

STUDIES ON THE CRANE-FLIES OF MEXICO.

PART III.\*

(Order Diptera, Superfamily Tipuloidea).

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The present paper is a further contribution to our knowledge of the Mexican crane-flies. The preceding parts appeared in 1925 and 1926 (*Annals Ent. Soc. America*, 18: 341-362, 1925; 19: 158-179, 1926). The present instalment is based on the extensive collections made in the State of Chiapas during 1926 by my friend, Dr. Alfons Dampf, who very kindly allowed me to retain the types of the novelties. The majority of the specimens were secured in the vicinity of San Cristobal las Casas, the former capital of Chiapas (altitude 2100 meters) and on the neighboring ranges of the Zontehuitz and Moshbiquil mountains, the highest altitude at which Tipulidæ were taken being on the summit of the Zontehuitz, at an altitude of 2800 meters. Other large and representative series were secured at lower altitudes, at the Rancho Sabino Perez (altitude nearly 500 meters), Santa Lucia (altitude 575 meters) and San Isabel (altitude about 650 meters), making a notable contrast with the fauna of the high altitudes around San Cristobal. Still other collections were made at Tonalá, a station on the Pan-American Railway, near the Pacific Ocean, and one of the hottest parts of the Mexican Republic (M. F. Nos. 930, 930a). The entire collection, including more than 1000 specimens, is of the greatest possible value in the unusual number of records that it includes.

The following *Mexican Biocenosis* (M. B.) and *Mexican Fauna* (M. F.) numbers of the collector require the following summary. These and all others in the series are to be made the subject of exhaustive memoirs on the Mexican fauna and flora by the distinguished collector.

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

*Hueitepec*: Swept in the dense leafy woods covering the Hueitepec, near San Cristobal, altitude 2600 meters. M. B. 170. *Limonia ludibunda* sp. n., as well as an undescribed species of *Elephantomyia* and the most northerly species yet discovered of the *Tipula monilifera* group.

*Zontehuitz*: Typical dense, damp virgin forest near the summit of the Zontehuitz, altitude 2750 meters, in immense numbers between the leaves of a *Bromelia* association. M. B. 176. *Dicranomyia exæta* sp. n., *Erioptera dampfi* sp. n., *Molophilus fuscopleuralis* sp. n.

*San Cristobal*: Very narrow, shadowy ravine of a small mountain brook, falling in cascades from the Moshbiquil mountain to the valley of San Cristobal, arising from a spring some 75 meters higher. M. B. 190, 190a. *Gonomyia chiapasensis* sp. n., *Erioptera* (*Mesocyphona*) *apicinigra* sp. n., *E. (M.) saturata* sp. n., *Molophilus obediens* sp. n., and undescribed species of *Geranomyia*, *Epiphragma* and *Atarba*, not discussed at this time.

*San Isabel*: Altitude about 650 meters, near a swift flowing brook; typical pine ridge vegetation; attracted by light. M. F. 1057. *Erioptera* (*Erioptera*) *quadrinicta* sp. n., *E. (Empeda) stygia* sp. n., *E. (Mesocyphona) modica* sp. n., *E. (M.) leucopasta* sp. n., *Rhabdomastix* (*Rhabdomastix*) *isabella* sp. n.

Besides the novelties discussed herein, Dr. Dampf has added most materially to our knowledge of distribution of previously described forms. The most interesting feature of the Chiapas collections might be considered the unusual development of the subgenus *Mesocyphona* of *Erioptera* Meigen, no fewer than 11 species having been taken on this expedition.

In the present report and others to be published under this title, the venation of the radial field of the wing is materially changed. The detailed paper by the writer discussing this modification should be consulted (The interpretation of the radial field of the wing in the Nematocerous Diptera, with special reference to the Tipulidæ. Proc. Linn. Soc. New South Wales, 52, 1927, in press).

I wish to express my deepest thanks to Dr. Dampf for the great privilege of examining this unequalled series of Mexican Tipulidæ.

**Limonia** Meigen.**Limonia infucata** sp. n.

General coloration orange, the praescutum with the narrow interspaces conspicuously dark brown; front silvery; antennæ brownish black throughout; halteres elongate, black; wings dark brown,  $Sc$  very long,  $Sc_2$  at the tip of  $Sc_1$ ; male hypopygium with the ventral dististyle an oval fleshy lobe, the rostral prolongation without the usual spines.

*Male.* Length about 5 mm.; wing, 7.3 mm.

Rostrum and palpi dark brown. Antennæ brownish black throughout; basal flagellar segments subglobular, becoming more elongate outwardly, the outer segments elongate-cylindrical. Front and anterior vertex silvery, the posterior vertex rufous; vertex narrow, the silvery coloration ending at the narrowest point.

Pronotum light brown, vaguely variegated with darker. Mesonotum high and gibbous. Praescutum bright orange-rufous, the interspaces appearing as narrow dark brown lines, extending from the humeral region, crossing the suture, and then appearing as narrower margins on the mesal and caudal margins of the scutal lobes; scutum and scutellum orange-rufous, the median area of the former a little paler, the caudal portions of the latter more infuscated; postnotal mediotergite obscure orange, darker laterally. Pleura testaceous yellow, indistinctly variegated by a narrow brown stripe passing from the fore coxa above the halteres, on the pleurotergite becoming more extensive. Halteres elongate, black, only the extreme base of the stem brightened. Legs with the coxæ yellow, the trochanters more obscure; remainder of legs brownish black, the femoral bases scarcely brightened; tarsi a trifle paler than the tibiæ but not evidently brightened. Wings relatively long, narrowed basally, dark brown, the stigma indicated only by a narrow seam at the end of vein  $R_2$ ; veins darker brown. Venation:  $Sc$  very long,  $Sc_1$  ending just before the fork of  $R_s$ ,  $Sc_2$  at its tip;  $R_s$  long, subangulate at origin; basal section of  $R_2$  relatively short; distal section of  $R_1$  longer;  $R_{2+3}$  about two-thirds  $R_3$ ; cell *1st*  $M_2$  short-rectangular; *m-cu* shortly before the fork of  $M$ , subequal to the distal section of  $Cu_1$ ; cell *2nd*  $A$  relatively narrow, vein *2nd*  $A$  being gently sinuous.

