

STUDIES ON THE CRANE-FLIES OF MEXICO.
PART I.

(Order Diptera, Superfamily Tipuloidea).

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The crane-flies discussed at this time were included in very large and important collections made in various parts of Mexico by Dr. Alfons Dampf, Professor of Applied Zoology and State Entomologist. Our knowledge of the crane-flies of this great republic had hitherto been restricted to the relatively few species recorded by Osten Sacken and Williston in the "Biologia Centrali-Americana," together with a few scattered descriptions by the writer. This fragmentary knowledge has been vastly added to through the critical and systematic collecting methods employed by Dr. Dampf. In the present installment a number of new species are described from various localities in the vicinity of Mexico City. The habitats from which the various collections were made will be discussed in detail in later papers by Dr. Dampf, those employed at this time being included in the following *Mexican Biocænosis* (M. B.) and *Mexican Fauna* (M. F.) numbers as adopted by the collector:

Desierto de los leones: A wild forested region some 25–30 kms. southwest of Mexico City, situated in the mountains at an altitude of 3,000 meters and over. The characteristic trees are *Pinus montezumæ*, *P. leiophylla*, *Abies religiosa*, *Quercus*, spp., and others, together with a dense undergrowth of many flowering shrubs and weeds. M. B. 73 is a very deep shadowy ravine (Barranca de la mina vieja, Rio Tapazulco de los Morales, 3010–3080 meters) in the *Abies religiosa* region, with a luxuriant growth of trees, shrubs and weeds. The very inconspicuous rivulet seeks its way through big stones, blocks and overhanging rocks. M. B. Nos. 25, 67, 73, 114, etc.; M. F. No. 66.

Chapingo: The new site of the Escuela Nacional de Agricultura, situated nearly 30 kms. east of Mexico City, lying

*Contribution from the Entomological Laboratory of the Massachusetts Agricultural College.

in the plain of the valley of Mexico between the Lago Texcoco and the mountain chain called Tlaloc. M. B. Nos. 29, 35, 44, 47, etc.; M. F. No. 291.

Mt. Tlaloc: A mountain group lying northeast of Mexico City, belonging to the Popocatepetl-Iztaccihuatl chain. M. B. No. 67 is from the *Abies religiosa* region, altitude 2800–3200 meters, deep rocky barrancas with dead trees, dense forest intermixed with brush. Several of the novelties were included under this number, the specimens having been swept from the *Abies* branches. M. B. Nos. 63, 63a, are from the *Pinus* region, altitude 3000–3600 meters. M. B. No. 64 is from the summit at approximately 4000 meters, in treeless situations, with grass and creeping *Cupressus* between the rocks.

Peñon viejo or Peñon marquez: An old volcano half-way between Mexico City and Chapingo, situated on the southern border of Lago Texcoco. The specimens were collected by sweeping the vegetation in a deep muddy trench.

The writer wishes to express his thanks and appreciation to Dr. Dampf for the privilege of collaborating in this important investigation. Through the kindness of the collector, the types of the novelties are retained in the writer's collection.

Dicranomyia Stephens.

Dicranomyia praepostera sp. n.

General coloration fawn-yellow; head gray above; wings tinged with pale yellow, the costal region and vein Cu_1 seamed with darker; male hypopygium very complicated in structure.

Male. Length, 5.5–6 mm.; wing, 8.5–9 mm.

Rostrum obscure ochreous-yellow, moderately elongate; palpi short, dark brown. Antennae with the basal segment obscure brownish yellow, the apex and remaining segments brown; flagellar segments oval, with short verticils. Head gray above, the frons, occiput and ventral portions more yellowish.

Thorax uniformly fawn-yellow, the median area of the praescutum a little more suffused but without distinct darker markings; scutellum and postnotum sparsely pruinose. Pleura reddish fawn-color, sparsely pruinose. Halteres infuscated, the base of the stem narrowly yellowish. Legs with the coxæ and trochanters light yellow; femora obscure yellow, the tips broadly dark brown; tibiæ brownish yellow, the tips narrowly and indistinctly infuscated; tarsi gradually passing into dark brown. Wings (Fig. 1) tinged with pale yellow, the costal region darker, this color broadening out distally to include the outer radial cells; a conspicuous darker brown seam along vein Cu_1 and $m-cu$; brown seams at arculus, Sc_2 , tip of Sc_1 and origin of Rs ; a large oval spot at fork of Rs ;

stigma darker at the ends, the center somewhat paler; cord and outer end of cell *1st M*₂ very narrowly seamed with brown. Venation: *Sc*₁ ending just beyond the origin of *Rs*, *Sc*₂ very far from its tip, lying about mid-distance between arculus and the origin of *Rs*; *m-cu* some distance before the fork of *M*.

Abdomen light brown, the genitalia passing into reddish brown; basal sternites pale yellow. Male hypopygium (Fig. 13) very large and complicated in structure. Ninth tergite (t) with a deep V-shaped notch, the lateral lobes obtusely rounded, the margins of the notch with delicate setæ. Basistyle (b) relatively small and simple. Ventral dististyle (v) very complicated, consisting of a kidney-shaped fleshy lobe provided with relatively short retrorse setæ; basal mesal portion produced into a complicated blade that bears the short bispinous rostrum. Dorsal dististyle a powerful, flattened, sickle-shaped blade that is expanded and truncate at tip. Gonapophyses (g) small, broad, the mesal apical angle provided with a short, erect lobe, the extreme tip of which is feebly decurved.

Holotype, ♂, Mt. Tlaloc, region of *Abies religiosa*, altitude 2800–3200 meters, June 15, 1924 (A. M. Dampf); M. B. No. 67. *Paratopotype*, ♂.

Dicranomyia praepostera is a very distinct species with no very close described relatives.

***Dicranomyia ravida* sp. n.**

General coloration light gray, the praescutum striped with darker; antennae black throughout; wings subhyaline, the stigma faintly darker; *Sc* short; cell *1st M*₂ closed; male hypopygium with the spines of the rostrum unequal, curved.

Male. Length, 4.5–5 mm.; wing, 6–6.8 mm.

Female. Length about 5.8 mm.; wing about 6.8 mm.

Rostrum and palpi dark brown. Antennae black, the basal segment pruinose; flagellar segments short-oval. Head brownish gray, clearer gray in front.

Pronotum gray, darker medially. Mesonotum yellowish gray, clearer gray laterally, the praescutum with a conspicuous brown median stripe and smaller, less distinct lateral stripes; scutal lobes extensively infuscated; postnotum gray, darker laterally behind. Pleura light gray pruinose. Halteres pale, the knobs weakly infuscated. Legs long and slender, the coxæ reddish brown, the fore and middle coxæ darker and more or less pruinose basally; trochanters brownish yellow; remainder of legs dark brown, the bases of the femora brightened. Wings subhyaline, the stigma faintly indicated; veins dark brown. Venation (Fig. 2): *Sc* short, *Sc*₁ ending about its length before the origin of *Rs*; *Rs* a trifle longer than the basal deflection of *R*₄₊₅; *m-cu* at or immediately before the fork of *M*.

