

THOMAS BORGMEIER

*Bredin-Archbold-
Smithsonian Biological
Survey of Dominica:
The Phoridae of
Dominica (Diptera)*

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ABSTRACT

Recent collecting by J. F. G. Clarke, O. S. Flint, Jr., R. J. Gagné, P. Spangler, T. J. Spilman, G. C. Steyskal, and W. W. Wirth for the Bredin-Archbold-Smithsonian Biological Survey of Dominica resulted in a small but representative collection of phorid flies, comprising 16 genera and 82 species, 43 of which are new. Of the latter, 32 belong to the giant genus *Megaselia*. One new species from Costa Rica has been added: *Pachyneurella haplopyga*.

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Abbreviations used in the text are as follows: USNM (United States National Museum); MCZ (Museum of Comparative Zoology); CTB (Collection of Thomas Borgmeier); Academy of Natural Sciences of Philadelphia (ANSP); su (supraantennal bristles).

Subfamily PHORINAE

Genus *Dohrniphora* Dahl

***Dohrniphora cavifemur*, new species**

FIGURES 1, 2

FEMALE.—Length (combined) 2.5 mm. Head width 0.65 mm. Frons pentagonal, about as broad as long medially, width 0.36 mm, black-brown, yellowish around bases of supraantennals, bristles of first and second row placed in large circular yellowish spots. Supraantennals divergent. First row straight, antials more approximate than preocellars, a little farther from each other than from anterolaterals, the latter are removed from eye-margin. Second row slightly concave anteriorly, the preocellars farther from each other than from mediolaterals. One strong lower postocular bristle; one bristle on jowls; one weaker bristle on cheeks. Third antennal joint small, suboval, dark brown; arista long (0.70 mm), finely but distinctly pubescent. Palpi yellow, moderately broad, length without stem 0.18 mm, with 5 strong bristles near apex, one of which is prolonged. Proboscis yellow, slightly

geniculate, basal part short, apical part (haustellum) long (0.46 mm) and narrow (0.1 mm), nearly straight.

Thorax dark brown. Mesopleural hairs not perceptible in the micropreparation but probably present above, as usually. Scutellum apparently with 4 unequal bristles, the posterior are broken in type, the anterior is 0.16 mm long.

Abdomen (Figure 1) dark brown, with 5 tergites. Tergites 3–5 gradually narrowed, 5th elongate triangular. Pubescence scarce and short, more abundant on segments 7–8; 7th segment on each side with a chitinous plate. Cerci small.

Legs yellow, midcoxae fuscous, hind femur darkened apically. Foretibia 0.5 mm, with 4 to 5 dorsal bristles. Midtibia with the usual basal pair of bristles near base and one short anterior subapical bristled, the dorsal hair-seam reaches the apical third. Hind femur (Figure 2) about 3 times as long as broad, dorsally near base with a deep excavation. Hind tibia with a complete dorsal hair-seam; the anterodorsal and posterodorsal cilia fine.

Wing distinctly yellowish, anterior margin and apical margin of membrane infuscated. Length 2.15 mm, width 0.98 mm. Costa 0.54 of wing length, ratio of segments 15:4:2. Cilia short. Fork narrow. First vein with the characteristic angle behind middle; 3rd vein with a distinct bristle at base; 4th vein slightly concave; 5th nearly straight, a little upturned apically; 6th slightly sinuate; 7th weak. Auxillary margin with one hair. Halteres dirty yellow.

MALE.—Similar to the female. Antenna brown, small, short oval; arista 0.60 mm long. Scutellum with 2 bristles and 2 fine short hairs. Abdominal tergites 2 and 6 elongated, yellow on anterior half; 3–5 with a broad yellow median spot anteriorly. Hypopygium dark brown, at left with a moderate bristle. Anal tube yellow, cylindrical, length 0.23 mm, apical hairs not

Reverend Thomas Borgmeier, O.F.M., Estrada Rio Grande 2116, Jacarepaguá, G.B., Rio de Janeiro ZC-89, Brazil.

differentiated. Legs as in female, the basal excavation of hind femora a little less pronounced, obtuse-angled instead of rectangular; posterior face of hind femur near base with two black obtuse erect spines very close together. Wing length 1.70 mm, costa 0.53 of wing length, ratio of segments 11:3:1.5.

MATERIAL EXAMINED.—Holotype female (USNM 70236, on slide), Dominica, Clarke Hall June 1964, light trap (O. S. Flint). Allotype male (USNM, on slide), 10–20 April 1964, same locality and collector.

DISCUSSION.—*Dohrniphora cavifemur* is a very striking species, both sexes are easily recognized by the deep dorsal excavation near base of the hind femur.

Dohrniphora divaricata (Aldrich)

FIGURE 3

Phora divaricata Aldrich, 1896, p. 437 [male, female; St. Vincent, B.W.I.]—Brues, 1904, p. 349.

Dohrniphora divaricata (Aldrich).—Borgmeier, 1961, p. 111.
Dohrniphora venusta (Coquillett).—Malloch, 1912, p. 432 [part].

Dohrniphora diffusa Borgmeier, 1960, p. 281, fig. 38 [♂ ♀; Brazil]; 1961, p. 111 [synonymy].

Holotype male (USNM 7765) and 3 paratypes (USNM, CTB), from St. Vincent, B.W.I. (J. M. Aldrich leg.).

MALE.—Length 1.8–2 mm. Frons pentagonal, broader than long laterally (4:3), black-brown or black, nearly opaque, without median line. First row straight, the antials as far apart as the preocellars, anterolaterals a little removed from eye. Second row slightly concave, the bristles equidistant. One lower postocular bristle, one bristle on jowls and one bristle on cheeks. Third antennal joint normal, yellowish brown; arista long, distinctly pubescent. Palpi reddish yellow, small, with short bristles.

Thorax pale brown to brown, pleura brown above, pale yellow below, sometimes entirely brown. Mesopleura hairy above. Scutellum with 4 bristles, the anterior hairlike and hardly one-half of the posterior.

Abdomen opaque, venter yellow, tergites black with yellow apical seams, 2 and 6 elongated. Pubescence scarce and short. Hypopygium large, dark brown, with fine longish hairs; anal segment long and stout, nearly parallel-sided, with short hairs.

Legs yellow, hind femur darkened at tip, midcoxa brown. Foretibia with 4 or 5 dorsal bristles; foretarsus very slender. Hair-seam of midtibia attaining apical third. Hind femur broad, ventral edge sharpened, near

the greatest width on posterior face with a flat groove and anterior to it with about 30–35 short black sensorial pins (Figure 3). Hind tibia without single bristles except on apex.

Wing with grayish yellow turbidity, veins dark brown. Costa about 0.52 of wing length, ratio of segments 25:7:3. Cilia short. Fork very narrow. Third vein with a bristle at base; 4th weakly curved; 5th straight, slightly upturned apically. Axillary margin with one hair. Halteres yellow.

FEMALE.—Length 2–2.5 mm. Proboscis stout, nearly straight. Abdomen black above, venter yellow; there are 5 tergites, 3–5 gradually narrowed, all with yellow apical seams. Hind femur normal. Wing as in male.

MATERIAL EXAMINED.—The holotype and 2 paratypes in USNM and one paratype male in my collection, from St. Vincent, B.W.I. (Aldrich). From Dominica: Clarke Hall, 7 males and 2 females, taken with Malaise trap and light trap, IV.64 (O. S. Flint) and I.–III.65 (W. W. Wirth).

DISTRIBUTION.—Antilles, Central and South America down to Argentine (see localities under *D. diffusa*, in Borgmeier, 1960).

DISCUSSION.—*Dohrniphora divaricata* is very close to *D. perplexa* Brues (1904, USA), but in the latter there are not so many sensorial pins on hind femur of male, the pleura are pale yellow and the anterior scutellars are about two-thirds of the posterior in length (see Borgmeier, 1963a, p. 67, fig. 74).

NOTE.—*D. divaricata* has been confused for a long time with *D. venusta* Coquillett (which is a synonym of *cornuta* Bigot). Even Malloch (1912), who could examine the types of *divaricata* and *venusta*, failed to see that they are different, probably because he did not examine the posterior face of the hind femur of the male. As a matter of fact, *cornuta* has only 4 or 5 sensorial pins of unequal length on the hind femur, and the female has only 4 tergal plates.

Dohrniphora dispar (Enderlein)

FIGURE 4

Phora dispar Enderlein, 1912, p. 20 [male; Brazil].

Dohrniphora dispar (Enderlein).—Schmitz, 1923, p. 55.—Borgmeier, 1925b, p. 100; 1935a p. 431, figs. 2 [foreleg], 3 [head of male], 5 [hind femur], pl. 5: fig. [wing of type]; 1960, p. 276, fig. 27 [♂ ♀].

Holotype male and one paratype male (CTB), Hammonia, S. Catarina, Brazil (Luederwaldt).

This is a very striking species, easily distinguished by the following characters: antenna of male orange, enlarged, about two-thirds eye-length. Pleura and all coxae yellow; abdomen nicely cross-banded with yellow. Foretarsus of male slender, last joint fuscous, slightly dilated and longer than preceding; hind femur on posterior face near base with 50–60 blunt spinules and one oval groove (Figure 4). Wing (see Borgmeier, 1935a, pl. 5: fig. 4): costa 0.51 segments 33:8:3, i.e. 1st section 3 times as long as 2+3. Female with 5 tergal plates.

MATERIAL.—46 males and 14 females, Dominica: Hodges River Mouth, Manets Gutter, South Chiltern, Clarke Hall, Fond Figue River, I.–III. 1965, light trap and Malaise trap (W. W. Wirth).

DISTRIBUTION.—Brazil, Argentine, Panama, Ecuador, Trinidad, Dominica W.I.

Dohrniphora cornuta (Bigot)

FIGURE 5

Phora cornuta Bigot, 1857, p. 827. [French edition: 1857, p. 827]. Schmitz, in Lindner, 1938–1958 (1951), p. 241 [literature and synonyms].—Borgmeier, 1960, p. 277; 1963a, p. 65.

In my redescription of this species I failed to mention the short sparse hairs near dorsal border on the posterior face of the hind femur; ventrobasally there are only 4 to 5 black spinules two of which are longer (Figure 5). The upper part of the pleura and the midcoxae are dark brown; there is a yellow cross-band on 6th tergite of male. First costal section generally 3 times as long as 2+3. Female with 4 tergal plates.

MATERIAL EXAMINED.—Nine females and 23 males, Dominica: Clarke Hall, Cabrit Swamp, Woodford Hill, South Chiltern, Manets Gutter, I.–III. 1965, with light trap and Malaise trap (W. W. Wirth).

Genus *Coniceromyia* Borgmeier

Coniceromyia Borgmeier, 1963b p. 450 (key).

Coniceromyia pilicoxa, new species

FIGURES 6, 7

MALE.—Length 2.6 mm. Head width 0.78 mm. Frons flat, broader than long laterally (5:4), width 0.41 mm, black-brown, shining, finely shagreened, with a fine median line and fine scattered hairs. Supraan-

tennals weak, divergent. First row of frontal bristles slightly convex, antials parallel, a little farther from each other than from anterolaterals, somewhat removed from eye-margin. Second row slightly convex, the bristles nearly equidistant. One strong lower postocular bristle directed downward; one weak bristle on jowls; cheeks bare. Antennal grooves flat, not separated, reddish brown. Third antennal joint retort-shaped, length 0.49 mm, reddish brown at base, apical half blackish, the whole joint covered by numerous whitish microtrichia; arista (broken in type) apical. Palpi pale yellow, small, length 0.22 mm, with 4 short bristles near apex.

Thorax shining, reddish yellow anteriorly, gradually darkened behind, castaneous, pleura yellow; mesopleura bare. Scutellum black castaneous, with 2 long posterior bristles and 2 shorter anterior bristles, the later about two-fifths of the former in length.

Abdomen opaque, venter yellow, tergites 2–6 black, 2 and 6 slightly elongated, 3–5 subequal; 1st tergite black, with the anterior and posterior borders yellow. Pubescence scarce and short. Hypopygium large, globose, dark castaneous, ventral part brown.

Legs yellow, hind femur blackish at tip. Foretarsus with a tuft of black curved hairs. Anterior face of fore- and midcoxae and anterior face of midfemora covered with dense long fine woolen sensorial hairs. Foretibia (Figure 7) 0.78 mm, with 2 unequal dorsal bristles on basal half and a series of short anterodorsal setulae on apical half. Foretarsus scarcely longer than tibia, relative length of tibia and tarsal joints 28:11:7:6:5:4. Fore-metatarsus (Figure 7) thickened, as broad as tibia, with a bare anteroventral furrow, apically without the slender process present in most species, instead with a fine curved bristle. Midtibia with the usual basal pair of bristles and a short anterior bristle near apex. Hind femur moderately broadened at basal third, 3 times as long as broad, on posterior face ventrobasally with a marginal strip of extremely short black spinuli. Hind tibia with a long dorsal bristle near base and one very short anterodorsal bristle near apex.

Wing (Figure 6) grayish yellow, veins dark brown. Length 2.78 mm, width 0.11. Costa not thickened, about as thick as 3rd vein, index 0.53, ratio of segments 31:20. Cilia moderately short (about 0.1 mm), closely set (there are about 9 between 1st and 3rd veins). Third vein with a bristle at base; 4th concave, deflected at tip; 5th but little curved before middle; 6th

slightly bisinuate; 7th weak. Axillary margin with one hair. Halteres yellow.

FEMALE.—Length 2 mm. Head width 0.6 mm. Width of frons 0.325 mm, lateral length 0.26 mm. Third antennal joint piriform, length 0.23 mm, width at base 0.117 mm, brown, darkened apically, covered with very short whitish pubescence, without hairs. Arista 0.42 mm, distinctly pubescent. Thorax darker than in male, pleura reddish castaneous. Mesopleura bare. Scutellars as in male. Tergites dull black, 2nd elongated, 3–6 subequal, all with a distinct yellow seam on hind margins. Foretibia 0.5 mm, with 2 bristles on basal half. Foretarsus one-fifth longer than tibia; metatarsus slender, of normal structure, joints 2–4 slightly flattened, longer than broad, 2nd joint about two-thirds of metatarsus in length. Coxate I–II and midfemur without lanuginous vestiture. Wing length 2.15 mm, width 0.88 mm. Costa 0.52 of wing length, slightly thicker than 3rd vein; ratio of segments 21:16. Cilia 0.1 mm long, about 8 between 1st and 3rd veins. Halteres yellow.

MATERIAL EXAMINED.—Holotype male (USNM 70237), Dominica, B.W.I., Trois Pitons, 4.V.64 (O. S. Flint, Jr.); wing on slide. One paratype, female (USNM), Dominica, W.I., Pont Casse, 1.7 m east, 12.III.65 (W. W. Wirth).

DISCUSSION.—*Coniceromyia pilicoxa* is a striking species. The male is easily recognized by the lanuginous vestiture of the fore- and midcoxae and midfemora. In my key (1963) it runs to *C. atricolor* Schmitz (Chile), from which it differs at once by the absence of hairs on the 3rd antennal joint. The long costa and the ratio of costal segments is distinctive for both sexes; the only other species of the genus with the costal index 0.5 are *C. striativena* Borgmeier (Mexico) and *C. cubensis* Brues (♂).

The female is considerably smaller than the male, but that occurs also in other species of the genus and was first observed by Brues in *C. cubensis*.

Coniceromyia ciliatipes, new species

FIGURES 8–10

MALE.—Length 1.8 mm. Head width 0.65 mm. Frons broader than long (4:3), width 0.36 mm, dark castaneous, strongly shining, scarcely pubescent, with a weak median line. Supraantennals short. First and 2nd row slightly convex, the bristles equidistant. One lower postocular bristle; one bristle on jowls; cheeks

bare. Third antennal joint dark brown, retort-shaped, length 0.45 mm. narrowed portion distinctly hairy; arista one-half as long as 3rd antennal joint, distinctly pubescent. Palpi pale yellow, narrow, length 0.16 mm, with short bristles on apical 3rd.

Thorax shining, reddish yellow, darker and sometimes castaneous behind. Mesopleura bare. Scutellum with 2 long posterior bristles; the anterior are hair-like and one-third to two-fifths of the posterior in length.

Abdomen opaque, venter yellow; tergites black or black brown, all with yellow apical seams; 2nd tergite elongated, 3–6 subequal. Pubescence very scarce. Hypopygium large, globose, reddish brown, shining. Anal segment not protruding.

Legs yellow, hind femur black at tip. Foretrochanter at apex with a tuft of curved black hairs. Forefemur (Figure 10) with long sensorial cilia on ventral border; similar but shorter and somewhat finer cilia are present also on foretibia ventrally. Foretibia 0.49 mm, with 2 dorsal bristles on 1st and 2nd third. Foretarsus (Figure 8) 0.57 mm, broadened, metatarsus excavated anteriorly forming a bare furrow, apically with a slender fringed process, joints 2–5 somewhat longer than broad, the width and length diminishing gradually. Midtibia with the usual bristles, the subapical bristle as long as the anterodorsal one near base. Hind femur maculated at tip, strongly broadened at basal fourth, posterior face ventrobasally with a broad marginal band of extremely short sensorial pins. Hind tibia with one dorsal bristle at basal third and one short anterodorsal subapically; 3 end-spurs as usual.

Wing (Figure 9) grayish yellow, veins dark brown, costa darker than 1st and 3rd vein. Length 1.74 mm, width 0.65 mm. Costa thickened, index 0.43, ratio of segments 17:9. Cilia moderately long (0.1 mm). Third vein with a bristle at base; 4th slightly concave, deflected apically; 5th and 6th but little curved, 5th with a faint hook at base. Axillary margin with one hair. Halteres pale yellow.

FEMALE.—Length 1.6 mm. Similar to the male. Third antennal joint short oval, dark brown apically, paler at base. Color of thorax and scutellars as in male. Second tergite a little elongated, 3–6 subequal in length. Cerci distinct, yellow. Forefemur and tibia not ciliated on ventral border. Foretarsus longer than tibia (22:19), metatarsus of normal structure. Hind femur moderately broad, about 3 times as long as broad.

MATERIAL EXAMINED.—Holotype male (USNM 70238), Dominica, W.I., S. Chiltern Est., 20.II.65 (W. W. Wirth). Paratypes (USNM, CTB): 8 males and 6 females (I.–III.65, W. W. Wirth), from the following localities: S. Chiltern Est., Pont Casse 1.5–1.7 m east, Manets Gutter, Freshwater Lake, Clarke Hall, Fond Figes River.

DISCUSSION.—In my key (1963b) *C. ciliatipes* runs to *C. latimana* Malloch, but in the latter the thorax is dark brown to black, the last tarsal joint of forelegs is fuscous, the foremetatarsus (δ) is broader and the forefemur and tibia lack the sensorial cilia on ventral border; the anterior scutellars are also a little longer; in the female the second costal segment seems to be shorter in *latimana*. The females are difficult to distinguish, because sometimes the thorax of *ciliatipes* is darkened.

Coniceromyia latimana (Malloch)

FIGURE 11

Conicera latimana Malloch, 1924, p. 73 [male; Puerto Rico].
Coniceromyia latimana (Malloch).—Schmitz, 1927, p. 66; 1929, p. 126.—Borgmeier, 1950, p. 298; 1963b, p. 455, fig. 7.

Of this species Dr. Wirth collected on the Island of Dominica at Clarke Hall, with a Malaise trap, 7 males and 2 females, January–March 1965.

The male is easily recognized by the broad foremetatarsus (Figure 11) and the fuscous color of the last tarsal joint of forelegs. The female differs from *C. ciliatipes* by the dark color of the thorax and also by the somewhat longer anterior scutellars which reach one-half of the posterior, a character I failed to mention in my redescription (1963b).

Genus *Conicera* Meigen

Conicera (Hypocerina) seticerca, new species

FIGURES 12–14

MALE.—Length 1.1 mm. Frons black, with two small reclinate supraantennals very close together and 2 anials twice as far apart and inserted immediately above the supraantennals; anterolateral bristles wanting.

Third antennal joint (Figure 14) black, conical, length 0.14 mm, width 0.09 mm, shortly pubescent; arista apical, twice as long as third antennal joint (0.28 mm), relative length of arisal segments I–III = 4:5:23; segments I–II and basal half of III thickened. Palpi dark, slender, with about 6 short setulae, the apical one not differentiated.

Thorax black. Scutellum with 2 bristles and 2 minute hairs. Mesopleura bare.

Abdomen black. Hypopygium dark brown; pincers of the epandrium very characteristic (Figures 12–13); right forceps with the upper (proximal) process broad and short, truncated at tip and with 4 short black cone-shaped pins and several hairs; lower (distal) process with numerous strong black teeth only partly visible in dorsal view, and besides the hairs with about 7 long bristles near outer border; left forceps slightly excavated apically, with numerous thick conelike teeth, many hairs and 7 or 8 strong bristles on outer border.

Legs dark brown; chaetotaxy as usual. Foretibia 0.27 mm, with a dorsal bristle above middle and a dorsal row of 8 short setulae on distal half; foretarsus 0.36 mm, ratio of tarsal joints 10:5:4:4:4, last joint slightly thicker than preceding. Midtibia 0.29 mm, dorsal bristle near base 0.15 mm. Hind femur 0.49 mm, width 0.15 mm, ventrobasally with 10 fine hairs on basal half. Hind tibia 0.39 mm, dorsal bristle on basal third as long as ventral end-spur (0.15 mm).

Wing yellowish brown, veins dark brown. Length 1.09 mm, width 0.52 mm. Costa 0.44 of wing length, ratio of segments 21:11. Cilia short, there are 10 pairs from base to tip of first vein, and 3 single cilia on 2nd costal segment. Third vein thicker than costa, with a bristle at base which is about as long as the longer costal cilia. Mediastinalis obsolete. Fourth vein concave, 5th slightly sinuous, 7th weak but complete. Halteres dark.

MATERIAL EXAMINED.—Holotype male (USNM 70239, on slide) and one paratype (CTB; dissected, on three slides), Dominica, W. I., Clarke Hall, light trap, October 1964 (P. Spangler).

DISCUSSION.—This striking species seems to be close to *megalodus* Schmitz (Brazil) but differs by the shape and chaetotaxy of the hypopygial pincers (see Schmitz, 1929, fig. 28 (6, 7, p. 118). *Conicera (Hypocerina) neotropica* Brues (1904; Grenada, W.I.), re-

cently redescribed by Borgmeier (1968), may also be near, but has the 3rd antennal segment somewhat longer and the arista relatively shorter; the structure of the hypopygium is unknown.

Genus *Gymnoptera* Lioy

Gymnoptera Lioy, 1864, p. 79.—Schmitz, in Lindner, 1953, p. 300.—Borgmeier, 1958, p. 307.

This genus is very similar to *Conicera* Meigen, but can be easily recognized by the chaetotaxy of the hind tibiae, which lack the dorsal bristle near base that are always present in *Conicera*. The male has stiletto-shaped appendages on the hind border of the hypopygium. The dimorphism in the venation of the wing is remarkable; in the male the costa is shorter, and the 1st costal segment is longer than the 2nd; in the female the costa is longer, and the 1st costal segment is shorter than the 2nd. The larvae and pupae are very characteristic (see figures of Schmitz, in Lindner, 1953, p. 302).

Gymnoptera neotropica Borgmeier

Gymnoptera neotropica Borgmeier, 1958, p. 307, fig. 1a-d [male; Rio de Janeiro].

FEMALE (undescribed).—Length 1.3–1.5 mm. Third antennal joint dark brown, small, globose, pointed at tip, length 0.13 mm, width 0.11 mm; arista apical, long (0.58 mm in a large specimen), distinctly pubescent. Tergites brown, opaque, 2 and 6 a little elongated, 3–5 subequal in length; pubescence scarce, short, nearly absent dorsally. Legs as in male. Wing hyaline, heavy veins pale brown. Length 1.53 mm (in female from Dominica 1.3 mm), width 0.72 mm (0.62 mm). Costa 0.54 (0.53) of wing length, ratio of costal segments 13:16 (11:14). Costal cilia short and numerous, arranged in pairs until near extreme tip, 2nd segment with 10–11 pairs and one single cilia.

MATERIAL EXAMINED.—The type-series (holotype and paratypes, males in CTB) from Rio de Janeiro; many puparia and several males and females reared from dead *Calosoma* beetle, III–IV. 1960 (T. Borgmeier). One female (on slide, USNM) from Dominica, W. I., Manets Gutter, 7 March 1965 (W. W. Wirth), light trap.

Subfamily METOPININAE

Tribe METOPININI

Genus *Megaselia* Rondani

Key to the Species of *Megaselia*

1. Mesopleura hairy or bristled (Subgenus *Aphiochaeta*) 2
- Mesopleura bare (Subgenus *Megaselia, sensu stricto*) 14
2. Scutellum with 4 bristles (group I) 3
- Scutellum with 2 bristles 5
3. Mesopleura with uniform hairs; 5th tergite of female and 5th–6th in male with an apical row of bristles 1. *M. (A.) setigera* (Brues)
- Mesopleura hairy and bristled 4
4. Tergites yellow-banded, in female of normal size 2. *M. (A.) fasciventris* (Enderlein)
- Tergites 1–3 black, 2–3 large (Figure 18), segments 4–10 (♀) yellow or orange 3. *M. (A.) luteicauda* (Borgmeier)
5. Mesopleura with hairs and one or more bristles 6
- Mesopleura with uniform hairs 12
6. Costa long (0.44 or more of wing) (group II) 7
- Costa short; fork wanting (group III) 11
7. Mesopleura with one long bristle 8
- Mesopleura with one or more moderate bristles 9
8. Costa 0.58–0.60 of wing length, 2 longer than 1 (Figure 23) 4. *M. (A.) pleurochaeta*, new species
- Costa 0.47 of wing length; 2 shorter than 1 (Figure 21) 5. *M. (A.) spiculata*, new species
9. Two supraantennals; frons glossy, coarsely punctured 6. *M. (A.) punctifrons*, new species
- Four supraantennals 10

10. Thorax yellow; costal cilia very short and close 7. *M.(A.) semiferruginea* Bridarolli
 Thorax dark; cilia long, widely placed (Figure 26) 8. *M.(A.) parviseta*, new species
11. Costa 0.34 of wing length (Figure 27) 9. *M.(A.) destituta*, new species
 Costa 0.42 of wing length 10. *M.(A.)* species indeterminata
12. Costa long (group IV) 13
 Costa short; 1 longer than 2+3 (Figure 31); fore-metatarsus thickened (Figure 33) (group V)
 13. *M.(A.) definitiva*, new species
13. Costa 0.55 of wing length; 2 longer than 1; palpi of normal shape
 11. *M.(A.) gemella* Borgmeier
 Costa 0.48 of wing length; 1 longer than 2+3 (Figure 30); palpi of male swollen (Figures 28, 29)
 12. *M.(A.) pulliclava*, new species
14. Scutellum with 4 bristles (group VI) 15
 Scutellum with 2 bristles 22
15. Fork missing; costa 0.41 of wing length (Figure 34) 14. *M.(M.) deprivata*, new species
 Fork present 16
16. Hind tibial setulae biseriate 17
 Hind tibial setulae uniseriate 18
17. Halteres yellow; costa 0.5 of wing length; 1 shorter than 2+3 15. *M.(M.) picta* (Lehmann)
 Halteres dark brown; costa 0.59 of wing length; 1 subequal to 2 16. *M.(M.) subpicta* (Malloch)
18. Scutellars unequal 17. *M.(M.) obscuripalpis*, new species
 18. ♂ *M.(M.) scalaris* (Loew) in part
 Scutellars equal or subequal 19
19. Supraantennals equal 18. ♀ *M.(M.) scalaris* (Loew)
 Supraantennals unequal 20
20. Costal segment: 2 longer than 1 (Figure 35) 19. *M.(M.) elegantula*, new species
 Costal segment: 2 shorter than 1 21
21. Costal cilia very short and close; female abdomen (fig. 39) orange or yellow; anal segment
 long (Figure 38) 20. *M.(M.) aurea* (Aldrich)
 Costal cilia long; tergites brown with yellow apical seams; anal segment short
 21. *M.(M.) striaticentris* Borgmeier
22. Costa long (0.44 or more of wing length) (group VII) 23
 Costa short (group VIII) 54
23. Halteres yellow 24
 Halteres dark 30
24. Two supraantennals; 6th tergite of female long and narrow; hypopygium with 4-5 bristles
 laterally 22. *M.(M.) seticauda* (Malloch)
 Four supraantennals 25
25. Supraantennals equal 26
 Supraantennals unequal 28
26. Hind tibial setulae biseriate 15. *M.(M.) picta* (Lehmann) p.p.
 Hind tibial setulae uniseriate 27
27. Pleura yellow 18. ♂ *M.(M.) scalaris* (Loew) in part
 Pleura brown 23. *M.(M.) pleurofascia* Borgmeier
28. Abdominal segments 3-5 (♀) membranous (Figure 41); fourth sternite with 2 curved rows
 of setulae (Figure 42) 24. *M.(M.) hypochaeta*, new species
 Abdomen of female with 6 tergites 29
29. Sixth tergite (♀) long, rounded behind (Figure 44) 25. *M.(M.) leptacina*, new species
 Sixth tergite short, rounded anteriorly (Figure 48) 26. *M.(M.) imilatrix*, new species
30. Hind tibial setulae biseriate; upper postantennals two-thirds of frontal width apart; labellae
 broad (Figure 50) 27. *M.(M.) buccata*, new species
 Hind tibial setulae uniseriate 31
31. Frons glossy 32
 Frons opaque or subshining 33
32. Fore-metatarsus (♂ ♀) thickened (Figure 52); coxae black 28. *M.(M.) polita* (Enderlein)
 Fore-metatarsus slender; coxae yellow; hind femur brown, basal 3rd yellow
 29. *M.(M.) femoralis* (Enderlein)
33. Costa shorter than one-half of wing (0.45-0.48) 34
 Costa 0.5 or longer 40
34. Costal cilia long (Figure 56); black species 30. *M.(M.) enderleini* (Brues)
 Costal cilia short 35

35. Labellae (σ^7) large, shield-shaped; costa 0.48 (Figure 58) 31. *M.(M.) labellifera*, new species
 Labellae not shield-shaped 36
36. Foretarsus (σ^7) thickened 37
 Foretarsus not thickened 38
37. Fore-metatarsus strongly thickened (Figure 67) 32. *M.(M.) metatarsalis* new species
 Fore-metatarsus slightly thickened (Figure 62) 33. *M.(M.) tarsodes*, new species
38. Third tergite of female constricted (Figure 69) 34. *M.(M.) substricta*, new species
 Third tergite of female not constricted; costa 0.45 39
39. Hypopygium with 2 bristles laterally (fig. 71); antials vertically below laterals 35. *M.(M.) diplochaeta*, new species
 Hypopygium without bristles; antials midway between supraantennals and laterals 36. *M.(M.) horticola* Borgmeier
40. Two supraantennals 41
 Four supraantennals 43
41. Palpi of male slender, fusiform, with short setulae (Figure 77) 37. *M.(M.) gracilipalpis*, new species
 Palpi normal 42
42. Wing whitish, veins pale (Figure 79); anal tube long 38. *M.(M.) pallidipennis*, new species
 Wing yellow, veins brown (Figure 81); anal tube short 39. *M.(M.) ferruginosa* (Brues)
43. Male with a sternal pocket on 6th segment 44
 Male without sternal pocket 45
44. Sternal pocket large (Figure 83); supraantennals subequal 40. *M.(M.) bursella*, new species
 Sternal pocket small (Figure 85); supraantennals unequal 41. *M.(M.) burselloides*, new species
45. Proboscis of female broad 46
 Proboscis of female normal 47
46. Fifth segment (φ) laterally with stiff hairs (Figure 87); sides of 6th tergite straight 42. *M.(M.) fontirostris*, new species
 Fifth segment (φ) without stiff hairs; sides of 6th tergite convex (Figure 91) 43. *M.(M.) tumidirostris*, new species
47. Veins rather straight; fork long 48
 Veins normal 49
48. Tergites 3-5 (φ) each laterally with a large stigma 44. *M.(M.) miristigma* Borgmeier
 Stigmata of normal size; terminal segments (φ) with a chitinized hook-shaped structure 45. *M.(M.) hamaticauda*, new species
49. Last joint of midtarsus (σ^7) twice as long as preceding (Figure 96) 46. *M.(M.) paula*, new species
 Last joint of midtarsus of normal length 50
50. Fork large; 4th vein starting behind fork; antials vertically below laterals 47. *M.(M.) flavopleura* (Malloch)
 Fork of medium size; antials inside of laterals 51
51. Arista short 52
 Arista long 53
52. Hind femur black at tip; 5th tergite (σ^7) yellow; hairs of ventral fringe of hind femur short and close (Figure 100) 48. *M.(M.) crinellifemur*, new species
 Hind femur not maculated; 5th tergite (σ^7) brown; hairs of hind femur longer, widely placed (Figure 106) 49. *M.(M.) subaristalis*, new species
53. Fifth tergite (φ) excavated behind, 6th transverse (Figure 110) 50. *M.(M.) totaflava*, new species
 Fifth tergite (φ) straight behind; 6th oval, longer than broad (Figure 112) 51. *M.(M.) alajuelensis* (Malloch)
54. Fork wanting; costa 0.42 (Figure 115) 52. *M.(M.) mutilata*, new species
 Fork present 55
55. Halteres yellow; 3rd vein with a bristle at base 53. *M.(M.) brevicostalis* (Wood)
 Halteres dark; 3rd vein without a bristle at base (Figure 117) 54. *M.(M.) crinipyga*, new species

1. *Megaselia (Aphiochaeta) setigera* (Brues)

Aphiochaeta aurea var. *setigera* Brues, 1919a, p. 505 [♀; Grenada].