Abdominal tergites dark brown, the sternites obscure brownish yellow; hypopygium and segment eight somewhat paler. Male hypopygium with the ventral dististyle appearing as a relatively small oval fleshy lobe, the rostral prolongation conspicuous, nearly glabrous, provided with a few setæ but without the usual spines; before apex on outer margin with a small pale triangular flange.

*Holotype*, ♂, east of San Cristobal, swept from bushes in dense forest of oaks and pines, altitude 2250 meters, July 7, 1926 (A. M. Dampf); M. B. 186.

**Limonia perflaveola** sp. n.

*Male.* Length about 3.5 mm.; wing, 4.5 mm.

Very closely allied to *L. alfaroi* (Alex.), of which it may perhaps prove only a variety, differing especially in the shorter subcosta.

Antennal flagellum pale brown. Remainder of body entirely pale yellow, the mesonotum a little more reddish yellow. Wings with the stigmal spot oval, distinct but pale; *Sc* relatively short, *Sc*<sub>1</sub> ending before midlength of *Rs*, in most cases at near one-third the length of this vein; in most specimens a series of macrotrichiae on the distal third of vein 2nd *A*.

*Holotype*, ♂, Cerro San Cristobal, June 29, 1926 (A. M. Dampf); M. F. 1005.

*Paratopotype*, ♂, June 30, 1926; M. F. 1007; paratype, ♂, San Cristobal, June 4, 1926; M. F. 940.

**Limonia ludibunda** sp. n.

Thoracic praescutum reddish yellow with three dark brown stripes; head black with a silvery-white longitudinal line; pleura dark with a pale longitudinal stripe; wings brownish yellow with a heavy brown pattern, *Sc* relatively short, ending just beyond the origin of *Rs*.

*Male.* Length about 6 mm.; wing, 7.3 mm.

Rostrum and palpi black. Antennae black throughout, the basal flagellar segments short-oval, with short pedicels, the outer segments becoming more elongate-oval. Front and the narrow anterior vertex pure silvery-white, the coloration extended caudad onto the posterior vertex as a similar narrow line to the occiput, the remainder of the posterior vertex and occiput black.

Pronotum yellow, dark laterally. Mesonotal praescutum reddish yellow with three dark brown stripes, the humeral region and broad lateral margins of the sclerite yellow; scutum dark brown, the lateral margins of the lobes narrowly yellow, the median area, the scutellum and the postnotum black, sparsely dusted with gray. Pleura dark brown dorsally, restrictedly paler brown on the ventral sternopleurite, the two enclosing a broad pale longitudinal stripe that extends from behind the fore coxa to the meron, the surface sparsely pruinose. Halteres pale, the knobs dark brown. Legs with the coxae and trochanters brownish yellow; femora brown, their bases more yellowish, the tips passing into dark brown; tibiae dark brown, the tips and the tarsi black. Wings relatively long and narrow; membrane with a brownish yellow suffusion, clearer yellow before and beyond the origin of *Rs*, in the outer end of cell *M*, and the ground-color of the cells beyond the cord; stigma, a large spot at origin of *Rs* and end of vein *Sc*, the cord and outer end of cell 1st *M*<sub>2</sub>, and conspicuous marginal spots at ends of veins *M*<sub>3</sub>, *M*<sub>4</sub>, *Cu*<sub>1</sub> and the Anal veins dark brown; distal portions of cells *R*<sub>2</sub> and *R*<sub>3</sub> conspicuously suffused with paler brown; veins brown, paler in the cream-colored areas, darker where traversing the brown spots. Venation: *Sc* relatively short, *Sc*<sub>1</sub> ending

at about opposite one-fourth to one-fifth the length of  $R_s$ ,  $Sc_2$  not far from its tip and likewise beyond the origin of  $R_s$ ;  $R_s$  relatively short, angulated and weakly spurred at origin; inner end of cell  $R_3$  lying proximad of cell 1st  $M_2$ , the latter cell about as long as vein  $M_{1+2}$  beyond it;  $m-cu$  at the fork of  $M$ , subequal to the distal section of  $Cu_1$ ; vein 2nd  $A$  relatively long and gently sinuous.

Abdominal tergites dark brownish black, the basal segments a little variegated baso-laterally with obscure yellow; sternites black, the first segment yellow; basal sternites narrowly ringed caudally with yellow; ventral dististyle of hypopygium pale. Male hypopygium with the ventro-mesal lobe of the basistyle very stout and sessile, terminating in a small apical papilla. Ventral dististyle smaller than the basistyle, deeply split apically into two parts, that bearing the rostral prolongation very broad, approximately equal in area to the remainder of the style; the actual beak-like portion is small, the usual two spines far removed from the rostrum, lying on the face of the lobe near its end, surrounded by a group of short delicate setæ.

*Holotype*, ♂, Hueitepec, in dense leafy woods, altitude 2600 meters, June 14, 1926 (A. M. Dampf); M. B. 170.

*Limonia ludibunda* bears a superficial resemblance to *Dicranomyia osterhouti* Alex. and *D. translucida* Alex. (Panama), but is a very distinct fly.

### Dicranomyia Stephens.

#### *Dicranomyia exæta* sp. n.

General coloration dark brown; front silvery; wings tinged with brown, the stigma darker brown, preceded and followed by a paler area;  $Sc$  short,  $Sc_2$  close to the tip of  $Sc_1$ ;  $R_s$  angulated and weakly spurred at origin.

*Male*. Length about 4.5 mm.; wing, 5.5 mm.

Rostrum and palpi black. Antennæ black throughout; flagellar segments oval, more elongate outwardly. Head with the front and anterior vertex silvery-white; posterior vertex light gray with a blackish area on either side.