Abdomen dark brownish gray, the hypopygium conspicuously brownish yellow. Male hypopygium (Fig. 14) with the caudal margin of the ninth tergite (t) with a broad U-shaped notch, the lateral lobes low

and obtuse, provided with numerous setæ. Basistyles (b) relatively small, only sparsely setiferous, the mesal lobe large and conspicuous, setiferous. Ventral dististyle (v) larger than the basistyle, with conspicuous setæ, the rostrum long, curved gently to the tip, near two-thirds the length bearing the usual two spines, these of generally similar shape, but the more basal one about one-fourth shorter than the other, both gently curved basad. Dorsal dististyle relatively slender, angularly arcuated to the long acute point. Gonapophyses (g) with the mesal apical lobe curved gently laterad.

Holotype, ♂, Chapingo, February 25, 1924 (A. M. Dampf); M. B. 29. *Allotopotype*, ♀, March 1, 1924. *Paratopotypes*, 3 ♂♂, March 5, 1924, M. B. 35; 3 ♂♂, March 31, 1924, M. B. 44; ♂, April 30, 1924, M. B. 47. *Paratype*, ♂, Mexico, D. F., November 8, 1923 (A. M. Dampf).

Dicranomyia tricornis sp. n.

General coloration yellowish brown, the praescutum somewhat brighter with three conspicuous brownish black stripes; male hypopygium with the rostrum bearing three powerful straight spines.

Male. Length, 5.6–6 mm.; wing, 6.8–7.6 mm.

Female. Length about 5 mm.; wing, 7 mm.

Rostrum and frons obscure yellow, the palpi brownish black. Antennae brownish black throughout; basal flagellar segments short, the outer ones passing into oval, clothed with a delicate erect pale pubescence. Head grayish brown, the vertex between the eyes darker.

Pronotum brownish black medially, passing into obscure yellow laterally. Mesonotal praescutum obscure orange-yellow with three conspicuous brownish black stripes, the median one broader and more conspicuous; scutellum and postnotum gray pruinose. Pleura brown, sparsely covered with a yellowish pollen, more pruinose behind. Halteres relatively short, brown, the base of the stem indistinctly brighter. Legs with the coxæ brown, the fore coxæ darker; trochanters obscure yellow; legs relatively long and slender; femora pale brown, brighter basally, with a vague darker ring immediately before the tips; tibiæ and basitarsi pale brown, their tips narrowly darkened; remainder of tarsi dark brown. Wings (Fig. 3) rather strongly tinged with brown, the stigma scarcely indicated; veins dark brown. Venation: *Sc* short, *Sc*₁ ending opposite the origin of *Rs*, *Sc*₁ a little shorter than *m-cu*; *Rs* relatively long, feebly angulated at origin; *m-cu* at the fork of *M*.

Abdominal tergites dark brown, indistinctly variegated with paler; basal sternites yellowish, the more distal sternites yellowish basally; hypopygium obscure yellowish brown. Male hypopygium (Fig. 15) with the ninth tergite (t) broad, the caudal margin with a very shallow emargination, on either side of the broad median space with a dense patch of setæ. Basistyle with the mesal lobe conspicuously setiferous. Ventral dististyle (v) fleshy, the rostrum large, semichitinized, and

with a row of three closely approximated spines of subequal size, placed on the side of the rostrum not far beyond its base; face of style at base of rostrum further produced into a small fleshy lobe that is tufted with a few strong setæ. Dorsal dististyle (d) a powerful flattened blade, widest near midlength, the apex drawn out into a long acute point. Gonapophyses (g) with the caudal mesal angle relatively slender, curved.

Holotype, ♂, Mexico, D. F., January 30, 1924 (A. M. Dampf). *Allotopotype*, ♀, March 7, 1924. *Paratypes*, 1 ♂, Peñon Viejo, May 11, 1924, M. B. 50; Peñon Marquez, 1 ♂, March 3, 1924, M. B. 34; 1 ♂, March 5, 1924, M. B. 37.

Dicranomyia tricornis is distinguished from the other regional species of the genus by the presence of three spines on the rostriform appendage of the male hypopygium.

Dicranomyia filicauda sp. n.

General coloration gray, the rostrum yellow; pronotum and mesonotal praescutum with dark brown stripes; halteres elongate; wings faintly tinged with brown, the stigma slightly darker; Sc_1 long; male hypopygium very complex in structure, the tergal region with two long, filiform lobes.

Male. Length about 6.5 mm.; wing, 8.5–8.6 mm.

Rostrum light yellow; palpi dark brown. Antennæ dark brown; flagellar segments oval. Head dark gray, the front and orbits paler.

Pronotum gray, dark brown medially, the sides passing into buffy. Mesonotal praescutum gray, the humeral regions broadly ochreous, the dorsum with three conspicuous dark brown stripes, the median stripe broad and conspicuous, the lateral stripes narrow and subobsolete; centers of scutal lobes dark, the median area pale; scutellum dark, indistinctly pale medially and more distinctly so caudally; postnotal mediotergite dark brown. Pleura pale, yellowish pollinose, with a short and narrow pale brown longitudinal stripe extending across the suture between the anepisternum and the sternopleurite. Halteres long and slender, infuscated, the extreme bases pale. Legs with the coxæ pale, the fore coxæ slightly infuscated; trochanters obscure yellow; femora brown, their bases paler; tips of femora indistinctly pale; remainder of legs passing into dark brown. Wings (Fig. 4) with a faint brown tinge, the oval stigma pale brown; veins dark brown. Venation: Sc_1 ending opposite the origin of R_s , Sc_2 some distance from the tip of Sc_1 , the latter alone about two-thirds R_s ; cell 1st M_2 closed, m being about two-thirds the outer deflection of M_3 ; $m-cu$ a short distance beyond the fork of M .

Abdominal tergites dark brown, the sternites and hypopygium more yellowish. From the ventral surface of the ninth tergite arises a pair of long, slender lobes, directed caudad, their surface clothed with long, conspicuous setæ; these lobes extend caudad beyond the other elements of the hypopygium. Basistyles small, the ventro-mesal lobes long and exceedingly complex. Ventral dististyle fleshy, larger than

basistyle; dorsal dististyle a long, straight rod, the tip produced into an acute beak-like spine.

Holotype, ♂, Desierto de los leones, altitude about 3000 meters, September 23, 1923 (A. M. Dampf). *Paratopotypes*, 5 ♂♂, December 9, 1923; M. F. 67.

This very remarkable crane-fly is readily told from all described members of the genus by the filiform structures adorning the ninth tergite of the male hypopygium.

Dicranomyia melanocera sp. n.

General coloration yellowish pollinose, the praescutum with a dark brown median stripe; rostrum obscure yellow; palpi and antennae black; halteres short, the knobs infuscated; wings subhyaline; *Sc* relatively short; cell *1st M*₂ closed.

Male. Length about 4.5 mm.; wing, 5.4–5.5 mm.

Rostrum obscure yellow; palpi black. Antennae black throughout; flagellar segments oval. Head dark, brownish gray pruinose; vertex between eyes broad.