Megaselia (Aphiochaeta) setigera (Brues).—Borgmeier, 1962b, pp. 301 [key], 317, figs. 1–3, 14 [Grenada; Costa Rica; Panama; Dominica].

Holotype female (MCZ), paratypes females (MCZ, CTB), Grenada, Brues collector.

MALE (undescribed).—Length 1.30–2.00 mm. Frons broader than long laterally (4:3), yellow to brown, subshining, pubescent. Lower supraantennals weak, one-half to two-thirds of upper, the latter about one-fourth of frontal width apart. Antials a little below level of upper postantennals, slightly farther from them than from laterals which are a little above level of upper supraantennals. One lower postocular bristle; one bristle on jowls; cheeks with a few hairs. Third antennal joint brown, of normal size. Palpi yellow, well bristled.

Thorax yellow. Mesopleura with a few short hairs. Scutellum with 4 equal bristles.

Abdomen opaque, venter yellow; tergites black, second yellow at base and with bristles laterally; 5th and 6th with bristles on hind margin, the lateral ones longer. Hypopygium brown, not large, on both sides with bristly hairs. Anal segment long, yellow, end-hairs differentiated.

Legs yellow, hind femur black at tip. Foretarsus very slender. Hair-seam of midtibia nearly complete. Hind femur on basal half of ventral edge with 6–7 setuliform hairs. Posterodorsal cilia of hind tibia short, the basal ones weak.

Wing grayish yellow, veins brown. Costa 0.56 of wing length, exceeding a little tip of 3rd vein, ratio of segments 14:12:4. Cilia very short and close. Fourth vein starting at fork, 5th and 6th sinuous. Axillary margin with 5–6 hairs. Halteres brown.

FEMALE.—Length 1.5–2.8 mm. Wing (Borgmeier, 1962b fig. 14); costa exceeding slightly tip of 3rd vein (Figure 14 is not correct in this respect). Tergites as in his Figure 1 (Borgmeier, 1962b); 3rd as long as 2nd, with the hind margin straight; 4th rudimental, variable in size, semicircular; 5th transverse, with 8 long bristles on hind margin.

MATERIAL EXAMINED.—Besides the specimens listed in a previous paper (1962) I have seen from Dominica 18 dried specimens (6 ♂, 12 ♀) and 79 preserved in alcohol (34 ♂ 45 ♀) from: Clarke Hall, S. Chiltern Est., Manets Gutter, Fond Figue River (Wirth 1965, I–III; Steyskal, May 1966).

DISCUSSION.—A very striking species of group I, easily recognized by the long bristles on 5th tergite of female, and on hind margin of 5th and 6th tergite in male.

2. *Megaselia (Aphiochaeta) fasciiventris* (Enderlein)

FIGURES 15–17

Aphiochaeta punctifemur var. *fasciiventris* Enderlein, 1912, p. 33 [♀; Hammonia=Corupá, S. Catarina, Brazil].

Megaselia (Aphiochaeta) fasciiventris (Enderlein).—Borgmeier, 1935a, p. 462, pl. 5: fig. 5 [wing; type]; 1962b, p. 302 [key].

Aphiochaeta caribbaea Brues, 1919a, p. 504 [♀; Grenada, W.I.].

Megaselia (Aphiochaeta) caribbaea (Brues).—Borgmeier, 1962b, p. 313, fig. 15 [type]; 1967c, p. 404 [synonymy].

MALE (undescribed).—Length 1.6–2.0 mm. Frons broader than long (4:3), black, subshining, sparsely pubescent, with a distinct median line. Supraantennal bristles (su) subequal, the upper one-third or more of frontal width apart, the lower one-eighth. Antials on level of lower su, about midway between upper su and eye; anterolaterals slightly above level of upper su near eye-margin. Second row slightly convex, the bristles equidistant. One long lower postocular; jowls with 2 bristles; cheeks with 5–6 weak bristles. Third antennal joint globose, dark brown; arista long, distinctly pubescent. Palpi brownish yellow, flat, with 5 strong bristles.

Thorax yellow to dark brown, subshining. Pubescence short. Mesopleura hairy, with 1–3 moderate bristles or prolonged hairs. Scutellum with 4 long bristles, the anterior sometimes a trifle weaker.

Abdomen opaque; venter yellow; tergites subequal, black with yellow apical bands. Pubescence distinct, bristle-like laterally, longer on hind margin of sixth. Hypopygium (Figures 16, 17) small, black, with several hairs on both sides; ventral plate broadly rounded. Anal segment yellow, of median length, apical hairs not differentiated.

Legs brownish yellow. Foretibia with a dorsal row of black spinuli. Foretarsus slender, metatarsus a little longer than 2+3. Hair-seam of midtibia reaching apical fifth, posterodorsal setulae distinct, some anterodorsal setulae on basal half. Hind femur broad (ratio 25:65), on basal half of ventral edge with about 11 stiff short setulae.

Wing (Figure 15, ♂ from Nova Teutonia) brownish, veins brown. Length 1.76 mm, width 0.75 mm.

Costa 0.53 of wing length (0.56 in male from Dominica), ratio of segments 14:12:4 (Dominica: 14:13:4). Cilia moderately long (0.1 mm), about 9 pairs between 1st vein and tip of costa. Mediastinalis present. One distinct bristle at base of 3rd vein. Fork acute; 4th vein slightly concave, starting at fork with a weak S-curvature; 5th bent before middle; 6th sinuous. Axillary margin with 4 hairs. Halteres yellow or brown.

FEMALE.—Length 2.0–2.3 mm. Similar to male. Costa 0.55 of wing length in lectotype, 0.56 in type of *A. caribbaea*; ratio of segments 16:15:5. Tergites somewhat shining.

MATERIAL EXAMINED.—Besides the type from Corupá, S. Catarina, Brazil, I have seen 30 males and 14 females from Nova Teutonia, and 7 males and 3 females from Petrópolis, R.J., Brazil. From Dominica: 2 males in alcohol, Clarke Hall, March 1965 (Wirth).

DISCUSSION.—*M. (A.) fasciventris* belongs to group I. There are 4 long scutellars of equal length in both sexes; the species is wrongly placed in my key (1962b) among those with unequal scutellars.

VARIATION.—The color of the thorax and halteres is variable. In the 2 males from Dominica the costa is rather long (0.56 of wing length), the 4th vein is more curved, the 5th is less arcuate; the halteres are dark; the hypopygium is identical to males from Nova Teutonia.

3. *Megaselia (Aphiochaeta) luteicauda* (Borgmeier)

FIGURES 18–20

Aphiochaeta luteicauda Borgmeier, 1925b, p. 145 [♀; Petrópolis].

Megaselia (Aphiochaeta) luteicauda (Borgmeier).—Borgmeier, 1962b, p. 301 [in key].

Lectotype female (CTB) and one paratype female (CTB), from Petrópolis, R. J.; Borgmeier and Ronchi, collectors.

MALE (undescribed).—Length 1.6–2.0 mm. Frons about as broad as long medially, black to blackish brown, subshining, scarcely pubescent, with a fine median line. Su subequal, the lower somewhat shorter (5:4 or 6:5), the upper about one-third of frontal width apart, the lower one-sixth. Antials on level of lower su, near anterior corner of frons, a little removed from eye-margin; anterolaterals slightly above level of upper su, near eye-margin. Second row slightly convex, the bristles equidistant. One strong lower postocular bristle; jowls-cheeks with an ascending row of 8 moderate bristles. Third antennal joint globose, brown; arista long, distinctly pubescent. Palpi flattened, yellowish, with 5 long bristles. Proboscis short, disk-shaped, circular when seen from below.

Thorax dark castaneous, subshining, Pubescence short. Mesopleura with a few fine hairs above and 1–3 bristly hairs behind. Scutellum with 4 long bristles.

Abdomen opaque, black, grayish pollinose; 2nd tergite elongated, 3–6 subequal, sparsely pubescent, some bristly hairs laterally and on hind margin of 6th. Hypopygium (Figure 20) small, black brown, at left with a row of 5 bristly hairs near lower margin. Anal segment long (0.2 mm), yellow, with short hairs, apical hairs not differentiated.

Lews yellowish brown to castaneous. Foretibia with a dorsal row of black spinuli. Foretarsus slender, metatarsus about as long as 2–4. Midtibial setulae biseriate on basal half, hair-seam reaching apical sixth. Hind femur broad, ventral hairs on basal half short, delicate, Posterodorsal setulae on hind tibiae strong below middle, weaker above.

Wing (Figure 19, ♂ from Dominica) yellowish brown, veins brown. Costa 0.56 of wing length, ratio of segments 14:14:3. Cilia long (0.13 mm), there are 6 pairs between r_1 and r_3 . Mediastinalis obsolete. Third vein with a bristle at base. Fork not large, acute; 4th vein starting at fork with a very faint hook (sometimes missing), curved near base, nearly straight at middle; veins 5–6 sinuous. Axillary margin with 3 hairs. Halteres yellow, peduncle reddish brown.

FEMALE.—Length 2.0–3.5 mm. Upper su sometimes more than one-third of frontal width apart, antials sometimes nearly vertically below anterolaterals. Third antennal joint small. Proboscis short, narrow. Abdomen (Figure 18) opaque, black on segments 1–3, venter enclosed, the rest yellow or orange, 1st tergite short; 2nd and 3rd large trapezoid, form a little variable, with short sparse pubescence, marginal hairs on 2nd (sometimes also on 3rd) stiff, bristle-like. Segments 3–10 membranous, retractile, often nearly entirely withdrawn under 3rd tergite; 3–6 indistinctly segmented, practically bare, 5th very short, 7–10 abbreviated. Cerci indistinct. Costa 0.55–0.57 of wing length, segments 1 and 2 subequal, 1st sometimes a little longer (23:20), there are 7–8 pairs of cilia between r_1 and r_3 .

MATERIAL EXAMINED.—Besides the types from Petrópolis, Rio de Janeiro, I have seen both sexes from Nova Teutonia, Brazil (Plaumann) and Costa Rica (Higuato, San Mateo; Suiza de Turrialba; P. Schild leg.); numerous females from Curitiba, (Wiltuschnig,

XII. 1925); one female from Loreto, Misiones, Argentina (Ogloblin 11.X36), on dead opilionid. From Dominica I have seen 12 males and 8 females from the following localities (Wirth I.-III, 1965): d'Leau Gommier, Manets Gutter, Sylvania, Layou R. mouth, Pont Casse, Fond Figures R. and Clarke Hall.

DISCUSSION.—This striking species belongs to group I. The female is easily recognized by the color and structure of the abdomen, the male by the long anal tube. The species comes close to *M. pyteryacantha* Borgmeier which has the scutellars unequal and the female abdomen different.

4. *Megaselia (Aphiochaeta) pleurochaeta*, new species

FIGURE 23

MALE.—Length 1.2–1.7 mm. Frons subquadrate, slightly broader than long (9:8), yellow, subshining, scarcely hairy, medium furrow distinct. Four supra-antennals, the lower very weak and hardly one-half of the upper which are about one-third of frontal width apart. Antials a little below level of upper supra-antennals, a little farther from them than from eye-margin and from anterolaterals; the latter are slightly higher placed. Preocellars as far from each other as upper supra-antennals. One lower postocular bristle; jowls and cheeks with a series of fine hairs. Third antennal joint brownish yellow, of normal size; arista one-third longer than width of frons, distinctly pubescent. Palpi yellow, not large, with 6 short bristles.

Thorax yellow, subshining; pleura pale. Scutellum with 2 bristles and 2 small hairs. Mesopleura with a few hairs above and a strong bristle behind which is about as long as the scutellars.

Abdomen: venter pale yellow; tergites dark brown, a little paler brown at middle and on anterior half of 2nd tergite; the latter with 2 bristles laterally. Pubescence scarce and short, longer on hind margin of 6th tergite. Venter on hind margins of segments 3–6 with 2–4 bristle-like hairs. Hypopygium dark brown, of medium size, dull, with hairs below and on each side with 2 conspicuous bristles behind; dorsum bare. Anal tube long, yellow, with short hairs, end-hairs strong.

Legs yellow, hind femur blackish at tip. Foretarsus slender. Hind femur moderately broad, with a distinct fringe of longish hairs on ventral edge of basal half. Hind tibia with about 10 distinct posterodorsal setulae.

Wing grayish yellow, veins brown. Length 1.2–1.5 mm. Costa in male 0.58 of wing length, ratio of segments 20:24:5. Cilia short. Fourth vein concave, very faintly recurved at base; 5th and 6th slightly sinuous. Anal margin broadly convex. Axillary margin with 2 short hairs. Halteres dark brown.

FEMALE.—Similar to male. Tergites brown; 2nd elongated, reaching sides, 3–6 gradually narrowed, 6th with a median notch anteriorly, 2nd with 2 bristles laterally; pubescence very scarce. Terminal segments fleshy. Venter with hairs as in male. Wing (Figure 23): costa up to 0.6 of wing length, ratio of segments 22:27:4.

MATERIAL EXAMINED.—Holotype male (USNM 70240), Dominica, Pont Casse, 1.7 miles east, 12.III.65 (W. W. Wirth). Paratypes (USNM, CTB): 5 males and 2 females, partly in alcohol, same data as type; 1 female, Pont Casse, 11.IV.1966 (R. J. Gagné).

DISCUSSION.—*M. pleurochaeta* seems to be close to *M. macrochaeta* Malloch (1912; Puerto Rico), but in the latter the female has 4 scutellars, the halteres are yellow, and the first costal division is longer than the second.

5. *Megaselia (Aphiochaeta) spiculata*, new species

FIGURES 21, 22

MALE.—Length 1.56 mm. Head width 0.52 mm. Frons black, slightly broader than long laterally (6:5), width 0.36 mm, median length 0.30 mm, distinctly pubescent, with a deep median furrow. Supra-antennals subequal, the lower about three-fourths of upper; the upper one-fifth of frontal width apart, the lower close together. Antials farther from su than from anterolaterals, the latter in line with upper su, the antials slightly lower. Second row nearly straight, the preocellars farther from mediolaterals than from each other. Upper and lower postoculars strong. Cheeks with some setulae. Third antennal segment black, globose, of normal size; arista 0.39 mm, distinctly pubescent. Palpi yellow, of normal shape, with 5 strong bristles on apical 3rd and some setulae.

Thorax black-brown. Pubescence short, bristle-like behind. Two dorsocentrals. Mesopleura with about 15 short hairs and one long bristle (0.176 mm), about as long as scutellars. Scutellum with 2 bristles and 2 minute hairs.

Abdomen black brown, venter dark; tergites subequal, first tergite yellow, 2–6 with a broad median yellow spot anteriorly, forming nearly a yellow longi-

tudinal strip. Pubescence conspicuous, longer on hind margin of 6th. Hypopygium (Figure 22) small, dark brown, with numerous bristles or bristly hairs. Anal segment yellow, of medium length (0.13 mm), hairy, end-hairs conspicuous but not much differentiated.

Legs yellow, hind femur with a large apical macula. Foretibia 0.33 mm; tarsus slender, 0.46 mm, metatarsus longer than 2+3. Midtibia 0.44 mm, with distinct anterodorsal and posterodorsal setulae; seam nearly complete; end-spur four-fifths of metatarsus. Hind femur broad (ratio 10:25), ventrobasal hairs short, inconspicuous. Hind tibia 0.59 mm, with 8 strong moderately short setulae.

Wing (Figure 21) distinctly grayish yellow, veins pale brown, 4-7 evanescent at tip. Length 1.37 mm, width 0.59 mm. Costa 0.47 of wing length, ratio of segments 10:8:4; cilia moderately long (0.1 mm), about 6 pairs between 1st vein and apex of costa. Medialisternalis obsolete. Fork acute. Third vein with a distinct bristle at base. Fourth starting at fork with a faint hook, curved at basal fourth, remainder nearly straight; 5th feebly recurved at base, broadly bent before middle; 6th sinuous. Axillary margin with 3 hairs. Halteres black.

MATERIAL EXAMINED.—Holotype, on slide (USNM 70241), Dominica, Manets Gutter, 7 Mar. 1965 (W. W. Wirth).

DISCUSSION.—*M. (A.) spiculata*, new species, is very close to *M. (A.) parviseta*, new species. For differences, see page 13.

6. *Megaselia (Aphiochaeta) punctifrons*, new species

FIGURE 24

FEMALE.—Length with the terminal segments partly protruding 1.75 mm. Head width 0.48 mm. Frons convex, subquadrate, width 0.26 mm, deep black, distinctly shining, with scattered coarse piligerous punctures and a fine median furrow. Two thin supraantennals close together (about one-seventh of frontal width apart and more approximate than the preocellars). Antials reclinate, placed on anterior border, closer to supraantennals than to anterolaterals which are distinctly higher. Second row slightly concave. Eyes large. One strong bristle on lower corner of eye; cheeks with 4 hairs. Third antennal joint orange, somewhat oval, of normal size. Arista brown, one-fifth longer than width of frons, distinctly pubescent. Palpi yellow,

partly withdrawn into the mouth opening, with about 5 bristles (the apical is the longest). Proboscis short.

Thorax black or brownish black, distinctly shining, pleura glossy. Mesopleura with hairs and one moderately long bristle behind (length 0.169 mm). Scutellum with 2 bristles (length 0.195 mm) and 2 minute hairs.

Abdomen black, venter enclosed. Tergites reaching sides, 2-5 subequal, glossy laterally, somewhat pruinose dorsally, 6th entirely glossy. Pubescence scarce, short. End-segments fleshy, 7th with a narrow tergal plate and a circle of delicate hairs. Cerci small.

Legs black brown, forelegs paler. Foretarsus slender. Foretibia with a dorsal row of short setulae. Posterodorsal setulae on midtibia distinct. Hind femur broad, no ventral fringe on basal half. Hind tibia with about 7 distinct setulae, the upper short, those on lower half strong and widely placed.

Wing (Figure 24) grayish brown, veins dark brown. Length 1.55 mm, width 0.62 mm. Costa 0.53 of wing length, ratio of segments 15:10:4. Cilia short, closely placed. First vein nearly straight; 4th gently curved on basal 3rd, base obsolete, apex faintly deflected; 6th slightly sinuous. Axillary margin with 2 hairs. Halteres black.

MATERIAL EXAMINED.—Holotype female (USNM 70242), Dominica, S. Chiltern Est., 2 Feb. 1965 (W. W. Wirth).

DISCUSSION.—*M. (A.) punctifrons*, new species, belongs to group II. It is a nice strongly shining species and is easily recognized by the two supraantennals and the coarse frontal punctures.

7. *Megaselia (Aphiochaeta) semiferruginea* Bridarolli

Megaselia (Aphiochaeta) semiferruginea Bridarolli, 1940, p. 494 (♂♀; Argentina).—Borgmeier, 1962b, p. 303 [key].

Holotype male and paratype female (CTB), from Carlos Paz, Sierras de Cordoba, Argentina; Bridarolli collector.

MATERIAL EXAMINED.—Three females from Dominica, in alcohol, Clarke Hall, March 1965 (W. W. Wirth).

This species belongs to group II (costa long, mesopleura hairy and with some setulae or prolonged hairs). It may be confused with *M. gemella* Borgmeier, but the latter lacks the mesopleural setulae, and the 2nd

costal segment is longer than the 1st; in *M. semiferruginea* the first and second costal segments are of equal length and the foretarsus is rather stout in male.

8. *Megaselia (Aphiochaeta) parviseta*, new species

FIGURES 25-26

MALE.—Length 1.40 mm. Head width 0.52 mm. Frons black-brown, broader than long laterally (4:3), width 0.26 mm, sparsely pubescent, with a distinct median line. Su equal or nearly so, the upper about one-third of frontal width apart, the lower one-fifth. Antials close to anterolaterals, on a slightly lower level than upper su, anterolaterals almost in line with upper su. One upper and one lower postocular bristle; one bristle on jowls; cheeks with some weaker bristles. Third antennal joint black, small, globose, width 0.09 mm; arista 0.39 mm. Palpi yellow, with 5 long bristles.

Thorax black-brown. Pubescence short, bristle-like behind. Mesopleura with 4 short hairs above and 2 small bristles (length 0.09 mm). Scutellum with 2 bristles and 2 hairs.

Abdomen black. Tergites subequal. Pubescence scarce, longer hairs on hind corners of tergites and on hind margin of 6th. Hypopygium (Figure 26) black-brown, with bristly hairs. Anal segment short, 0.09 mm, yellow, end-hairs not differentiated.

Legs yellow, hind femur not darkened at tip. Foretibia 0.33 mm; tarsus slender, 0.49 mm, metatarsus as long as 2+3. Midtibia 0.41 mm, cilia biseriate, seam reaching apical fourth. Hind femur about 3-times as long as broad, on basal half of ventral edge with 8 moderately long curved hairs. Hind tibia 0.54 mm, with 10 distinct short setulae.

Wing (Figure 25) grayish yellow, veins pale brown, 4-7 evanescent at tip. Length 1.37 mm, width 0.57 mm. Costa 0.52 of wing length, ratio of segments 24:20:7. Cilia moderately long (0.11 mm), 6 pairs between 1st vein and apex of costa. Mediastinalis obsolete. Fork acute. Third vein with a fine bristle at base; 4th starting at fork with a faint hook, feebly curved near base, remainder nearly straight; 5th a little recurved at base, remainder feebly sinuous; 6th slightly sinuate. Axillary margin with 3 hairs. Halteres yellow.

MATERIAL EXAMINED.—Holotype on two slides (USNM 70243), Dominica, Pont Casse, 12 Feb. 1965 (Wirth).

DISCUSSION.—*M. (A.) parviseta*, new species, is extremely close to *M. (A.) spiculata*, new species, but in the latter the upper su are more approximated, the mesopleural bristle is long, the hind femur is black at tip, the anal segment is longer, and the costa is shorter; the color of the halteres is also different.

REMARK.—The type-specimen was badly damaged by accident during laboratory work, after the description and drawings had been made.

9. *Megaselia (Aphiochaeta) destituta*, new species

FIGURE 27

FEMALE.—Length 1.00 mm. Head width 0.31 mm. Frons as broad as long medially (0.18 mm), lateral length 0.11 mm, black or black-brown, pubescent, with a distinct median line. Four supraantennals of equal length, the upper about one-fourth of frontal width apart, the lower one-eighth. Bristles of 1st row forming an evenly convex line with upper su, antials a little farther from su than from anterolaterals, as far from su as the latter from each other. Second row slightly convex, the bristles equidistant. Upper postocular distinct; lower strong. Jowls + cheeks with 3 bristles. Third antennal joint black, of normal size, globose, width 0.065 mm; arista 0.27 mm, shortly pubescent. Palpi yellow, slender, with 4 long bristles on apical half.

Thorax black or black-brown, Mesopleura with a few short hairs and one very short bristle (0.03 mm). Scutellum with 2 bristles and 2 minute hairs.

Abdomen black-brown, venter grayish yellow. Tergites 2-6 subequal, gradually narrowed, 6th transverse, with a gland opening basally. Pubescence short, scarce; venter on hind margins of 5th and 6th segments with a transverse row of hairs placed in dark spots. Terminal segments short. Cerci small.

Legs yellow, hind legs brownish yellow. Foretibia 0.20 mm. Fore-metatarsus slightly thickened, one-half of tibia in length, about as long as joints 2+3. Midtibia 0.24 mm, hair-seam ending at middle; spur two-thirds of metatarsus. Hind femur slender, length 0.39 mm, width 0.10 mm, ventrobasally with 4 short widely placed fine hairs. Hind tibia 0.35 mm, with 12 very delicate short posterodorsal cilia.

Wing (Figure 27) slightly grayish, veins pale brown, 4-7 paler, evanescent at tip. Length 0.93 mm, width

0.42 mm. Costa 0.34 of wing length, slightly thickened, especially on distal half, ratio of segments 3:2, with 8 marginal cilia, the longest 0.065 mm; there are 3 cilia between tip of 1st vein and apex of costa; besides the marginal bristles there is a dorsal row of 13 closely set short hairs. Mediastinalis incomplete. Fork wanting. Third vein without a bristle at base, apex upcurved and thickened; 4th vein evenly arcuate, obsolete at base; 5-6 feebly sinuous, 7th indistinct. Axillary margin with 2 hairs. Halteres black.

MATERIAL EXAMINED.—Holotype female (USNM 70244) on slide, Dominica, Manets Gutter, 7 March 1965, light trap (Wirth).

DISCUSSION.—*M. (A.) destituta*, new species, is extremely close to *M. tumidula* Borgmeier (1962b, Brazil) but the latter is larger, the costa is somewhat longer, the 3rd vein is not distinctly upcurved at apex and less thickened, and there are 4 cilia between r^1 - r^3 (see Borgmeier, 1962b, fig. 33); 6th more distinctly sinuate, the upper su are also farther apart from each other.

10. *Megaselia (Aphiochaeta)* species indeterminata

There is one male before me, labeled: "Dominica, Manets Gutter, 5 March 1965, W. W. Wirth" and "*Megaselia (Aph.) lanceata* Borg. det. W. W. Wirth." This specimen has both wings badly damaged at base; I put them on slide. The costa is less thickened than in *M. (A.) lanceata* Borgmeier (Mexico); wing length 0.91 mm, costa 0.41 of wing length. This male probably belongs to a new species which is close to *M. (A.) tumidula* Borgmeier (1962b, p. 338, figs. 33-34; Nova Teutonia, Brazil). According to Dr. Wirth, there is a 2nd male in the National Museum of Natural History from the same locality (collected 7 March 1965, W. W. Wirth) which may be in better condition.

MATERIAL EXAMINED.—One female (USNM, on slide), from Dominica, Pont Casse, April 1964, O. S. Flint, at light, probably belongs to this species. Wing length 1.24 mm, costa 0.42 of wing length.

I refrain from naming and describing this species until additional material is available, preferably preserved in alcohol.

In *M. (A.) destituta*, new species, described above, which is also near, the costa is shorter (0.34 of wing length).

11. *Megaselia (Aphiochaeta) gemella* Borgmeier

Megaselia (Aphiochaeta) gemella Borgmeier, 1962b, pp. 304 [key], 349, fig. 43 [♂ ♀].

Holotype male (CTB), paratypes one male 3 females (CTB, USNM), from Petrópolis, R.J., Brazil, and Nova Teutonia, S. Catarina, Brazil.

MATERIAL EXAMINED.—From Dominica, 8 males and 24 females (pinned, one on slide) and 3 males and 30 females (in alcohol), from the following localities: Clarke Hall, S. Chiltern Est., d'Leau Gommier, Tareau Cliffs, Antrim 1000', Fond Figures R. (Collectors: W. W. Wirth, Jan.-Mar. 1965; O. S. Flint, 1964; R. J. Gagné, 1966).

The species belongs to group IV. The mesopleura are hairy. Supraantennals unequal. The male antenna is oval and somewhat enlarged; the palpal bristles are short. Hypopygium on each side with 3-4 weak bristles; anal segment very long (0.30 mm), end-hairs differentiated. Costa 0.55; 2 longer than 1. Halteres brown.

12. *Megaselia (Aphiochaeta) pulliclava*, new species

FIGURES 28-30

MALE.—Length 1.55 mm. Frons as broad as long medially (0.31 mm), dark brown, slightly shining, sparsely pubescent, with a fine median line. Su subequal, the upper one-half of frontal width apart, the lower one-eighth. Antials slightly below level of upper su, vertically below anterolaterals which are distinctly higher. Second row convex, the bristles equidistant. Two strong bristles near lower corner of eye. Cheeks with 2 hairs. Third antennal joint brown, of normal size, globose; arista 0.39 mm, distinctly pubescent. Palpi (Figures 28, 29) orange, rather long (0.23 mm), thickened, in dorsal view of normal shape, slightly depressed above; ventrally on distal half with a large oval groove which bears a few minute hairs; sides on basal half with a weak depression; there are 3 short black spinulae: 2 near apex, the apical being a little longer, and one on middle of lateral border.

Thorax yellowish brown, subshining. Pubescence short, not noticeably longer behind. Mesopleura with a patch of short hairs above. Scutellum with 2 bristles and 2 minute hairs.

Abdomen opaque, dark brown, venter yellow; tergites with a fine yellow apical seam; tergite 2 slightly elongated, 3-6 subequal. Pubescence short and scarce,

hind margin of 6th tergite with longer hairs. Hypopygium small, dark brown, on both sides with some bristly hairs. Anal segment rather long (0.15 mm), pale yellow, end-hairs not longer than the other hairs.

Legs yellow, hind femur black at tip. Foretibia 0.36 mm; foretarsus slender, metatarsus as long as joints 2-4. Midtibia 0.45 mm, hair-seam reaching apical fourth, spur nearly as long as metatarsus. Hind femur about 3 times as long as broad; basal half of ventral edge with 9 short curved hairs or setulae. Hind tibia 0.65 mm, with 6 distinct posterodorsal setulae on distal two-thirds and some shorter ones on basal third.

Wing (Figure 30) brownish yellow, veins brown. Length 1.50 mm, width 0.67 mm. Costa 0.48, ratio of segments 13:7:4. Cilia moderately short (0.09 mm), 6 pairs between tip of first vein and apex of costa. Mediastinalis obsolete. Fork acute. Third vein with a bristle at base; 4th weakly and evenly curved, starting behind fork without an S-curvature; 5th but little bent; 6th slightly bisinuate. Anal angle well marked. Axillary margin with 3 hairs. Halteres dark brown, stem yellow.

MATERIAL EXAMINED.—Holotype male, pinned specimen (USNM 70245), Dominica, Clarke Hall 11-20 Jan. 1965, light trap (W. W. Wirth).

DISCUSSION.—*M. (A.) pulliclava*, new species, is extremely close to *M. sublutea* Malloch (1912; U.S.A.), recently redescribed by Borgmeier (1964 p. 344). In *M. sublutea* the palpi are pale yellow, club-shaped and apparently shorter than in the present species; furthermore, the halteres of *M. sublutea* are decidedly pale yellow and the 4th vein is recurved at base.

REMARK.—The ventral groove on distal half of palpi described above may be due to desiccation; as a matter of fact, the excavation is present in both palpi of the type-specimen.

13. *Megaselia (Aphiochaeta) definita*, new species

FIGURES 31-33

MALE.—Length 1.00-1.30 mm. Head width (paratype) 0.39 mm. Frons quadrate, width 0.20 mm, black brown, sparsely pubescent, with a distinct median line. Supraantennals equal, the upper about one-fourth of frontal width apart, the lower more approximate. Antials in line with upper su, about midway between them and anterolaterals which are higher near eye-margin. Second row nearly straight, the preocellars farther from mediolaterals than from each other. Up-

per postocular bristle strong. Three bristles near lower corner of eyes. Third antennal joint black-brown, globose, of normal size; arista 0.30 mm, distinctly pubescent. Palpi slender, yellowish, well bristled.

Thorax black-brown. Pubescence short, longer behind. Mesopleura with about 13 hairs (in holotype), two of which are longer and bristle-like (length 0.05 mm). Scutellum with 2 bristles and 2 minute hairs.

Abdomen dark brown, venter enclosed. Tergites subequal in length. Hypopygium (Figure 32, from paratype) castaneous, higher than long, right side rounded behind, with a conspicuous bristle below and an ascending row of 5 setulae; 3 hairs near posterior border. Anal segment brownish yellow, of medium length, hairy, tergite on each side near apex with a long bristle directed downward; end-hairs not differentiated.

Legs yellowish brown to dark brown. Foretibia in holotype 0.19 mm (in paratype 0.26 mm); foretarsus (Figure 33) 0.37 mm (0.27 mm); metatarsus as thick as tibia at apex, one-half as long as tibia; joints 2-5 gradually attenuated. Midtibia 0.26 mm (0.32 mm); end-spur two-thirds of metatarsus. Hind femur 3 times as long as broad, with about 7 curved setuliform hairs. Hind tibia 0.36 mm (0.45 mm), with 12 short posterodorsal setulae.