Pronotum dark brown, the scutellum obscure yellow. Mesonotal praescutum shiny dark reddish brown with three darker brown stripes that are only a little darker than the ground-color, the humeral region obscure yellow; remainder of mesonotum dark brown, sparsely pruinose. Pleura dark brown, the dorsal portion of the sternopleurite extensively paler to produce a short, broad, longitudinal stripe. Halteres dark, the base of the stem narrowly obscure yellow. Legs with the fore coxæ dark, the other coxæ more yellowish testaceous; trochanters yellowish testaceous; femora yellow, the tips broadly infuscated; tibiæ and tarsi dark brown. Wings with rather strong brownish tinge, the stigma brown, especially near the transverse veins; paler cream-colored areas before and beyond the stigma and in the anal region; small and

scarcely evident brown seams at end of *Sc* and origin of *Rs*; veins brown, the obliterative portions before the cord extensive. Macrotrichiaë of veins relatively conspicuous. Venation: *Sc* short, both *Sc*<sub>1</sub> and *Sc*<sub>2</sub> ending just before the origin of *Rs*; *Rs* angulated and weakly spurred at origin; distal section of *R*<sub>1</sub> short, nearly in alignment with the basal section of *R*<sub>2</sub>, *r* being very short and the distal section of *R*<sub>2</sub> entirely atrophied; inner end of cell *R*<sub>3</sub> lying far proximad of the other elements of the cord; cell 1st *M*<sub>2</sub> subrectangular; *m-cu* at the fork of *M*, longer than the distal section of *Cu*<sub>1</sub>.

Abdomen dark brown, the sternites only a little paler; hypopygium with the ventral dististyle pale. Male hypopygium with the ventromesal lobe of the basistyle very short and sessile, terminating in a weak apical tubercle. Ventral dististyle much as in *Limonia ludibunda* sp. n., being split apically into two subequal portions, the mesal one of which bears the rostral prolongation; the spines located on the face of this mesal lobule, one spine gently curved, the other more nearly straight.

*Holotype*, ♂, near summit of the Zontehuitz, in dense, damp virgin forest, altitude 2750 meters, June 20, 1926 (A. M. Dampf); M. B. 176.

*Dicranomyia exæta* is not greatly different from *Limonia ludibunda* sp. n., especially in the peculiar structure of the male hypopygium. The two species furnish an interesting example of the insufficient grounds on which the genera *Limonia* and *Dicranomyia* are now being maintained as distinct.

### Gonomyia Meigen.

#### Gonomyia (Gonomyia) chiapasensis sp. n.

Allied to *G. (G.) æqualis* Alex. (Guatemala); rostrum obscure yellow; thoracic dorsum dark gray, the scutellum yellow; pleura blue-gray with a whitish yellow longitudinal stripe; halteres elongate; wings with a strong dusky tinge; male hypopygium with the dististyle bifid, the longest arm terminating in a simple black point.

*Male*. Length about 5 mm.; wing, 6 mm.

*Female*. Length about 5–5.2 mm.; wing, 6 mm.

Rostrum obscure yellow, a little darker dorsally; palpi black. Antennæ black throughout. Head dark gray.

Pronotum gray, the anterior lateral pretergites sulphur-yellow, narrowly interrupted by a dark spot before the wing-root. Mesonotum dark gray, the praescutum with three very slightly darker brown stripes; pseudosutural foveæ black; scutum dark gray, the median region a little paler; scutellum conspicuously yellow, darker medially at base; postnotum dark, dusted with gray, the cephalic lateral region narrowly yellowish. Pleura blue-gray with a conspicuous whitish yellow longitudinal stripe, extending from behind the fore coxa, on the pteropleurite becoming somewhat more yellowish and including the

whole sclerite; pleurotergite gray; dorsopleural membrane largely sulphur-yellow. Halteres elongate, brown, the base of the stem pale. Legs with the coxæ dark gray, their lower faces brown; trochanters dark brown, paler beneath; remainder of legs dark brown, the bases of the femora paler. Wings with a strong dusky tinge, the stigma slightly darker, oval; veins dark brown. Venation:  $Sc_1$  ending opposite or just beyond the origin of  $R_s$ ,  $Sc_2$  very variable in position, sometimes at the tip of  $Sc_1$ , more often removed from this tip, in extreme cases  $Sc_1$  alone being only a little shorter than  $m-cu$ ; petiole of cell  $R_3$  elongate, subequal to or only a little shorter than  $R_4$ ; cell 1st  $M_2$  elongate-rectangular, gently widened outwardly;  $m-cu$  a little less than its own length beyond the fork of  $M$ ; anterior arculus lacking.

Abdominal tergites dark brown, the sternites and hypopygium obscure yellow. Male hypopygium generally similar to *G. (G.) aequalis* Alex.; outer fleshy lobe of the basistyle relatively slender, dark-colored, the small, triangular lobe at base relatively conspicuous; dististyle bifid, one arm forming a dusky rounded knob that terminates in about a dozen setæ of various sizes, the other arm narrowed outwardly, the tip a simple slender black point with the tip obtuse. In *aequalis* this tip is bifid. Aedeagus and gonapophyses much as in *aequalis*, the sub-terminal spine of the former long and slender.

*Holotype*, ♂, San Cristobal, altitude 2100 meters, June 4, 1926 (A. M. Dampf); M. F. 940.

*Allotype*, ♀, near San Cristobal, July 17, 1926; M. B. 190a.

*Paratypes*, 5 ♂ ♂, with the allotype.

### **Gonomyia** (*Lipophleps*) **maya** sp. n.

Belongs to the *manca* group; head and rostrum orange; antennæ entirely dark; thoracic pleura with a faint silvery longitudinal stripe; wings with the stigma barely indicated; male hypopygium with the dististyle simple, fleshy, unarmed, terminating in a single powerful fasciculate seta.

*Male*. Length about 3.3 mm.; wing, 3.7 mm.

Rostrum orange, the palpi black. Antennæ dark brown throughout; flagellar verticils elongate, as in the males of this subgenus. Head orange, the vertex behind infuscated.