Mesonotum pale, yellowish pollinose, with a broad, dark brown median stripe that does not reach the suture; lateral stripes nearly obsolete; scutum dark gray; scutellum obscure yellow, more grayish basally; postnotal mediotergite gray. Pleura pale, sparsely pruinose, the posterior sclerites paler. Halteres short, yellow, the large knobs infuscated. Legs with the coxae pale, the fore coxae more infuscated; trochanters yellow; femora pale yellowish brown, passing into brown at the tips; tibiae brown, the tips dark brown; tarsi black. Wings (Fig. 5) subhyaline, the stigma oval, pale brown; veins darker brown. Venation: *Sc* relatively short, *Sc*₁ ending nearly its own length before the origin of the short *Rs*, the latter oblique, somewhat angulated; *Rs* only a little longer than the basal deflection of *R*₄₊₅; inner ends of cells *R*₃ and *1st M*₂ lying basad of cell *R*₅; cell *1st M*₂ closed, about equal to vein *M*₁₊₂ beyond it; *m-cu* near fork of *M*, a little longer than the distal section of *Cu*₁.

Abdomen dark brown, the sternites paler; hypopygium pale brown. Male hypopygium (Fig. 16) with the basistyles (b) produced mesad into fleshy lobes. Ventral dististyle (v) large and fleshy, the rostrum stout with two close-set spines; dorsal dististyle relatively small, arcuated, the long tip acute. Gonapophyses (g) with the mesal lobe relatively slender, the tip subacute.

Holotype, ♂, Xochimilco, September 30, 1923 (A. M. Dampf). *Paratopotype*, ♂.

Dicranomyia dampfi sp. n.

Allied to *D. badia* (Walker); general coloration black, the small humeral angles of the praescutum paler; tips of femora obscure yellow; wings strongly tinged with brown, the oval stigma darker brown.

Male. Length about 7 mm.; wing, 9.6 mm.

Female. Length about 7.5 mm.; wing, 10 mm.

Rostrum, palpi and antennae black; flagellar segments oval. Head black.

Pronotum and mesonotal praescutum black, only the restricted humeral angles of the latter a little paler; posterior sclerites of mesonotum dark brown. Pleura black, the anterior portion of the propleura a little brighter; sternopleurite dark brown. Halteres blackish, the extreme base of stem pale. Legs with the coxae obscure brownish yellow, the fore coxae darker; trochanters obscure yellow; femora dark brown, the extreme bases paler, the narrow tips conspicuously obscure yellowish; tibiae and tarsi brownish black. Wings (Fig. 6) strongly tinged with brown, the stigma oval, darker brown; a paler cloud on anterior cord; paler areas before and beyond the stigma; veins brownish black. Venation: Sc_1 ending immediately beyond the origin of Rs , Sc_2 not far from the tip and before this origin; cell $1st M_2$ closed, a little shorter than vein M_{1+2} beyond it; $m-cu$ close to fork of M .

Abdominal tergites dark brownish black, the sternites paler, yellowish brown, the bases of the individual segments a little brighter. Male hypopygium with the ventral dististyle very large and fleshy, the short rostrum with two acute spines, placed almost at the tip. Gonapophyses broad, the relatively short mesal lobe broad-based, gently curved, the subacute tip directed slightly laterad.

Holotype, ♂, Desierto de los leones, altitude about 3000 meters, September 23, 1923 (A. M. Dampf). *Allotopotype*, ♀.

This interesting *Dicranomyia* is named in honor of the collector, Dr. Alfons Dampf, to whom we are indebted for invaluable collections of Mexican insects and whose untiring efforts have done very much toward making known the interesting fauna of Mexico. The species is related to *D. badia* (Walker) from which it is told by the diagnostic characters listed above.

Limonia Meigen.

Limonia obtusistylus sp. n.

General coloration gray; head with two velvety-black lines that are confluent before and behind; mesonotal praescutum with three conspicuous dark brown stripes; wings grayish subhyaline, spotted with brown; Sc long; $m-cu$ before the fork of M ; male hypopygium with a bispinous rostrum; dorsal dististyle small, sickle-shaped, the tip obtusely rounded.

Male. Length about 4.5 mm.; wing, 6.6 mm.

Rostrum and palpi dark brown. Antennae dark brown, the extreme proximal ends of the basal flagellar segments indistinctly paler; flagellar segments oval. Head dark gray, the anterior vertex golden-yellow, the posterior vertex with a velvety-black stripe that divides shortly, following the orbits for a brief distance, thence directed caudad, becoming confluent on the occiput.

Pronotum gray, dark brown above. Mesonotal praescutum yellowish gray with three conspicuous dark brown stripes, the sublateral regions likewise indistinctly darkened; scutum grayish brown, indistinctly variegated with darker; scutellum light yellow; postnotum darkened. Pleura dark brown, heavily gray pruinose, interrupted to leave small patches of the ground-color. Halteres yellow, the knobs conspicuously dark brown. Legs with the coxae testaceous, sparsely pruinose; trochanters obscure yellow; remainder of legs broken. Wings (Fig. 7) grayish subhyaline, sparsely spotted with brown; ground-color clearest immediately before and beyond the stigma; subcostal cell largely occupied by three brown markings, restricting the ground-color to two small spots; stigma pale brown with the ends vaguely darker; wing-apex faintly suffused; the largest remaining spots are along the costal region, at tip of Sc_1 , at origin and fork of R_s ; cord and outer end of $1st M_2$ narrowly seamed; a series of small brown spots in cells R and M , with fewer scattered similar spots in cells Cu and $1st A$; veins dark brown. Venation: Sc long, Sc_1 extending to just before mid-length of R_s ; Sc_2 not evident in the unique type; $m-cu$ some distance before the fork of M .

Abdomen brown, sparsely variegated with darker. Male hypopygium (Fig. 17) with the caudal margin of the ninth tergite (t) conspicuously notched medially. Basistyle (b) relatively small, with a conspicuous hemispherical setiferous lobe on mesal face. Ventral dististyle (v) large and fleshy, the rostrum very small, with two long straight spines that are much longer than the rostrum alone; cephalic margin of rostrum with a fringe of seven or eight short setae. Dorsal dististyle a small sickle-shaped blade, the apex obtuse. Gonapophyses relatively small, appearing as flattened blades, the caudal mesal angle produced, the apex curved gently laterad.

Holotype, ♂, Desierto de los leones, altitude 3010–3080 meters, July 20, 1924 (A. M. Dampf); M. B. No. 73.

Limonia obtusistylus is generally similar to the species of the *simulans* group (*simulans* Walker, *concinna* Williston, etc.), differing very strikingly in the structure of the male hypopygium. The reference of the species in *Limonia* is based on the length of the subcostal vein.

Elephantomyia Osten Sacken.

Elephantomyia alticola sp. n.

General coloration gray; wings with a faint brown tinge, the costal margin and a conspicuous seam in cell M adjoining vein Cu_1 darker brown; abdominal tergites yellow, each segment with a T-shaped brown mark; sternites uniformly dark brown.