Wing (Figure 31, drawn from holotype) slightly grayish yellow, veins brown. Length 0.81 mm (1.08 mm), width 0.37 mm (0.46 mm). Costa 0.42 (0.41) of wing length; Ratio of segments 20:8:5 (25:10:7). Cilia short (0.05-0.06 mm), there are 4 between r_1 and apex of costa. Mediastinalis obsolete. Third vein with a small bristle at base. Fork narrow, acute, posterior arm slightly curved. Fourth vein starting at fork (base obsolete in holotype), evenly concave; 5th slightly recurved at base; 6th feebly sinuous; 7th weak. Axillary margin with 2 hairs. Halteres dark.

FEMALE.—Similar to male. Abdomen brown. Tergites subequal in length, 6th transverse, with a yellowish gland-opening at base medially. The thickening of the fore-metatarsus is not so conspicuous as in male. In 3 specimens there are only 3 costal cilia between r_1 and tip of costa.

MATERIAL EXAMINED.—Holotype male, on slide (USNM 70246), Dominica, Cabrit Swamp, 13 June 1964, at light (O. S. Flint). Paratypes (all on slides) (USNM, CTB): 1 female, Cabrit Swamp, 18 June 1964 at light, (O. S. Flint); 2 females, Clarke Hall, 21-29 April 1964 (O. S. Flint); 1 male and 2 females, light trap, 21-31 March 1965 (W. W. Wirth).

DISCUSSION.—This small species belongs to group V and is close to *M. coalescens* Borgmeier, 1962b (Brazil), but differs by the structure and chaetotaxy of the male hypopygium and the dilated foretarsus in male.

14. *Megaselia (Megaselia) deprivata*, new species

FIGURE 34

MALE.—Length 1 mm. Frons broader than long medially (5:4), anterior width 0.25 mm, black-brown, slightly shining, distinctly pubescent, with a fine median furrow. Four supraantennals apparently subequal (the lower partly broken), the upper nearly one-fourth of frontal width apart, a little farther than the preocellars. Antials near anterior corner of frons, directed vertically toward median line, almost vertically below anterolaterals, twice as far from upper supraantennals than from anterolaterals. Third antennal joint dark brown, of normal size and shape; arista as long as width of frons, strongly hairy. Palpi yellow, not large, the bristles of median length or short.

Thorax subshining, dark brown, pleura paler below; mesopleura bare. Scutellum with 4 bristles, the posterior somewhat shorter (10:13) and close together, invading disk and nearly in line with the anterior bristles.

Abdomen black, dull. Tergites 2–6 gradually a little reduced in length. Pubescence scarce and short, somewhat longer laterally and on hind margin of 6th tergite. Hypopygium black, small, higher than long, with some hairs below; anal tube short, yellowish, end-hairs inconspicuous.

Legs yellowish coxae enclosed, hind legs darker. Foretibia 0.26 mm. Foretarsus short, a little longer than tibia, metatarsus as long as joints 2+3. Hind femur with 3 longish hairs on basal 4th of ventral edge. Posterodorsal cilia short, closely set.

Wing (Figure 34) distinctly brownish, veins dark brown. Length 1.1 mm, width 0.52 mm. Costa 0.41 of wing length, ratio of segments 17:13. Fork wanting. Costal cilia short (0.08 mm), about 10 pairs between humeral crossvein and apex of costa. Mediastinalis present. Third vein somewhat upcurved on distal third, slightly thickened apically; 4th slightly concave, a little deflected at extreme apex; 5th but little curved; 6th sinuous. Axillary margin with 2 hairs. Halteres black.

MATERIAL EXAMINED.—Holotype male (USNM 70247), Dominica, Freshwater Lake, 21 January 1965 (W. W. Wirth).

DISCUSSION.—*M. (M.) deprivata*, new species, belongs to group VI. It is a very peculiar species, easily recognizable by the length and position of the four scutellars, the short costa, and the absence of a fork.

15. *Megaselia (Megaselia) picta* (Lehmann)

Phora picta Lehmann, 1822, p. 43.

This cosmopolitan species was recently redescribed by Borgmeier (1966). The number of scutellars is variable (2–4). The specimens examined from Dominica have only 2 scutellars. See literature, synonyms and main characters in Borgmeier, 1966, p. 10; 1967b, p. 96.

MATERIAL EXAMINED.—Eight females (4 pinned, 4 in alcohol), and 4 males (2 pinned, 2 in alcohol), Dominica: S. Chiltern Est.; Clarke Hall; Fond Figues R. (Wirth, I.–III.1965).

16. *Megaselia (Megaselia) subpicta* (Malloch)

Aphiochaeta subpicta Malloch, 1912, p. 452, pl. 35: fig. 3 [♀; Biscayne Bay, Fla.].

Megaselia (M.) subpicta (Malloch).—Borgmeier, 1962b, pp. 306 [key], 361, fig. 56 [♂ ♀; U.S.A.; Brazil]; 1966, pp. 2 [key], 8, fig. 1 [wing of type].

Megaselia (M.) malacophaga Borgmeier, 1958 p. 372, figs. 71 [abdomen of female], 76 [hypopygium], 79 [wing], [♂ ♀; Rio de Janeiro, Petrópolis, Curitiba, Nova Teutonia].

Holotype female (USNM 14843), Biscayne Bay, Fla. Seen 1961.

MALE AND FEMALE.—Length 1.8–3.5 mm. Frons quadrate, yellow or brown. Supraantennals equal or nearly so, the upper one-half of frontal width apart. Antials vertically below laterals. Third antennal joint small, reddish yellow. Arista long. Palpi yellow, with moderate bristles.

Thorax yellow. Mesopleura bare. Scutellum with 4 equal bristles.

Abdomen opaque, venter yellow. Tergites black, 2nd yellow anteriorly, 3–5 with yellow median spots, in male sometimes 5th entirely yellow. Second tergite laterally with bristles (♂ ♀), 6th in male with apical bristles. Hypopygium (see Borgmeier, 1958, fig. 76) small, brown, with 1 or 2 bristles laterally below. Anal segment long, sheath-shaped, yellow, end-hairs differentiated. Tergites of female as in Borgmeier's Figure 71 (1958).

Legs yellow, hind femur maculated at tip, with 5–6 strong hairs on basal half of ventral edge. Hind tibial setulate biseriolate, the posterodorsal ones strong.

Wing grayish yellow, veins brown. Costa longer than one-half of wing (0.54–0.60), First segment equal or subequal to 2nd. Cilia very short and close. Fourth vein starting at fork, sometimes slightly deflected at extreme tip; 5th starting vertically below apex of first vein; veins 5–7 but little bent. Axillary margin with 5 hairs. Halteres dark.

MATERIAL EXAMINED.—Besides the holotype ♀ from Florida and numerous specimens from Brazil, I have seen 28 males and 24 females from the following localities of Dominica: South Chiltern Est., Sylvania, Manets Gutter, Springfield Est., and Clarke Hall (W. W. Wirth collector, January–March, 1965).

DISCUSSIONS.—I am now convinced that *M. (M.) malacophaga* Borgmeier is a synonym of *M. (M.) subpicta*. The extreme tip of fourth vein seems to be variable; sometimes the apical deflexion is distinct, as in the specimens from Brazil; sometimes it is obsolete or wanting, as in the type and the Dominican specimens.

17. *Megaselia (Megaselia) obscuripalpis*, new species

FIGURES 36, 37

FEMALE.—Length 1.70 mm, with the terminal segments extended 1.80 mm. Frons very little longer medially than broad anteriorly (11:10), width 0.26 mm, yellow, subshining, sparsely pubescent, with a distinct median line. Su unequal, the lower hair-like and about one-half in length, the upper one-fourth of frontal width apart. Antials in line with upper su, farther from anterolaterals than from su, anterolaterals higher placed, near eye-margin. Second row slightly convex, the bristles equidistant. Upper postocular long. Two divergent bristles near lower corner of eye; cheeks with 2 setulae. Third antennal joint not large, globose, yellowish brown, darkened at tip; arista 0.39 mm, distinctly pubescent. Palpi brown, of normal shape, with 6 short bristles on apical half. Proboscis short.

Thorax subshining, yellow, pleura paler. Pubescence short, bristle-like behind between 2 dorsocentrals. Mesopleura bare. Four scutellars, the posterior long, the anterior thin and one-half in length of the posterior. (9:18).

Abdomen black-brown, 6th tergite with a yellow triangular mark at middle extending from base to apex. Tergites 2–6 subequal in length, 2 reaching sides, 3–6 gradually narrowed, 3–5 transverse, 6th (Figure 37) quadratic, as long as broad. Pubescence extremely scarce, a few short hairs on 2nd tergite laterally, and longer bristle-like hairs on hind margin of 6th tergite; 7th tergite with a narrow tergal plate; 8th segment black, chitinized, glossy. Cerci small.

Legs yellow, hind femur black at tip. Foretibia 0.36 mm; foretarsus slightly longer than tibia (0.41 mm), metatarsus a little longer than 2+3. Midtibia 0.52 mm, seam reaching apical fourth; spur four-fifths of metatarsus. Hind femur 3 times as long as broad; the hairs on basal half of ventral edge short and inconspicuous. Hind tibia 0.57 mm, with 11 fine posterodorsal setulae.

Wing (Figure 36) distinctly grayish yellow, veins dark brown. Length 1.70 mm, width 0.72 mm. Costa 0.51 segment 16:11:3. Cilia short (0.05 mm) and close, there are 11 pairs between tip of 1st vein and apex of costa. Mediastinalis obsolete. Fork narrow, acute. Third vein without a bristle at base; 4th starting at fork, slightly concave; 5th but little curved, nearly straight on distal half; 6th sinuous; 7th weak; 4–7 evanescent at apex. Axillary margin with 4 hairs. Halteres yellow.

MATERIAL EXAMINED.—Holotype female (pinned, USNM 70248), Dominica, Fond Figs R. 400 ft, 29 April 1966. (R. J. Gagne).

DISCUSSION.—*M. obscuripalpis* belongs to group VI. In my key (1962 p. 307) the species runs to couplet 55, but it must be noted that the 2 species mentioned there are wrongly placed: *punctifemur* is a *Physoptera*, and *M. subflava* belongs to group VII. There are several undescribed neotropical species which have the anterior scutellars one-half as long as the posterior. *M. obscuripalpis* may be separated from its allies by the brown palpi, the length of costa and the ratio of costal segments. The form of the 6th tergite may also be distinctive.

18. *Megaselia (Megaselia) scalaris* (Loew)

Phora scalaris Loew, 1866, p. 53.—Borgmeier, 1966, p. 36, figs. 23, 24 [female abdomen]; 1967b, p. 101.

This widely distributed species was recently redescribed by Borgmeier (1966). The supraantennals are of equal length and widely separated. The antials are nearly vertically below the laterals. The female is easily

recognized by the structure of the 6th abdominal tergite which is saddle-like. The hypopygium has a single bristle on each side below; the anal segment is large and the apical hairs are strong. The female has 4 subequal scutellars (group VI); the male generally only two (group VII).

MATERIAL EXAMINED.—From Dominica: 2 females in alcohol, Clarke Hall, March 1965 (Wirth). 1 female, Clarke Hall, May 1966 (Steyskal); 1 male and 1 female, Clarke Hall, 11–20 Jan. 1965 (Wirth); 1 male, Clarke Hall, 26–28 Feb. 1965 (Wirth); 1 male, Hodges R. mouth, reared from *Calathea*, 22 Feb. 1965 (Wirth).

19. *Megaselia (Megaselia) elegantula*, new species

FIGURE 35

FEMALE.—Length, with the abdominal segments fully extended, 2.00 mm. Head width, 0.45 mm. Frons as broad as long medially (0.23 mm), slightly narrower anteriorly (0.20 mm), reddish yellow, finely pubescent, with a distinct median line. Lower su rudimental, about one-third in length of the upper which are about one-fourth of anterior frontal width apart. Antials reclinate, slightly divergent, much approximate to upper su, a trifle lower, twice as far from eye-margin than from su, about midway between su and l_1 which are slightly above level of su, near eye-margin. Second row nearly straight, preocellars farther from each other than from mediolaterals. Upper postocular well developed; lower postocular strong; no bristle on jowls; cheeks with 2 weak bristles. Third antennal joint of normal size, globose, width 0.09 mm, brownish; arista 0.39 mm, distinctly pubescent. Palpi pale yellow, slender, with short bristles on apical half.

Thorax reddish yellow, pleura pale. Pubescence short, longer behind, Scutellum with 4 bristles of equal length.

Abdomen: venter pale yellow; tergites subequal in length, dark brown, with short hairs on hind margins; 2nd tergite with a group of short hairs laterally, no bristles. Venter with a few hairs on hind margins of sternites 4–7; 7th segment with a narrow elongate tergal plate. Cerci distinct.

Legs pale yellow, hind femur maculated at tip. Foretibia 0.28 mm. Foretarsus slender, 0.39 mm. Midtibia 0.36 mm, hair-seam reaching apical fourth. Hind femur 3 times as long as broad, ventrobasal hairs in-

conspicuous. Hind tibia 0.48 mm, with a complete dorsal hair-seam and 6 strong posterodorsal setulae, the longest below middle nearly as long as width of tibia.

Wing (Figure 35) grayish yellow, veins brown. Length 1.30 mm, width 0.52 mm. Costa 0.54 of wing length, ratio of segments 19:22:7. Cilia moderately short (0.091 mm), there are about 8 pairs between tip of 1st vein and apex of costa. Mediastinalis distinct. Fork acute. Third vein with a conspicuous bristle at base; 4th starting a little behind fork, distinctly arcuate on basal half, less so on distal half; 5th slightly sinuate; 6th nearly straight; veins 4–7 obsolete at apex. Anal margin convex, the angle not pronounced. Axillary margin with 2 hairs. Halteres dark brown.

Holotype female, on slide (USNM 70249), Dominica, Clarke Hall 1–10 Feb. 1965, light trap (Wirth).

DISCUSSION.—*M. (M.) elegantula*, new species, belongs to group VI; it is easily recognized by the position of the antials, 4 scutellars, venation and strong posterodorsal setulae of t_3 .

20. *Megaselia (Megaselia) aurea* (Aldrich)

FIGURES 38–40

Phora aurea Aldrich, 1896, p. 477 [δ ♀; St. Vincent, B.W.I.]—Coquillett, 1900 p. 253.

Aphiochaeta aurea (Aldrich).—Brues, 1904, p. 365, pl. vii: fig. 35.—Malloch, 1912, p. 467.

Megaselia (M.) aurea (Aldrich).—Borgmeier, 1962b, p. 294, 306 [key]; 1966, pp. 2, 15.

Aphiochaeta rubriventris Borgmeier, 1925b, p. 156, pl. v: fig. 22.

Holotype female and 4 paratypes females (USNM), one paratype female (CTB), 1 paratype male (MCZ), St. Vincent, B.W.I.

Additional notes to my redescription (1966) are as follows.

MALE.—Length 1.3–2.4 mm. Su unequal. Hypopygium (Figure 38) of medium size, dark brown, on each side with numerous short hairs and one moderate bristle below. Ventral plate large, broadly rounded. Anal segment long, yellow, with short hairs and 2 pairs of longer ones near dorsal edge of tergite, which are about as long as the apical hairs. Hind femur (Figure 40) slender, more than 3 times as long as broad, on basal half of ventral edge with 6 conspicuous curved hairs, the longest is about one-half of

femoral width. Costa (male from Dominica) 0.65, ratio of segments 21:19:4.

FEMALE.—Length 1.5–3 mm. The structure of the abdominal tergites can best be observed in pregnant individuals preserved in alcohol (Figure 39). Second tergite moderately elongated, reaching sides, well chitinized; 3rd shorter than 2nd, weakly chitinized, the outlines ill defined, at each side with a transverse oval whitish area which is shining and often surrounded by a dark area; 4th and 5th rudimental, nearly membranous but recognizable by the very short pubescence, 4th slightly transverse, 5th subquadrate; 6th well chitinized, rectangular, longer than broad. The color of the abdominal segments 1–6 is highly variable (the terminal segments 7–10 are always black):

In a paratype, tergite 1 is reddish brown; 2 reddish brown at middle, black laterally; 3 black-brown; 4–5 black with a deep red tinge; 6 deep black; sides of abdomen deep red above, black below; venter yellow.

In specimens from Grenada, W.I., tergites 1–5 are orange, 6 is black; sometimes also 2–3 are black laterally; in one specimen 1–4 are orange, 5–6 black.

In specimens from Dominica, W.I., tergites 1–3 are brown, 2 sometimes yellow anteriorly; 4 is orange; 5 dark brown, sometimes orange; 6 black, venter orange, often black laterally.

In specimens from Brazil (Rio de Janeiro; Belem, Pará), Bolivia, Costa Rica, and United States (Florida), tergites 1–6 are orange; in 2 specimens from Costa Rica 6 is black at sides, yellow at middle.

Costa in paratype 0.62 of wing length, ratio of segment 27:22:5; in specimens from Dominica the first section is generally equal to 2+3 or shorter; in specimens from Rio de Janeiro, Bolivia, Costa Rica, Florida, 1 is longer than 2+3.

MATERIAL EXAMINED.—Besides the material listed in a previous paper (1966) I have seen 6 pinned males and 25 females, and 50 males and 45 females in alcohol, from the following localities of Dominica: Clarke Hall, Manets Gutter, Fond Figue River, S. Chiltern Est. and Pont Casse, January–March 1965 (W. W. Wirth).

DISCUSSION.—*M. (M.) aurea* comes close to *M. rubronigra* Borgmeier (Costa Rica), but the latter is much darker and the costa exceeds the tip of 3rd vein. The female of *M. aurea* can be easily recognized by the peculiar structure of the 3rd tergite and the color of the abdomen.

21. *Megaselia (Megaselia) striativentris* Borgmeier

Megaselia (Megaselia) striativentris Borgmeier, 1962b, pp. 306 [key], 367 [δ ♀; Nova Teutonia; Curitiba, Paraná, Petrópolis, R. J., Costa Rica].

Holotype male (CTB), Nova Teutonia, Brazil. Paratypes males and females (CTB, USNM).

Frons quadrate or subquadrate, dark brown. Su unequal. Antials lower than upper su, removed from eye-margin, sometimes midway between su and l_1 , the latter nearly in line with upper su. Third antennal joint orange, darkened at tip.

Thorax yellow. Mesopleura bare. Scutellum with 4 equal bristles.

Abdomen subshining, venter yellow. Tergites black with yellow apical bands; 2nd with bristles laterally (δ ♀); 6th tergite in male with apical bristles. Hypopygium small, brown, hairy. Anal segment moderately short, as long as epandrium, yellow, with short hairs.

Legs yellow, hind femur black at tip. Foretarsus slender. Hair-seam of midtibia nearly complete. Hairs on ventral edge of hind femur of moderate length. Hind tibia with 6–8 setulae, the upper weak, the remainder strong. Wing slightly brownish. Costa 0.56 (holotype), ratio of segments 16:15:5. Cilia long (0.12 mm). Fourth vein starting at fork, 5–6 sinuous. Haltere brown [not yellow; sometimes ochreous brown].

MATERIAL EXAMINED.—More than 150 specimens from Brazil and some from Costa Rica. From Dominica I have seen 10 pinned specimens and 150 specimens preserved in alcohol (δ ♀), from the following localities: Clarke Hall, S. Chiltern Est., and Manets Gutter (Jan.–March 1965, W. W. Wirth).

DISCUSSION.—*M. (M.) striativentris* can be confused with *M. fimbriata* Borgmeier (1962b, Brazil) which is very similar but has some anterodorsal setulae on hind tibia and the antials are nearly vertically below the anterolaterals.

22. *Megaselia (Megaselia) seticauda* (Malloch)

Aphiochaeta seticauda Malloch, 1914, p. 32 [δ ♀; Irazu, Costa Rica].

Megaselia (M.) seticauda (Malloch).—Borgmeier, 1962b, p. 309 [key], 413, figs. 74 [hypopygium], 93 [wing ♀]; 1966, pp. 3 [key], 44.

Megaselia (M.) disparisecta Borgmeier, 1962b, p. 414, figs. 86 [abdomen, ♀], 92 [wing, ♀]; 1966, p. 45 [syn.]; 1967c, p. 405 [syn.].

This species, originally described from Costa Rica, is widely distributed. I have seen the types and other

specimens from Costa Rica; furthermore from Brazil (Petrópolis, Nova Teutonia), Ecuador, Mexico (Nogales), United States (Texas) and one female from Dominica, Clarke Hall, 11–20 January 1965, light trap (Wirth).

The species was redescribed by the present writer in 1962(b) and 1966. There are only two supraantennals in both sexes, close together; the antials are close to su and nearly parallel. The hypopygium has on each side behind a series of 4 or 5 strong moderately long bristles; anal segment long. Sixth tergite in female long and narrow. Costa 0.52 in male, up to 0.58 in female; first costal section equal to 2nd, or 2nd longer than 1st. Cilia very short. Halteres yellow or brown.

DISCUSSION.—The female is easily recognized by the long 6th tergite; the male by the bristles of the hypopygium. The length of the 2nd costal segment is variable and caused the synonym *M. disparisecta*.

23. *Megaselia (Megaselia) pleurofascia* Borgmeier

Megaselia (Megaselia) pleurofascia Borgmeier, 1962b, p. 418 [♂ ♀; Nova Teutonia].

One pinned male from Dominica, Clarke Hall, 11–20 March 1968 (Wirth) seems to be referable to this species, originally described from southern Brazil.

24. *Megaselia (Megaselia) hypochaeta*, new species

FIGURES 41–43

FEMALE.—Length 2.4 mm. Head width 0.65 mm. Frons as broad as long laterally (0.28 mm), slightly longer medially (0.32 mm), yellow, sparsely pubescent, with a fine median line. Four supraantennals, the lower rudimental, placed nearly vertically below the upper which are close together, occupying about one-fourth of frontal width. Antials a little lower than upper supraantennals, about as far from them as from eye-margin; anterolaterals distinctly higher, near eye-margin. Second row slightly convex anteriorly, the bristles equidistant; the preocellars farther apart from each other than upper supraantennals. Ocular cilia distinct; upper postocular bristle strong; one lower postocular bristle, and one on jowls; cheeks narrow, with 2 moderate bristles. Third antennal joint reddish yellow, small globose, diameter 0.1 mm; arista distinctly pubescent. Palpi of normal shape, with short bristles.

Thorax yellow, with 2 dorsocentrals; pubescence short, longer and bristle-like in front of scutellum. Mesopleura bare. Scutellum with 2 bristles and 2 minute hairs.

Abdomen (Figures 41–42) reddish yellow, tergites 1–2, 6 and terminal segments blackish brown; 2nd tergite yellow on anterior half, with some short bristles laterally. Segments 2–5 mostly membranous, bare; 3rd segment with an ill-defined, weakly chitinized small dark plate. Posterior border of 5th segment blackish; 6th tergite trapezoid. Terminal segments tubiform, fleshy. Venter yellow, except 6th segment and a subapical band of 5th which are blackish. The 4th ventrite has posteriorly on each side a curved row of about 20 closely set black setulae (Figure 42); in front of them there are some sparse bristly-hairs; 6th ventrite with sparse short hairs inserted in chitinous spots; 7th segment with a narrow striplike tergite dilated anteriorly; a similar narrow sternite is present, slightly dilated posteriorly. Cerci indistinct.

Legs yellow; hind femur maculated at tip. Foretibia 0.44 mm; foretarsus 0.52 mm, all joints longer than broad; fore-metatarsus about as long as joints 2–4 combined. Midlegs missing in type. Hind femur 0.91 mm, width 0.28, with about 9 longish setuliform hairs. Hind tibia 0.85 mm, with 9 posterodorsal setulae, the 3 on median 3rd are stronger and nearly as long as width of tibia.

Wing (Figure 43) grayish yellow, veins pale brown. Length 2.08 mm, width 0.78 mm. Costa 0.53 of wing length, ratio of costal segments 20: 15 : 4. Mediastinalis present. Costal cilia short, more or less 10 pairs between tip of 1st vein and apex of costa. Fork acute, narrow. Fourth vein slightly concave, starting at fork, basal S-curvature indistinct; 5th arcuate before middle, remainder nearly straight; 6th feebly sinuous; 7th weak but distinct. Axillary margin with 4 hairs. Halteres yellow.

MATERIAL EXAMINED.—Holotype female, on slide (USNM 70250), Dominica, Clarke Hall, 21–31 Jan. 1965, W. W. Wirth, light trap.

DISCUSSION.—A striking species, easily recognized by the structure of the abdomen and especially by the two curved rows of setulae on fourth ventrite. *M. aurea* is similar in general appearance, but has four scutellars, longer costa, and the structure of the abdomen is quite different.

25. *Megaselia (Megaselia) leptacina*, new species

FIGURES 44-46

FEMALE.—Length 1.40–1.50 mm. Head width 0.42 mm. Frons dark brown, as broad as long medially (0.20 mm), lateral length 0.15 mm, sparsely pubescent, with a fine median line. Supraantennals unequal, the lower thin and a little more than one-half of upper (5:9), the upper about one-fourth of frontal width apart, the lower one-eighth. Antials close to lower corner of frons, slightly below level of upper su, anterolaterals a trifle above level of su, near eye-margin. Second row slightly convex, the bristles equidistant. One upper postocular, and one lower; jowls-cheeks with a series of about 4 hairs. Third antennal joint black-brown, of normal size, globose, width 0.09 mm; arista as long as head width, finely pubescent. Palpi yellow, slender, of normal length, with 5 long bristles on apical half.

Thorax reddish yellow, pleura castaneous but epipleura pale yellow. Pubescence short. Mesopleura bare. Scutellum with 2 bristles and 2 minute hairs.

Abdomen (Figures 44) dark brown, venter grayish brown. Tergites 2–5 subequal in length, all reaching sides; 6th elongated, rounded behind, with a distinct gland-opening at base. Pubescence short and scarce, more conspicuous near lateral corner of 2nd and on hind margin of 5th tergite. Venter sparsely hairy. Terminal segments fleshy, tubiform; 7th segment with a pen-shaped tergal plate, 7th sternite reduced to a narrow median strip; 8th withdrawn; cerci indistinct.

Legs pale yellow, coxae enclosed, hind femur brownish yellow on distal half. Foretibia 0.26 mm; foretarsus slender, 0.36 mm, metatarsus longer than joints 2+3. Midtibia 0.36 mm; hair-seam reaching apical fourth; spur two-thirds of metatarsus. Hind femur (Figure 46) slender, length 0.52 mm, width 0.13 mm, basal half of ventral edge with 5–6 conspicuous curved hairs, the longest one-half of width of femur in length. Hind tibia 0.46 mm, with 15 fine short posterodorsal cilia.

Wing (Figure 45) grayish yellow, veins pale brown. Length 1.19 mm, width 0.52 mm. Costa 0.56 of wing length, ratio of segments 21:18:6. Cilia short (0.052 mm) and close, there are 10 pairs between tip of 1st vein and apex of costa. Mediastinalis weak. Fork acute. Third vein without a bristle at base; 4th arcuate; 5th curved before middle, remainder nearly straight;

6th sinuous. Anal margin broadly convex; axillary margin with 2 hairs. Halteres yellow.

MATERIAL EXAMINED.—Holotype female, on slide (USNM 70251), Dominica, S. Chiltern Est., 20 Feb. 1965 (W. W. Wirth). Paratypes females (USNM, CTB) 4 females on slide, same locality and date; one pinned female, Clarke Hall, 11–20 Mar. 1965 (W. W. Wirth).

DISCUSSION.—*M. (M.) leptacina*, new species, is close to *M. tubulifera* Borgmeier (1962b, Brazil), but the latter has the sixth tergite transverse.

26. *Megaselia (Megaselia) imitatrix*, new species

FIGURES 47-48

FEMALE.—Length 1.70 mm, extended in alcohol 2.00–2.50 mm. Frons subquadrate, broader than long laterally (4:3), yellow, sometimes infuscated above, shortly pubescent, with a distinct median line. Upper postantennals one-fifth or less of frontal width apart, more approximate than the preocellars. Lower postantennals very weak, hardly one-half of upper in length. Antials about midway between anterolaterals and upper postantennals, nearly in line with latter; anterolaterals a little higher near eye-margin. Second row slightly convex. Eyes large. Jowls with 2 divergent bristles. Cheeks narrow, with 4 hairs. Third antennal joint globular, width 0.13 mm, dusky yellow; arista 0.5 mm distinctly pubescent. Palpi pale yellow, of normal shape, well bristled.

Thorax yellow. Mesopleura bare. Scutellum with 2 bristles and 2 fine hairs.

Abdomen (Figure 48) venter yellow, laterally slightly darkened on segments 3–5, the darkened areas separated by yellow intervals. Tergites black, 1–2 yellow on anterior half; 3–5 gradually narrowed, subequal in length, with a yellow median spot anteriorly not reaching posterior border; 6th tergite shorter and broader than 5th, nearly semicircular anteriorly, with a transverse median yellow spot; 7th segment with a black trapezoid tergite. Pubescence on dorsum very scarce and short, longer on hind margin of 6th and 7th tergites; venter distinctly hairy on segments 3–6; 7th segment with a small sternal plate provided with 2 bristles. Cerci small.

Legs yellow, hind femur black at tip, on basal half of ventral edge with curved hairs, the basal ones short, the remaining setiform. Hind tibia with 6 strong widely placed posterodorsal setulae.

Wing (Figure 47) yellowish, veins brown. Length 1.30 mm to 1.50 mm. Costa about 0.5, ratio of segments 24:17:7. Cilia short (0.06 mm). Mediastinalis present. Fork large, acute; 3rd vein without a bristle at base; 4th starting behind fork, evenly curved; 5th but little curved; 6th weakly sinuous. Axillary margin with 4 hairs. Halteres yellow, penduncle brown.

MALE.—Length 1.60 mm, in alcohol up to 2.00 mm. Similar to female. Tergites black, 1–2 and 6 yellow on anterior half, 2–4 with a yellow median spot not reaching posterior border, 5th sometimes nearly entirely yellow. Pubescence scarce and short, 6th with bristly hairs on hind margin. Hypopygium small, black-brown, with hairs, at left with a single conspicuous bristle. Anal segment long (0.23 mm), pale yellow, end-hairs differentiated but not so strong as in *M.(M.) scalaris*. Foretarsus slender, longer than tibia (4.3). Costa nearly one-half wing length, first segment generally a little longer than 2+3.

Holotype (in alcohol; USNM 70252), Dominica, Cabrit Swamp, 23 Feb. 1965, light trap (Wirth). Paratypes 9 females and 15 males, from the following localities: Cabrit Swamp, 23 Feb. 1965 [1 female]; Clarke Hall, 21–31 Jan. 1965 (Wirth); Puerto Rico, Barrio Rio Grande, El Verde, 1963–1966, sticky traps, G. E. Drewery.

DISCUSSION.—*M.(M.) imitatrix*, new species, is very similar in appearance to *M.(M.) scalaris* (Loew), but the female of the latter has four scutellars and ♀ and ♂ have four subequal postantennals; it differs also by the position of the antials and the structure of the abdominal tergites 5–6.

27. *Megaselia (Megaselia) buccata*, new species

FIGURES 49–51

MALE.—Length (somewhat extended in balsam) 2.00 mm. Head width 0.57 mm. Frons distinctly higher than broad, width 0.23 mm, lateral length 0.28 mm, median length 0.33 mm, black-brown, distinctly pubescent, with a distinct median line. Su equal, the upper two-thirds of frontal width apart, the lower about one-fourth. Antials close to upper su and near eye-margin, vertically below anterolaterals, the latter distinctly higher, twice as far from antials as antials from upper su. Second row slightly concave anteriorly, nearly straight, the preocellars farther from each other than

from mediolaterals. One long lower postocular bristle; jowls-cheeks with an ascending row of 6 bristles, the upper 3 slightly weaker. Third antennal joint dark brown, globose, of normal size, width 0.10 mm. Palpi pale yellow, of normal shape, with 5 bristles of moderate length. Proboscis of peculiar shape; labrum small, triangular; labellae (Figure 50) yellow, broad, with a few fine hairs, apparently without pseudo-tracheae.

Thorax brownish yellow, pleura pale. Pubescence short, longer behind. Mesopleura bare. Scutellum with 2 bristles and 2 hairs.

Abdomen: venter yellow; tergites dark brown; 2 and 6 a little elongated, 3–5 subequal in length. Pubescence short, some bristly hairs on 2nd laterally and on hind margin of 6th. Hypopygium (Figure 57) dark brown, small, with short hairs; anal segment pale yellow, long, cylindrical, slightly curved downwards, end-hairs not longer than hairs on tergite.