Pronotum yellowish, darker medially; anterior lateral pretergites and antero-lateral margins of the praescutum bright sulphur-yellow. Mesonotal praescutum light brown, sparsely dusted with gray; median area of scutum broadly obscure yellow; scutellum brown, broadly margined caudally with yellowish; postnotum chiefly pale reddish brown. Pleura reddish brown, with a broad silvery longitudinal area beginning behind the fore coxa, passing beneath the halteres; dorsopleural region dark. Halteres brownish testaceous, the knobs obscure brownish yellow. Legs with the coxæ and trochanters reddish testaceous; femora obscure brownish yellow, passing into dark brown on the outer half; tibiæ and basitarsi light brown, the tips darker brown;

remainder of tarsi dark brown. Wings relatively broad, with a rather strong brownish tinge, the costal region clearer yellow; stigma very pale brown, scarcely evident against the dark ground-color; veins pale brown. Venation:  $Sc_1$  ending a short distance before the origin of  $R_s$ , the distance shorter than  $m-cu$ ; cell 1st  $M_2$  closed;  $m-cu$  close to the fork of  $M$ .

Abdominal tergites light brown, the sternites yellow; male hypopygium yellowish. Hypopygium much as in *G. (L.) manca* (O. S.), the basistyle long and slender, with a single small fleshy dististyle that terminates in a single very powerful fasciculate seta; besides this, the dististyle bears three bristles of medium size and three smaller ones on the mesal face. Gonapophyses asymmetrical, entirely pale, the longest with the basal half or more a broad flattened plate that narrows abruptly into a spinous tail-like portion, this latter narrowed gradually to the acute spinous tip; the smaller apophysis is a stout, flattened, sickle-shaped blade. Aedeagus long and slender, approximately as long as the basistyles, narrowed very gradually to the acute tip.

*Holotype*, ♂, San Isabel, altitude about 650 meters, July 30, 1926 (A. M. Dampf); M. F. 1057. See additional ecological notes at beginning of this report.

*Paratopotype*, ♂.

### Teucholabis Osten Sacken.

#### *Teucholabis dampfi* sp. n.

General coloration shiny coal-black; pronotum obscure yellow; knobs of the halteres orange; two silvery areas on the thoracic pleura; wings subhyaline; stigma subcircular, dark brown; a narrow pale brown seam on the anterior cord; abdomen black.

*Male*. Length, 5-6 mm.; wing, 5.8 - 7 mm.

Rostrum and palpi black. Antennæ black throughout; flagellar segments short-oval. Head shiny black.

Pronotum obscure yellow, the scutellum and pretergites black. Mesonotum shiny coal-black, the scutellum a trifle paler. Pleura black, with two conspicuous paler areas that are covered with a dense microscopic silvery pubescence, one area on the dorsal portion of the sternopleurite, the other on the meron; dorso-pleural membrane dark.

Halteres dark, the knobs conspicuously orange. Legs with the fore coxæ obscure yellow, the anterior face darkened; remaining coxæ obscure yellow; trochanters yellow, the tips darkened; femora obscure yellow, the tips blackened, broadest on the fore femora where the distal two-thirds or more is included, much narrower on the middle and hind femora; fore tibiæ black, middle and hind tibiæ brownish yellow, the tips narrowly blackened; tarsi brownish black. Wings subhyaline; stigma subcircular, dark brown; a paler brown seam on the anterior cord and a similar vague wash at near midlength of cells  $M$ ,  $Cu$  and 1st  $A$ ; veins black. Venation:  $Sc$  relatively short,  $Sc_1$  ending about opposite one-third to two-fifths the length of  $R_s$ ,  $Sc_2$  variable in position, in cases removed



from the tip of  $Sc_1$ , in others closer to this tip;  $R_{2+3+4}$  short to virtually obliterated; basal section of  $R_2$  oblique in position, about equal to  $R_{1+2}$ ; cell 1st  $M_2$  elongate;  $m-cu$  close to the fork of  $M$ ; vein 2nd  $A$  nearly straight. In some cases,  $Sc_2$  is atrophied.

Abdomen black, including the hypopygium; in some specimens the bases of the sternites narrowly paler.

*Holotype*, ♂, summit of one of the mountains of the Moshbi-quil range, altitude 2500 meters, in pine forest, July 17, 1926 (A. M. Dampf); M. F. 1033.

*Paratopotypes*, 15 ♂♂.

The types were found swarming about five feet above the ground.

*Teucholabis dampfi* is named in honor of the collector, Dr. Dampf, who has added so vastly to our knowledge of the insects of Mexico. It is readily distinguished by the diagnostic features as given above. By means of the writer's key to the American species of the genus (Trans. Amer. Ent. Soc., 40: 235-239; 1914), the species runs out at couplet 14.

### Erioptera Meigen.

#### *Erioptera* (*Empeda*) *stygia* sp. n.

Size very small (wing, ♂, 3 mm. or less); general coloration brownish black; wings strongly suffused with blackish;  $Sc$  short, veins  $R_3$  and  $R_4$  divergent.

*Male*. Length about 2-2.4 mm.; wing, 2.5-3 mm.

Rostrum and palpi dark brown. Antennæ brownish black throughout. Head dark brown.

Thorax entirely brownish black. Halteres brownish black, the basal third of the stem paler. Legs with the coxæ and trochanters brown; remainder of legs dark brown. Wings strongly suffused with blackish, the stigma scarcely darker; veins dark brown. Venation:  $Sc$  very short,  $Sc_1$  ending just beyond the origin of  $Rs$ ,  $Sc_2$  somewhat removed from its tip, exactly opposite this origin;  $R_{2+3+4}$  a trifle longer than the basal section of  $R_2$ ;  $R_{3+4}$  straight, longer than  $R_3$ ;  $R_3$  and  $R_4$  strongly divergent,  $R_3$  being oblique in position, cell  $R_3$  at margin being more than twice as wide as cell  $R_2$ ; petiole of cell  $M_3$  shorter than  $m-cu$ , the latter at the fork of  $M$ .

Abdomen brownish black, the hypopygium a trifle paler.

*Holotype*, ♂, San Isabel, altitude about 650 meters, July 30, 1926 (A. M. Dampf); M. F. 1057. Additional ecological notes given at the beginning of this report.

*Paratopotype*, ♂.

*E. (E.) stygia* is one of the smallest species of *Empeda* so far described.

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

General coloration dark gray; wings cream-colored, the base and costal region brighter; stigma conspicuous, dark brown; paler brown clouds on the cord and along vein *Cu* in cell *M*; wing-apex a little suffused with dusky.

*Male*. Length about 4 mm.; wing, 5 mm.