Male. Length, excluding rostrum, 8.2 mm.; wing, 11.5 mm.; rostrum alone, $\bar{5}$ mm.

Rostrum relatively short, brownish black; palpi concolorous. Antennae black, only the apex of the second scapal segment a trifle

paler. Head yellowish gray, the vertex between the eyes about one-third wider than the diameter of the first scapal segment.

Pronotum dark brown, heavily dusted with gray. Mesonotum dark brown, heavily dusted with gray, the praescutum more yellowish gray, the median area remaining broadly dark brown. Pleura dark gray, the dorso-pleural region buffy. Halteres obscure brownish yellow, the knobs darker brown. Legs with the coxae obscure yellow, their bases slightly darker; trochanters obscure brownish yellow; femora brown, the tips blackened, on the fore femora the black very extensive, including all but the basal fourth; posterior femora with the black tips narrow; tibiae and tarsi dark brown. Wings (Fig. 8) with a faint brown tinge, the costal margin and a conspicuous seam along vein Cu_1 in cell M darker brown, the two narrowly and indistinctly connected by a vague narrow seam along the cord; outer end of cell $1st\ M_2$ likewise indistinctly seamed; stigma oval, darker brown; veins dark brown. Venation: Sc_1 ending beyond two-thirds the length of R_s , Sc_2 a trifle longer; R_s strongly angulated and weakly spurred at origin; $m-cu$ about two-thirds its length beyond the fork of M .

Abdominal tergites obscure yellow, the intermediate segments brighter colored, the segments with dark brown inverted T-shaped markings, the crossbar occupying the caudal margin of the segment; sternites uniformly dark brown.

Holotype, ♂, Mt. Tlaloc, region of *Abies religiosa*, altitude 2800–3200 meters, June 15, 1924 (A. M. Dampf); M. B. No. 67.

Elephantomyia alticola is very different from the described species of the genus.

Gonomyia Meigen.

Gonomyia (Gonomyia) tuberculata sp. n.

Belongs to the *cognatella* group; wings narrow, Sc short; R_s in alignment with R_{4+5} ; cell $2nd\ A$ narrow; male hypopygium with the outer dististyle produced into a darkened tubercle before midlength.

Male. Length, 3.5–3.6 mm.; wing, 4.8–5.6 mm.

Rostrum and palpi dark brown. Antennae with the scapal segments conspicuously light yellow; flagellum abruptly dark brown. Head yellow, the center of the vertex with a brownish black spot.

Pronotum dark brown, yellow on the sides. Mesonotal praescutum with three dark brown stripes, the interspaces only a trifle paler so the dorsum appears almost uniformly dark; lateral margins of the praescutum broadly yellow; scutum dark brown, the median area narrowly obscure yellow; scutellum brown, the margins broadly yellow; postnotal mediotergite with a 1-shaped brown mark. Pleura light yellow with a narrow dorsal dark brown stripe passing immediately above the base of the halter to the postnotal mediotergite; sternopleurite less distinctly darkened. Halteres elongate, the knobs and base of the stem dark brown, the remainder of the stem paler. Legs with the coxae and trochanters testaceous; remainder of legs dark brown, the femoral

bases paler. Wings (Fig. 9) narrow, with a faint brownish tinge; stigma oval, darker brown; veins dark brown. Venation: *Sc* very short, *Sc*₁ ending a distance before the origin of *Rs* that is approximately equal to the length of the latter vein alone, *Sc*₁ short; *r-m* joining *Rs* immediately before its fork; *Rs* in alignment with *R*₄₊₅; cell *R*₂ relatively large; cell 2nd *M*₂ deep; *m-cu* at fork of *M*; cell 2nd *A* narrow.

Abdominal tergites dark brown, the sternites and hypopygium yellow. Male hypopygium (Fig. 18) with the basistyle (b) produced into a cylindrical fleshy lateral lobe and a smaller mesal lobe. Outer dististyle an elongate, clavate, fleshy lobe, the mesal margin near midlength produced into a darkened tubercle. Inner dististyle complex, tripartite, consisting of a flattened paddle-like blade with a single seta on the disk; a fleshy setiferous lobe that terminates in two powerful fasciculate setae, and a powerful chitinized spine, the latter varying in degree of stoutness in different specimens. Acdeagus (a) curved. Gonapophyses (g) asymmetrical, the longest very slender, curved, terminating in a long acute spine; the second apophyse is small, gently sinuous.

Holotype, ♂, Penon marquez, March 5, 1924 (A. M. Dampf); M. B. No. 36. *Paratopotypes*, 2 ♂♂. *Paratypes*, 3 ♂♂, Penon viejo, May 11, 1924; M. B. No. 50; 2 ♂♂, Desierto de los leones, in swampy meadow, January 25, 1925; M. B. No. 114.

Gonomyia tuberculata is allied to *G. delicata* Alexander (Guatemala), differing especially in the structure and venation of the wings. The male of the latter species is still unknown.

Molophilus Curtis.

Molophilus severus sp. n.

General coloration dark brown; antennae short; knobs of halteres bright yellow; male hypopygium with the basal dististyle a powerful gently curved, chitinized rod that is gradually narrowed to the acute tip.

Male. Length, 3.6–3.8 mm.; wing, 5–5.2 mm.

Female. Length about 4.5 mm.; wing, 6.2–6.3 mm.

Rostrum and palpi black. Antennae short, black throughout; flagellar segments oval with relatively long setae. Head dark gray.

Pronotum dark brown, the sides obscure yellow. Mesonotal praescutum reddish brown, the median area broadly darker brown, the humeral region narrowly obscure yellow; scutal lobes darkened; scutellum and postnotum dark. Pleura dark brown. Halteres pale yellow, the intermediate portion of the stem indistinctly darker, the knobs brighter yellow. Legs with the coxae brownish testaceous; trochanters testaceous yellow; femora pale brownish yellow, the tips narrowly and indistinctly darkened; tibiae brownish yellow, the tips and the tarsi dark brown. Wings with a strong brown tinge, the stigmal region darker; prearcular region indistinctly more yellowish; veins dark brown. Venation: Vein 2nd *A* elongate, running generally

parallel to 1st *A*, ending opposite the basal portion of the petiole of cell *M*₃.

Abdomen dark brown, including the hypopygium. Male hypopygium with the basistyle terminating in a minute compressed beak, the apex of which is acute. Outer dististyle elongate, curved, bifid, the longest arm slender and strongly angulated near midlength, the shorter arm dilated and squarely truncated at apex. Basal dististyle (Fig. 19) a powerful, gently curved chitinized rod, gradually narrowed to the acute tip, the concave margin on basal half microscopically serrulate.

Holotype, ♂, Desierto de los leones, altitude 3010–3080 meters, July 20, 1924 (A. M. Dampf); M. B. No. 73. *Allotopotype*, ♀. *Paratopotypes*, 40 ♂ ♀; *paratype*, ♂, Chapingo, July 14, 1924; M. F. 237.