Legs yellow, hind femur with a black macula at apex. Foretibia 0.36 mm, with a dorsal row of short spinuli; foretarsus slender, 0.49 mm, metatarsus a little longer than joints 2+3. Midtibia 0.52 mm, hair-seam complete, 4 distinct anterodorsal and 4 posterodorsal setulae on upper two-thirds; spur four-fifths of metatarsus. Hind femur 3 times as long as broad, width 0.26 mm, length 0.75 mm, ventrobasally with a row of 5 conspicuous curved hairs not reaching middle. Hind tibia 0.65 mm, setulae biseriata: 6 strong posterodorsal which are as long as width of tibia, and 4 anterodorsal which are weaker.

Wing (Figure 49) infuscated, veins dark brown. Length 1.48 mm, width 0.62 mm. Costa 0.52, ratio of segments 24:19:11. Cilia short (0.065 mm), close, about 10 pairs between tip of first vein and apex of costa. Fork long and narrow, acute. Mediastinalis obsolete; 3rd vein with a small bristle at base; 4th concave starting at fork with a slight S-curve, 5th but little curved, 6th very feebly sinuous. Axillary margin with 5 hairs. Halteres dark brown.

MATERIAL EXAMINED.—Holotype male (on slide; USNM 70253), Dominica, Clarke Hall, 8–10 Jan. 1965, Malaise trap (Wirth).

DISCUSSION.—*M.(M.) buccata*, new species, is a very striking species of group VII. It runs to *M. anteropinososa* in my key (1926b), but is completely different by the peculiar labellae, the elongate frons, the frontal chaetotaxy, and the venation.

28. *Megaselia (Megaselia) polita* (Enderlein)

FIGURES 52-53

Aphiochaeta polita Enderlein, 1912, p. 30 [♀; Hammonia].—Malloch, 1914, p. 29 [Costa Rica].*Megaselia (Megaselia) polita* (Enderlein).—Borgmeier, 1935a, p. 449, pl. 5: fig. 7 [wing of holotype, ♂ ♀]; 1962b, p. 307 [key].

Holotype female (CTB), Hammonia, S. Catarina, Brazil (Luederwaldt).

Frons quadratic, black, glossy. Supraantennals subequal. Antials and anterolaterals nearly in line with upper su. Thorax black, shining. Mesopleura bare. Scutellum with 2 bristles. Abdomen black. Hypopygium glossy, castaneous. Anal segment of medium length, yellow, end-hairs not differentiated. Legs black. Foremetatarsus (Figure 52) somewhat thickened in both sexes. Hind tibial setulae strong. Hairs on ventral edge of hind femur short. Wing (Figure 43, drawn from holotype) distinctly brownish; length 1.56 mm, width 0.67 mm; costa 0.56, cilia moderately short (0.09 mm), closely set, about 11-12 pairs between 1st vein and apex, ratio of segments 25:24:10. Third vein without bristle at base; 4th starting at fork or behind it, slightly deflected at tip. Anal margin broadly convex. Axillary margin with 2 hairs. Halteres black.

MATERIAL EXAMINED.—Besides the type, I have seen numerous specimens from Nova Teutonia, S. Catarina, some specimens from Petrópolis, Rio de Janeiro; one from Peru (Tingo Maria); two from Costa Rica (Suiza de Turrialba). From Dominica: 1 female, pinned. S. Chiltern Est. (Wirth); 2 females and 1 male in alcohol, Clarke Hall, March 1965 (Wirth).

DISCUSSION.—*M. (M.) polita* can be confused with *M. littoralis* Malloch (Costa Rica), but the latter has slender foretarsi, the base of wing is yellow, the cilia are widely placed (see Borgmeier, 1962b, fig. 66), and the forelegs are yellow. Also close to *M. anthracina* Borgmeier (Brazil), which has a shorter costa, unequal su, and bristly hairs on ventral edge of hind femur.

29. *Megaselia (Megaselia) femoralis* (Enderlein)

FIGURES 54-55

Aphiochaeta femoralis Enderlein, 1912, p. 30 [♀; Hammonia].—Malloch, 1914, p. 29 [♀; Costa Rica].*Megaselia (Megaselia) femoralis* (Enderlein).—Borgmeier, 1932, p. 51 [♀; Costa Rica]; 1935a, p. 450, pl. 5: fig. 13 [type]; 1966, pp. 4 [key], 56 [♂ ♀; Texas, U.S.].

Lectotype female and 3 paratypes females (CTB), from Hammonia, S. Catarina, Brazil (Luederwaldt).

The female types were redescribed by Borgmeier (1935a) and the male was first described in 1966. The hypopygium (Figure 54) is small, black, and shows several fine short hairs on both sides. The left ventral plate (Figure 55) is pointed at tip, and the right is broadly rounded. The anal segment is of medium size, yellow; the apical hairs are not differentiated.

MATERIAL EXAMINED.—Besides the types, I have seen numerous specimens from Brazil (Nova Teutonia, Curitiba, Petrópolis) and some from Costa Rica (Suiza de Turrialba, Collector P. Schild). From Dominica, 36 females and 18 males are before me, mostly pinned, some in alcohol and 4 on slides, Clarke Hall, Jan.-Feb. 1965 (Wirth).

DISCUSSION.—*M. (M.) femoralis* belongs to group VII. It is easily recognized by the striking coloration of the hind femur, the glossy frons and by venational characters.

30. *Megaselia (Megaselia) enderleini* (Brues)

FIGURES 56, 57

Aphiochaeta enderleini Brues, 1912, p. 135 [nomen novum] *Megaselia (Megaselia) enderleini* (Brues).—Borgmeier, 1935a, p. 447, fig. 16.*Aphiochaeta minuta* Enderlin, 1912, p. 36 [♂ ♀; Hammonia, Brazil, not Aldrich].

Lectotype male (CTB) and 1 paratype male (CTB), Hammonia, Brazil.

MALE.—Length 1.3-1.6 mm. Head width 0.42 mm. Frons broader than long (4:3), black, subopaque, scarcely pubescent, with a distinct median furrow. Lower su variable in length, one-half or three-fourths of upper, nearly vertically below upper which are about one-fifth of frontal width apart. Anterolaterals nearly in line with antials and upper su; antials farther from su than from laterals. Third antennal joint black, globose. Palpi black-brown, well bristled.

Thorax black. Mesopleura bare. Scutellum with 2 bristles and 2 minute hairs.

Abdomen black, opaque. Tergites subequal, scarcely and shortly pubescent, longer bristle-like hairs on hind margin of 6th. Hypopygium black-brown, with hairs and on each side with a single bristle. Anal segment very short, black-brown, end-hairs not differentiated.

Legs black to black-brown. Foretarsus slender, Metatarsus longer than 2+3. Hind femur rather broad (ratio 8:21, 9:25, 10:25, the latter in specimens from Dominica), ventral hairs on basal half short, inconspicuous. Hind tibia with fine cilia.

Wing (Figures 56–57) nearly hyaline, somewhat brownish in specimens from Dominica; heavy veins brown, light veins pale (distinct in specimens from Dominica). Length (lectotype) 1.40 mm, width 0.59 mm. Costa 0.44–0.45 (lectotype) 0.46 (Nova Teutonia), 0.45 (Petrópolis), 0.46 (Dominica). Ratio of segments 19:8:5 (lectotype); 10:6:3 (Nova Teutonia), 12:7:4 (Petrópolis). Cilia long (0.13 mm), there are 4 or 5 pairs between tip of 1st vein and apex of costa. Third vein without bristle at base; 4th slightly concave, 5th slightly recurved at base, 6th weakly sinuous; anal margin concave, axillary margin with 5–6 hairs. Halteres black.

FEMALE.—Similar to the male. Tergites subequal. Pubescence scarce. There are 5–6 costal cilia between r_1 and r_3 .

MATERIAL EXAMINED.—Type and 1 paratype, Harmonia, Brazil; many specimens from Nova Teutonia, Brazil, and Petrópolis, Brazil; a few from Costa Rica and Mexico, DF.; 35 specimens, mostly in alcohol, from Dominica (Jan.–Mar. 1956) Clarke Hall, S. Chiltern Est., Pont Casse (Wirth); 1, Freshwater Lake, IV.66 (R. J. Gagné).

DISCUSSION.—*M. (M.) enderleini* is a striking species; form, color, and venation of wing are characteristic. Comes close to *M. atricolor* Borgmeier (Brazil), but the latter has four equal supraantennals.

31. *Megaselia (Megaselia) labellifera*, new species

FIGURES 58–60

MALE.—Length 1.40 mm. Head width 0.46 mm. Frons black, slightly broader than long laterally (6:5), width 0.23 mm, pubescent, with a distinct median line. Su unequal, the lower thin and about one-half of the upper, the upper nearly one-fourth of frontal width apart, the lower one-ninth. Antials in line with upper su, farther from them than from anterolaterals which are a little higher near eye-margin. One upper and one lower postocular bristle. Cheeks with 2 or 3 setulae. Third antennal joint black, of normal size, globose; arista 0.39 mm, finely pubescent. Palpi brown, of normal shape, with bristles of moderate length. Proboscis short, dark brown; labellae large, shield-shaped, each labella excavated ventrally.

Thorax black-brown. Pubescence short, longer behind. Mesopleura bare. Scutellum with 2 bristles and 2 minute hairs.

Abdomen black-brown, venter dark. Tergites subequal in length, with scarce short pubescence, hairs on hind margin of 6th tergite bristle-like. Venter sparsely hairy. Hypopygium (Figure 59) small, dark brown, with some fine bristly hairs; ventral plate large, hairy. Anal segment short, yellowish brown, end-hairs hardly longer than the other hairs. Legs castaneous. Foretibia 0.28 mm; fore tarsus slender; metatarsus as long as 2+3. Midtibia 0.33 mm. Hind femur (Figure 60) nearly 3 times as long as broad, on basal half of ventral edge with about 7 longish curved hairs. Hind tibia 0.46 mm, with 10 short posterodorsal setulae.

Wing (Figure 58) distinctly yellowish brown, veins brown. Length 1.17 mm, width 0.52 mm. Costa 0.48 of wing length, ratio of segments 18:14:7. Cilia short (0.078 mm), there are 6 pairs between tip of 1st vein and apex of costa. Mediastinalis distinct. Fork acute. Third vein without a bristle at base; 4th vein curved near base, remainder nearly straight; 5th and 6th slightly sinuous; 7th weak. Axillary margin with 2 hairs. Halteres black.

Holotype, on slide (USNM 70254), Dominica, S. Chiltern Est. 20 Feb. 1965 (Wirth).

DISCUSSION.—*M. (M.) labellifera*, new species, comes close to *M. labellata* Borgmeier (1962b, Brazil), but the latter has the labellae larger and of red color, the supraantennals are equal, the antials are vertically below l_1 , and the venation is different.

32. *Megaselia (Megaselia) metatarsalis*, new species

FIGURES 64–67

MALE.—Length 1.00 mm. Head width 0.39 mm. Frons broader than long medially (3:2), width 0.20 mm, yellow, with sparse fine hairs and a fine median line. Lower su reduced to hairs, upper about one-fourth of frontal width apart. Antials close to anterolaterals, both practically in line with upper su. Second row nearly straight, preocellars a little farther from medio-laterals than from each other. Upper postocular developed; 2 unequal bristles near lower corner of eye. Third antennal segment of normal size, globose, width 0.078 mm, brownish; arista 0.31 mm, distinctly pubescent. Palpi yellow, slender, with 6 long bristles on apical half.

Thorax yellow. Pubescence short. Mesopleura bare. Scutellum with 2 bristles and 2 short hairs.

Abdomen: venter yellow; tergites pale brown, subequal in length, with sparse hairs, those on hind margin

of 6th not conspicuously longer. Hypopygium (Figure 66) brown, asymmetrical, sides apparently connected beneath anal segment; each side with several bristly hairs, lobe of left side broadly rounded; lobe of right side narrow, a short tooth-like process and a short digitiform process (dotted line in Figure 66) are probably part of the connecting bridge. Anal segment short, yellow, end-hairs short.

Legs entirely yellow, coxae enclosed. Foretibia 0.19 mm; fore-metatarsus (Figure 67) strongly dilated, broader than tibia, with a broad longitudinal furrow on ventral side, length 0.14 mm, width 0.052 mm; joints 2-5 small, combined 0.16 mm. Midtibia 0.29 mm, hair-seam reaching apical fourth; end-spur two-thirds of metatarsus. Hind femur 3 times as long as broad, on basal half of ventral edge with 5 long curved hairs (Figure 65). Hind tibia 0.39 mm, with 6 fine short posterodorsal cilia beginning at basal fourth.

Wing (Figure 64) grayish yellow, veins pale brown. Length 0.98 mm, width 0.39 mm. Costa 0.48 of wing length, ratio of segments 15:11:5. Cilia short (0.05 mm), about 8 pairs between tip of 1st vein and apex of costa. Mediastinalis missing. Fork acute. Third vein without a bristle at base; 4th weakly arcuate, especially on basal half; 5th and 6th feebly sinuous; 7th weak. Anal margin very broadly convex; axillary margin with 2 hairs. Halteres dark.

Holotype on slide (USNM 70255), Dominica, Clarke Hall, 1-10 Feb. 1965, light trap (Wirth).

DISCUSSION.—In my key (1962b) *M. (M.) metatarsalis*, new species, runs to *M. flavipes*, but the latter is larger, has tarsal joints 1-3 slightly dilated and the costa longer.

33. *Megaselia (Megaselia) tarsodes*, new species

FIGURES 61-63

MALE.—Length 1.00 mm. Head width 0.39 mm. Frons broader than long laterally (5:4), width 0.19 mm, lateral length 0.15 mm, median length 0.16 mm, dark brown, sparsely pubescent, with a distinct median line. Lower supraantennals thin and a little more than one-half of upper, which are one-fourth of frontal width apart (the lower one-fifth). Antials in line with upper su, nearly vertically below anterolaterals which are a little higher. Second row convex, the preocellars farther from each other than the upper supraantennals. Upper postocular bristles distinct. One lower postocular, and one bristle on jowls; cheeks narrow,

with one setula. Third antennal segment of normal size and shape, dark brown; arista 0.32 mm, distinctly pubescent. Palpi (Figure 63) slender, length 0.09 mm, yellowish brown, with 5 long bristles on apical half.

Thorax reddish yellow. Pubescence short, 2 dorso-centrals. Mesopleura bare. Scutellum with 2 bristles and 2 minute hairs.

Abdomen brown, venter enclosed. Tergites subequal in length. Pubescence short, scarce; 6th segment behind with a circle of bristly hairs. Hypopygium brown, on each side with a few weak bristles or bristly hairs. Anal segment very short, hairy, end-hairs not differentiated.

Legs yellow, hind femur maculated at tip. Foretibia 0.23 mm, width at tip 0.04 mm. Foretarsus (Figure 62) longer than tibia, length 0.33 mm, joints 1-4 thickened, gradually attenuated, all joints longer than broad; metatarsus nearly as broad as end of tibia (0.03 mm). Midtibia 0.30 mm, hairseam ending below middle, posterodorsal cilia distinct; end-spur as long as metatarsus. Hind femur 0.45 mm, about 3 times as long as broad, with about 7 conspicuous curved hairs on basal half of ventral edge. Hind tibia 0.42 mm, with 10 fine posterodorsal setulae.

Wing (Figure 61) slightly yellowish, veins brown. Length 1.00 mm, width 0.47 mm. Costa 0.47 of wing length, ratio of segments 24:15:8; cilia short (0.06 mm), about 7 pairs between tip of 1st vein and apex of costa. Mediastinalis distinct. Posterior arm of fork curved. Fourth vein starting behind fork, evenly arcuate; 5th and 6th veins slightly sinuous; 7th weak. Anal angle not pronounced; axillary margin with 2 hairs. Halteres dark.

Holotype, (USNM 70256, on slide), Dominica, 21-29 Apr. 1964, light trap (O. S. Flint).

DISCUSSION.—*M. (M.) tarsodes*, new species, is a small species close to *M. communis* Borgmeier, recognizable by the dilated foretarsus.

34. *Megaselia (Megaselia) substricta*, new species

FIGURES 68, 69

FEMALE.—Length 1.2 mm. Head width 0.41 mm. Frons broader than long laterally (4:3), width 0.20 mm, median length 0.22 mm, brownish yellow, with sparse pubescence and a fine median line. Lower supraantennals rudimental, close together; upper supraantennals one-fourth of frontal width apart. Antials nearly in line with upper supraantennals,

twice as far from them as from eye-margin. Anterolaterals a trifle higher, close to antials. Second row convex anteriorly, the preocellars farther apart than upper supraantennals. Upper postocular bristle distinct; ocular cilia weak. One lower postocular bristle, and one on jowls; cheeks with one moderate bristle. Third antennal joint brown, globose, length about 0.09 mm. Arista 0.44 mm, distinctly pubescent. Palpi slender, whitish yellow, with about 5 bristles on apical third. Labrum piriform, labellae slender.

Thorax yellow, with 2 dorsocentrals. Pubescence short, somewhat longer before scutellum. Mesopleura bare. Scutellum with 2 bristles and 2 minute hairs.

Abdomen yellow, venter enclosed; tergites (Figure 69) brown, 3-6 modified. Third tergite as long as 2nd, constricted at middle, the sides excavate; 4th short, 5th and 6th trapezoid; 4th and 5th with an anterior seam (indicated by dotted lines) which is normally covered by the hind border of the preceding tergite; 6th with a gland opening at base. Pubescence short and very scarce. 7th tergite subtriangular, concave anteriorly. Terminal segments fleshy, short.

Legs entirely yellow, hind femur not maculated. Foretibia 0.28 mm; foretarsus slender, length 0.36 mm; metatarsus slightly longer than joints 2-3 combined (11:10). Midtibia 0.37 mm; end-spur nearly as long as metatarsus (14:17). Hind femur 0.52 mm, width 0.18 mm, ventrobasally with some short hairs and about 5 fine longish hairs on basal half. Hind tibia 0.48 mm, with about 12 short posterodorsal cilia.

Wing (Figure 68) slightly grayish, veins pale. Length 1.23 mm, width 0.52 mm. Costa 0.47 of wing length, ratio of segments 18:13:6. Cilia moderately short (0.078 mm), there are about 7 pairs between tip of 1st vein and apex of costa. Mediastinalis missing. Fork acute. Third vein with a conspicuous bristle at base; 4th vein obsolete at base, slightly concave; 5th but little curved; 6th feebly sinuous; 7th weak. Axillary margin with 2 hairs. Halteres dark.

MALE.—Length 1.17 mm. Costa 0.5 of wing length. There are 6 pairs of cilia between tip of 1st vein and apex of costa. Hypopygium pale brown, with fine hairs; anal segment short (0.052 mm), dirty yellow, with short hairs, apical hairs not differentiated.

MATERIAL EXAMINED.—Holotype female, (USNM 70257, on slide), Dominica, Clarke Hall, 1-10 May 1964, light trap (O. S. Flint). Paratypes (USNM, CTB): one female on slide, 21-29 April 1964, same

locality and collector; 4 females and 1 male in alcohol, Clarke Hall, 11-20 Mar. 1965 (W. W. Wirth).

DISCUSSION.—*M. (M.) substricta*, new species, comes very close to *M. mendax* Borgmeier (1962b, Brazil), but the latter has a longer costa (see Figure 70, wing of paratype) and the structure of the third and fourth tergite is different.

35. *Megaselia (Megaselia) diplochaeta*, new species

FIGURES 71-73

MALE.—Length 1.00 mm. Head width 0.33 mm. Frons broader than long laterally (4:3), width 0.20 mm, black-brown, shining, pubescent, with a distinct median furrow. Four supraantennals subequal (4:3), the upper about one-fourth of frontal width apart, the lower one-eighth; the upper are more approximate than the preocellars. Antials in line with upper su, vertically below anterolaterals which are higher, near eye-margin. Second row slightly convex, preocellars farther from each other than from mediolaterals. Upper postocular bristle developed; 2 bristles near lower corner of eye. Third antennal joint black, length 0.08 mm; arista long (0.39 mm), distinctly pubescent. Palpi yellow, well bristled.

Thorax dark brown. Mesopleura bare. Scutellum with 2 bristles and 2 minute hairs.

Abdomen dark brown. Tergites subequal. Pubescence extremely scarce and short. Hypopygium (Figure 71) dark brown, slightly produced and pale behind; there are 3 small hairs close together near apex; sides each with 2 conspicuous bristles, above them at right 2 setulae, lower border at right with a small notch. Left ventral plate (visible in Figure 71) white, slender, sinuous, ciliate. Anal segment of medium size. brown, hairy, on each side with a long hair directed downward, end-hairs short.

Legs yellow to brownish yellow. Measurements (holotype): foretibia 0.23 mm, midtibia 0.28 mm, hind tibia 0.39 mm. Foretarsus slender, longer than tibia (4:3). Hair-seam of midtibia reaching apical 3rd; end-spur two-thirds of metatarsus. Hind femur (Figure 73) about 3 times as long as broad, with 7 curved longish hairs on basal half of ventral edge. Posterodorsal cilia of hind tibia delicate.

Wing (Figure 72) brownish yellow, veins brown. Length 1.00 mm, width 0.39 mm. Costa 0.44 of wing length, ratio of segments 15:10:5. Cilia short (0.05 mm), about 6 between tip of 1st vein and apex of

costa. Mediastinalis obsolete. Fork acute. Fourth vein weakly arcuate, slightly recurved at extreme base and apex; 5th feebly bent before middle, remainder nearly straight; 6th slightly sinuate; 7th weak, approximate to anal margin which is broadly convex. Axillary margin with one long and one short hair. Halteres dark.

FEMALE.—Similar to male. Tergites dark brown, subequal, 6th trapezoid, with a gland opening at base medially. Cerci distinct.

MATERIAL EXAMINED.—Holotype male (on slide; USNM 70258), Dominica, Manets Gutter, 7 Mar. 1965, (W. W. Wirth). Paratypes (USNM, CTB): 3 males on slides, 2 males and 1 female in alcohol, same locality, date and collector.

DISCUSSION.—*M.(M.) diplochaeta*, new species, belongs to group VII. The male is easily recognized by the conspicuous two bristles on each side of the hypopygium; the female may be separated from its nearest allies by the fourth vein which is slightly but distinctly deflected at tip.

36. *Megaselia (Megaselia) horticola* Borgmeier

FIGURE 74

Megaselia (Megaselia) horticola Borgmeier, 1962b, pp. 311 [key], 442 [♂ ♀; Rio de Janeiro, Brazil].

Holotype male (CTB), paratypes 6 males and 36 females, Rio de Janeiro, Brazil (CTB, USNM).

One female (pinned specimen) from Dominica, Layou R. Mouth, 20 Jan. 1965 (Wirth) agrees perfectly with the types. The wing of a paratype female is represented in Figure 74; length of this wing 1.17 mm, costa 0.45, ratio of segments 9:5:3. Female of Dominica: wing length 1.04 mm, costa 0.44, ratio of segments 8:5:2.5. The costa is slightly thickened on distal half in both sexes.

DISCUSSION.—*M.(M.) horticola* is close to *M. obscura* Brues (1904, St. Vincent, B.W.I.), which also has the costa thickened on distal half, but in the latter the costa is longer (0.5) and the fifth and sixth veins are more distinctly convergent at middle (see Borgmeier, 1962b, fig. 98, p. 443).

37. *Megaselia (Megaselia) gracilipalpis*, new species

FIGURES 75–77

MALE.—Length 1.00 mm. Head width (paratype) 0.59 mm. Frons nearly twice as broad as long laterally, width 0.30 mm, yellowish brown, subshining, pubes-

cent, with a distinct median line. Only 2 developed su are present, occupying about one-fourth of frontal width; lower su rudimental, reduced to hairs which are about one-third of the upper in length. Antials in line with upper su, farther from them than from eye-margin; anterolaterals a little higher, near eye-margin. Second row straight, the preocellars farther from mediolaterals than from each other. Upper postocular developed; lower postocular strong; jowls and cheeks with a series of closely set setulae. Third antennal joint somewhat enlarged, compressed, lenticular, densely and shortly pubescent, length 0.19 mm, pale yellow; arista relatively short, 0.40 mm, finely pubescent. Palpi (Figure 77) yellow, slender, fusiform, length 0.24 mm, with very short setulae and fine hairs. apical setula slightly differentiated.

Thorax subshining, reddish yellow to brownish, pleura (in alcohol) pale yellow. Pubescence short, longer behind. Mesopleura bare. Scutellum with 2 bristles and 2 minute hairs.

Abdomen dark brown, venter yellow; 2nd tergite yellow on basal half. Tergites 2–6 subequal in length. Pubescence scarce, short, 2nd tergite with a few moderate bristles laterally; 6th sternite with a group of short hairs behind. Hypopygium (Figure 76) dark brown, not large, on both sides with several long bristles and setulae, right side behind above with a small notch, rounded below; ventral plate large. Anal segment of good size, whitish or yellow, end-hairs hardly longer than the other hairs.

Legs entirely yellow, coxae enclosed, hind femur not maculated at tip. Foretibia 0.39 mm, midtibia 0.44 mm, hind tibia 0.63 mm. Hair-seam of midtibia reaching apical 3rd; cilia distinct; end-spur nearly as long as metatarsus. Hind femur 3 times as long as broad, on basal half of ventral edge with about 8 delicate curved hairs. Posterodorsal cilia of hind tibia weak.

Wing (Figure 75) brownish yellow, veins dark brown. Length (paratype) 1.69 mm, width 0.72 mm. Costa 0.5 of wing length, ratio of segments 16:9:4. Cilia moderately short (0.09 mm), about 7 pairs between tip of 1st vein and apex of costa. Mediastinalis incomplete. Fork acute, posterior arm curved. Third vein without a bristle at base; 4th starting behind fork, evenly curved, slightly recurved at base and apex; 5th weakly bisinuous; 6th distinctly sinuate. Axillary margin with 2 hairs. Halteres pale brown.

MATERIAL EXAMINED.—Holotype male (USNM 70259; mounted); Dominica, Clarke Hall 11–20

Jan. 1965 (W. W. Wirth). Paratypes (USNM, CTB) 2 males, one in alcohol and the others on 2 slides, same locality, date and collector.

DISCUSSION.—*Megaselia (Megaselia) gracilipalpis*, new species, is a very striking species, easily recognized by the slender palpi and the structure and chaetotaxy of the hypopygium; the venation is also characteristic.

**38. *Megaselia (Megaselia) pallidipennis*,
new species**

FIGURES 78–80

MALE.—Length 1.3 mm. Head width 0.44 mm. Frons (Figure 78) subquadrate, slightly broader than long laterally (6:5), width 0.23 mm, black-brown, with sparse hairs and a distinct median line. Two supra-antennals close together. First row convex, antials reclinate, nearly on level of su, slightly farther from anterolaterals than from su. Second row slightly concave, the preocellars more approximate than the antials. There is a weak supranumerary bristle on lower corner of frons, the exact length of which could not be ascertained. Upper postocular bristle distinct; ocular cilia weak. One moderate lower postocular; one weak bristle on jowls; cheeks with one setula above. Third antennal joint globose, yellowish brown; arista 0.44 mm, distinctly pubescent. Palpi yellow, not large, with moderate bristles.

Thorax black-brown, with 2 dorsocentrals. Mesopleura bare. Scutellum with 2 bristles and 2 minute hairs.

Abdomen black-brown, venter enclosed. Relative length of abdominal tergites 12:10:8:8:12. Pubescence scarce, and short, longer and bristle-like on hind border of 6th tergite. Second tergite with some bristles laterally. Hypopygium black-brown, at right with a single moderate bristle behind. Anal segment white, rather long (0.19 mm), with longish hairs, the end-hairs hardly longer.

Legs brownish yellow, hind legs darker. Foretibia 0.26 mm; foretarsus slender, 0.65 mm, metatarsus slightly longer than 2+3 (9:8). Midtibia 0.35 mm, the dorsal hair-seam reaching apical fifth; end-spur three-fourths of metatarsus. Hind femur (Figure 80) 3 times as long as broad, length 0.52 mm, with about 12 curved hairs on basal half of ventral edge. Hind tibia 0.46 mm, the posterodorsal cilia short.

Wing (Figure 79) grayish white, heavy veins extremely pale, veins 4–6 almost not perceptible, 7th

nearly extinguished. Length 1.17 mm, width 0.52 mm. Costa 0.5 ratio of segments 32:22:7. Cilia short (0.04 mm) about 8 pairs between 1st vein and tip of costa. Mediastinalis obsolete, 4th vein evenly curved; 5th weakly arcuate before middle; 6th slightly sinuous. Axillary margin with 3 hairs. Halteres dark brown.

Holotype (on slide, USNM 70260), Dominica, Clarke Hall, 21–29 Apr. 1964, light trap (O. S. Flint). Paratype (on slide, CTB), 1–10 May 1964, same locality and collector.

DISCUSSION.—*M. (M.) pallidipennis*, new species, belongs to group VII. It is recognizable by the very pale wings and the white anal segment.

39. *Megaselia (Megaselia) ferruginosa* (Brues)

FIGURE 81

Aphiochaeta ferruginosa Brues, 1912, p. 136 [nomen novum]. *Megaselia (Megaselia) ferruginosa* (Brues).—Borgmeier, 1935a, p. 451 [♀; type]; 1962b, p. 309 [key]. *Aphiochaeta ferruginea* Enderlein, 1912, p. 37 [♀; Hammonia; not Brunetti 1912]

Lectotype female (CTB), Hammonia, S. Catarina, Brazil.

MALE (undescribed).—Length 1.2–1.3 mm. Frons about as broad as long medially, width 0.22 mm, black-brown, subshining, scarcely pubescent, with a distinct median line. Two weak su close together, more approximate than preocellars, the lower rudimental, reduced to fine hairs. Antials in line with su, a little farther from them than from laterals which are slightly higher near eye-margin. Second row slightly convex, the bristles equidistant. Cheeks with fine hairs. Third antennal joint globose, ferruginous or orange; arista distinctly pubescent. Palpi yellow, with short bristles.

Thorax dark castaneous, subshining. Pubescence short. Mesopleura bare. Scutellum with 2 bristles and 2 hairs.

Abdomen opaque, black-brown; tergites 2–6 subequal, nearly bare. Hypopygium yellowish brown, with fine hairs; anal segment short, yellow, end-hairs not differentiated.

Legs yellow, coxae enclosed, hind femur and tibia sometimes brown. Foretarsus slender, metatarsus as long as 2–4. Hair-seam of midtibia reaching apical third. Hind femur slender, 4 times as long as broad; ventrobasal hairs short, not reaching middle. Posterodorsal cilia of hind tibia short and delicate.

Wing (Figure 81; male from Nova Teutonia) grayish yellow, veins brown. Length 1.19 mm, width 0.54

mm. Costa 0.5 of wing length, ratio of segments 2:12:5 (in male from Dominica 11:6:2). Cilia short (0.03 mm), about 9 pairs between r_1 and r_3 . Third vein without a bristle at base. Fork not large, posterior arm arcuate. Fourth vein evenly concave, starting at fork; 5th and 6th sinuous. Axillary margin with 2 hairs. Halteres dark brown.

FEMALE.—Length 1.5–1.8 mm. Similar to male. Tergites 2–6 subequal, scarcely pubescent, 2nd with 2 bristly hairs laterally; 6th tergite trapezoid, in one specimen semicircular. Wing length 1.56 mm to 1.82 mm. Costa 0.53 (type) or 0.54 (Nova Teutonia), ratio of segments in type 15:10:4 (in specimen from Nova Teutonia 15:8:3); in 2 specimens from Nova Teutonia fork large, costa 0.54, ratio 14:8:5, and 4th starting well beyond fork.

MATERIAL EXAMINED.—Besides the type from Brazil, I have seen 2 females from Petrópolis, Rio de Janeiro, Brazil; 5 females and 5 males from Nova Teutonia, Brazil; 2 males and 3 females from Higuaito, San Mateo, Costa Rica (P. Schild); 2 males from Dominica: Pont Casse, 12 Feb. 1965, and Clarke Hall, 11–20 Jan. 1965 (Wirth).

DISCUSSION.—*M. (M.) ferruginosa* belongs to group VII. It is easily recognized by the reddish color of the antennae, the weak *su*, the pale hypopygium and by the venation.

VARIATION.—The two females with large fork are rather puzzling, but I think they are individual variants.

40. *Megaselia (Megaselia) bursella*, new species

FIGURES 82–83

MALE.—Length 1.60 mm. Head width 0.52 mm. Frons brownish black, broader than long laterally (4:3), width 0.26 mm, sparsely pubescent, with a distinct median line. Four *su*, the lower weaker and about three-fourths of the upper in length, the latter are more approximate than the preocellars and are about one-fourth of frontal width apart. Antials slightly below level of upper *su*, farther from them than from eye-margin. Upper and lower postocular bristles strong; one bristle on jowls; cheeks with 3 setulae. Third antennal joint brown, slightly enlarged, length 0.13 mm; arista 0.39 mm, distinctly pubescent. Palpi brown, slender, the bristles short or of moderate length.