Rostrum and palpi black. Antennæ black throughout. Head brownish gray.

Pronotum dark gray, yellowish laterally. Mesonotal praescutum dark gray, without stripes; antero-lateral pretergites narrowly sulphur-yellow; humeral triangles paler than the ground-color; pseudosutural foveæ black. Pleura dark gray, the region of the wing-base ochreous. Halteres obscure yellow, the knobs dark brown. Legs with the coxæ and trochanters brown; femora brownish black; tibiæ brown, the tips narrowly darker; tarsi brownish black. Wings cream-colored, cells *C* and *Sc* and the wing-base more yellowish; stigma oval, dark brown; distinct paler brown clouds along the cord and vein *Cu*, the latter almost covering the distal half of cell *M*; wing-apex more or less suffused with dusky; veins pale, much darker in the clouded areas. Venation: *Sc* long, *Sc*<sub>1</sub> ending about opposite three-fifths the length of the long *Rs*, *Sc*<sub>2</sub> faint, far from the tip of *Sc*<sub>1</sub>, the latter alone about equal to *r-m*; basal deflection of *R*<sub>2</sub> shorter than *R*<sub>2+3+4</sub>; veins *R*<sub>3</sub> and *R*<sub>4</sub> generally parallel to one another, cell *R*<sub>2</sub> at margin being only a little narrower than cell *R*<sub>3</sub>; petiole of cell *M*<sub>3</sub> about equal to *m-cu*, the latter at the fork of *M*.

Abdomen brownish black, including the hypopygium. Male hypopygium with the apex of the basistyle a little produced. Outer dististyle strongly bifid, the outer arm shorter, its apex expanded. Inner dististyle gently curved, a little expanded outwardly, the surface with a few scattered setulæ.

*Holotype*, ♂, Summit of the Zontehuitz, north of San Cristobal, altitude 2800 meters, swept from low bushes, *Baccharis* and *Gaultheria*, June 20, 1926 (A. M. Dampf); M. B. 174.

*E. (E.) oresitropha* is generally similar to the larger *E. (E.) alticola* Alex., differing conspicuously in the wing-pattern, the longer and more evident macrotrichiæ of the wing-veins and the details of venation.

**Erioptera** (*Erioptera*) **quadricincta** sp. n.

Allied to *E. (E.) annulipes* Will.; tibiæ with four dark and four white annuli, the first dark ring narrowest and basal in position; vein 2nd *A* sinuous, the apex simple.

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

*Female*. Length about 3.3 mm.; wing, 3–3.1 mm.

Rostrum and palpi brownish black. Antennal scape brownish black, the flagellum paler, especially the basal segments. Head clear light gray.

Mesonotal praescutum pale grayish brown to yellowish brown, brighter brown laterally, the interspaces narrowly darker and provided with a row of conspicuous dark setæ; posterior sclerites pale. Pleura pale brown with a narrow silvery longitudinal stripe extending from behind the fore coxæ, passing beneath the root of the halteres. Halteres pale, the stem before the knob a little darkened. Legs with the coxæ and trochanters testaceous; femora testaceous yellow at base, the remainder white with four brown to brownish black rings, the first paler and sometimes more poorly indicated, the remaining annuli increasing in size outwardly, the white inter-rings narrow, the extreme tip white; tibiæ white with four brownish black rings, the first narrowest, at the base of the segment, the others alternating with narrower white rings, on the posterior tibiæ the light and dark annuli subequal in area, the apical ring white; basitarsi with the basal third and apical third black, the central third white; second tarsal segment white; remainder of the tarsi black, forming the third dark tarsal ring; the femora thus appear to have four dark rings, of which the first may be more or less indistinct, the tibiæ four rings, the first narrow and basal in position, the tarsi with three dark rings, of which two are on the basitarsi. Wings grayish yellow, with marginal dark spots at the ends of the veins, alternating with white spots in the ends of the cells, the white areas more extensive than the dark; veins yellow, darker in the infuscated areas;  $Sc_2$  and the cord brownish black. Venation: *m-cu* in alignment with *r-m*, some distance beyond the fork of *M*; vein *2nd A* sinuous, the tip simple.

Abdomen pale brown, the hypopygium yellow.

*Habitat*: Mexico, Guatemala.

*Holotype*, ♂, San Isabel, Chiapas, altitude about 650 meters, July 30, 1926 (A. M. Dampf); M. F. 1057.

*Allotype*, ♀, Tonalá, May 23, 1926; M. F. 930a.

*Paratopotypes*, several ♂ ♀; *paratypes*, ♀, with the allotype; ♂ ♀, Santa Lucia, Chiapas, altitude 575 meters, July 29, 1926; M. F. 1055; ♂ ♀, Rancho Sabino Perez, altitude nearly 500 meters, July 28, 1926; M. F. 1052; ♂, Aguna, Guatemala, altitude 2000 feet, (Dr. G. Eisen).

### **Erioptera** (Erioptera) **dampfi** sp. n.

General coloration ochreous; wings pale yellowish subhyaline, the veins pale; male hypopygium with the outer dististyle deeply bifid, the arms slender; gonapophyses appearing as long slender rods.

*Male*. Length about 4–4.2 mm.; wing, 5–5.2 mm.

*Female*. Length about 4.5 mm.; wing, 5.8–6 mm.

Rostrum ochreous; palpi dark brown. Antennæ brownish black, in some cases the terminal segments of the flagellum a little paler. Head ochreous.

Thorax pale ochreous yellow, in cases with a faint brownish tinge, the lateral pretergites and lateral margins of the sclerite whitish yellow;

pseudosutural foveæ pale. Pleura brownish testaceous, the sternopleurite and ventral pleurotergite paler, more yellowish to form a vague longitudinal stripe. Halteres pale, the knobs a little darker. Legs with the coxæ and trochanters obscure yellow, the fore coxæ darker; remainder of legs yellow, the terminal tarsal segments darker. Wings pale yellowish subhyaline, the veins and trichiaë only a little darker. Venation:  $R_{2+3+4}$  about twice the basal section of  $R_5$ ; cell  $M_2$  open; vein 2nd  $A$  relatively short, ending before midlength of  $R_s$ , only the distal fourth or less sinuous.