***Molophilus paucispinosus* sp. n.**

General coloration dark brownish gray; knobs of halteres whitish; wings strongly infumed; vein 2nd *A* relatively short; male hypopygium with the basal dististyle terminating in a few strong spines.

Male. Length about 3.2 mm.; wing, 3.5 mm.

Rostrum and palpi brownish black. Antennal scape black, the flagellum broken. Head dark gray.

Pronotum dark, only the lateral portions of the posterior notum obscure yellow. Mesonotum dark brownish gray, the humeral region of the praescutum vaguely brighter. Pleura dark brown, very sparsely pruinose. Halteres pale, the knobs whitish. Legs dark brown. Wings strongly infumed, the stigmal region scarcely darker; veins and macrotrichiae still darker brown. Venation: *Sc*₁ ending opposite *r*; vein 2nd *A* relatively short, ending a short distance before *m-cu*.

Abdomen dark brownish black, including the hypopygium. Male hypopygium with the outer dististyle bifid, the longest arm slender, gently curved, the short arm flattened, the apex truncated and gently sinuous. Basal dististyle (Fig. 20) a short powerful chitinized rod that terminates in a few strong spines; margin of style near midlength with a single elevated tubercle that bears a short powerful seta.

Holotype, ♂, Desierto de los leones, altitude 3010–3080 meters, July 20, 1924 (A. M. Dampf); M. B. No. 73.

The two species of *Molophilus* described herewith are very distinct from all allied regional species in the structure of the male hypopygium.

Erioptera Meigen.

***Erioptera* (Mesocyphona) *inornatipes* sp. n.**

General coloration light brown, the praescutum with two conspicuous dark brown stripes; pleura with a grayish white longitudinal stripe enclosed between two narrow brown vittae; legs uniformly

brown; wings brown, spotted and dotted with white, the costal region basad of the origin of *Rs* largely pale.

Male. Length, 3.3–3.5 mm.; wing, 4.2–4.4 mm.

Female. Length, 4 mm.; wing, 5–5.2 mm.

Rostrum brown; palpi black. Antennae brown, the flagellum a little paler; flagellar segments oval. Head grayish brown.

Pronotum brown, darker medially. Mesonotal praescutum light brown with two conspicuous dark brown stripes that are separated from one another by a very slightly narrower median line of the ground-color; extreme lateral margin of sclerite narrowly dark brown; pseudosutural foveae and tuberculate pits in transverse alignment, black; scutal lobes with their mesal edges blackened; scutellum brown, broadly margined with ochreous; postnotum gray. Pleura gray with two ill-defined, narrow brown longitudinal stripes that enclose a dirty grayish white band that passes immediately beneath the root of the halter; sternopleurite grayish. Halteres pale, the knobs dark brown. Legs with the coxae and trochanters pale brown; remainder of legs brown, the femora only vaguely darkened at their tips; terminal tarsal segments somewhat darker in color. Wings (Fig. 10) brown, the costal margin darker, the remaining cells paler in color, the entire surface variegated with numerous whitish dots and spots, arranged in more or less contiguous to confluent longitudinal rows in the cells, restricting the ground-color to a reticulate pattern; costal region before the origin of *Rs* extensively whitish cream color; a small spot before the posterior arculus darker brown; the three larger brown costal blotches much wider than the pale spots between; a pale band along the cord to *Cu*₁; veins brown, pale in the whitish areas. Venation as in the subgenus.

Abdomen light grayish brown, including the hypopygium. Ovipositor with the tergal valves yellowish horn-color, the sternal valves darker.

Holotype, ♂, Peñon viejo, May 11, 1924 (A. M. Dampf); M. B. No. 50. *Allotopotype*, ♀. *Paratopotypes*, 18 ♂ ♀; *paratypes*, Peñon marquez, 1 ♂, March 13, 1924; M. B. 34; 5 ♂ ♀, March 5, 1924, M. B. Nos. 36, 37; 20 ♂ ♀, Desierto de los leones, swampy meadow, January 25, 1925; M. B. 114.

Erioptera inornatipes is well distinguished from the allied species of the subgenus *Mesocyphona* by the unornamented legs.

Erioptera (Empeda) ochricauda sp. n.

Size large (wing, ♂, over 7 mm.); general coloration dark brown, variegated with yellowish; pleura striped longitudinally with brown and yellow; legs brownish black.

Male. Length about 5 mm.; wing, 7.2 mm.

Rostrum light ochreous; palpi infuscated. Antennae with the scapal segments paler than the dark brown flagellum; flagellar segments oval, becoming more elongate outwardly, the verticils relatively short and inconspicuous. Head light gray.

Pronotum brown medially, the sides more yellowish; lateral pretergites conspicuously light yellow. Mesonotum dark grayish brown, the lateral margins of the praescutum conspicuously orange-yellow; pseudostutural foveae and tuberculate pits shiny brownish black; scutellum grayish brown, bordered posteriorly by obscure brownish yellow. Pleura obscure yellow, longitudinally variegated with brown, the more dorsal stripe including the fore coxa and the dorsal anepisternum; ventral stripe including the sternopleurite and meron, the pteropleurite remaining largely pale. Halteres pale yellow. Legs with the fore coxae dark, the other coxae obscure yellow; trochanters brownish yellow; remainder of legs brownish black, only the extreme femoral bases paler. Wings with a pale grayish tinge, the costal region a little darker; anal angle of wing weakly infuscated; veins brown; *Rs*, *M* and *1st A* conspicuously paler. Venation: *Sc*₁ ending beyond midlength of *Rs*, *Sc*₂ some distance from its tip, *Sc*₁ alone more than one-half longer than *r-m*; *r* about its own length beyond the fork of *Rs*; basal deflection of *M*₁₊₂ very short; *m-cu* near fork of *M*.

Abdomen dark brown, the sternites somewhat paler; hypopygium ochreous. Male hypopygium with the outer dististyle (Fig. 21) bifid, the outer or longer arm relatively broad, parallel-sided, the apex obtuse; the shorter or mesal arm broadest just beyond midlength, thence suddenly narrowed to a blunt point. Inner dististyle gently expanded distally.

Holotype, ♂, Mt. Tlaloc, *Pinus* region, altitude about 3700 meters, on wet rocks, June 15, 1924 (A. M. Dampf).

Erioptera ochricauda is readily distinguished from the known species of *Empeda* by the large size, striped thoracic pleura and other characters as diagnosed.

Erioptera (*Empeda*) **alticola** sp. n.

General coloration gray; antennae and legs black throughout; halteres pale, the knobs infuscated; wings tinged with brownish gray, the extreme base more yellowish.

Male. Length about 4.8 mm.; wing, 6.2–6.3 mm.

Female. Length about 4.4 mm.; wing, 5.8 mm.

Rostrum dark gray; palpi black. Antennae black throughout, the segments with long verticils. Head gray.