Thorax reddish brown. Pubescence short, behind longer and bristle-like. Mesopleura bare. Scutellum with 2 bristles and 2 minute hairs.

Abdomen dark brown, venter yellow. Tergites subequal. Pubescence short, hind margin of 6th tergite with bristly hairs. Hypopygium (Figure 83) small, dark brown, sides connected beneath anal segment, connecting bridge at middle angulate (in profile) and bearing at tip 2 curved bristles directed downwards; each lateral lobe of the epandrium with several weak bristles or bristly hairs. Sixth sternite with a deep median pocket flanked on each side by an angulate lobe which bears numerous short marginal hairs. Sternites 4–5 with a transverse apical row of hairs. Anal segment of median length, pale yellow, end-hairs differentiated.

Legs yellow, hind femur maculated at extreme tip. Foretibia 0.33 mm. Foretarsus slender, metatarsus nearly as long as joints 2–4 combined. Midtibia 0.39 mm, hair-seam ending subapically. Hind femur 3 times as long as broad, on basal half of ventral edge with 15 short closely set curved hairs. Hind tibia 0.52 mm, with 9 fine posterodorsal setulae.

Wing (Figure 82) grayish yellow, veins dark brown. Length 1.35 mm, width 0.62 mm. Costa 0.51 of wing length, ratio of segments 13:9:3. Cilia short (0.065 mm), close, there are about 10 pairs between r_1 and tip of costa. Mediastinalis present. Fork acute. Third vein without a bristle at base; 4th evenly arcuate, 5th very weakly sinuous, 6th sinuate. Axillary margin with 2 hairs. Halteres dark brown.

Holotype, on slide (USNM 70261), Dominica, Clarke Hall, 1–10 Feb. 1965, light trap (Wirth).

DISCUSSION.—*M. bursata* Borgmeier (1966, Arizona) has a similar pocket on 6th sternite, but has four scutellars and the hypopygium is quite different. This new species is most closely related to *M. (M.) burselloides*, new species, but differing by the structure of the sternal pocket and the hypopygium.

REMARK.—The drawing of the hypopygium was made after removing the internal copulatory organs.

41. *Megaselia (Megaselia) burselloides*, new species

FIGURES 84–85

MALE.—Length 1.65 mm. Head width 0.52 mm. Frons black or black-brown, broader than long laterally (4:3), width 0.54 mm, sparsely pubescent, median line distinct. Lower *su* weak, about one-half in length of upper which are one-fourth of frontal width apart. Antials a little below level of upper *su*, twice as far from them as from eye-margin, anterolaterals only slightly higher, near eye-margin. Second row nearly

straight, the bristles equidistant. Two divergent bristles near lower corner of eye; cheeks with 2 setulae. Third antennal joint dark brown, globose; arista 0.39 mm, distinctly pubescent. Palpi slender, brownish yellow, with bristles of medium length.

Thorax black-brown. Pubescence short, longer behind, Mesopleura bare. Scutellum with 2 bristles and 2 minute hairs.

Abdomen dark brown, venter yellow. Tergites subequal. Pubescence scarce and short, longer on hind corners, bristle-like on hind margin of 6th. Hypopygium (Figure 85) dark brown, sides of epandrium connected beneath anal segment, connecting bridge produced into a rounded point, each lateral lobe of epandrium with several bristly hairs. Left ventral plate large, broadly rounded; right ventral plate triangular. Sixth sternite with a small pocket or pouch, flanked on each side by a short rounded process which bears 2 setulae; below the pocket are 2 or 3 hairs on each side. Anal segment whitish yellow, of medium size, end-hairs differentiated.

Legs yellow, hind femur maculated at extreme tip. Foretibia 0.28 mm; foretarsus slender, metatarsus longer than 2+3. Midtibia 0.41 mm; seam nearly complete. Hind femur on basal half of ventral edge with 9 longish curved hairs. Hind tibia 0.57, with 8 fine posterodorsal setulae.

Wing (Figure 84) grayish yellow, veins dark brown. Length 1.40 mm, width 0.62 mm. Costa 0.53 of wing length, ratio of segments 25:18:6. Cilia moderately short (0.091 mm), there are 8 marginals between tip of 1st vein and apex of costa. Mediastinalis present. Fork acute. Third vein without a bristle at base; 4th starting with a faint hook, concave; 5th slightly bisinuate, 6th sinuous. Axillary margin with 2 hairs. Halteres dark brown.

Holotype, on slide (USNM 70262), Dominica, Clarke Hall, 10 Jan. 1965, Malaise trap (Wirth).

DISCUSSION.—*M. (M.) burselloides*, new species, is very close to *M. (M.) bursella*, new species, but the sternal pocket is different and the fifth vein is more curved on distal half.

REMARK.—The drawing of the hypopygium was made after removing the internal copulatory organs.

42. *Megaselia (Megaselia) fortirostris*, new species

FIGURES 86–88

FEMALE.—Length 1.30–1.40 mm. Head width 0.40 mm. Frons brown, broader than long laterally (4:3),

width (holotype) 0.20 mm, scarcely pubescent, with a fine median line. Supraantennals unequal, the lower rudimental, very thin and more or less one-half in length of the upper which are one-fourth of frontal width apart, the lower are slightly more approximate. Antials about in line with upper su, close to anterolaterals which are a little higher. Second row convex, the bristles equidistant. Two divergent bristles near lower corner of eye; cheeks with 3 hairs. Third antennal joint dark brown, of normal size, globose, width 0.08 mm, arista 0.35 mm, distinctly pubescent. Palpi yellowish brown, slender, with 6 long bristles on apical half. Epistoma not produced. Proboscis (Figure 88) dark brown, length 0.26 mm, labrum voluminous, pear-shaped, length 0.18 mm, width 0.15 mm. Labellae narrow.

Thorax reddish yellow or yellowish brown. Pubescence short, longer behind. Mesopleura bare. Scutellum with 2 bristles and 2 minute hairs.

Abdomen dark brown, venter grayish yellow. Tergites subequal, gradually diminishing a little in length, 6th with a gland-opening at base. Pubescence on tergites scarce and short. Venter distinctly hairy; 5th segment (Figure 87) laterally above with several stiff bristly hairs (length 0.065 mm); 6th tergite trapezoid, the sides straight. Terminal segments fleshy, cerci small.

Legs pale yellow, hind femur blackened at tip. Foretibia 0.26 mm (in paratype 0.28 mm); tarsus slender, 0.33 mm (0.36 mm); metatarsus a little longer than 2+3. Midtibia 0.28 mm (0.31 mm), hair-seam reaching apical third, cilia distinct, spur five-sixths of metatarsus. Hind femur 3 times as long as broad, on basal half of ventral edge with 6 longish curved hairs. Hind tibia 0.41 mm (0.49 mm), with about 10 short fine posterodorsal setulae.

Wing (Figure 86) grayish yellow, veins pale brown, 4–7 evanescent at apex. Length 1.10 mm (in paratype 1.22 mm), width 0.52 mm (0.59 mm). Costa 0.53 of wing length, ratio of segments 24:16:5. Cilia short (0.078 mm), 7 pairs between r_1 and apex of costa. Mediastinalis distinct. Fork small, acute. Third vein without a bristle at base; 4th concave, especially on apical half; 5th sinuous, 6th weakly bisinuate, 7th weak. Axillary margin with 2 hairs. Halteres dark brown.

Holotype (on slide, USNM 70263) and 1 paratype (on 2 slides, CTB), Dominica, Manets Gutter, 7 Mar. 1965 (Wirth).

DISCUSSION.—Easily recognized by the four stiff bristly hairs laterally on fifth segment. Extremely close

to *M. (M.) tumidirostris*, new species, which lacks the stiff hairs on fifth segment. *M. crassirostris* is a black species, with the epistoma produced.

**43. *Megaselia (Megaselia) tumidirostris*,
new species**

FIGURES 89-91

Among material received from the United States National Museum I found one female on slide from Dominica, which belongs to a new species that is extremely close to *M. (M.) fortirostris*, new species, described above. A detailed description would be for the greatest part a repetition of that of *M. (M.) fortirostris*, new species. The main differences are: (1) The structure of the labrum (Figure 90) is somewhat different, being less voluminous. (2) The sixth tergite (Figure 91) has the lateral borders slightly curved instead of straight. (3) The fifth segment lacks the stiff hairs present on the pleural area in *M. fortirostris*. (4) The costa is shorter (index 0.5); length of wing (Figure 89) 1.17 mm; ratio of costal segments 20:13:6; therefore, the second segment is relatively shorter; the costal cilia are shorter and more closely set (there are nine pairs between tip of first vein and apex of costa); the fourth vein is less arcuate on distal half, and the fifth is more distinctly sinuous.

MATERIAL EXAMINED.—Holotype on slide (USNM 70264), Dominica, Clarke Hall, June 1964, light trap (O. S. Flint).

44. *Megaselia (Megaselia) miristigma* Borgmeier

FIGURE 97

Megaselia (Megaselia) miristigma Borgmeier, 1962b, pp. 308 [key], 390, fig. 69 [abdomen, ♀; Nova Teutonia; Petrópolis; San José, Costa Rica].

Holotype female (CTB), Nova Teutonia, Brazil; 4 paratypes (CTB, USNM), Nova Teutonia, Petrópolis, Brazil; S. José, Costa Rica.

MALE (undescribed).—Length 1.4–1.8 mm. Frons as broad as long laterally, slightly longer medially, yellow or brownish, densely pubescent, opaque, with a distinct median line. Su weak, the lower thin and a little more than one-half of upper, the latter one-fourth of frontal width apart. Antials not much inclined toward median line, slightly above level of upper su, a little farther from laterals than from su; laterals higher on each side in oblique line with antials and upper su.

Second row straight, the bristles equidistant. One strong lower postocular; jowls with 3 weak bristles; cheeks with 3 short hairs. Third antennal joint small, globose, brown; arista one-third longer than frontal, width, shortly pubescent. Palpi clavate, yellow, with 6 bristles. Proboscis brown, labrum small, labellae large, semicircular, without pseudotracheae.

Thorax yellow. Mesopleura bare. Scutellum with 2 bristles and 2 minute hairs.

Abdomen opaque, venter yellow. Tergites 2–6 subequal, brown, sometimes paler medially and on basal half of 2nd. Pubescence scarce, short, not conspicuously longer on hind margin of 6th. Hypopygium of medium size, brown, with fine hairs; anal segment of medium length, yellow, end-hairs not differentiated.

Legs yellow, hind femur blackened at tip. Foretarsus slender, metatarsus slightly longer than 2–4. Hair-seam on midtibia complete, setulae biseriata, the anterodorsal weak. Hind femur nearly 3 times as long as broad, the ventral hairs on basal half short. Hind tibia with 6 strong setulae, sometimes 2 additional weaker ones are present.

Wing narrow (Figure 97), yellowish, veins pale brown. Length 1.4–1.8 mm. Costa 0.53, ratio of segments 14:12:5. Cilia very short and close. Mediastinalis wanting. Fork long, narrow, acute. Third vein straight, with a minute hair at base; 4th–7th but little curved, 4th starting in front of fork, sometimes obsolete basally, slightly deflected at extreme tip. Anal margin broadly convex; axillary margin with 2 short hairs. Halteres dark brown.

FEMALE.—See original description. Tergites 3–5 with a large stigma laterally (see Borgmeier, 1962, fig. 69).

MATERIAL EXAMINED.—The types (see above); 1 female in alcohol, Dominica, Fond Figue River 9–12 Mar. 1965 (Wirth); 1 female and 6 males, all on slides, Puerto Rico, El Verde Exp. St., Barrio Rio Grande, 1963–1966, G. E. Drewery (No. 26).

DISCUSSION.—The female is easily recognized by the large stigmata; the male by venational characters.

**45. *Megaselia (Megaselia) hamaticauda*,
new species**

FIGURES 92, 93

MALE.—Length 1.25–1.37 mm. Frons yellow, subopaque, about as broad as long laterally (10:9), width 0.26 mm, a little longer medially (0.3 mm), with scattered hairs and a fine median furrow. There are

4 supraantennals, the upper are shorter than the antials and are about one-fourth of frontal width apart; they are more approximate than the preocellars; the lower supraantennals are very weak and about one-half of the upper in length. First row distinctly convex, the antials are one-half of frontal width apart. Second row slightly concave anteriorly, the bristles equidistant. Eyes large. One strong lower postocular bristle; cheeks narrow, with about 6 hairs or weak bristles. Third antennal joint small, orange; arista about one-third longer than frontal width, shortly pubescent. Palpi yellow, about one-half as broad as long, length 0.13 mm, with moderately long bristles. Proboscis orange, with very broad labellae.

Thorax yellow, subshining; pleura pale, mesopleura bare. Scutellum with 2 bristles and 2 minute hairs. Postscutellum brown.

Abdomen opaque, venter yellow. Tergites 2-5 subequal in length, 6th elongated; 1st brownish, 2 and 5 yellow, 3, 4, and 6 with a black or brown spot laterally, not reaching middle; in the paratype the tergites are a little darker and have distinct yellow seams on hind margins. Pubescence scarce, short, almost limited to hind margins. Hypopygium dark brown, subshining, with a few short hairs. Anal tube yellow, of medium length, as long as dorsum of hypopygium, end-hairs moderately strong (wanting in paratype).

Legs yellow, hind femur darkened at tip. Foretarsus slender. Dorsal hair-seam of midtibia complete, cilia biseriata on upper half. Hind femur broad, ventral fringe on basal half wanting (the hairs are not longer than the pubescence). Posterodorsal setulae of hind tibia about 7, strong and about as long as width of tibia, except the basal ones.

Wing (Figure 92) grayish yellow, veins dirty yellow. Length (paratype) 1.37 mm, width 0.5 mm. Costa 0.56 of wing length, ratio of segments 13:8:7. Cilia short. Humeral cross-vein indistinct, mediastinalis wanting. Base of 3rd vein with a short hair. Fork long. Fourth vein starting behind fork, obsolete and slightly curved basally, remainder nearly straight except at apex which is somewhat deflected; 5th but little curved; 6th slightly sinuous. Anal margin broadly convex. Axillary margin with 2 hairs. Halteres dark brown.

FEMALE.—Length 2.25 mm. Similar to male. Third antennal joint small, orange. Proboscis short, labellae normal. One lower postocular bristle; jowls with one bristle; cheeks with 8 hairs. Thorax yellow, postscutellum brown. Tergites 1-5 subequal, 6th elongated; 1,

3, and 4 dark brown, 2 and 5 yellow, somewhat brownish at middle; 6th nearly black, with 2 faint yellow longitudinal stripes; 6th with a broad yellow seam, seams on 4th and 5th narrow. Pubescence nearly absent. Seventh segment black, tergite small; intersegmental membrane black, surrounding the base of a peculiar chitinous structure which comprises segments 8-10 (Figure 93); this structure is black-brown, glossy, striolate in side view and distinctly concave above, terminating behind on each side in an obtuse erect hook which nearly touch each other; at base above there are several fine hairs, one of which is longer. Hind femur as in male. Wing length 2 mm. Costa 0.6 of wing length.

MATERIAL EXAMINED.—Holotype male (USNM 70265) and paratype female (USNM), Dominica, Fond Figes River, 3 Feb. 1965, rain forest (W. W. Wirth); one paratype male (CTB), same locality, 9-12 Mar. 1965 (W. W. Wirth); one paratype male, 1.5 m east Pont Casse, 11 Apr. 1966 (R. J. Gagné); one paratype male (in alcohol), Malaise trap, 12-14 Oct. 1964 (P. J. Spangler).

DISCUSSION.—*M. (M.) hamaticauda*, new species, belongs to group VII. The venation is very similar to *M. orthoneura* Borgmeier (1961; Brazil), but in the latter the female terminal segments are fleshy and the male has a small hypopygium and a distinct ventral fringe on hind femur; the color of the tergites is also different.

Three species are known from the Philippines, in which the female is provided with curious chitinous structures on the seventh and eighth abdominal segments: *M. (M.) appendiculata* Brues, *M. (M.) bihamulata* Brues and *M. (M.) carinata* Borgmeier (see Borgmeier, 1967b, pp. 151-155).

46. *Megaselia (Megaselia) paula*, new species

FIGURES 95, 96

MALE.—Length 0.90-1.00 mm. Head width (paratype, on slide) 0.31 mm. Frons brownish, grayish pruinose, opaque, broader than long laterally (3:2), width 0.19 mm, pubescent, with a fine median line. Lower su rudimental, hair-like; upper not quite one-fourth of frontal width apart (4:14). Antials on level of upper su, slightly farther from them than from eye and from anterolaterals, the latter a little higher. Second row feebly convex, the bristles equidistant. Upper and lower postocular long. No bristle on jowls; cheeks

with a series of 5 hairs. Third antennal joint yellow or brownish yellow, globose, width 0.065 mm; arista 0.20 mm, distinctly pubescent. Palpi yellow, of normal size, slightly angulate on upper border near base, with 5 long bristles on apical half. Proboscis small.

Thorax subshining, yellow to brownish yellow. Pubescence short, not noticeably longer behind. Mesopleura bare. Scutellum with 2 bristles and 2 very minute hairs.

Abdomen opaque, venter yellow, tergites dark brown, subequal in length, 6th yellow on anterior half. Pubescence scarce, mostly short, some longer hairs on hind margin on 6th tergite. Hypopygium of medium size, dark brown, dull, with longish hairs. Anal segment of medium length, yellow, with long hairs, end-hairs not differentiated.

Legs entirely yellow. Foretibia (in paratype) 0.19 mm; foretarsus 0.28 mm, metatarsus about as long as 2+3. Midtibia 0.26 mm; seam reaching apical third; cilia fine; end-spur three-fourths of metatarsus; last joint of midtarsus (Figure 96) a little thickened, about twice as long as preceding. Hind femur 3 times as long as broad, on ventral edge near base with about 4 longish curved hairs. Hind tibia 0.32 mm with 10 very fine cilia; last joint of hind tarsus slightly longer than preceding.

Wing (Figure 95) slightly grayish yellow, veins brown (yellow in paratype on slide). Length 1.04 mm in holotype, 0.85 mm in mounted paratype, width of latter 0.39 mm. Costa 0.5 of wing length, ratio of segments 14:10:5. Cilia short (0.05 mm), widely placed, there are 6 pairs between r_1 and apex of costa. Medialastinalis weak. Fork large, anterior arm steep, posterior arm curved. Third vein without a bristle at base; 4th starting behind fork, evenly arcuate; 5th and 6th sinuous. Anal margin broadly convex. Axillary margin with 2 hairs. Halteres dark brown.

FEMALE.—Length 1.3 mm. Similar to male. Tergites 2–6 subequal, gradually narrowed, scarcely pubescent, hairs on hind margin of 6th not noticeably longer; 8th segment dark. Tarsi of normal length. Wing length 1.17 mm.

MATERIAL EXAMINED.—Holotype male (pinned, USNM 70266), Dominica, Fond Figes River, 20 Jan. 1965 (W. W. Wirth); allotype female (on slide, USNM), and 2 males paratypes: one pinned (USNM), another on slide (CTB), Fond Figes River, 3 Feb. 1965 (Wirth).

DISCUSSION.—*M. (M.) paula*, new species, belongs to the group of species whose males have the last mid-tarsal joint twice as long as the preceding: *M. lutea* Meigen (Europe, U.S.A.), *M. scutellaris* Wood (Europe), *M. (M.) serotina* Borgmeier (Brazil), *M. luteoides* Schmitz (Formosa), *M. tetrachaeta* Beyer (New Guinea), and *M. postorta* Borgmeier (Australia). *M. paula*, new species, differs from *M. serotina* by smaller size, the ratio of costal segments (in *M. serotina* 1 is longer than 2+3), and its less curved fifth vein (see Figure 94.).

47. *Megaselia (Megaselia) flavopleura* (Malloch)

FIGURES 98, 99

Aphiochaeta flavopleura Malloch, 1914, p. 31 [♀; Costa Rica].

Megaselia (Megaselia) flavopleura (Malloch).—Borgmeier, 1962b, pp. 309, 429, fig. 90 [♂; paratype].

Holotype female (ANSP), one paratype male (not female, CTB), from Costa Rica.

MALE.—Length 1.20–1.40 mm. Frons somewhat broader than long medially (5:4), brown, rather shining, with sparse pubescence and a distinct median line. Lower su weak, about one-half of upper which are one-fourth of frontal width apart (the lower one-eighth). Antials in line with upper su, near eye-margin, vertically below anterolaterals. Second row convex, the bristles equidistant. Two long divergent bristles near lower corner of eye; cheeks with a few hairs. Third antennal joint brown, of normal size; arista one-third longer than width of frons. Palpi narrow, yellow, with long bristles.

Thorax yellow, pleura pale. Mesopleura bare. Scutellum with 2 bristles and 2 minute hairs.

Abdomen: venter yellow; tergites brown, 2–6 subequal in length, sparsely hairy, hairs on hind border of 6th bristle-like. Venter sparsely hairy. Hypopygium (Figure 98) of medium size, pale brown, with a few short hairs laterally. Anal segment short, pale yellow, with short hairs and one longer hair on each side directed downwards, as long as apical hairs.

Legs yellow. Foretarsus slender, metatarsus longer than 2+3. Hind femur on basal half with several longish delicate curved hairs. Hind tibia with about 13 fine short cilia.

Wing (see Borgmeier, 1962b p. 399, fig. 20, drawn from paratype) slightly yellowish, veins dirty yellow. Length (paratype) 1.4 mm. Costa 0.56–0.59 length

of wing; segments 23:23:9. Cilia moderately short (0.1 mm), 8 or 9 pairs between 1st vein and apex of costa. Third vein without a bristle at base. Fork large, anterior arm rather steep. Fourth starting behind fork, 5 and 6 sinuous. Axillary margin with 2 hairs. Halteres dark brown.

FEMALE.—Length 1.3–1.5 mm. Similar to male. Tergites pale brown, sparsely hairy. Tergites 5 and 6 (Figure 99) moderately convex laterally, hind corners conspicuous; 6th transverse. Costa up to 0.6 length of wing, 2nd segment a little longer than first (10:11:5).

MATERIAL EXAMINED.—Paratype male, Costa Rica (holotype female seen in Philadelphia in 1961); 10 males and 10 females (one pinned, one on slide, the rest in alcohol) from Dominica, Manets Gutter, 15 Mar. 1965 (Wirth), and Fond Figes River, 27 Feb. 1965 (Wirth).

DISCUSSION.—Easily separated from *M. (M.) alajuelensis* by the position of the antials, the long costa, the large fork, the fourth vein starting behind fork, and the structure of tergites 5 and 6.

48. *Megaselia (Megaselia) crinellifemur*, new species

FIGURES 100–104

MALE.—Length 1.40–1.60 mm. Head width about 0.50 mm. Frons slightly broader than long laterally (5:4), width 0.26 mm, yellow or brownish yellow, infuscated above, subopaque, pubescent, with a distinct median line. Su unequal, the lower thin and about one-half in length of the upper which are one-fourth of frontal width apart. Antials nearly in line with upper su (slightly lower), about midway between su and anterolaterals, the latter not much higher, near eye-margin. Second row slightly convex, the preocellars slightly farther from l_2 than from each other, but not so much approximate as upper su. Upper postoculars well developed. Two divergent strong bristles near lower eye-corner; cheeks with 3 weaker bristles. Third antennal joint slightly enlarged, globose, yellow, infuscated at tip, sometimes brownish. Arista short (0.32 mm), distinctly pubescent. Palpi yellow, of normal size, the bristles moderately long. Proboscis small, yellow.

Thorax subshining, yellow or brownish yellow. Pubescence short. Mesopleura bare. Scutellum with 2 bristles and 2 hairs.

Abdomen: venter yellow; tergites black-brown, 5th yellow, also 2nd along anterior border yellow and sometimes a fine median yellow stripe on 2–4; 2nd and 6th slightly elongate, 3–5 subequal. Pubescence extremely scarce, short, 2nd with 3 and 4 moderate bristles laterally, and 6th with bristly hairs on hind margin. Venter with conspicuous apical rows of bristly hairs on segments 3–6. Hypopygium (Figure 103) dark brown, with short hairs laterally, one of which is longer; left ventral plate (Figure 104) broadly rounded, whitish yellow; right process triangular. Anal segment long (0.19 mm), sheat-shaped, whitish yellow, slightly infuscated on basal half, with fine hairs, end-hairs differentiated.

Legs yellow, hind femur blackened at tip. Foretibia 0.30 mm, with a dorsal row of fine cilia; foretarsus slender, 0.36 mm, metatarsus a little longer than 2+3. Midtibia 0.41 mm, seam reaching apical fourth, cilia fine, spur three-fourths of metatarsus. Hind femur (Figure 100) 3 times as long as broad, on basal half of ventral edge with a fringe of about 12–14 short stiff hairs, the basal 9–10 are closely set and straight. Hind tibia 0.52 mm, with about 9 short setulae, the basal ones very weak.

Wing (Figure 101) grayish yellow, veins dark brown. Length 1.40 mm, width 0.59 mm. Costa 0.53 length of wing, ratio of segments 24:21:6. Cilia short, 0.065 mm, there are 9 pairs between tip of 1st vein and apex of costa. Fork narrow, acute. Mediastinalis incomplete; 3rd vein without a bristle at base; 4th evenly arcuate, starting at fork with a very faint hook; 5th but little curved before middle; 6th feebly sinuous. Axillary margin with 3 hairs. Halteres brown.

FEMALE.—Similar to male. Length 1.80–2.00 mm. Tergites (Figure 102) black, 6th with a median yellow spot anteriorly; venter yellow, lateral areas dark-banded; the tergites are subequal in length and gradually narrowed; 6th subquadrate, slightly broader than long. Pubescence very scarce and short; 2nd with some moderate bristles laterally; venter with a transverse apical row of bristly hairs on segments 3–6; 7th tergite long and narrow. Fringe on hind femur as in male.

MATERIAL EXAMINED.—Holotype male (pinned; USNM 70267), Dominica, Fond Figes R., 30 Jan. 1965 (Wirth). Paratypes (USNM CTB), pinned: 4 males 3 females, from the following localities: S. Chiltern Est. 2 Feb. 1965 (Wirth); Clarke Hall, 11–20 Feb. 1965 (Wirth), June 1966 (G. Steyskal); in al-

cohol: 18 males 4 females, Clark Hall, 1–10 Feb. 1965 (Wirth).

DISCUSSION.—*M. (M.) crinellifemur*, new species, is very close to *M. subflava* Malloch (Puerto Rico), but differs by the close fringe on hind femur and by venational characters. Dr. Wirth was kind enough to compare one paratype male with the holotype male of *M. subflava* (USNM 14857). The latter is represented by a good series from Puerto Rico and will be treated in a forthcoming paper. Also close to *M. (M.) subaristalis*, new species, which is smaller, the ventral plate is triangular, the hind femur is not maculated at tip, and the 1st vein is more straight near apex.

49. *Megaselia (Megaselia) subaristalis*, new species

FIGURES 105–109

MALE.—Length 1.2–1.3 mm. Head width 0.45 mm. Frons subquadrate, brown, median furrow distinct. Lower supraantennals very weak and about one-half of upper, the latter more approximate than the preocellars. Antials inclined toward median line, about midway between upper supraantennals and anterolaterals, which are slightly higher placed. Third antennal joint (Figure 105) brownish, somewhat enlarged, oval, about one-half eye-length; arista dorsal, hardly twice as long as 3rd antennal joint, pubescent. Palpi short, yellow, the bristles moderately long. Proboscis short.

Thorax yellowish brown (in alcohol reddish yellow), pleura pale. Mesopleura bare. Scutellum with 2 bristles.

Abdomen: venter yellow. Tergites brown, subequal in length. Pubescence scarce, short, longer on hind margin of 6th tergite. Venter with a transverse row of bristle-like hairs on hind margin of 6th segment. Hypopygium (Figure 108) dark brown, higher than long, on both sides with hairs and one weak bristle on lower border. Both sides of dorsal part connected below anal tube. Right ventral plate (Figure 107) small, whitish, triangular; left ventral plate large, rounded triangular (Figure 107), generally curved and spoon-like in side view (Figure 108). Anal tube long, yellow, with short hairs; end-hairs strong.

Legs yellow, hind femur (Figure 109) infuscated at tip, moderately broad, with a distinct fringe of about 8 longish hairs on ventral edge of basal half. Foretarsus slender. Hind tibial setulae delicate but distinct, weaker on upper half.

Wing (Figure 106) brownish yellow, veins brown. Length (paratype) 1.13 mm, width 0.5 mm. Costa 0.55

of wing length, ratio of segments 10–9–2. Cilia short (0.06–0.08 mm). Fourth vein evenly concave, faintly deflected at extreme tip; 5th and 6th slightly sinuous; 7th weak. Axillary margin with 3 hairs. Halteres dark brown.

FEMALE.—Length 1.5 mm. Similar to male. Third antennal joint not enlarged; arista about two and one-half length of 3rd antennal joint. Tergites dark brown, 2nd a little elongated, 3–5 subequal, 6th small, with a whitish median notch anteriorly. Pubescence scarce, 2nd tergite with some hairs laterally. Terminal segments fleshy, 7th with a narrow dorsal plate. Fringe on hind femur as in male.

MATERIAL EXAMINED.—Holotype male (USNM 70268), pinned (from alcohol), Dominica, Point Lolo, 0.5 miles west, 25 Jan. 1965, at light (W. W. Wirth). Paratypes: 1 female (USNM), pinned (from alcohol), and 13 males (in alcohol), same locality, date and collector.

DISCUSSION.—*M. (M.) subaristalis*, new species, belongs to group VII. In my key to the neotropical species (1962b) it runs to *M. tumidicornis*, but the latter has a shorter costa (0.45). The species may be recognized by the enlarged 3rd antennal joint in male, the rather short arista, and the structure of the hypopygium, especially the left ventral plate. Close to *M. crinellifemur* (see p. 35).

50. *Megaselia (Megaselia) totaflava*, new species

FIGURES 110–111

FEMALE.—Length 1.3–1.5 mm, fully extended 1.9 mm. Head width 0.44 mm. Frons yellow, quadratic, width 0.20 mm, pubescent, with a distinct median line. Su unequal, the lower thin and less than one-half in length, the upper about one-fourth of frontal width apart, the lower one-eighth. Antials nearly in line with upper su, twice as far from them than from eye-margin, close to anterolaterals which are slightly higher near eye-margin. Second row slightly convex, the bristles equidistant. One upper and one lower postocular bristle; one bristle on jowls; cheeks with 2 setulae. Third antennal joint yellowish brown, globose, of normal size, width 0.09 mm; arista 0.39 mm, finely pubescent. Palpi whitish, with moderate bristles.

Thorax reddish yellow, pleura pale. Pubescence short, longer behind. Mesopleura bare. Scutellum with 2 bristles and 2 minute hairs.

Abdomen ochreous yellow, venter pale yellow. Tergites 2-6 subequal, gradually narrowed, 5th (Figure 110) on hind margin with a small excavation at middle, 6th transverse, sides weakly convex, with a gland opening at base. Pubescence scarce and short, some short bristly hairs on 2nd tergite laterally. Terminal segments tubiform, whitish; 7th with a trapezoid tergal plate, sternite a linear strip dilated apically; 8th segment behind with 2 very small tergal plates close together. Cerci small.

Legs entirely yellow, hind femur not darkened at tip. Foretibia 0.28 mm; tarsus slender, 0.37 mm. Midtibia 0.39 mm, hair-seam reaching apical fourth; 9 distinct posterodorsal cilia; end-spur three-fourths of metatarsus. Hind femur nearly 3 times as long as broad, ventrobasally with 5 longish curved hairs. Hind tibia 0.50 mm, with 12 fine posterodorsal cilia.

Wing (Figure 111) grayish yellow, veins pale brown. Length 1.24 mm, width 0.52 mm. Costa 0.52 of wing length, ratio of segments 21:17:6. Cilia short (0.05 mm) and close, there are about 10 pairs between tip of 1st vein and apex of costa. Fork acute. Mediastinalis obsolete. Third vein without a bristle at base; 4th concave on basal fourth, remainder nearly straight; 5th and 6th slightly sinuous. Anal margin convex, axillary margin with 2 hairs. Halteres brownish.

MATERIAL EXAMINED.—Holotype female, on slide (USNM 70269), S. Chiltern Est. 20 Feb. 1965 (Wirth); paratypes in alcohol (USNM, CTB): 65 females, S. Chiltern Est., Clarke Hall and Pont Casse, I-III 1965 (Wirth); 1 pinned female, Clarke Hall, 11-20 Jan. 1965.