Abdomen dark brown, the hypopygium a little paler. Male hypopygium with the outer dististyle deeply bifid, the arms slender, the inner arm about one-half longer than the outer, forming a gently curved black spine. Inner dististyle broader at base, near midlength narrowed into a gently curved sinuous spine. Gonapophyses appearing as long, slender, nearly straight pale rods, lying generally parallel to one another.

*Holotype*, ♂, near summit of the Zontehuitz, in dense, damp virgin forest, in immense numbers between the leaves of a *Bromelia* association, altitude 2750 meters, June 20, 1926. (A. M. Dampf); M. B. 176.

*Allotopotype*, ♀.

*Paratopotypes*, 30 ♂ ♀.

This very interesting *Erioptera* is dedicated to the collector, Dr. Alfons Dampf, to whom I am vastly indebted for many favors.

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

*Male*. Length about 3 mm.; wing, 3.8–3.9 mm.

*Female*. Length about 3.8 mm.; wing, 4.8 mm.

Generally similar to *E. (M.) eiseni* Alex., differing especially in the darker coloration of the body, the dark wings with the white spotted pattern more contrasted, the conspicuous black subterminal ring of the femur, and especially the structure of the male hypopygium.

Mesonotal praescutum with the stripes more grayish than yellowish, the interspaces and lateral margins black. Legs with the femora yellow, with a broad black subterminal ring, about one-half wider than the pale apex, the yellow coloration before and beyond this ring somewhat paler than the remainder of the femur; fore femora with a much narrower additional black premedian ring; tips of the tibiaë narrowly and weakly infuscated but scarcely blackened; basitarsus yellow, the tip and remainder of the tarsi dark brown. Wings with the ground-color much darker than in *eiseni*; costal margin more yellowish, especially basally; the white pattern arranged as in *eiseni* but appearing more contrasted against this darker background; spots at ends of veins  $R_{1+2}$  and  $R_3$  widely separated.

Male hypopygium with the outer dististyle strongly bifid, as in the subgenus, but the inner arm stout and weakly split at apex into

two short divergent points; inner dististyle broad at base, the distal half markedly narrowed and strongly sickle-shaped. Gonapophyses flattened, relatively broad, the tips obliquely truncated.

*Holotype*, ♂, near San Cristobal, in shaded ravine of mountain brook, altitude nearly 2200 meters, July 17, 1926. (A. M. Dampf); M. B. 190 a.

*Allotopotype*, ♀.

*Paratopotypes*, 2 ♂ ♂.

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

*Male*. Length about 2.8 mm.; wing, 3.6 mm.

Generally similar to *E. (M.) eiseni* Alex., differing especially in the broad blackened apices of the femora and the structure of the male hypopygium.

Mesonotal praescutum with the stripes more grayish than yellowish, the interspaces black, the lateral margins narrower and paler. Legs with the femoral tips broadly blackened, on the posterior legs including more than the distal fifth; posterior femora with a still broader median black ring, the two enclosing a narrow subterminal yellow annulus; tips of the tibiae infuscated but not blackened; basal two tarsal segments yellow, their tips and the remainder of the tarsi infuscated. Fore legs broken. Wings with the costal half much darker than the posterior half, the spots large and contrasted; costal margin almost uniformly dark; no white spots in the anal cells except those at the ends of the veins.

Male hypopygium as in *eiseni*, the arms of the outer dististyle and the inner dististyle all very slender and heavily blackened, the tips acute and simple, very gently curved; inner dististyle without scattered setae, as in *eiseni*. Gonapophyses long and slender, the two taken together appearing lyriform, the extreme tips very weakly expanded, pale, obtuse.

*Holotype*, ♂, near San Cristobal, in shaded ravine of mountain brook, altitude nearly 2200 meters, July 17, 1926 (A. M. Dampf); M. B. 190 a.

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

*Male*. Length about 2.5 mm.; wing, 2.9 mm.

*Female*. Length about 3 mm.; wing, 3.2 mm.

Somewhat resembling in its general appearance, a small specimen of *E. (M.) eiseni* Alex., differing in the wing and leg coloration and, especially, in the structure of the male hypopygium.

Praescutal stripes broad, restricting the dark brown interspaces. Legs with the femora yellow, with a conspicuous brownish black ring close to the tip, the apex beyond it scarcely one-fourth the length of this ring, white; a similar narrow whitish ring precedes the dark annulus; no premedial dark ring on fore femur; tip of tibiae narrowly but conspicuously dark brown; tarsi pale yellow, the terminal two segments

and the tips of the others brown. Wings with a conspicuous dark brownish ground coloration that is only slightly paler in the posterior cells; wing-spots numerous and small; a series of about six such spots along the costa in the space beyond *h* and including the end of vein  $R_{1+2}$ ; the other marginal white spots are likewise small; the marks along the cord and the other white areas of the disk similarly restricted; veins dark, white in the pale areas.

Male hypopygium of very distinct structure. Outer dististyle profoundly bifid, the basal portion including only about one-fourth the total maximum length of the style; outer arm a straight slender smooth spine; inner arm longer, the basal half or a little more stouter, the outer margin with a series of five or six irregular teeth, the long apex a straight acute spine. Inner dististyle a flattened pale blade, at the widest point about one-fourth the length, the base very narrowly constricted, the outer margin densely fringed with long yellow setæ. Gonapophyses dark, the tips blackened, at about two-thirds their length strongly curved mesad toward one another, their tips subacute.

*Holotype*, ♂, San Isabel, altitude about 650 meters, July 30, 1926 (A. M. Dampf); M. F. 1057.

*Allotoptype*, ♀.

*Paratopotype*, ♀.

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

*Male*. Length about 1.8 mm.; wing, 2.3 mm.

*Female*. Length about 2.2 mm.; wing, 2.7–2.8 mm.

Very similar to *E. (M.) invariegata* Alex. (Amazonian Peru) in the unmarked wings and uniformly darkened legs, differing in certain minor details, as the uniformly pale halteres. The discovery of the male sex of *invariegata* will surely furnish genitalic differences.