Pronotum broadly dark brown medially, the sides narrowly grayish. Mesonotal praescutum dark brown, the sides of the sclerite fading into light gray, only the very narrow pretergites and dorsopleural membranes a trifle buffy; posterior sclerites of mesonotum clear light gray. Pleura uniformly light gray. Halteres pale, the knobs infuscated. Legs with the coxae dark gray, the remainder of the legs black. Wings with a faint brownish gray tinge, the oval stigma faintly indicated, pale brown; wing-base and costal region a little more yellowish; veins brown.

Abdomen dark brown, including the hypopygium. Male hypopygium with the outer dististyle (Fig. 22) bifid, the shorter or mesal arm squarely

truncated and with the inner angle produced laterad into a point; outer arm relatively slender and gently curved.

Holotype, ♂, Mt. Tlaloc, *Pinus*-region, altitude 3000-3600 meters, June 15 1924 (A. M. Dampf). *Allotopotype*, ♀, *Abies*-region, altitude 2800-3200 meters, June 15, 1924; M. B. No. 67. *Paratopotypes*, 4 ♂ ♀.

Erioptera allicola is readily told from all described species of the subgenus by the comparatively large size, nearly uniformly gray coloration and black antennæ and legs.

Erioptera (*Empeda*) *curta* sp. n.

General coloration pale brown, variegated with yellow; head yellow, the vertex variegated with brown; antennae pale at base; thoracic pleura yellow, indistinctly striped with darker; wings with *Sc* short; male hypopygium with an obtuse lobe in the axil of the arms of the outer dististyle.

Male. Length about 4.4 mm.; wing, 4.7 mm.

Rostrum yellow; palpi brown. Antennae with the basal segment of scape yellow, the second segment passing into brown; flagellum brown, the segments short-oval, with verticils of moderate length. Head yellow, the center of the vertex infuscated.

Pronotum yellow, narrowly brown medially. Mesonotal prae-scutum pale brown, further divided by a dark brown median vitta that becomes obsolete shortly beyond the pseudosutural foveae, the lateral margins of the sclerite narrowly yellow; pseudosutural foveae shiny chestnut-brown; scutum obscure brownish yellow, each lobe with two confluent brown spots, the posterior mesal one smaller; scutellum yellow, the median area at base weakly infuscated; postnotum weakly infuscated. Pleura obscure yellow with two ill-defined darker longitudinal vittae, the more dorsal including the fore coxa and occupying the anepisternum, the more ventral somewhat darker, including the sternopleurite and meron. Halteres pale, the knobs infuscated. Legs with the fore coxae darkened, as described above, the other coxae pale; trochanters pale yellow; remainder of legs pale yellow, the terminal segments passing into dark brown. Wings yellowish gray, the base, costal region and space between the branches of *Cu* (as interpreted by Tillyard) more yellowish; veins brown, more yellowish in the flavous areas. Venation (Fig. 11): *Sc* very short, *Sc*₁ ending before one-third the length of the short *Rs*, *Sc*₂ not far from its tip.

Abdomen dark brown, the caudal and caudo-lateral portions of the basal segments more yellowish, the latter increasing in amount on the posterior segments, very extensive on the penultimate segment; sternites yellowish; hypopygium pale. Male hypopygium with the outer dististyle (Fig. 23) bifid, the longest arm with a prominent basal wing or flange that is approximately rectangular in outline; the shorter curved arm has a conspicuous obtuse lobe on the inside near base, this lobe having approximately the same outline as the two arms.

Holotype, ♂, Chapingo, August 13, 1924 (A. M. Dampf); M. F. 291.

Erioptera curta is readily distinguished from all described species of the subgenus by the short subcosta and the structure of the male hypopygium.

Erioptera (*Empeda*) **tridentata** sp. n.

General coloration pale yellow; wings pale yellowish subhyaline, the veins pale; male hypopygium with the outer dististyle bifid, the mesal arm with a conspicuous group of three spines near its axil.

Male. Length, 2.8–3 mm.; wing, 4.8 mm.

Female. Length, 3.8 mm.; wing, 5.2 mm.

Rostrum pale yellow, the palpi a trifle darker. Antennae yellow, the terminal segments passing into darker; flagellar segments of the male with relatively long verticils. Head pale yellow; vertex in the male very narrow, in the female somewhat broader.

Pronotum pale yellow. Mesonotal praescutum and scutum with the disk pale reddish yellow, the margins pale yellow; remainder of mesonotum pale yellow. Pleura yellowish white. Halteres pale throughout. Legs pale yellow, only the terminal tarsal segments infuscated. Wings very pale yellowish subhyaline, the veins scarcely darker, inconspicuous. Venation: Sc_1 ending near midlength of R_s , Sc_1 a little shorter than $r-m$; r just before midlength of R_{2+3} ; veins R_2 and R_3 divergent; anal veins strongly divergent.

Abdomen obscure yellow, including the hypopygium. Male hypopygium with the outer dististyle (Fig. 24) profoundly bifid, the outer arm longer, curved, the shorter mesal arm terminating in a broad flattened blade with a conspicuous group of three spines on the inner margin just beyond the base.

Holotype, ♂, Desierto de los leones, altitude 3010–3080 meters, July 20, 1924 (A. M. Dampf); M. B. No. 73. *Allotopotype*, ♀. *Paratopotypes*, 5 ♂ ♀.

Erioptera tridentata is readily distinguished from all described species of *Empeda* by the uniformly pale yellow coloration and structure of the male hypopygium.

Erioptera (*Empeda*) **unidentata** sp. n.

Male. Length about 3.4 mm.; wing about 3.8 mm.

Closely related to *E. (E.) tridentata* sp. n., from which it differs in slight details of coloration and the structure of the male hypopygium.

Rostrum obscure yellow; palpi infuscated. Antennae with the scapal segments yellowish testaceous, the flagellum brown; flagellar segments with long verticils. Head clear light gray.

Mesonotum light reddish brown, the praescutum with a vague dusky median line on the anterior half, this becoming obsolete at the tuberculate pits, the latter black; pseudosutural foveae pale. Pleura

pale reddish brown. Halteres pale, the knobs weakly infuscated. Legs with the coxae pale, the fore coxae extensively infuscated; trochanters pale; legs largely pale, the fore femora darker; tarsi passing into brown. Wings tinged with grayish, the base and costal region more yellowish; veins pale. Venation: r on R_{2+3} only a trifle more than its length beyond the origin.

Abdomen pale brown, the hypopygium paler. Male hypopygium with the outer dististyle (Fig. 25) bifid, the shorter mesal arm bearing a single powerful spine just before midlength. In the related *E. (E.) nigrolineata* (Enderlein), there is a similar solitary spine, which, however, is borne in the axil of the two arms.

Holotype, ♂, Desierto de los leones, altitude 3010–3080 meters, July 20, 1924 (A. M. Dampf); M. B. No. 73.

Tipula Linnæus.

Tipula moctezumæ sp. n.

General coloration gray, the praescutum with four uniformly dark brown stripes; antennae short, the basal segment of the flagellum very long; abdominal tergites obscure yellow, striped longitudinally with dark brown; ninth tergite broad, pale; inner dististyle divided into two blackened arms.

Male. Length, 14–15 mm.; wing, 18.5–19.5 mm.