DISCUSSION.—*M. (M.) totaflava*, new species, comes close to *M. (M.) alajuelensis* but differs by the structure of tergites 5-7, the shorter costal cilia and other characters.

51. *Megaselia (Megaselia) alajuelensis* (Malloch)

FIGURES 112-114

Aphiochaeta alajuelensis Malloch, 1914, p. 32 [δ ♀; Costa Rica].

Megaselia (Megaselia) alajuelensis (Malloch).—Borgmeier, 1962b, pp. 309, 410, fig. 91 [Costa Rica; Brazil].

Holotype male and paratype female, Alajuela, Costa Rica (ANSP); 1 paratype male (CTB).

MALE.—Length 1.00-1.80 mm. Frons subquadrate, as broad as long medially, somewhat shorter laterally,

yellow or brown, pubescent, with a distinct median line. Lower su weak, about one-half in length of the upper which are one-fourth of frontal width apart. Antials very close to anterolaterals, inside of them and slightly lower; 2nd row slightly convex, the bristles equidistant. Third antennal joint brown, globose, of normal size; arista one-third longer than width of frons. Palpi yellow, with long bristles.

Thorax yellow. Mesopleura bare. Scutellum with 2 bristles and 2 hairs.

Abdomen: venter yellow. Tergites brown, 6th sometimes yellow. Pubescence short, hairs on hind-margin of 6th bristle-like. Venter with transverse apical rows of conspicuous bristly hairs on segments 3-6. Hypopygium (Figure 113) pale brown, small, hairy, hairs short or of moderate length. Anal segment short, yellow, with short hairs, end-hairs not differentiated.

Legs entirely yellow, hind femur not darkened at tip. Foretarsus slender. Hind femur ventrobasally with about 7 longish curved hairs. Hind tibia with 12 fine setulae, those below middle somewhat stronger.

Wing (see Borgmeier, 1962b, fig. 91), grayish, yellow, veins dirty yellow. Costa 0.52 of wing length, ratio of segments (in paratype) 10:8:3. Cilia moderately short (0.07-0.08 mm), there are 6 pairs between 1st vein and tip of costa; 3rd vein without a bristle at base; 4th vein starting at fork; 5th and 6th sinuous. Axillary margin with 3 hairs. Anal margin broadly convex. Halteres brown.

FEMALE.—Length 1.10-2.00 mm. Similar to male. Proboscis (Figure 114) narrow, yellow. Tergites (Figure 112) pale brown, subequal in length; hind corners of 5th broadly rounded; lateral borders of 6th convex. Pubescence conspicuous on lateral borders of tergites; 2nd with bristly hairs. Venter sparsely hairy, hairs shorter than in male. Costa 0.52-0.53 of wing length; there are 7-8 cilia between 1st vein and apex of costa.

MATERIAL EXAMINED.—Besides the types from Costa Rica and numerous specimens from Brazil, I saw about 300 specimens from Dominica: 25 pinned specimens, 48 on slides, and more than 200 in alcohol, from the following localities: Clarke Hall, Pont Casse, Manets Gutter, Fond Figures R., d'Leau Gommier, S. Chiltern Est. (W. W. Wirth; O. S. Flint; T. J. Spilman; 1964-1965).

DISCUSSION.—*M. (M.) alajuelensis* comes close to *M. (M.) flavopleura* Malloch, but the latter has a longer costa, the ratio of length of segments is different,

the fork is larger, and the fourth vein starts behind fork; the female of *M. (M.) alajuelensis* can be recognized by the form of the sixth tergite which is distinctive; it is best seen in alcohol material.

VARIATION.—The variation in body-length is remarkable.

52. *Megaselia (Megaselia) mutilata*, new species

FIGURE 115

FEMALE.—Length 1.00 mm. Head width 0.32 mm. Frons black brown, as broad as long medially (0.19 mm), lateral length about 0.11 mm, finely pubescent, with a distinct median line. Four su of equal length, the upper two-fifths of frontal width apart (6:15), the lower one-seventh. Antials approximate to eye-margin, a little above level of upper su, nearly vertically below anterolaterals which are distinctly higher near eye-margin. Second row nearly straight, the bristles equidistant. Upper postocular bristles strong. A pair of divergent bristles near lower corner of eye, cheeks with 4 setulae. Third antennal joint black-brown, of normal size, width 0.078 mm; arista 0.26 mm, distinctly pubescent. Palpi yellow, of normal shape, with 5–6 bristles on apical half.

Thorax black-brown. Pubescence short, longer behind. Mesopleura bare. Scutellum with 2 bristles and 2 minute hairs.

Abdomen dark brown, venter yellow. Tergites 2–6 subequal in length, gradually narrowed. Pubescence scarce, short; venter on hind margins of segments 4–6 with a transverse row of hairs inserted in dark spots. Terminal segments short, fleshy; cerci distinct.

Legs yellow, hind legs more or less brownish yellow. Foretibia 0.22 mm. Foretarsus slender (0.29 mm), metatarsus about as long as joints 2+3. Midtibia 0.27 mm, hair-seam reaching apical third; end-spur about two-thirds of metatarsus. Hind femur a little more than 3 times as long as broad, ventrobasal hairs rudimental. Hind tibia 0.39 mm, posterodorsal cilia inconspicuous, very fine.

Wing (Figure 115) grayish yellow, veins brown. Length 1.01 mm, width 0.44 mm. Costa 0.42 or 0.43 of wing length, ratio of segments 22:21, with about 13 marginal cilia, length 0.065 mm (there are 5 between r_1 and apex of costa). Fork and mediastinalis missing. Third vein with a conspicuous bristle at base, nearly as long as longest costal cilia; 4th vein weakly arcuate; 5th but little curved before middle; 6th

slightly sinuous; 7th weak. Axillary margin with 2 hairs. Halteres dark brown.

MATERIAL EXAMINED.—Holotype female, on slide (USNM 70270), Dominica, Manets Gutter, 7 Mar. 1965, light trap (Wirth).

DISCUSSION.—Among the neotropical species of group VIII easily recognized by the unforked 3rd vein.

53. *Megaselia (Megaselia) brevicostalis* (Wood)

Phora brevicostalis Wood, 1910, pp. 243, 246 [δ ♀; England].

Aphiochaeta brevicostalis (Wood).—Wood, 1912, p. 171.—Brues, 1915a, p. 113.—Lundbeck, 1922, p. 401, fig. 119.

Megaselia (Megaselia) brevicostalis (Wood).—Borgmeier, 1966, pp. 6 [key], 106, figs. 89–90 [δ ♀; U.S.; South America].

Aphiochaeta fuscopedunculata Malloch, 1912, p. 498 [Kaolo, B.C.].—Borgmeier, 1966, p. 107 [synonymy].

Megaselia (Megaselia) frequens Borgmeier, 1962b, p. 312, 448 [Brazil]; 1966, p. 107 [synonymy].

This European species, recently recorded by Borgmeier from North and South America, is represented by two males: 1 pinned specimen from Dominica, Layou, 29 May 1966 (G. Steyskal); and 1 male in alcohol, Dominica, Clarke Hall, Feb. 1965, light trap (W. W. Wirth). The species has a small bristle at base of 3rd vein.

54. *Megaselia (Megaselia) crinipyga*, new species

FIGURES 116–117

MALE.—Length 1.00 mm. Head width 0.31 mm. Frons slightly broader than long laterally (6:5), about as broad as long medially (0.21 mm), black-brown, pubescent, with a distinct median line. Supraantennals of equal length, the upper about one-third of frontal width apart, the lower one-sixth. Antials on anterior border, farther from supraantennals than from eye-margin; anterolaterals higher, near eye-margin. Second row weakly convex, the bristles equidistant. Upper postocular bristle developed. Two bristles near lower corner of eye. Third antennal joint black, globose, width 0.8 mm; arista 0.27 mm, distinctly pubescent. Palpi yellow, well bristled.

Thorax black-brown. Pubescence short, longer behind. Mesopleura bare. Scutellum with 2 bristles and 2 minute hairs.

Abdomen black-brown, venter dark. Tergites subequal in length. Pubescence scarce and short, hardly longer on hind margin of 6th tergite. Hypopygium

(Figure 116) small, dark brown, globose, on both sides with numerous hairs and 1 or 2 bristles. Anal segment yellowish brown, very short, end-hairs delicate, inconspicuous, directed downward.

Legs castaneous to yellowish brown. Foretibia 0.23 mm, midtibia 0.29 mm, hind tibia 0.41 mm. Foretarsus slender, 0.33 mm, metatarsus as long as joints 2+3. Hind femur about 3 times as long as broad, length 0.44 mm, ventrobasal hairs short and delicate, not reaching middle. Posterodorsal cilia of hind tibia short and fine.

Wing (Figure 117) grayish yellow, veins pale brown, 4-7 evanescent apically. Length 0.91 mm, width 0.41 mm. Costa 0.42 length of wing, ratio of segments 13:7:5. Cilia short (0.05 mm) about 5 between tip of 1st vein and apex of costa. Mediastinalis missing. Fork narrow and acute. Third vein without a bristle at base; 4th slightly arcuate on basal half, remainder straight; 5th but little curved, very weakly recurved at base; 6th slightly sinuous; 7th weak. Anal margin broadly convex. Axillary margin with 2 hairs. Halteres dark.

FEMALE.—Similar to the male. Tergites of subequal length, 2-6 gradually narrow, 7-10 fleshy. Cerci distinct. Wing length 0.91 mm, width 0.39 mm. Costa 0.42, segments 13:6:5.

MATERIAL EXAMINED.—Holotype male (on slide, USNM 70271), Dominica, Cabrit Swamp, 18 June 1964, at light (O. S. Flint). Paratypes (USNM, CTB all on slides): 5 males and 2 females, same locality, date and collector.

DISCUSSION.—*M. (M.) crinipyga*, new species, comes close to *M. brevicostalis* Wood, but in the latter the halteres are yellow, and the third vein has a bristle at base.

Genus *Woodiphora* Schmitz

Woodiphora (Woodiphora) magnipalpis (Aldrich)

FIGURES 118-120

Phora magnipalpis Aldrich, 1896, p. 438 [♂, ♀; St. Vincent, W.I.].

Aphiochaeta magnipalpis (Aldrich).—Brues, 1904, p. 365, pl. vi: fig. 36 [wing].

Woodiphora magnipalpis (Aldrich).—Schmitz, 1926, p. 75.—Borgmeier, 1932, p. 50 [Costa Rica; Brazil]; 1963a, p. 136, fig. 155 [forefemur].

Aphiochaeta pilosa Malloch, 1914, p. 33, pl. 1: fig. 4 [♀; Costa Rica].—Borgmeier, 1963a, p. 138 [synonymy].

Aphiochaeta velutinipes Brues, 1924, p. 158 [♀; U.S.].—Borgmeier, 1963a, p. 138 [synonymy].

Aphiochaeta opaciventris Brues, 1924, p. 159 [♂; Grenada, W.I.].—Borgmeier, 1967b, p. 263 [synonymy].

Holotype male (USNM 7759), paratypes males and females (USNM, MCZ, CTB), all from St. Vincent, B.W.I. (Aldrich).

MALE.—Palpi (Figure 119) enlarged, with microscopic hairs. Forefemur (Figure 120) with a characteristic black stria on median third of ventral furrow. Foretarsus slender. Fore-metatarsus, with an anteroventral series of short and some longer sensorial hairs. Wing clear. Costa 0.54-0.56 of wing length; ratio of segments 26:22:8 (paratype), 25:22:8 or 22:20:8 (males from Dominica), 26:19:7 (holotype male of *A. opaciventris*), 22:20:8 (syntype male of *A. opaciventris*). Halteres variable: yellow (types) or yellowish brown or dark brown (specimens from Grenada and Dominica).

FEMALE.—Palpus slender (Figure 118), with short bristles and fine hairs. Forefemur without stria. Foretarsus somewhat stout. Wing as in male. Costal segments 24:22:9. Halteres yellow or dark.

MATERIAL EXAMINED.—Besides the types listed above, I have seen from Dominica: 25 pinned males and 18 females, and numerous specimens of both sexes in alcohol, from the following localities: Macoucheri, Grande Savane, Woodford Hill, Pagua Bay, Hodges River Mouth, Fond Ficus River, Cabrit Swamp, Clarke Hall, all collected by W. W. Wirth (Jan. to Mar. 1965).

DISTRIBUTION.—Antilles, North America, Central America, Brazil.

DISCUSSION.—The male is easily recognized by the black stria on median third of forefemur (Figure 120).

SYNONYMY.—As I pointed out in a previous paper (1963a, p. 138), *Aphiochaeta pilosa* Malloch (1914) and *Aphiochaeta velutinipes* Brues (1924) are synonyms of *W. magnipalpis*. To these must be added *Aphiochaeta opaciventris* Brues (1924), based on a single male from Grenada, W. I. According to Brues (1924, p. 161), "This species is at once distinguished from *magnipalpis* Aldrich from the same island [the type-locality of *W. magnipalpis* is St. Vincent!] by (1) the much more slender legs, (2) opaque velvety black abdomen, (3) normally curved fifth vein and (4) by the complete absence of any cilia on the middle tibiae. (5) The palpi although similarly enlarged in the male, are more slender than in *magnipalpis*."

In February 1965, during a visit to the Harvard Museum, I had the opportunity to examine the holotype male of *A. opaciventris* (the wing on slide is before me) which I compared carefully with a paratype male of *W. magnipalpis* in my collection. I reached the following conclusions with regard to the differences appointed by Brues: (1) the legs are not more slender in *A. opaciventris*; (2) the abdomen is opaque velvety black also in *W. magnipalpis*; (3) the fifth vein is less curved before middle in *A. opaciventris*; (4) the mid-legs are missing in the holotype of *A. opaciventris*, but in a syntype the cilia are present on midtibia; (5) the palpi of male are not more slender in *A. opaciventris*.

The only real differences discovered are (a) the ratio of costal segments; in the type of *A. opaciventris* the first section is exactly as long as the other two together [not longer, as stated by Brues]; (b) the fifth vein is less curved; (c) the halteres are dark. That the differences of (a) and (b) are due to variation, is suggested by the fact that they are not present in a syntype of *A. opaciventris* taken by Brues together with the type. That the color of the halteres is variable, seems to be evident from the presence of the black stria on forefemur in all males examined and which I consider as an extraordinary character of high taxonomic value. I conclude from this that *A. opaciventris* must be a synonym of *W. magnipalpis*.

REMARK.—For the remaining species of this genus see my improved key to the world species (Borgmeier, 1967b, p. 264).

Genus *Johowia* Silva Figueroa

Johowia parvicornis, new species

FIGURES 121–123

MALE.—Length 1.5–1.9 mm. Head width 0.65 mm. Frons longer than broad (4:3), width above 0.26 mm, width below 0.23 mm, a little depressed anteriorly at middle, black, subopaque, with a distinct median line. Four equal supraantennals, between and above them there are some proclinate bristly hairs which are not always conspicuous; the upper supraantennals are approximately one-half of frontal width apart, the lower one-third. Antials near eye, on a lower level than lower supraantennals, vertically below anterolaterals, the latter are much higher, about at middle between antials and mediolaterals. Second row straight or slightly convex anteriorly, the preocellars a little farther from each

other than from mediolaterals. Eyes large, approximate below, where they are about one-half of frontal width apart. One strong lower postocular bristle directed downward; one weak bristle on jowls; cheeks very narrow, with 8 weak bristles. Third antennal joint (Figure 123) dark brown, very small, globose, width 0.09 mm; arista dorsal, long (0.40 mm), finely pubescent. Palpi (Figure 122) yellow, small, clavate, length 0.15 mm, at apex with 5 strong bristles and a smaller one. Proboscis short, labrum very small, labella with 8 pseudotracheae.

Thorax shining, dark castaneous, pleura paler, sternopleura yellow. Mesopleura with short uniform hairs. Scutellum with 2 bristles and 2 short hairs.

Abdomen dull, venter yellow, tergites black-brown, with grayish pruinosity, 2–5 subequal in length, 6th a little longer, all with yellow seams on hind margins. Pubescence scarce and short, not noticeably longer on 6th tergite, 2nd with bristly hairs laterally. Venter hairy. Hypopygium small, dark brown, both sides of dorsal part connected beneath anal tube, with short hairs 2 or 3 of which behind are bristle-like; ventral plate small, triangular. Anal segment short, somewhat depressed, dark brown, with short hairs.

Legs slender, yellow, coxae enclosed, hind legs dark brown except for the coxae and the basal 3rd of femora which are yellow. Foretibia 0.52 mm; tarsus thin, 0.65 mm, metatarsus longer than joints 2+3. Midtibia with a complete dorsal hair-seam and 7 distinct postero-dorsal setulae. Hind femur 3 times as long as broad, hairs on ventral edge short and inconspicuous. Hind tibiae with a dorsal hair-seam and 10 distinct postero-dorsal setulae increasing gradually in length.

Wing (Figure 121) brownish, veins dark brown. Length 1.9 mm, width 0.65 mm. Costa 0.57 of wing length, ratio of segments 17:15:5. Cilia short and very close. Fork long, acute. Fourth vein with a slight S-curve at base, concave, deflected at extreme tip; 5th but little curved; 6th slightly sinuous; 7th weak. Axillary margin with 4 hairs. Halteres yellow with a brownish tinge.

FEMALE.—Length 1.8 mm. Similar to the male. The extranumerary supraantennals are more conspicuous. Third antennal joint a little smaller. Tergites subequal. Terminal segments fleshy, 7th and 8th with a narrow chitinous tergite; segments 9–10 tubiform, cerci not differentiated.

Holotype male (USNM 70272), Dominica, Pont Casse, 1.7 m east, 10.III.65 (W. W. Wirth). Paratypes

(USNM, CTB) 4 males and 1 female (W. W. Wirth), from the following localities: Pont Casse 10.III.65; S. Chiltern Est. 20.II.65; Clarke Hall 18.I.65; Manets Gutter 7. and 10.III.65. One of the paratypes (crushed; in alcohol) was dissected for the study of details; another was badly damaged by accident.

DISCUSSION.—*J. parvicornis*, new species, is very close to *J. pilipleura* Borgmeier (1960; Rio de Janeiro), but in the latter the mesopleural hairs are not of uniform length, the costa is longer and extends beyond tip of third vein, the ratio of costal segments is different, the sixth tergite has some strong bristles laterally on hind margin, the hypopygium is bristled, and the anal segment is yellow and compressed.

Genus *Apocephalus* Coquillett

Apocephalus (Mesophora) insulanus, new species

FIGURES 124–127

MALE.—Length 1.6–1.7 mm. Head width 0.65 mm. Frons yellow or fuscous yellow, nearly twice as broad as long medially (12:7), width 0.31 mm. Supraantennals, anterolaterals and mediolaterals wanting. Antials one-sixth of frontal width apart, a little more approximate than the preocellars, the latter nearly one-third of frontal width apart. Upper postocular bristle weak, lower strong; jowls and cheeks bare. Third antennal joint (Figure 127) enormous, band-shaped on distal half, yellow, infuscated on apical half, length 0.44 mm; arista subapical, length 0.20 mm. Palpi (Figure 125) yellow, small and narrow, pointed at apex, length 0.18 mm, with short setulae.

Thorax reddish yellow. Mesopleura bare. Scutellum with 2 bristles and 2 minute hairs.

Abdomen dull, nearly bare. Venter yellow. Tergites 2 and 6 elongated. Color of tergites somewhat variable, 1, 2, and 6 yellow anteriorly, black posteriorly; 3–5 black, with yellow median spots; all with fine yellow apical seams. Hypopygium (Figure 126) black-brown, sides produced behind and apparently connected beneath anal segment, with short hair; apex of left side whitish; ventral part flat. Anal segment brown, slender, curved, length 0.23 mm, end-hairs differentiated.

Legs yellow, hind femur darkened at tip. Foretarsus slender, longer than tibia (9:7), fore-metatarsus about as long as joints 2–4 combined. Midtarsus normal, endspur nearly as long as midmetatarsus (10:11). Hind

femur about 3 times as long as broad. Hind tibia with 7 posterodorsal setulae.

Wing (Figure 124) slightly grayish yellow, veins dark brown. Length 1.56 mm, width 0.65 mm. Costa 0.5 of wing length, ratio of segments 30:18:5. Cilia short and close, about 8 pairs between 1st and 3rd veins. Fork small. Fourth vein evenly concave; 5th nearly straight; 6th but slightly sinuous; 7th weak. Axillary margin with 3 hairs. Halteres dark brown, stem yellow.

FEMALE.—Length 1.8 mm. Similar to the male. Mediolaterals present, 2nd row convex, the preocellars farther from mediolaterals than from each other. Third antennal joint conical, twice as long as broad basally, not reaching vertical border; arista apical, about two-thirds of antenna in length. Palpi yellow, longer than in male (0.23 mm), not pointed at tip, narrow, about 3 times as long as broad, with extremely short hairs, practically bare. Tergites 2 and 6 elongated, all reddish yellow with black transverse bands apically. Ovipositor black, glossy, lanceolate.

MATERIAL EXAMINED.—Holotype male (USNM 70273), Dominica, S. Chiltern Est. 2 Feb. 1965 (W. W. Wirth). Paratypes (USNM, CTB): one male, Clarke Hall, 16 Feb. 1965 (Wirth); one male, Fond Figues River, 21–31 Mar. 1965 (Wirth); one female, Pont Casse, 29 Jan. 1965 (Wirth); one male (CTB), Trinidad, B.W.I., Arima Valley, Feb. 1964 (Wygodzinsky & Rozen).

DISCUSSION.—*A. (M.) insulanus*, new species, may be confused with *A. (M.) antennatus* Malloch (1912; U.S.), but in the latter the halteres are yellow and the hypopygium (Figure 129) is bristled; the costa is also a little shorter and the wing is broader (Figure 128). Figures 128 and 129 were drawn from a male from Gatlinburg, Tennessee.

Apocephalus (Apocephalus) azteca Borgmeier

Apocephalus (Apocephalus) azteca Borgmeier, 1961, p. 56, figs. 78, 86 [ovipositor and wing; ♀; Panama].

Holotype female (CTB, mounted) and 4 paratypes (in alcohol), from Barro Colorado Island, Canal Zone, 16.V.56 (Rettenmeyer), taken with *Azteca* species.

MALE (undescribed).—Length 1 mm. Similar to the female. Frons as broad as long medially, width 0.26 mm, dark brown, grayish pruinose, opaque, with a distinct median line and 2 rudimental supraantennals close together. First row strongly convex, the antials parallel and about one-third of frontal width apart.

Second row distinctly convex, the bristles equidistant. Third antennal joint oval, length 0.14 mm, yellow basally, darkened apically; arista subapical, short. Palpi pale yellow, small, with short bristles. Posterior scutellars slightly shorter than the anterior, the tips of the 4 scutellars are in line. Abdomen dull, venter yellow. Tergite 2 elongated, 3–5 short, 6th a little longer; tergites 1–5 velvety dark brown, with fine yellow seams on hind margins, 6th yellow on basal half, dark behind. Hypopygium dark brown, somewhat grayish, with short hairs. Anal segment slender, yellow, apical hairs differentiated. Legs yellow, hind femur with anteroventral bristles on apical half. Wing as in female. Halteres yellow.

FEMALE.—In the female from Dominica and in one female of the type-series 2 microscopic hairs are present below the rudimental supraantennals. The 2nd row is distinctly convex anteriorly (not slightly, as stated in the original description). Scutellars as in male described above. Sternite of the basal capsule of the ovipositor with a transverse row of 4 hairs (not bristles); apical hairs are absent on the sternite, but the apex is pointed and slightly curved downwards, forming a short tooth.

MATERIAL EXAMINED.—One male allotype (USNM) Dominica, Clarke Hall, 21–31 Jan. 1965 (W. W. Wirth); 1 female in alcohol (USNM), Clarke Hall, 1–10 Feb. 1965 (Wirth). One female and 1 male from Clarke Hall were destroyed by Psocids. I reexamined the type-series in my collection.

DISCUSSION.—*A. (A.) azteca* is close to *A. angustinervis* Borgmeier (1961, Brazil), but differs by the yellow halteres, the shorter costa and the structure of the ovipositor.

Genus *Apodicrania* Borgmeier

Apodicrania Borgmeier, 1933, p. 384; 1963b, p. 479 [key].

TYPE-SPECIES.—*Syneura termitophila* Borgmeier, 1923.

Apodicrania termitophila (Borgmeier)

Syneura termitophila Borgmeier, 1923b, p. 57, fig. 6 [♂ ♀; Petrópolis, Rio de Janeiro]; 1925b, p. 233, pl. xi; fig. 53. *Apodicrania termitophila* (Borgmeier).—Borgmeier, 1933, p. 384; 1963b, p. 479.

Two males and 1 female (in alcohol), Dominica, Clarke Hall, 1–10 Feb. 1963, light trap (W. W. Wirth).

In my collection also from Central America and from Brazil.

Genus *Pseudacteon* Coquillett

Pseudacteon antiguensis (Malloch)

LITERATURE AND SYNONYMS.—See Borgmeier, 1963a, p. 200, figs. 196 (ovipositor), 197 (hypopygium).

Holotype male (USNM 14896) and paratypes males (USNM, CTB), Antigua, B.W.I.

This is a very striking species which is a parasite of *Solenopsis geminata* and *S. saevissima*. The female is easily recognized by the large horse-shoe shaped ovipositor, and the male by the digitiform processes of the hypopygium. See the redescription and figures in Borgmeier (1963a).

MATERIAL EXAMINED (according to Wirth).—18 males and 24 females, of which I have seen 3 males and 5 females, Dominica, Clarke Hall, Malaise trap, 11–31 Jan. 1965 (W. W. Wirth).

DISTRIBUTION.—Antilles, Mexico, Brazil. Probably occurring also in the southern United States.

Pseudacteon dorymyrmecis Borgmeier

Pseudacteon dorymyrmecis Borgmeier, 1925a, p. 45 [♀; Rio de Janeiro].

Holotype female and 2 paratypes (CTB), Rio de Janeiro, 3.III.1925 (Borgmeier), with *Dorymyrmex pyramicus*.

FEMALE.—Frons with 2 supraantennals and 2:4:4:4 bristles. Antials inclined toward median line. Inner bristles of 2nd row not reduced in size. Third antennal joint oval, dark brown; arista short, subapical, practically bare. Palpi small, pale yellow, with short setulae, the apical hardly differentiated. Scutellum with 4 bristles, the anterior weak. Second tergite elongated, 3–5 short, subequal; 6th tergite represented only by a rudimental plate on each side which bears 2 hairs. Sixth sternite near base with a transverse row of 6 erect hairs, the median pair being close together and bristlelike, the laterals short. Ovipositor black, glossy, lanceolate, depressed and pointed, flat above; 8th sternite forming a small tooth basally which is perceptible in side-view. Legs yellow. Midtibia with a dorsal hair-seam which terminates below middle. Hind femur with some anteroventral setulae on distal half.

Hind tibia with a complete dorsal hair-seam. Hind metatarsus about as long as joints 2-3 combined. Wing clear. Costa 0.36 ratio of segments 2:1. Cilia short, about 13 pairs. Seven vein obsolete. Axillary margin with 3 hairs. Halteres whitish yellow.

MALE (undescribed).—Similar to the female. Hypopygium without digitiform appendages. Anal segment long, whitish yellow, end-hairs conspicuous.

MATERIAL EXAMINED.—Two males and 5 females (USNM, CTB), Dominica, Clarke Hall, Fond Figue River, I.-III.65 (W. W. Wirth), with light trap and Malaise trap.

DISCUSSION.—*P. dorymyrmecis* is close to the European *P. formicarum* Verrall, which lacks the dorsal hair-seam on midtibia. Also close to *P. curriei* Malloch (British Columbia), but in the latter the costal cilia are longer, the median bristles on sixth sternite are widely placed and the ovipositor is transversely convex above.

Pseudacteon arcuatus, new species

FIGURE 133

FEMALE.—Length 0.91 mm. Head width 0.33 mm. Frons black, with 2 proclinate supraantennals and 4:4:4 bristles. Antials near lower corner of frons, inclined toward median line; anterolaterals higher, near eye-margin. Intermediary bristles wanting. Third antennal joint dark brown, length 0.19 mm, conical, distinctly pubescent; arista wanting. Palpi small, yellow, with a few short hairs and one longer hair at apex.

Thorax black-brown. Two dorsocentrals. Mesopleura bare. Scutellum with 2 bristles.

Abdomen dark brown; tergites 2 and 6 elongated, 3rd and 4th short, 5th a little longer. Sixth sternite with a median pair of long hairs and laterally with 2 or 3 shorter hairs. Ovipositor (Figure 133) heavily chitinized, black and brown; 7th segment with an elongate chitinous stripe at each side; lateral lobes of 8th segment oval from above, excavated dorsally; medial apical piece arc-shaped.

Legs brownish yellow, anterior legs paler. Foretibia 0.19 mm; foretarsus 0.32 mm, metatarsus not as long as joints 2+3 combined. Midtibia 0.22 mm; midtarsus 0.33 mm. Hind femur slender, more than 3 times as long as broad, ventrobasally with some moderately long hairs. Hind tibia 0.26 mm, very slender near base, with a dorsal hair-seam and some delicate posterodorsal cilia.

Wing grayish yellow, veins pale brown. Length 0.93 mm, width 0.46 mm. Costa 0.37 of wing length, ratio of segments 14:7. Coastal cilia short, 14 pairs in all, of which 4 pairs on 2nd segment. Fourth vein slightly concave near base, remainder nearly straight; veins 6 and 7 evanescent apically. Axillary margin with 2 hairs. Halteres brownish.

MATERIAL EXAMINED.—Holotype female (USNM 70274, on slide), Dominica, Clarke Hall, light trap, Nov. 1964 (T. J. Spilman).

DISCUSSION.—The general structure of the ovipositor is similar to *P. pradei* Borgmeier from Brazil, but the shape of the lateral lobes and of the median apical piece are quite different (see Borgmeier, 1925b, fig. 48, p. 245).

Genus *Metopina* Macquart

Metopina recurvata, new species

FIGURES 130-132

FEMALE.—Length 1.0-1.3 mm. Frons dark brown, shining, sparsely pubescent, with a distinct median line. Four perfect subequal supraantennals forming a trapezium. Antials inclined toward median line, about midway between upper supraantennals and laterals, the points of insertion in an oblique straight line. Preocellars weak, nearly in line with anterior ocellus, as far apart as inner borders of posterior ocelli. Vertical row with 6 bristles as usual. Third antennal joint brown, normal; arista apical, with long pubescence. Palpi yellowish brown, with 5 long bristles.

Thorax brown, pleura yellowish below. Scutellum with 2 bristles and 2 hairs.

Abdomen dull, dark brown venter enclosed. Tergites 1-4 (Figure 130) transverse, 5th semicircular with a large gland opening; 6th segment fused together with 5th as usual, membranous. Tergites nearly bare; venter on segments 3-6, sides of 5-6 and dorsum of 6 with numerous short hairs inserted in black chitinous rings; 7th segment with a narrow dorsal plate; apical hairs short.

Legs yellow. Foretarsus longer than tibia. Hind metatarsus broad, with 4 or 5 transverse combs.

Wing (Figure 131) brownish, veins dark brown, membrane infuscated beyond costa and along 2 basal thirds of 6th vein. Length 1.04 mm, width at distal third 0.45 mm. Costa 0.53 of wing length, ratio of segments 7:12. Cilia short and close. Fourth vein straight;

5th strongly bent near base, the prolongation of the basal part would meet the costa at a right angle; 6th with the usual sudden bend behind middle, apical part gently arcuate. Halteres dark brown.

MALE.—Length 0.8 mm. Similar to the female. Anal tube hardly protruding. Hind femur without a sensorial organ on posterior face. Wing (Figure 132) length 0.78 mm, width at apical third 0.37 mm. Costa 0.5 of wing length, thickened from middle of 1st section to near apex, gradually attenuated beyond tip of 1st vein; ratio of segments 2:3.

MATERIAL EXAMINED.—Holotype female, on slide (USNM 70275), (Dominica, Clarke Hall, 11, 20 Mar. 1965 (W. W. Wirth). Paratypes (USNM, CTB) 9 females and 11 males (3 ♂ 6 ♀ in alcohol), Dominica: South Chiltern Est., Fond Figue River, Cabrit Swamp, Pont Casse, Manets Gutter, d'Leau Gommier, Trafalgar Falls, Freshwater Lake, I.–III.1965 (W. W. Wirth).