Antennal flagellum paler than the scape. Scutellum pale testaceous. Halteres uniformly pale yellow. Male hypopygium with the dististyles long and conspicuous, the outer style a long straight rod, at about two-thirds the length angularly bent and narrowed to a long acute apical spine. Inner dististyle about as long, firmly fused with the outer style or arm, the tip expanded, bifid, the large outer arm truncated, its surface microscopically roughened, the slender subapical arm appearing as a pale straight rod. Gonapophyses appearing as elongate decussate rods, black, narrowed gradually to the acute tips.

*Holotype*, ♂, Santa Lucia, altitude 575 meters, July 29, 1926 (A. M. Dampf); M. F. 1055.

*Allotopotype*, ♀.

*Paratopotypes*, ♂ ♀; *paratypes*, ♂ ♀, San Isabel, July 30, 1926; M. F. 1057; ♂, between Santa Lucia and San Isabel, July 30, 1926; M. F. 1056; ♀, Rancho Sabino Perez, altitude nearly 500 meters, in hilly country, July 28, 1926; M. F. 1052.

**Rhabdomastix** Skuse.**Rhabdomastix** (*Rhabdomastix*) **isabella** sp. n.

Antennæ ( $\sigma^7$ ) approximately four times as long as the body; mesonotum brown, the pleura darker brown; wings brownish gray, the stigma darker;  $R_s$  relatively short,  $R_3$  oblique in position, remote from the tip of  $R_{1+2}$ .

*Male.* Length about 5 mm.; wing, 5.2 mm.; antenna about 21 mm.

Rostrum obscure yellow, the palpi brown. Antennæ ( $\sigma^7$ ) elongate, about four times as long as the entire body; scapal segments dark brown, the flagellum yellow, the outer segments darker; first flagellar segment about one-third longer than the second, the succeeding segments becoming more elongated and attenuated, the extreme tips of the individual segments dark. Head brown.

Pronotum and mesonotum uniformly rather dark brown, the surface subnitidous; scutellum yellowish testaceous; postnotum dark, paler laterally and at base. Pleura dark brown, darker than the notum; meron large. Halteres pale. Legs with the coxæ brown; trochanters elongate, brownish testaceous; remainder of the legs broken. Wings with a brownish gray suffusion, the costal region somewhat darker; stigma still darker brown; veins dark brown. Venation:  $R_s$  relatively short, less than two times the petiole of cell  $R_3$ ;  $R_3$  short and oblique, at margin remote from  $R_{1+2}$ , the distance on costa between them about twice  $R_3$  alone.

Abdomen yellowish brown, darker laterally; hypopygium lighter brown.

*Holotype*,  $\sigma^7$ , San Isabel, altitude about 650 meters, July 30, 1926 (A. M. Dampf); M. F. 1057. The additional data on the conditions under which the above collections were made, at beginning of the present paper, should be consulted.

*R. (R.) isabella* is the most northern representative of the subgenus so far discovered. It is most closely allied to *R. (R.) septentrionalis* Alex. (Costa Rica), differing in the still smaller size, the different thoracic coloration, and the distinct venation of the radial field.

**Cryptolabis** Osten Sacken.**Cryptolabis** (*Cryptolabis*) **luteiceps** sp. n.

Head light ochre-yellow; thoracic dorsum dark brown; pleura dark, with a longitudinal yellow marking; tips of femora and tibiæ infuscated; wings with  $R_s$  short and very strongly convex.

*Male.* Length about 2.7 mm.; wing, 3–3.1 mm.

*Female.* Length about 2.6–2.8 mm.; wing, 3.2–3.6 mm.

Rostrum obscure yellow; palpi brown. Antennæ with the scapal segments brown; flagellum pale brownish testaceous; flagellar segments short-oval to subcylindrical, decreasing in size outwardly. Head light ochre-yellow.

Pronotum obscure yellow; lateral pretergites narrowly clearer yellow. Mesonotal praescutum testaceous with three confluent dark brown stripes, the extreme lateral margin of the sclerite obscure yellow; scutellum large, brownish testaceous; postnotum darker. Pleura dark, with an obscure yellow longitudinal mark on the sterno-pleurite. Halteres obscure yellow, the knobs whitish. Legs with the coxæ and trochanters testaceous yellow; femora yellow, the tips infuscated; basitarsi obscure yellow, the tips and remainder of the tarsi brown. Wings whitish subhyaline, the veins darker. Macrotrichia of the cells sparse, present in all cells beyond the level of cell  $R_2$ . Venation:  $sc$  relatively long,  $Sc_1$  ending opposite or beyond two-thirds the length of the very strongly convex  $R_s$ ; basal section of  $R_2$  oblique to subtransverse, about equal to  $R_{2+3}$ ; veins  $R_3$  and  $R_4$  with the tips deflected gently toward the cephalic margin of the wing; veins  $M_{1+2}$ ,  $M_3$  and  $M_4$  similarly deflected toward the caudal margin; cell  $M_3$  deep, its petiole very short; cell  $M_4$  relatively short and wide.

Abdomen brown, darker in the females, this presumably caused by the presence of eggs within; terminal segments more yellowish.

*Holotype*, ♂, Tonalá, attracted to light between 7 and 8 P. M., on the shores of a small clear rivulet flowing over pebbles and stones, May 23, 1926 (A. M. Dampf); M. F. 930a.

*Allotopotype*, ♀.

*Paratopotypes*, 3 ♀ ♀.

*C. (C.) luteiceps* is readily told by the coloration of the head.

### Molophilus Curtis.

#### **Molophilus obediens** sp. n.

Belongs to the *plagiatus* group; general coloration dark brown; mesonotal praescutum ochreous, with three brown stripes, the lateral stripes occupying the margin of the sclerite between the pseudosutural foveæ and the transverse suture; male hypopygium with the basal dististyle a powerful black spine with a smaller, curved lateral spine shortly beyond the base.

*Male*. Length, 3.2–3.5 mm.; wing, 4.3–5 mm.

Rostrum and palpi brownish black. Antennæ short, black throughout. Head grayish brown.

