Jalisco should be transferred to it.

#### *Psacalium eriocarpum* Blake

*Cacalia eriocarpa* Blake, Journ. Washington Acad. Sci. 19: 279. 1929.

ZOOLOGY.—*A new species of fish of the family Disparichthyidae from off Cuba.*<sup>1</sup> LEONARD P. SCHULTZ, United States National Museum. (Communicated by L. STEJNEGER.)

#### *Disparichthys herrei* n. sp.

This new species differs from *Disparichthys fluviatilis* Herre, first described in Field Museum Natural History, Publication 335, Zoological Series 18 (12): 383–384, fig. 31, 1935. Type locality, a brook at Marienberg, Sepik River, New Guinea and also in Herre's 1936 paper,<sup>2</sup> the only other species in the genus and the only genus in the family Disparichthyidae, by having different proportions of the body as indicated in the following description.<sup>3</sup>

*Holotype*.—A specimen 174 mm in total length taken in a dipnet by Dr. Paul Bartsch on the Smithsonian-Roebling Exploring Expedition, April 8, 1937, at Corrientes Bay anchorage, as it came up to a submarine light. U. S. N. M. Cat. No. 107044.

*Description*.—An exceedingly slender eel, the length of the head (5.4 mm) contained in the total length 32.2 times and the depth of the body (1.7 mm at two head lengths behind the snout) 102 times; body scaleless, tapering from the head gradually to the tail which is almost thread-like, there is no caudal filament and none appears to have been broken off; a pair of small bony structures coming to the surface of the skin just back of the head (6.3 mm behind tip of snout) in midline of back. This pair stained red in alizarin and can be traced anteriorly a short distance in the flesh, appearing as though each might be a minute tube. The small size renders difficult the study of this organ and its significance is not known. Additional specimens should make possible its dissection and mounting but the author does not wish to spoil the only specimen known. Although this structure is in about

<sup>1</sup> Published with the permission of the Secretary of the Smithsonian Institution. Received September 6, 1938.

<sup>2</sup> HERRE, A. W., *Fishes of the Crane Pacific Expedition*, Field Mus. Nat. Hist., Zool. Ser. 21: 436. 1936.

<sup>3</sup> The author is very grateful to Mr. Alfred C. Weed, Curator of Fishes, Field Museum of Natural History, Chicago, for several measurements of the type of *Disparichthys fluviatilis* Herre, used in this study.