DISCUSSION.—*M. recurvata*, new species, is close to *M. fenyesei* Malloch redescribed by Borgmeier (1963a, p. 212), but in the latter the fifth vein is not so strongly recurved basally and the basal part is not so steep; the apical part of 6th vein is straight; the ratio of costal segments is 4:5 in the female; the costa is not thickened in the male; the structure of female tergites is completely different.

Genus *Dahliphora* Schmitz

Dahliphora dispar Borgmeier

FIGURES 134–136

Dahliphora dispar Borgmeier, 1961, pp. 107, figs. 147 [antenna of male], 149 [heavy veins of wing].

Hototype and Type (♂) (CTB), from Petrópolis, Rio de Janeiro, Brazil, X.1950 (Borgmeier); 2 ♀ paratypes (CTB) from Amapá, Serra do Navio, Brazil (Bicelli coll.).

MALE.—Length about 0.8 mm. Frons jet-black, lacking the supraantennals, the anterolaterals and the mediolaterals; 2 preocellars present; vertex with 6 bristles. Third antennal joint (see Borgmeier, 1961, fig. 147) black, onion-shaped, width 0.78 mm; arista differentiated, thick, length 0.19 mm, with long pubescence. Palpi small, narrow, black brown, with short bristles. Thorax black-brown, mesopleura bare. Scutellum with 2 subequal bristles. Abdomen black, dull, tergites subequal. Hypopygium small, dark brown,

with longish hairs. Anal segment short, apical hairs differentiated. Legs black-brown. Foretibia 0.16 mm; foretarsus 0.19 mm, metatarsus as long as joints 2+3. Midtibia 0.16 mm, end-spur about two-thirds of metatarsus. Hind femur 3 times as long as broad. Hind tibia 0.228 mm, without hair-seam (contrary to my statement in 1961) but with a dorsal row of fine cilia. Wing (Figure 135) slightly brownish, heavy veins brown, light veins pale brown. Length 0.677 mm, width 0.343 mm. Costa 0.5 of wing length, ratio of segments 17:15. Cilia short, about 15 pairs. Third vein gently curved; 4th very little concave; 5th strongly curved near base, distal two-thirds nearly straight; 6th slightly bisinuate; 7th very close to anal margin. Axillary margin without hairs. Halteres black.

FEMALE (undescribed).—Similar to the male. Frons with 2 reclinate supraantennals, 2 preocellars, and 6 vertical bristles; all bristles weak. Third antennal joint (Figure 136) normal, black, onion-shaped, width 0.07 mm; arista 3-segmented, apical, length 0.22 mm, with long pubescence. Tergites subequal, black. Wing 0.7 mm, width 0.378 mm. Costa 0.5 of wing length, ratio of segments 17:19. Third vein strongly bent at apical 4th; 5th bent at basal 3rd (in male at basal 4th).

MATERIAL EXAMINED.—Two males (USNM, CTB) and 1 female (allotype USNM; paratype ♀, CTB) Dominica: South Chiltern Est. 2.II.65; Clarke Hall 18.I.65; Fond Figue River, 3.II.65 (W. W. Wirth).

DISCUSSION.—*D. dispar* differs from *D. crenaticornis* by the structure of the antennae and the number of scutellars. The sexual dimorphism in the venation is remarkable.

Genus *Pachyneurella* Brues

Pachyneurella Brues, 1904, pp. 382, pl. ix: fig. 58 [wing], 59 [hypopygium].

Puliciphora Dahl [in part].—Brues, 1906, p. 14.—Borgmeier and Schmitz, 1923, p. 140 [note].—Schmitz, 1929, pp. 25, 157, 159.—Borgmeier, 1960, p. 314.

Subgenus *Termitometoecus* Borgmeier and Schmitz, 1923, p. 140 [type-species: *Puliciphora (Termitometoecus) bicolor* Borgmeier and Schmitz].

TYPE-SPECIES.—*Phora venata* Aldrich, 1896.

MALE.—Frons broader than long, with 4 porrect supraantennals and 2:4:6 bristles. Third antennal point globose or oval; arista apical. Antennal foveae coalescent. Mesopleura bare. Costa with a slight swelling before tip of 1st vein; 1st costal division shorter than 2nd; 3rd vein unforked. Costal cilia hair-like. Medias-tinalis present; veins 4–7 reaching margin. Axillary

margin without hairs. Legs slender. Hind tibia without dorsal hair-seam and without posterodorsal cilia. Hypopygium asymmetrical, with bristles. Anal tube protruding.

FEMALE.—Degenerate, wingless. Tegument strongly shining. Frons with 4 proclinate supraantennals and 0:0:4 bristles. Three ocelli. Third antennal joint globose, pointed; arista apical. Thorax short. Prothoracic bristle wanting. Hind corners without a papilla-like elevation. Abdomen strongly convex; 5th tergite at base with a gland-opening and a small flap covering it; 6th tergite very small.

DISCUSSION.—This genus which was for a long time considered as a synonym of *Puliciphora*, must be reinstated, as is evident from a comparative study of three species represented by males. The male differs from *Puliciphora* by the bristly hypopygium and by the slight swelling on first costal segment. The female has only four vertical bristles; the bristles of the first and second rows are wanting. The tegument is strongly shining and there is no papilla for the insertion of the alar bristle on the hind corners of the thorax.

Four species are known: *Pachyneurella venata* (Aldrich) (♂ ♀), *P. bicolor* Borgmeier and Schmitz (♂ ♀), *P. nitida* (Malloch) [new combination] (♀), and *P. haplopyga*, new species (♂) (p. 46).

Pachyneurella venata (Aldrich)

FIGURES 140, 141

Phora venata Aldrich, 1896, p. 436 [♂; St. Vincent, W. I.].

Pachyneurella venata (Aldrich).—Brues, 1904 p. 382, pl. ix: figs. 58 [wing], 59 [hypopygium].

Puliciphora venata (Aldrich).—Brues, 1906, p. 15; 1919a, p. 506; 1923, p. 22 [♂ ♀, Grenada; not Bolivia].—Borgmeier, 1960, p. 336 [in part; not ♀, not fig. 97=*bicolor*].

Lectotype male, herewith designated (USNM) and 1 paratype male (MCZ), from St. Vincent, B.W.I. (Aldrich). Probably 1 "type" also in British Museum, London (*teste* Brues, 1904, p. 382).

MALE.—Length 1.0–1.3 mm. Frons broader than long laterally (3:2), black-brown, opaque, sparsely pubescent, without median furrow. There are 4 equal porrect supraantennals and 2:4:6 bristles; anterolaterals wanting; Antials inclined toward median line, close to mediolaterals; 2nd row concave anteriorly. Jowls-cheeks with an ascending row of 5 bristles. Third antennal joint dark brown, globose, of normal size; arista apical, distinctly pubescent. Palpi yellowish brown to dark brown, narrow, with short bristles.

Thorax dark brown, opaque. Two dorsocentrals. Mesopleura bare. Scutellum with 2 bristles.

Abdomen black-brown to black, dull. Second tergite a little elongated, tergites 3–6 subequal in length, 6th tergite followed by a membranous yellow apical band which partly covers the hypopygium. Pubescence short, 6th segment laterally and ventrally with hairs placed in chitinous spots. Hypopygium (Figures 141–142) castaneous, large, asymmetrical, longer than high, at left behind with a long black process which is somewhat flattened, and at right with a pale process; at left above there is a single bristle near the base of the anal tube; and at right there are apically about 6 bristly hairs. Anal segment large, depressed, the tergites laterally on each side with 4 strong bristles; apical hairs of ventrite inconspicuous.

Legs yellowish brown, forecoxae paler. Foretarsus slender, metatarsus slightly concave on anterior border, but not suddenly constricted as in *Pachyneurella bicolor*. End-spur on mid- and hind tibia short. Hind tibia without hair-seam and without cilia. Hind metatarsus with 5 transverse combs of hairs.

Wing (Figure 140) brownish yellow, veins dark brown. Length 1.37 mm, width 0.67 mm. Costa 0.54 of wing length, ratio of segments 2:3; 1st section at distal 3rd with a small swelling. Costal cilia very short and close. Fourth vein nearly straight; 5th but little curved before middle, remainder nearly straight; 6th slightly sinuous. Axillary margin without hairs. Halteres dark brown.

FEMALE (undescribed).—Length 1.2 mm. Frons transversely convex, pale brown to dark brown, shining, pubescent, with 4 supraantennals and 4 bristles on vertical border. Three ocelli. Eyes somewhat reduced, about twice as long as 3rd antennal joint; the latter is brown, globose, pointed; arista apical, distinctly pubescent. Palpi brown, with long bristles.

Thorax short, about twice as broad as long, shining, reddish yellow or yellowish brown, lighter than head. Prothoracic bristle wanting. Hind corners without alar papilla. Hind border with 6 bristles, the 2 inner ones close together, the sublateral close to the lateral, the latter placed a little more cephalad, the sublateral in line with the inner bristles. Abdomen strongly convex, shining. Venter fuscous; the 6 tergites deep black castaneous; the structure of the tergites more or less as in *Pachyneurella bicolor*, 6th very small; 5th with a small gland opening basally, with a small raisable flap

covering it. Pubescence short, distinct, yellowish; hairs on membranous parts of segments 4–6 partially placed in dark chitinous spots. Cerci distinct. Legs yellow.

MATERIAL EXAMINED.—Besides the types (USNM, MCZ), I have seen 23 males and 2 females from Dominica: Clarke Hall, Manets Gutter, Pont Casse, Sylvania, Trafalgar Falls, d'Leau Gommier, Fond Figues R., South Chiltern Est., Macoucheri, I.–III. 1965 (W. W. Wirth).

DISCUSSION.—I confused *Pachyneurella venata* for a long time with *P. bicolor* Borgmeier and Schmitz (1923; Brazil) owing to the fact that the venation of the males is very similar, both having the small swelling of the costa in the first section; the comparison of the male genitalia (Figures 137–138 with 141–142) shows that *bicolor* is not a synonym of *P. venata* as I wrongly stated in a previous paper (1960). The female I described in 1960 as *venata*, is actually *bicolor*. The first true *venata* females I have seen are the two specimens mentioned above from Dominica; the abdomen is uniformly dark brown and not cross-banded. The females were mentioned by Brues (1919a, p. 506) but not described, from Grenada, W. I.; they must have been lost because they are not in the Brues collection; the females mentioned from Bolivia were probably *bicolor*.

A single male (on slide) from San José, Costa Rica, in the author's collection (H. Schmidt leg.) shows that there is a third species (see *Pachyneurella haplopyga*, new species, below) with the characteristic small swelling of the costa in the first costal section; the hypopygium (Figure 139) is quite different from either *venata* or *bicolor*.

Pachyneurella haplopyga, new species

FIGURE 139

MALE.—Length 1.3 mm. Frons black-brown. Anterolateral bristles wanting. Jowls-cheeks with an ascending row of bristles. Third antennal joint dark brown, of normal size (diameter 0.078 mm). Arista long, distinctly pubescent. Palpi slender, brown, with moderate bristles.

Thorax dark brown. Two dorsocentrals. Mesopleura bare. Scutellum with 2 bristles.

Abdomen dark brown. Tergites subequal in length, 6th apically with a membranous seam covering base of hypopygium. The latter is relatively small, but es-

entially of the same structure as in *Pachyneurella venata* and *P. bicolor*. The most important distinctive character is the moderate lanceolate process at the left side, which seems to be homologous to the black process present in *P. venata*. Hind border of epandrium at left with a row of 5 or 6 bristles; hind corner at right rounded apically and with bristles; the ventral process at right is also present but hardly discernible in the preparation of the unique specimen.

Legs brown. Foretibia 0.25 mm; foretarsus slender, fore-metatarsus apparently not concave on anterior border. Midtibia 0.32 mm, hind tibia 0.40 mm. Endspurs II and III short.

Wing grayish yellow, veins pale brown. Length 1.32 mm, width 0.59 mm; first costal segment with a slight swelling behind middle. Venation very similar to *P. venata*; 4th vein slightly upturned at extreme base (straight in *P. venata*). Halteres dark.

MATERIAL EXAMINED.—Holotype male, (CTB, on slide), Costa Rica, San José, H. Schmidt, 1940.

DISCUSSION.—Differs from *P. venata* by details of the hypopygium, especially by the lanceolate process at left side of the epandrium, and by the fourth vein.

Genus *Homalophora* Borgmeier

Homalophora Borgmeier, 1923a, p. 178, fig. 14.

TYPE-SPECIES.—*Homalophora reichenspergeri* Borgmeier, 1923a (♀).

The male of this genus is recognizable by the long sensorial hairs near base of forefemur and the long chitinous clasper at right of hypopygium.

Five species are known: *H. attae* Borgmeier (♂♀; Brazil); *H. epichaeta* Borgmeier (♀; Panama); *H. metae* Seevers (♀; Colombia); *H. reichenspergeri* Borgmeier (♀; Brazil); *H. sensibilis*, new species (♂; Dominica, W.I.).

Homalophora sensibilis, new species

FIGURES 143–146

MALE.—Length 1–1.2 mm. Frons broader than long, a little produced medially, dark brown, scarcely shining, sparsely pubescent, with 4 equal porrect supra-antennals and 2:4:6 bristles; anterolaterals wanting; antials inclined toward median line, about midway between upper supraantennals and mediolaterals;

second row concave anteriorly. Third antennal joint normal, dark brown; arista apical, longer than eye, distinctly pubescent. Palpi of normal shape, with moderate bristles.

Thorax dark brown, subopaque. Mesopleura bare. Scutellum with 2 bristles and 2 minute hairs.

Abdomen dark brown, dull. Tergites 2-5 subequal, 6th elongated. Pubescence scarce and short. Hypopygium (Figures 145, 146) dark brown, large, asymmetrical; dorsal part at right reduced to a small triangular piece close to anal tube, provided with 3 short hairs; dorsal part at left large, rounded behind; ventral part at right with a long slender forceps curved and spoon-shaped apically, medially in profile (from left) with 2 short fingerlike processes and between them 2 blunt black teeth; anal segment long, brown, with short hairs.

Legs brown, forecoxae yellowish. Forefemora with a dark ventral stria on basal half and about 7 fine long sensorial hairs (Figure 143). Foretarsus slender. Apical spur of midtibia short. Hind femur ventrobasally at extreme base of posterior face with a short narrow black stria which at great magnification shows 2 blunt elevations (Figure 144); ventral edge with 3 or 4 short hairs near base. Hind tibia without hair-seam but with numerous fine cilia. Hind metatarsus with 5 transverse combs of hairs.

Wing grayish yellow, veins dark brown. Length 1.0 mm, width 0.5 mm. Costa 0.51 of wing length, ratio of segments 14:23. Cilia very short. Veins 4-7 approximately as in *Pachyneurella venata*. Halteres dark brown.

MATERIAL EXAMINED.—Holotype male, pinned (USNM 70276), Dominica, Macoucherie, 15 Mar. 1965 (W. W. Wirth). Paratypes: 2 males, 1 pinned and the other in alcohol (USNM), Manets Gutter, 7 Mar. 1965 (Wirth); 1 male, on slide (USNM), Clarke Hall, Junae 1964 (O. S. Flint); 1 male, pinned (CTB), Clarke Hall, 1-10 Feb. 1965 (Wirth); 1 male, on slide (CTB), Cabrit Swamp, 23 Feb. 1965 (Wirth).

DISCUSSION.—*H. sensibilis*, new species, is very close to *H. attae* Borgmeier (1958, p. 402, figs. 104-106) but differs by the right clasper of the hypopygium which is more slender and slightly dilated and spoon-shaped at apex. The venation is also slightly different: in *H. sensibilis*, new species, the fourth vein is practically straight, in *H. attae* it is slightly upturned at extreme apex.

Genus *Chonocephalus* Wandolleck

Chonocephalus Wandolleck.—Borgmeier, 1963, p. 247; 1967a, p. 201.

TYPE-SPECIES.—*Chonocephalus dorsalis* Wandolleck (Bismarck Archipelago).

Mr. Charles N. Colyer was kind enough to call my attention to the fact that in the checklist of *Chonocephalus* I published in 1967 (a, p. 202) four species described by Paulian from Madagascar (1958, *Mémoires Institut Scientifique Madagascar*, (E) vol. 9, pp. 10-14, figs. 1a-d and 2a-m) are missing; these are: *C. dimakae* Paulian, *C. hibisci* Paulian, *C. madagascariensis* Paulian, and *C. vadoni* Paulian.

Chonocephalus furcatus Borgmeier

FIGURES 147, 148

Chonocephalus furcatus Borgmeier, 1967a, p. 206, figs. 27, 30 [=figs. 147 and 148 in the present paper].

Original description:

MALE.—Length about 1.2 mm. Head width 0.30 mm. Frons dark brown. External bristle on upper border of antennal grooves 0.10 mm long. Third antennal joint pointed, about as broad as long. Palpi of normal shape and size, apical hair slightly differentiated.

Thorax castaneous; humeri, pteropleura and sternopleura paler. Scutellum with 4 bristles, the anterior a little shorter.

Abdomen opaque. Tergites 2-5 subequal in length, 5th elongated, all with a fine yellowish seam behind. Hypopygium [Figure 148] high and short, brown, slightly shining. Epandrium at left side of anal opening with a slender process (*p*) and farther below with a long single bristle; at both sides of the anal opening there is a series of hairs which are curved apically. Hypandrium at left with a long slender fork [Figure 148] and at right with a lobulate process provided apically with two fingerlike structures close together [Figure 147] and which became visible only after removing the inner copulatory organs.

Legs slender, yellowish brown, mid tibia whitish yellow on distal half. Fore tibia 0.20 mm, fore metatarsus 0.10 mm. Mid tibia 0.26 mm, mid metatarsus 0.13 mm. Hind tibia 0.36 mm; hind tarsus dilated as usual; hind metatarsus 0.14 mm. End-spurs of mid and hind tibia very short.

Wing brownish, clouded more or less as in *punctifascia* Borgmeier (1935[b]) but with less contrast [see remarks p. 48, under *C. punctifascia*]. Length 1.20 mm, width 0.53 mm. Costa about 0.6 of wing length, exceeding the point of contact of 3rd vein with the costa; apical swelling of 3rd vein slightly diverging from anterior border of wing. Fourth vein slightly concave; 5th straight except at apex which is slightly deflected; 6th slightly sinuous. Halteres dark brown.

Holotype male, mounted on minuten pin (USNM [70440]), from Dominica, South Chiltern Est., 20 Feb. 1965 (W. W.

Wirth). One paratype, dissected, on slide (CTB), Dominica, Trafalgar Falls, 6 March 1965 (W. W. Wirth).

DISCUSSION.—*Chonocephalus furcatus* is easily recognized by the slender fork on the left side of the hypopygium.

Chonocephalus dominicanus Borgmeier

FIGURE 149

Chonocephalus dominicanus Borgmeier, 1967a, p. 206, fig. 19 [=fig. 149 in the present paper].

Original description:

MALE.—Length 0.91 mm; of a mounted specimen 0.8 mm. Head width about 0.23 mm. Frons dark brown, opaque; structure and chaetotaxy as usual. Ocellar bristles 0.065 mm. Third antennal joint dark brown, pointed, about as long as broad (0.065 mm); arista 0.19 mm. Palpi brown, of normal shape and size.

Thorax brown, opaque. Tergites 2–5 subequal in length, 6th elongated; apical seams faint, yellow. Hypopygium [Figure 149] globose, pale brown, slightly shining. Epandrium with numerous hairs disposed as in [Figure 149]; posterior border not well perceptible in micro-preparation. Hypandrium mostly concealed by the internal copulatory organs (*i*).

Legs brownish yellow, mid and hind tibiae paler on distal half. Fore tibia 0.156 mm, mid tibia 0.247 mm, hind tibia 0.325 mm. All tarsi longer than respective tibiae. End-spurs of mid and hind tibia rudimental.

Wing yellowish brown, faintly shaded. Length 0.94 mm, width 0.44 mm. Costa 0.56 of wing length. Fourth vein weakly concave; 5th nearly straight, slightly deflected near apex; 6th slightly sinuous. Halteres dark brown.

Holotype male (on slide USNM [70441], Dominica, Clarke Hall, 11–20 May 1964 (O. S. Flint). One paratype male (on slide, CTB), *ibidem*, June 1964 (O. S. Flint), light trap. One male from Clarke Hall, Jan. 1965 (W. W. Wirth) was lost during laboratory work.

DISCUSSION.—*Chonocephalus dominicanus* comes close to *punctifascia* Borgmeier (1936[b]), but the latter has a longer costa (up to 0.66 of wing length).

Chonocephalus jamaicensis Brues

Chonocephalus jamaicensis Brues, 1915b, p. 102 [♀; Jamaica].—Borgmeier, 1963a, p. 249.

MATERIAL EXAMINED.—Numerous females in alcohol, collected on decaying fruit, Dominica, Clarke Hall, 29 Feb. 1965 (W. W. Wirth).

DISTRIBUTION.—Antilles, Mexico, U.S. (Louisiana), Surinam.

The female was recently redescribed by Borgmeier (1963a). It is characterized by the hyaline dots on hind margins of tergites. The male is unknown.

Chonocephalus mexicanus Silvestri

Chonocephalus mexicanus Silvestri, 1911, p. 172, figs. 1, 2 [♀; Cordoba, Mex.].—Borgmeier, 1963a, p. 250.

Chonocephalus buccatus Malloch, 1912, p. 510, pl. 40: fig. 5 (♀; Guatemala).

One female, (USNM on slide), Dominica, Clarke Hall, 1–30 June, 1964 (O. S. Flint). Hind margins of abdominal tergites without hyaline dots. The holotype was collected by Silvestri and is probably in his collection at Portici.

Chonocephalus punctifascia Borgmeier

Chonocephalus punctifascia Borgmeier, 1935b, p. 257, figs. 1–13, pl. 1: fig. 1 [wing; ♂ ♀; Rio de Janeiro]; 1967a, p. 210.

There are 4 males on slides, which agree perfectly with the males from Rio de Janeiro; Dominica, Clarke Hall, May to June 1964 (O. S. Flint).

In a previous paper (1963a, p. 210) I noted the following:

Remark: The micro-preparation of the wing of *Chonocephalus punctifascia* from which the photo was made which was published by Borgmeier (1935b, pl. 1: fig. 1), is in my collection. It does not show such a strong contrast between the darker areas and the lighter ones as shown in the mentioned figure. The contrast is probably due to the fact that a panchromatic film was used by the photographer, J. Barbosa.

It is possible that *C. punctifascia* is a synonym of *C. jamaicensis*, as I surmised in a previous paper (1963a). Males associated with females from the type-locality are necessary to decide this question.

Tribe Beckerinini

Genus *Beckerina* Malloch

Beckerina Malloch, 1910, pp. 17, 90.—Borgmeier, 1963a, p. 128.—Schmitz, in Lindner, 1956, p. 376.

TYPE-SPECIES.—*Phora umbrimargo* Becker (Europe).

When I described *Beckerina lucifrons* (1925b), I failed to make a comparison with *B. fuscohalterata* Enderlein, because Schmitz, who had seen the type of the latter, stated wrongly that it had only two scutellar bristles. When I redescribed the type later (1935a), I did not realize that the differences from *B. lucifrons* Borgmeier (1925b) are not satisfactory: the ratio of frontal width/length given for *B. fuscohalterata* (5:3)

is practically the same as that given for *B. lucifrons* (4:2.5), and the venation is also practically identical. Therefore, I consider *lucifrons* as a synonym of *B. fuscolaterata*, which seems to be the only species of the genus with hairy mesopleura.

B. nigricornis Borgmeier (1925b) is a color variant of *B. chelifera* Borgmeier, as is shown by a re-examination of the types in my collection. Both are synonyms of *B. neotropica* Brues (1919a; Grenada), of which I have seen the holotype (MCZ); a paratype is in my collection. Brues, in his description, does not mention the dorsal hair-seam on the hind tibia; he refers only to the absence of bristles and setulae. The differences indicated by Beyer in his key (1966, p. 171) for the costal sections of *B. chelifera* ("I deutlich kuerzer als II") and *nigricornis* ("I deutlich kuerzer als II +

III") are proved to be nonexistent by the photos of the wings I published in 1925 (pl. III: figs. 12-13).

As I pointed out in a previous paper (1966, p. 124), *B. relicta* Borgmeier (1963a) is a synonym of *B. aliena* Malloch (1919) which has four scutellars, not two as wrongly stated by Malloch.

All species of the genus *Beckerina* can be divided into three groups, on account of the absence or presence of one or more hair-seams on the hind tibia: (a) hind tibia simple; (b) hind tibia with one hair-seam; (c) hind tibia with several hair seams.

Beyer in his description of *B. burmicola* does not refer to the condition of the mesopleura, the length of costa, and the ratio of costal segments. In the following key I supposed that the mesopleura are bare, and that the costal index is approximately 0.5 of wing length.

Key to the World Species of the Genus *Beckerina*

1. Hind tibia simple 2
Hind tibia with 1 or more hair-seams 6
2. Frons with 4 + 4:4:4 bristles; costa 0.68 (U.S.) (♂) *B. orphnephiloides* Malloch
Frons with 2 + 4:4:4 bristles; costa shorter 3
3. Halteres black (Europe; Alaska) (♂ ♀) *B. umbrimargo* Becker
Halteres yellow 4
4. Yellow species (U.S.) (♂ ♀) *B. luteola* Malloch
Dark species 5
5. Costa 0.47; wing length 1.8 mm (U.S.) (♂ ♀) *B. similata* Malloch
Costa 0.5 (?); wing length 3 mm (Burma) (♂ ♀) *B. burmicola* Beyer
6. Hind tibia with 1 hair-seam 7
Hind tibia with more than 1 hair-seam 12
7. Halteres dark (Antilles; Central and South America) (♂ ♀) *B. neotropica* Brues
Halteres yellow 8
8. Frons with 4 + 4:4:4 bristles 9
Frons with 2 + 4:4:4 bristles 10
9. Foretarsus (♂) dilated (Brazil) (♂ ♀) *B. irregularis* Borgmeier
Foretarsus (♂) slender (Costa Rica) (♂ ♀) *B. costaricana* Borgmeier
10. First costal section one and one-half as long as 2 (♀) *B. aliena* Malloch
First costal section one and one-fourth as long as 2 or subequal 11
11. Hypopygium laterally with 2 finger-like processes behind (Dominica, W.I.)
. (♂ ♀) *B. dactylata*, new species
Hypopygium with 1 short process (Brazil) (♂ ♀) *B. luteihalterata* Borgmeier
12. Mesopleura hairy above (Brazil) (♂ ♀) *B. fuscohalterata* Enderlein
Mesopleura bare 13
13. Costa 0.52; the 3 lateral bristles of frons equidistant (New Zealand) (♂) *B. polysticha* Schmitz
Costa shorter; the 3 lateral bristles on frons not equidistant 14
14. Costa 0.42; sections 22:11:4 (Brazil) (♂ ♀) *B. nudipleura* Borgmeier
Costa 0.47; sections 25:15:7 (Dominica, W.I.) (♂) *B. dominicana*, new species

Beckerina dactylata, new species

FIGURES 150, 151

MALE.—Length 1.6 mm. Head width 0.65 mm. Frons broader than long laterally (3:2), black, anterior margin yellowish, shining, scarcely pubescent. Two divergent postantennals close together. First row slightly convex, the antials twice as far apart as the preocellars. Second row straight. Eyes large. Three bristles on inferior corner of eyes. Cheeks narrow, with 4 short hairs. Third antennal joint globular, of normal size, reddish brown, darkened at apex. Arista a little longer than frontal width, distinctly pubescent. Palpi pale yellow, or normal size, with strong but moderately long bristles.

Thorax reddish yellow. Mesopleura bare. Scutellum with 4 long bristles nearly in line, the inner ones slightly shorter as usual.

Abdomen: venter yellow; tergites black, opaque, with narrow yellow hind apical margins; tergites 2 and 6 elongate, 3–5 subequal. Pubescence extremely scarce and short. Hypopygium large, yellow, subshining, on each side with 2 finger-shaped processes, the posterior one (forceps) with short spinuli on inner side near apex (Figure 151). Anal segment papilliform.

Legs yellow, hind femur darkened at tip. Foretarsus slender. Hind femur without fringe on ventral edge. Mid- and hind tibia with a complete dorsal row of palisade-like hairs, but without posterodorsal cilia.

Wing (Figure 150) grayish yellow, veins brown. Length (holotype) 1.45 mm, width 0.62 mm. Costa 0.46 of wing length, ratio of segments 13:7:4. Costal cilia short. Venation similar to *B. luteihalterata* Borgmeier (1925b, pl. 3 fig. 11), but the costa is not so conspicuously thickened on distal half, and the 5th vein is nearly straight. Veins 4–7 evanescent apically. Mediastinalis present. Axillary margin with 3 bristles. Halteres yellow.

FEMALE.—Length 1.8 mm. Similar to the male. Tergites subequal, gradually narrowed, brown anteriorly, behind with transverse black band and yellow seams. Cerci distinct. Wing length 1.95 mm. Costa about 0.5 of wing length, ratio of segments 18:11:4.

MATERIAL EXAMINED.—Holotype male (pinned, abdomen on card; USNM 70277), Dominica, South Chiltern Est., 2 Feb. 1965 (W. W. Wirth). Paratypes: 1 female (pinned; USNM), South Chiltern Est. 20 Feb. 1965 (W. W. Wirth); 1 female (on slide; USNM), Clarke Hall, 21–29 Apr. 1964 (O. S. Flint); 1 male (pest-damaged; CTB; wing on slide), Manets

Gutter, 2 Mar. 1965 (W. W. Wirth); 1 female (CTB), Fond Figs River, 12 Apr. 1966 (R. J. Gagné).

DISCUSSION.—*B. dactylata*, new species, comes close to *B. luteihalterata* Borgmeier from Brazil, but the latter has only one finger-like process on each side of the hypopygium and the process is shorter; the venation is also different (fifth vein distinctly curved; costa more thickened on apical half).

Beckerina dominicana, new species

FIGURE 152

MALE.—Length 1.6–1.8 mm. Frons distinctly broader than long laterally (3:2), width 0.31 mm, honey yellow, shining, sparsely hairy, with a few crossed hairs anteriorly, without median line. Postantennals strong, close together. First row nearly straight, the antials about two-fifths of frontal width apart, a little more than the preocellars; anterolaterals close to anterior corner of frons, a little removed from eye-margin. Second row slightly convex, the bristles equidistant. One strong lower postocular bristle; 2 strong bristles on jowls; cheeks with a few short hairs. Third antennal joint round, brown; arista short (0.39 mm), pubescent. Palpi pale yellow, flat, the bristles strong but of moderate length.

Thorax subshining, yellowish brown or brownish yellow above, pleura pale yellow. Two dorsocentrals. Scutellum with 4 subequal bristles.

Abdomen dull, venter yellow; tergites velutinous black-brown, 2–5 subequal, 6th a little longer, all with pale brown or yellowish apical bands. Pubescence short, scarce dorsally. Hypopygium small, brown, at left with a small rounded hairy lobe; a digitiform process is not perceptible; ventral plate rounded. Anal segment yellow, short, depressed, with short hairs.

Legs yellow, hind femur blackish near tip. Foretarsus slender, longer than tibia (4:3). Midtibia with several irregular straight or oblique hair-seams, some of which ending at middle, 1 reaching apex. Hind femur 3 times as long as broad. Hind tibia with a complete anterior hair-seam and several irregular ones on dorsal face, between both there is a bare strip with a single row of short hairs; no setulae.

Wing (Figure 152) grayish yellow, veins dark brown. Length (paratype) 1.48 mm (1.69 in holotype), width 0.59 mm. Costa 0.47 of wing length, ratio of segments 25:15:7. Cilia moderately long (0.11 mm), widely placed; there are 5 pairs between 1st and 3rd veins.

Mediastinalis wanting. Fork long, acute. Fourth vein weakly concave; 5th but little curved; 6th slightly sinuous. Axillary margin with 3 hairs. Halteres dark brown.