Frontal prolongation of head obscure brownish yellow, darker medially above; nasus moderately long, dark; palpi dark brown. Antennae short, scape and first segment of flagellum orange; intermediate flagellar segments indistinctly bicolorous, dull orange, the basal enlargement of each darker, the terminal flagellar segments passing into uniform dark brown; first flagellar segment very long, exceeding in length the combined following three segments; basal swellings of intermediate flagellar segments relatively small and inconspicuous. Head gray, the small vertical tubercle a trifle more yellowish.

Mesonotal praescutum dark gray with four uniform dark brown stripes, the intermediate pair rather broadly separated from one another; scutum dark gray, each lobe with two separate brown areas; scutellum gray with an indistinct brown median line; postnotum gray. Pleura brownish gray, indistinctly variegated with darker areas. Halteres pale, the knobs infuscated. Legs long and slender, the coxae brownish gray; trochanters brownish yellow; femora brownish black, the bases indistinctly and restrictedly paler, the tips blackened, the segments with a more or less distinct subterminal paler ring, more distinct on the posterior legs; tibiae dark brown, the tips and the tarsi blackened. Wings with the center of the disk whitish subhyaline, the base and costal region more yellowish, the apical and anal cells weakly infuscated, the stigma small, ill-defined and only slightly darker than the ground-color; the pale areas occupy most of cells R and M , the broad bases of the anal cells, cell $1st M_2$, all of R_5 except the base and the base of cell M_3 ; a rather broad and conspicuous brown seam occupies the distal half of vein Cu_1 , slightly narrower on $m-cu$; veins dark brown, more

yellowish in the flavous areas. Venation: R_2 complete, but the distal two-thirds pale and without macrotrichiae; petiole of cell M_1 variable, equal to or shorter than m ; $m-cu$ connecting with M_4 shortly beyond its origin.

Abdominal tergites obscure yellow with a narrow dark brown median and two broader lateral stripes that widen out behind, on the fourth and succeeding segments gradually eliminating the ground-color, the subterminal segments uniformly darkened, pruinose; basal sternites yellow, the subterminal segments darkened; hypopygium pale. Eighth sternite produced medially into a small flattened liguliform lobe that lies closely appressed to the ninth sternite. Male hypopygium with the ninth tergite (Fig. 26) broad, notched medially, the lateral angles produced caudad into rather broad obtuse lobes. Tergite entirely separate from the sternite; basistyle virtually complete. Outer dististyle pale, more or less constricted near midlength. Inner dististyle deeply divided into an inner and a slightly smaller outer arm, each being spatulately dilated and blackened distally; the outer dististyle lies far ventrad near the ventral portion of the basistyle, its usual dorsal position being occupied by the outer chitinized arm of the inner style.

Holotype, ♂, Mt. Tlaloc, *Pinus-region*, altitude 3000-3600 meters, June 15, 1924 (A. M. Dampf); M. B. No. 63. *Paratopotypes*, 5 ♂♂, M. B. Nos. 63, 67.

Tipula moctezumae is readily distinguished from all similar regional forms by the very long third antennal segment and the peculiar structure of the hypopygium.

Tipula azteca sp. n.

General coloration gray, the praescutum with the lateral stripes nearly obsolete; antennae moderately elongate, flagellum black; male hypopygium without a median liguliform lobe on eighth sternite.

Male. Length about 12-12.5 mm.; wing, 14-15 mm.

Frontal prolongation of head relatively elongate, brown, the dorsum, including the long nasus, gray; palpi with basal segment pale brown, the remainder brownish black. Antennae of moderate length, if bent backward extending approximately to the base of the abdomen; basal segment dark brown, the second segment conspicuously yellow; flagellum black, the segments moderately incised. Head light gray, the small, simple vertical tubercle more yellowish.

Mesonotal praescutum gray, more infuscated anteriorly and laterally, with the usual brown stripes often very feebly indicated, especially the lateral pair, which are virtually obsolete; intermediate pair darker, broadened and confluent in front, strongly narrowed behind, not attaining the suture; scutum light gray, each lobe with a large triangular darker gray marking; scutellum light gray; postnotum yellowish gray. Pleura gray, the dorso-pleural membrane more brownish. Halteres elongate, pale yellow, the knobs infuscated. Legs with the coxae light gray; trochanters obscure orange; remainder of legs black, the extreme

femoral bases indistinctly paler. Wings extensively whitish subhyaline, the base and cells *C* and *Sc* conspicuously yellow; faint brown clouds include most of cells *1st R*₁, *2nd R*₁, *R*₂ and *R*₃; faint and restricted marginal clouds in cells *M*₁ to *M*₄; a conspicuous triangular cloud in end of cell *1st A* at about mid-distance between the anal veins, extending basad for about one-third the length of the cell; veins narrowly seamed with brown, broader and more conspicuous on the distal half of *Cu*₁. Venation: *R*₂ entire, quite without macrotrichiae; vein *1st A* running parallel with *Cu*₂ for its basal third, thence diverging gradually to the margin, cell *1st A* thus being very wide.

Basal abdominal tergites obscure yellow, with a narrow median dark brown stripe and broader paler brown lateral stripes, the latter on the third and succeeding segments broadening out to include the entire segments; sternites beyond the extreme base infuscated; hypopygium pale. Male hypopygium very similar in structure to that of *T. moctezumæ* sp. n., differing as follows: 9th tergite without the smaller median U-shaped notch, there being only a linear split; lateral lobes more obliquely truncated. Eighth sternite without median liguliform lobe.

Holotype, ♂, Mt. Tlaloc, summit, at nearly 4000 meters; treeless, with grass and creeping *Cupressus* between the rocks, June 15, 1924, (A. M. Dampf); M. B. No. 64. *Paratopotypes*, 2 ♂♂.

Tipula azteca is unquestionably closely related to *T. moctezumæ* in the peculiar structure of the hypopygium, differing most evidently in the small size, length and structure of the antennae and the details of the hypopygium.

Nephrotoma Meigen.

Nephrotoma dampfi sp. n.

General coloration yellow; mesonotal praescutum with three confluent shiny black stripes; head with the occipital brand very extensive, steel-gray, narrowly margined with velvet-black; a small black spot adjoining eye at narrowest part of vertex; abdomen orange-yellow, the tergum with a continuous black median stripe.

Male. Length, 8–9 mm.; wing, 9.5–11.2 mm.

Frontal prolongation of head pale yellow, the dorsum narrowly dark brown, the nasus concolorous; palpi brownish black. Antennae black throughout; flagellar segments only moderately incised. Head orange, passing into yellow on the genae and beneath; occipital brand very large, covering most of the vertex, shiny steel-gray, narrowly margined with velvety black, the latter continued cephalad as a small median spur onto the orange, slightly bifid vertical tubercle; a small but conspicuous black spot on either side of the vertex at the narrowest point, touching the margin of the eye.