Pronotum dark, obscure yellow behind, the anterior lateral pretergite yellow. Mesonotal praescutum ochreous, with three conspicuous brown stripes, the broad median stripe darker in front, somewhat paler behind, the lateral stripes occupying the extreme lateral margins of the sclerite behind the pseudosutural foveæ; the interspaces and concolorous humeral region are thus unusually wide; in some specimens, the dark stripes are broader, restricting the interspaces, which are then cut by the pseudosutural foveæ; in still other specimens, only the humeral region of the sclerite remains of the ground-color; scutum pale, each lobe with two darker spots, the median region a little suffused;



scutellum and postnotum dark brown. Pleura dark brown. Halteres with the stem brown, the bases narrowly obscure yellow, the knobs obscure yellow. Legs with the coxæ and trochanters brownish testaceous, the fore coxæ darker; femora and tibiæ brownish yellow, with dark setæ; tarsi brown. Wings with a grayish suffusion, the stigmal region, relatively conspicuous; macrotrichiaë dark. Venation:  $R_{4+5}$  subequal to twice as long as the basal section of  $R_5$ ;  $R_{2+3}$  about one-half longer than  $m-cu$ ; petiole of cell  $M_3$  between two and three times  $m-cu$ ; vein *2nd A* relatively long, only gently sinuous, ending about opposite one-fourth the length of the petiole of cell  $M_3$ .

Abdomen, including the hypopygium, dark brown. Male hypopygium with the basal dististyle broad and powerful at base, on outer margin shortly beyond the base with a curved thumb-like spine, the long axis beyond this point gently curved to the acute tip, the mesal margin weakly roughened. Basistyle with the apical beak relatively slender.

*Holotype*, ♂, near San Cristobal, in shaded ravine of mountain brook, altitude nearly 2200 meters, July 17, 1926 (A. M. Dampf); M. B. 190 a.

*Paratopotypes*, 5 ♂ ♂; *paratypes*, ♂ ♂, San Cristobal, June 4, 1926; M. F. 940; June 15, 1926; M. F. 973.

#### ***Molophilus fuscopleuralis* sp. n.**

Belongs to the *plagiatus* group; thoracic notum reddish brown, the postnotum and pleura dark brown; male hypopygium with the basal dististyle a powerful chitinized rod, bearing a spinulose branch on outer face before midlength, the main spine with a long dense brush of black setæ along the mesal face.

*Male*. Length about 4.2–4.3 mm.; wing, 5.5 mm.

Rostrum and palpi brownish black. Antennæ brown, the second scapal segment darker; flagellar segments elongate-oval, covered with a dense erect white pubescence. Head dark blackish gray.

Mesonotal praescutum pale ochres to reddish brown, without distinct darker stripes, the posterior sclerites somewhat darker; postnotum dark, sparsely pruinose. Pleura entirely dark brown, contrasting with the paler praescutum. Halteres obscure yellow, the stem beyond the base darker. Legs with the coxæ and trochanters dark brown; remainder of the legs dark brown, with dark setæ, the terminal tarsal segments passing into brownish black. Wings with a strong yellow tinge, the veins pale brown; macrotrichiaë dark brown. Venation: Cells beyond the cord deep; petiole of cell  $M_3$  a little shorter than the basal section of  $M_{1+2}$  and nearly three times  $m-cu$ ; vein *2nd A* gently sinuous, ending about opposite one-fourth the length of the petiole of cell  $M_3$ .

Abdomen, including the hypopygium, dark brown. Male hypopygium with the spine near apex of basistyle slender. Basal dististyle a powerful chitinized rod, before midlength on outer face with a strong lateral spine that is weakly spinulose; the main axis of the style

is gently narrowed to the acute tip, the mesal face from about opposite the level of the lateral spine almost to the apex with a dense brush of long black setæ.

*Holotype*, ♂, near summit of the Zontehuitz, in dense, damp virgin forest, altitude 2750 meters, June 20, 1926 (A. M. Dampf); M. B. 176.

*Paratopotype*, ♂.

**Molophilus pennatus** sp. n.

Belongs to the *plagiatus* group; general coloration of the mesonotum reddish brown, the pleura dark brown; antennæ (♂) relatively long; male hypopygium with the basal dististyle an elongate simple rod, the mesal face densely fringed with long setæ and scattered black spines.

*Male*. Length about 4 mm.; wing, 4.8–5.2 mm.

Rostrum and palpi black. Antennæ relatively long, in the male, if bent backward, extending about to the base of the abdomen, brownish black throughout; flagellar segments elongate-oval. Head dark.

Pronotum dark, the scutellum testaceous; lateral pretergites yellow. Mesonotal praescutum pale, with three reddish brown stripes that are confluent or virtually so, the humeral region and lateral margins yellowish; pseudosutural foveæ not conspicuous against this nearly concolorous background; scutal lobes reddish brown; scutellum testaceous, darker medially at base; postnotum reddish brown, the dorsal portion darker. Pleura dark brown, the sterno-pleurite ventrally paler in color. Halteres pale, the knobs yellow. Legs with the coxæ and trochanters yellowish testaceous; remainder of legs brown, with dark setæ, the tarsi passing into brownish black. Wings with a strong grayish yellow tinge, the base and costal region clearer yellow; veins darker yellow, with brown macrotrichia. Venation:  $R_{2+3}$  longer than the petiole of cell  $M_3$ , the latter about twice *m-cu*; vein *2nd A* elongate, gently sinuous, ending about opposite midlength of the petiole of cell  $M_3$ .

Abdomen dark brown, the hypopygium conspicuously yellowish. Male hypopygium large and conspicuous. Basal dististyle a very elongate simple rod, the basal fifth straight, beyond this point gradually narrowed and gently arcuate, the mesal face of the curved portion being densely provided with abundant setæ and subappressed stout black spines; apex of the style a stout black spine.

*Holotype*, ♂, San Cristobal, altitude 2100 meters, at light, June 8, 1926 (A. M. Dampf); M. F. 950.

*Paratopotypes*, ♂ ♂; June 8, 1926; M. F. 952; ♂ ♂, June 15, 1926; M. F. 973.

*M. pennatus* is most closely allied to *M. orion* Alex. (Costa Rica), from which it differs in the general coloration, structure of the antennæ and the more elongate basal dististyle of the male hypopygium.