Pronotum light yellow, the pleura extensively dark brown. Mesonotal praescutum yellow, the dorsum with three confluent shiny black or gray-black stripes, the anterior lateral margins with a small opaque black spot; a small black spot on lateral margin of praescutum just cephalad of suture; scutum yellow, each lobe largely occupied by a shiny gray-black stripe that extends obliquely across the lobe, the mesal margin parallel; scutellum pale brownish with a narrow median black vitta; postnotal mediotergite yellow with a \perp -shaped brown marking. Pleura sulphur-yellow, variegated with black, the most conspicuous markings consisting of two short longitudinal stripes occupying the anepisternum and sternopleurite, divided by a yellow stripe; meron restrictedly blackened; a linear black streak immediately cephalad of each halter on the postnotal pleurotergite. Halteres brown, the base of the stem paler, the knobs extensively pale sulphur-yellow. Legs with coxae yellow, the fore coxae extensively darkened basally; trochanters orange-yellow; remainder of legs black, the femoral bases narrowly pale brown. Wings subhyaline, cells *C* and *Sc* more yellowish; outer ends of marginal radial cells faintly darkened; stigma oval, brown. Venation (Fig. 12): *Sc*₂ ending opposite origin of *Rs*; *m-cu* oblique, connecting with *M* some distance before its fork.

Abdominal tergites orange-yellow, with a continuous median black stripe extending to the ninth tergite, broadening out behind; sternites concolorous, with a dark spot laterally at base; base of eighth sternite extensively blackened basally; hypopygium pale. Eighth sternite notched medially, the margins of the notch fringed with conspicuous yellow setae. Male hypopygium with the ninth tergite deeply notched caudally.

Holotype, ♂, Mt. Tlaloc, *Pinus*-region, altitude 3000–3600 meters, June 15, 1924 (A. M. Dampf); M. B. No. 63. *Paratopotypes*, 12 ♂♂; M. B. Nos. 63, 69.

Nephrotoma dampfi is named in honor of Dr. Dampf, who collected the types on Mt. Tlaloc. This very distinct fly is readily distinguished from other species by the small size, curious head pattern and confluent praescutal stripes.

EXPLANATION OF FIGURES.

Symbols: Venational: Cu—Cubitus; M—Media; R—Radius; A—Anal. Hypopygial: a—aeedeagus; b—basistyle; d—dorsal dististyle; g—gonapophyse; t—ninth tergite; v—ventral dististyle.

PLATE XXIV.

- Fig. 1. Wing of *Dicranomyia præpostera* sp. n.
 Fig. 2. Wing of *D. ravida* sp. n.
 Fig. 3. Wing of *D. tricornis* sp. n.
 Fig. 4. Wing of *D. flicauda* sp. n.
 Fig. 5. Wing of *D. melanocera* sp. n.
 Fig. 6. Wing of *D. dampfi* sp. n.
 Fig. 7. Wing of *Limonia obtusistylus* sp. n.
 Fig. 8. Wing of *Elephantomyia alticola* sp. n.
 Fig. 9. Wing of *Gonomyia tuberculata* sp. n.
 Fig. 10. Wing of *Erioptera inornatipes* sp. n.
 Fig. 11. Wing of *E. curta* sp. n.
 Fig. 12. Wing of *Nephroloma dampfi* sp. n.

PLATE XXV.

- Fig. 13. Male hypopygium of *Dicranomyia præpostera* sp. n.
 Fig. 14. Male hypopygium of *D. ravida* sp. n.
 Fig. 15. Male hypopygium of *D. tricornis* sp. n.
 Fig. 16. Male hypopygium of *D. melanocera* sp. n.
 Fig. 17. Male hypopygium of *Limonia obtusistylus* sp. n.
 Fig. 18. Male hypopygium of *Gonomyia tuberculata* sp. n.
 Fig. 19. Basal dististyle of *Molophilus severus* sp. n.
 Fig. 20. Basal dististyle of *M. paucispinosus* sp. n.
 Fig. 21. Outer dististyle of *Erioptera ochricauda* sp. n.
 Fig. 22. Outer dististyle of *E. alticola* sp. n.
 Fig. 23. Outer dististyle of *E. curta* sp. n.
 Fig. 24. Outer dististyle of *E. tridentata* sp. n.
 Fig. 25. Outer dististyle of *E. unidentata* sp. n.
 Fig. 26. Ninth tergite of *Tipula moctezumae* sp. n.



Fig. 1



Fig. 3



Fig. 5



Fig. 7

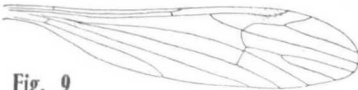


Fig. 9

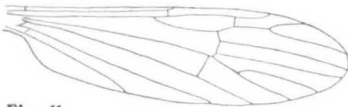


Fig. 11

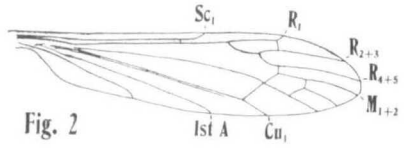


Fig. 2



Fig. 4



Fig. 6

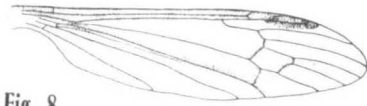


Fig. 8

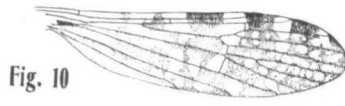


Fig. 10

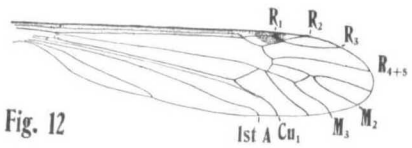


Fig. 12

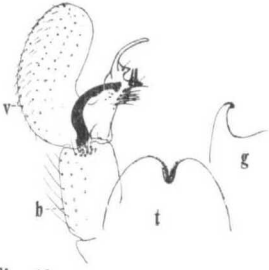


Fig. 13

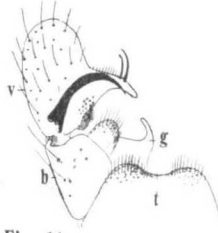


Fig. 14

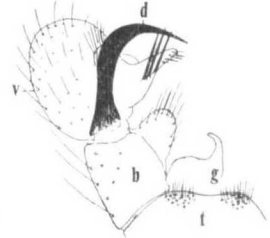


Fig. 15

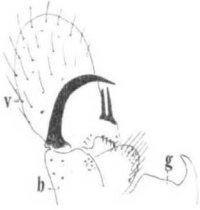


Fig. 16



Fig. 17

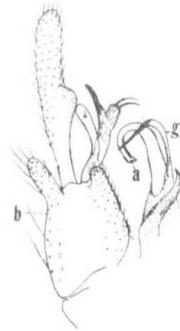


Fig. 18



Fig. 19



Fig. 20



Fig. 21



Fig. 22

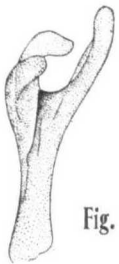


Fig. 23



Fig. 24



Fig. 25

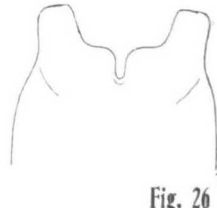


Fig. 26