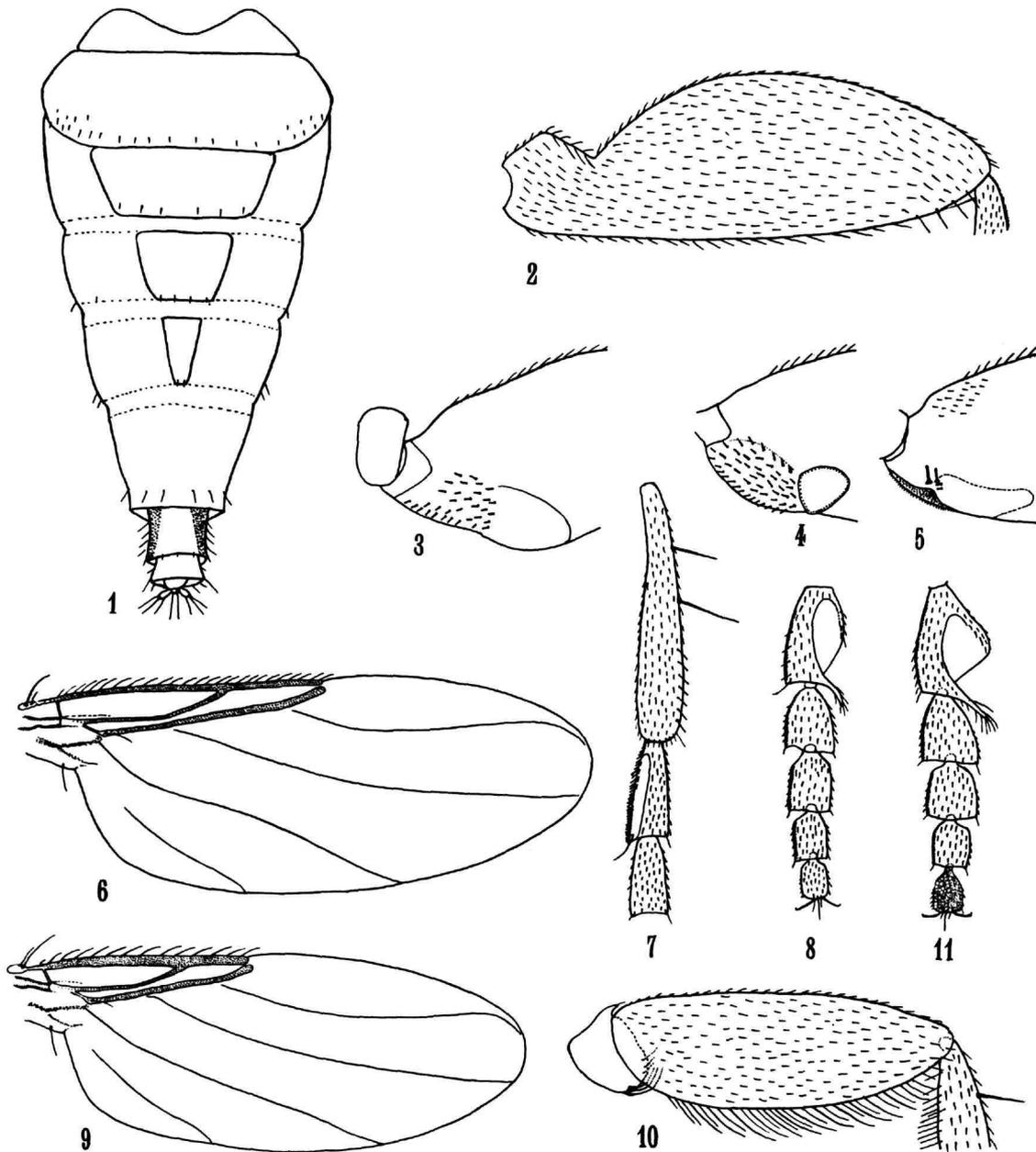
Holotype male (USNM 70278), paratype male (CTB; mostly destroyed by psocids; wing on slide), Dominica, South Chiltern Est., 2 Feb. 1965 (W. W. Wirth).

DISCUSSION.—*B. dominicana*, new species, is close to *B. nudipleura*, which has a shorter costa and a longer first costal section.

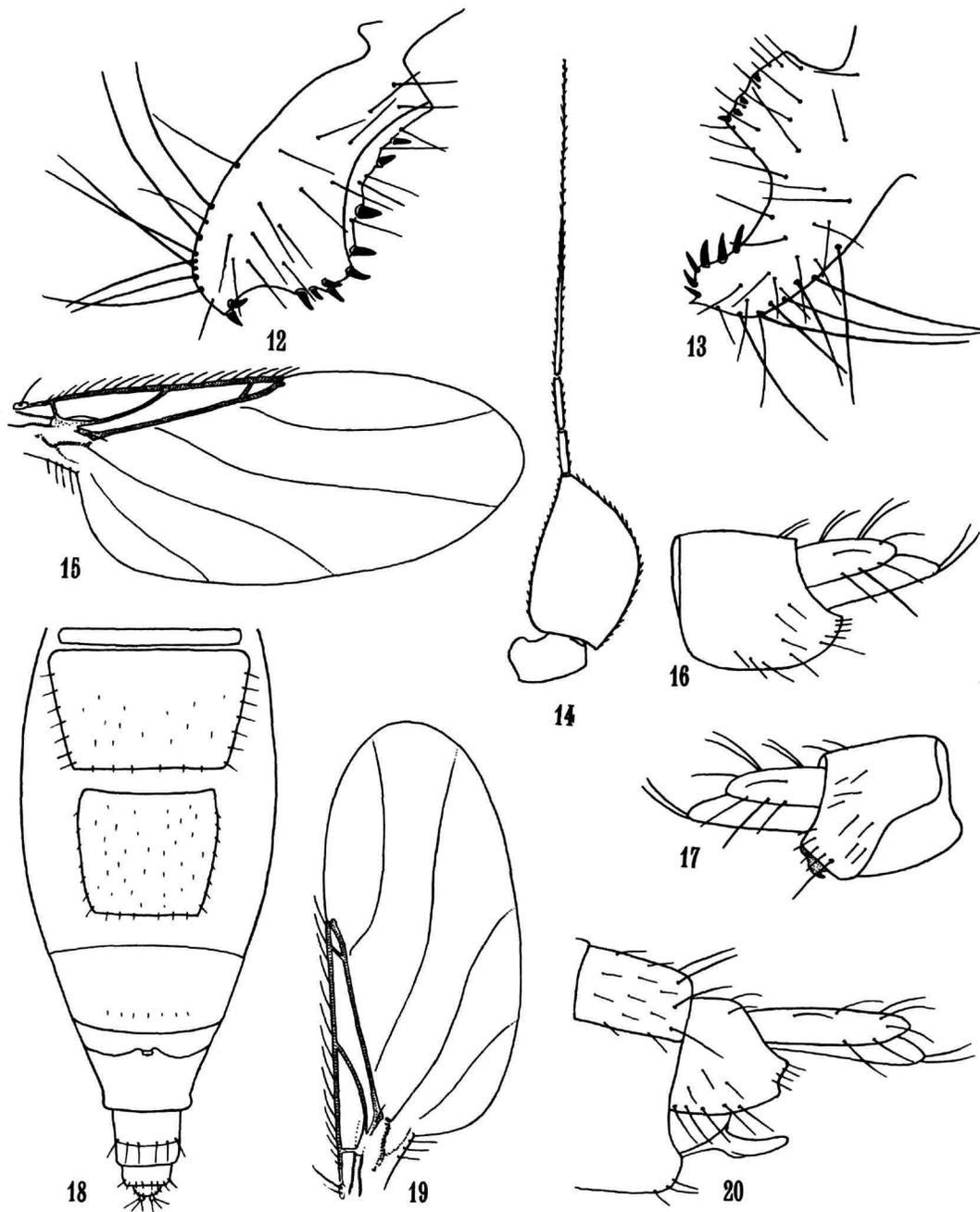
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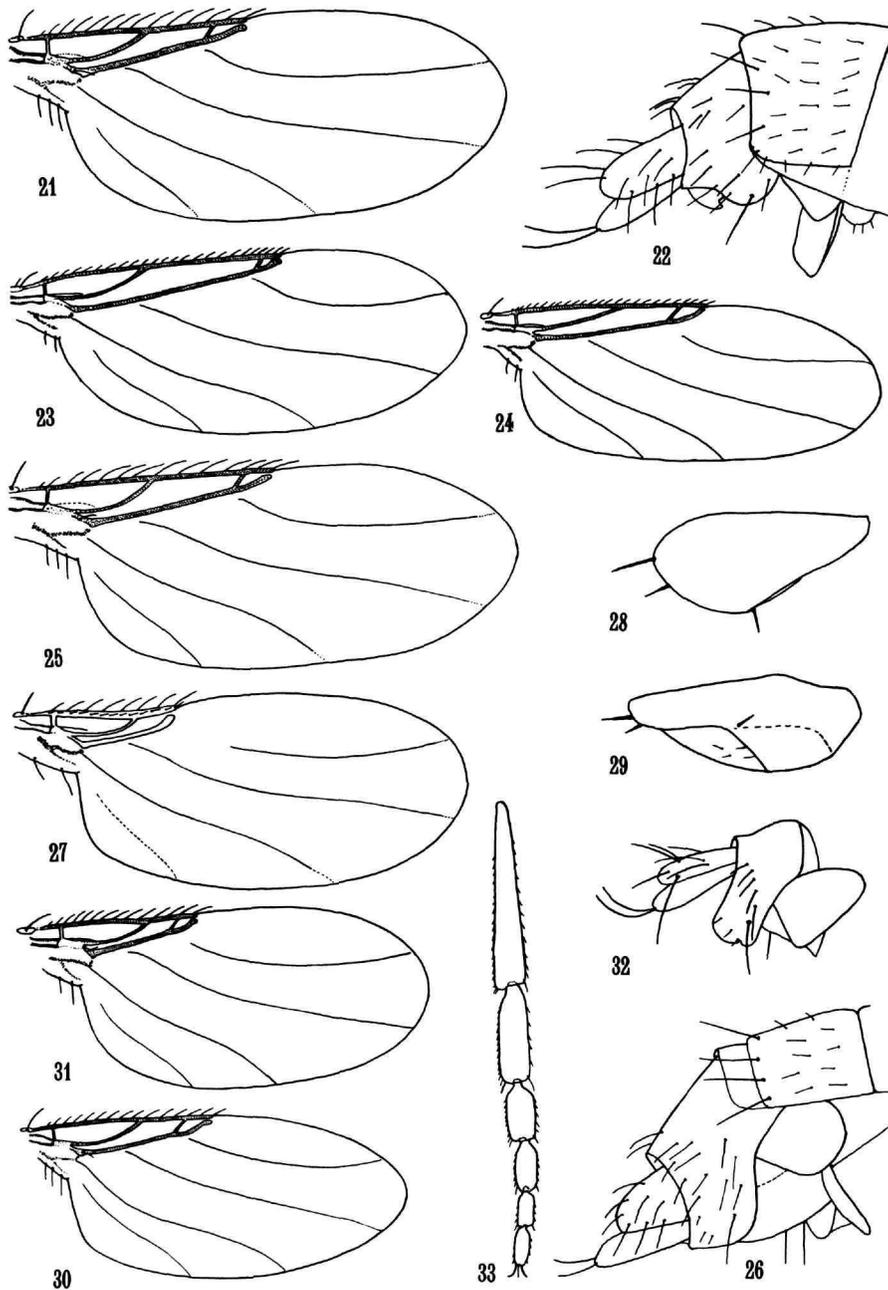
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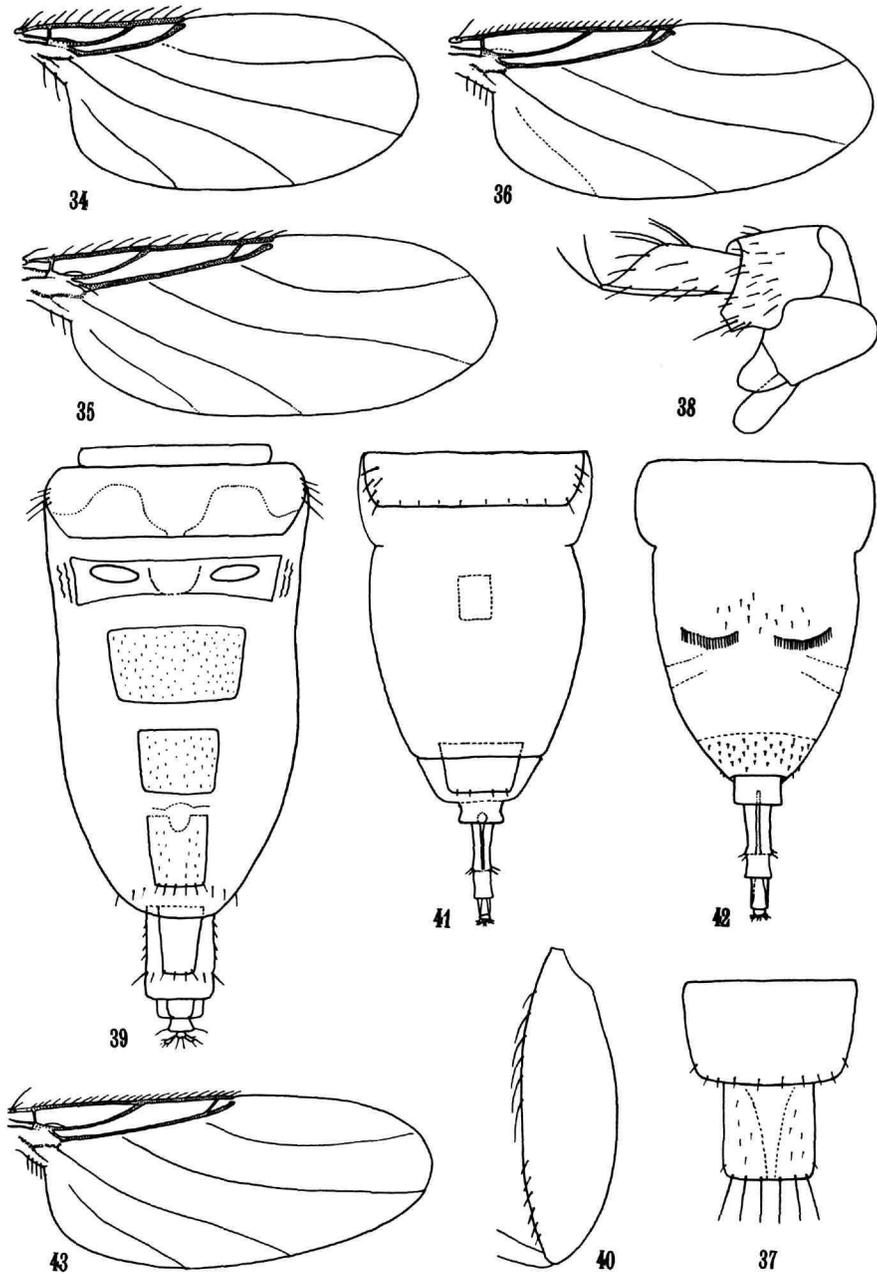
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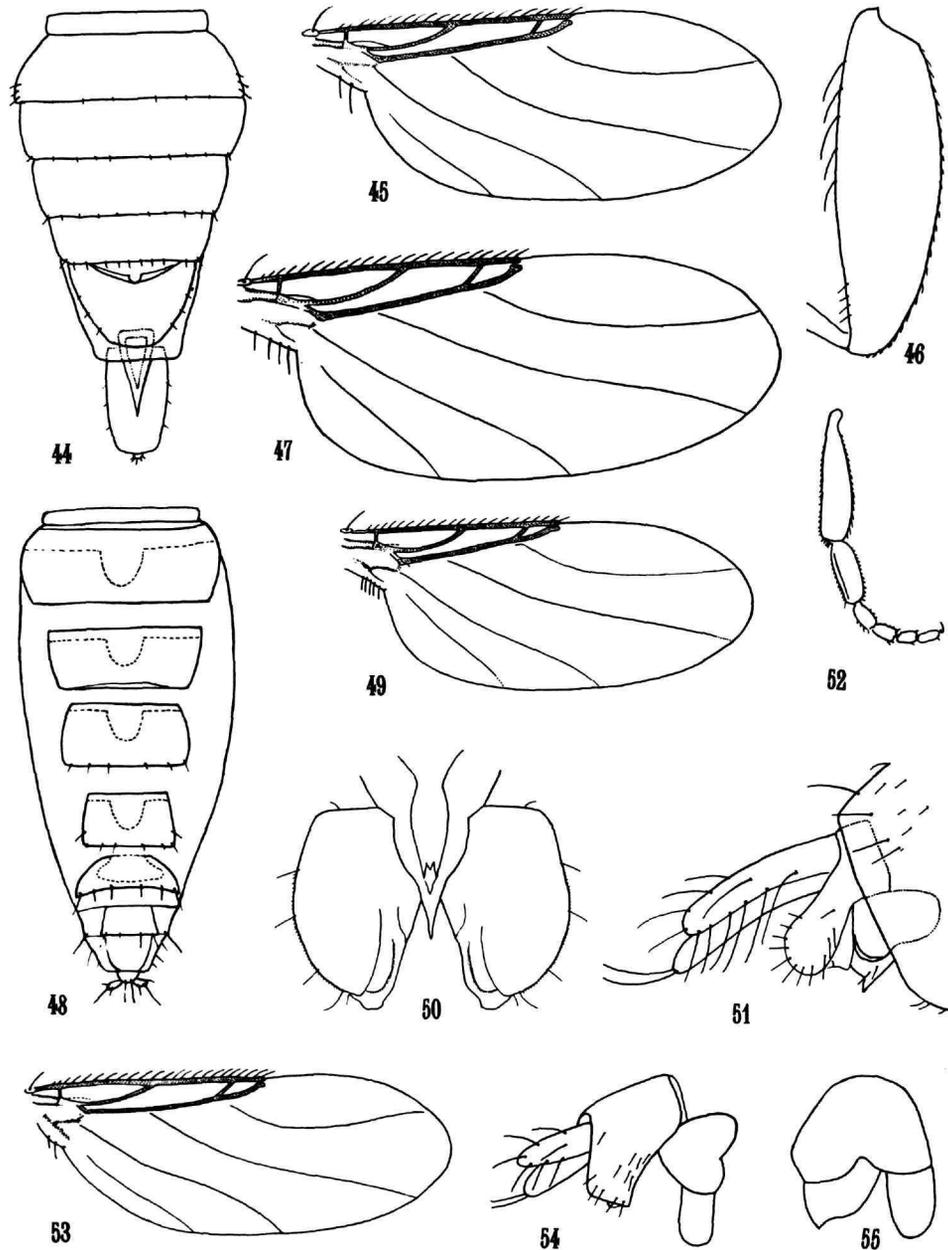
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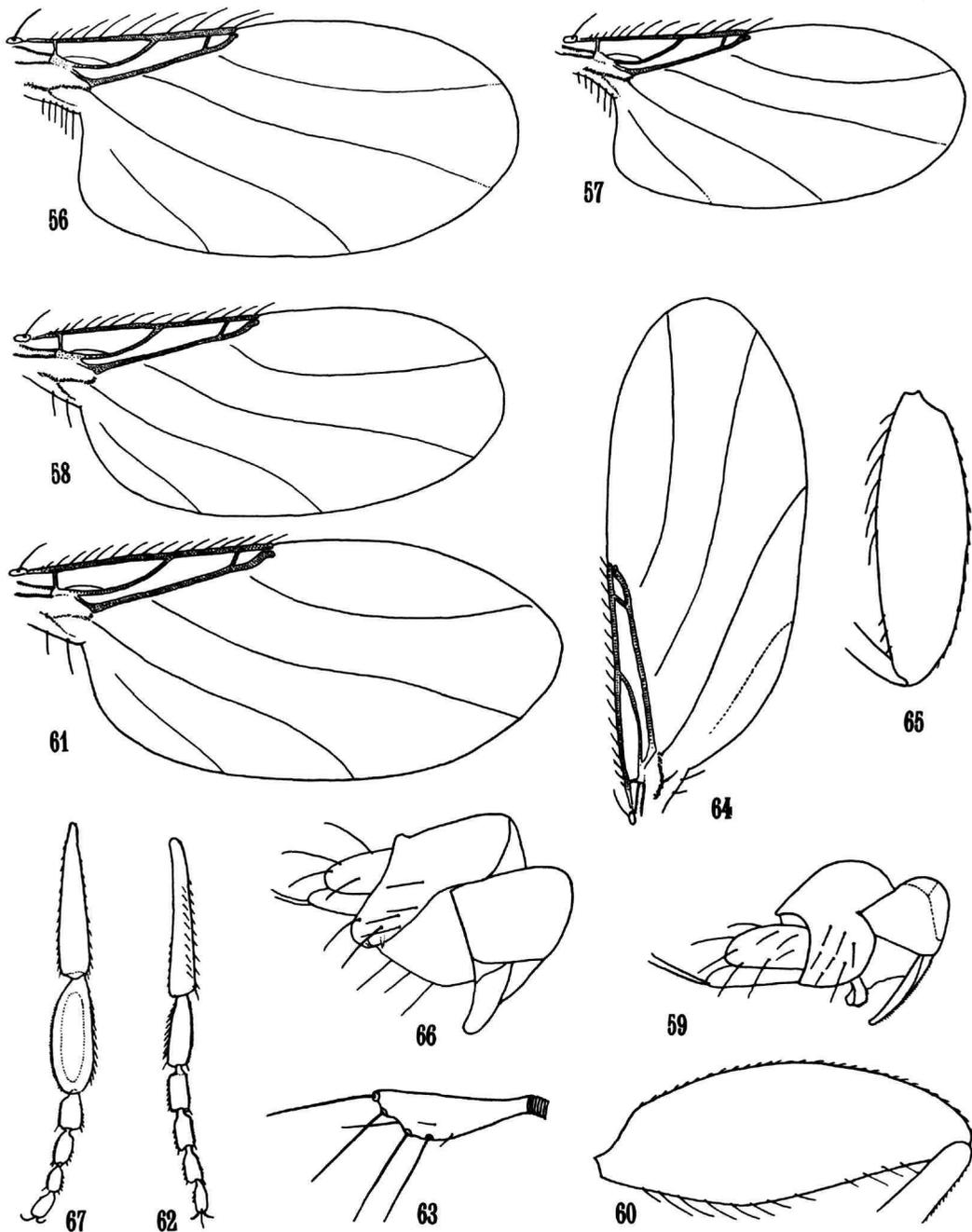
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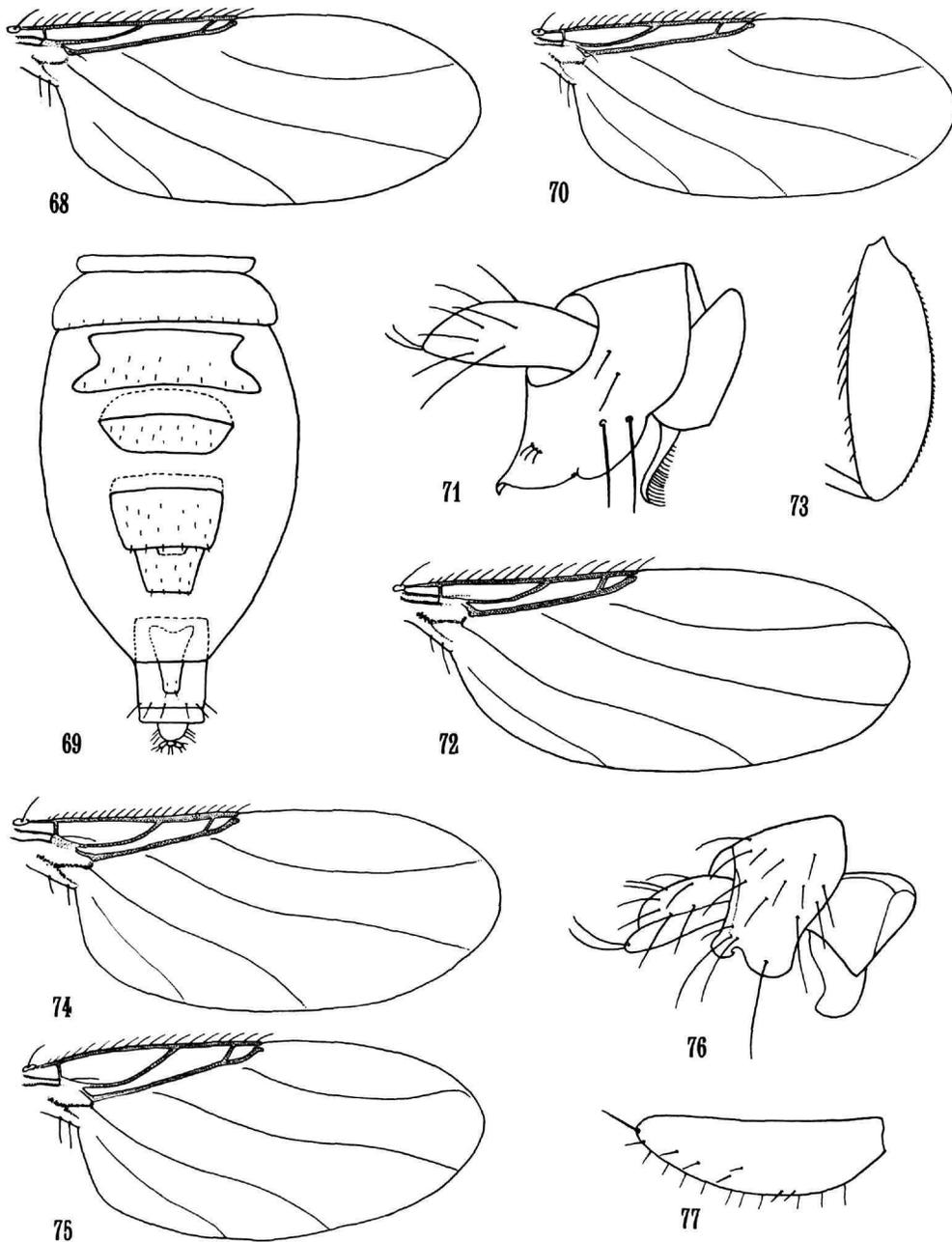
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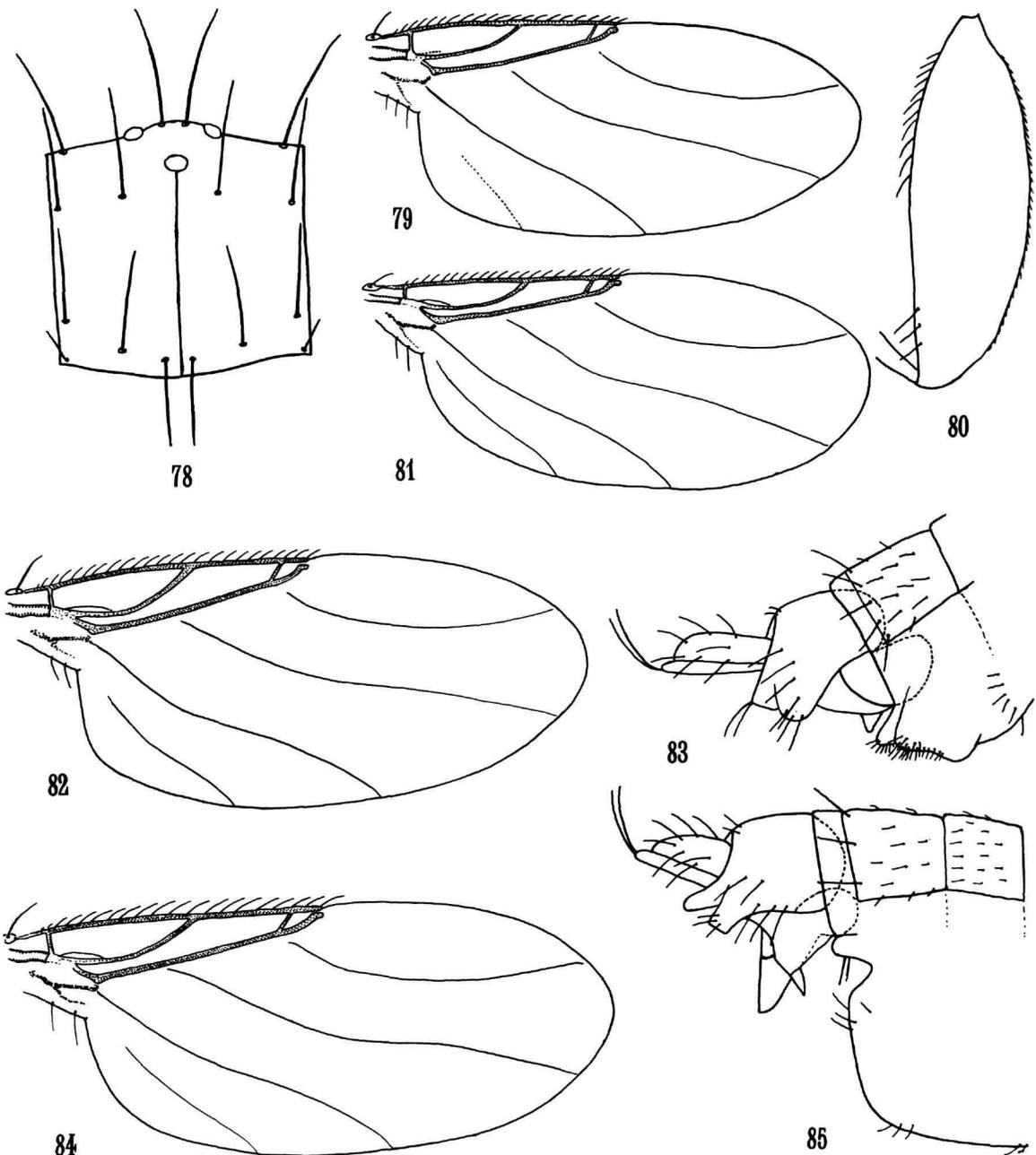
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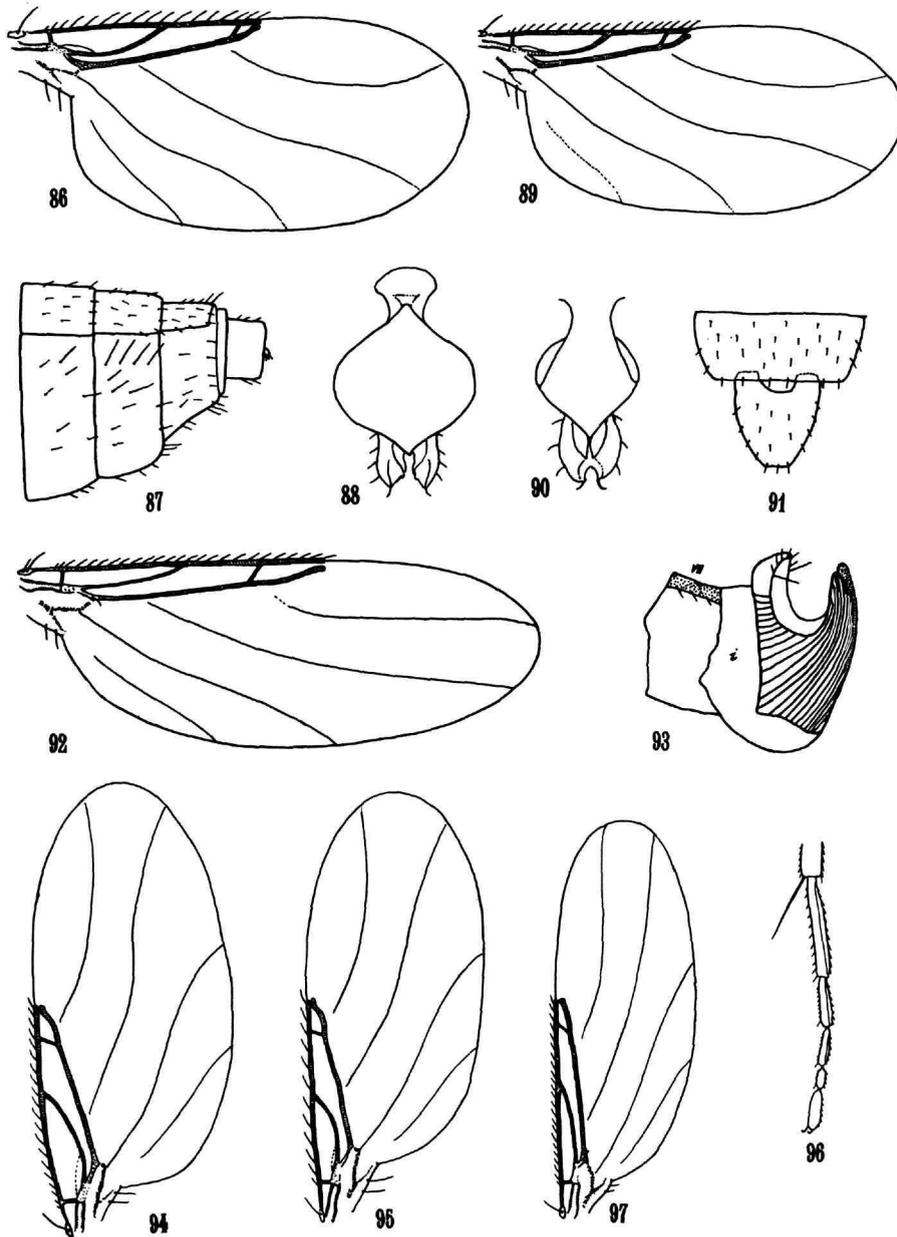
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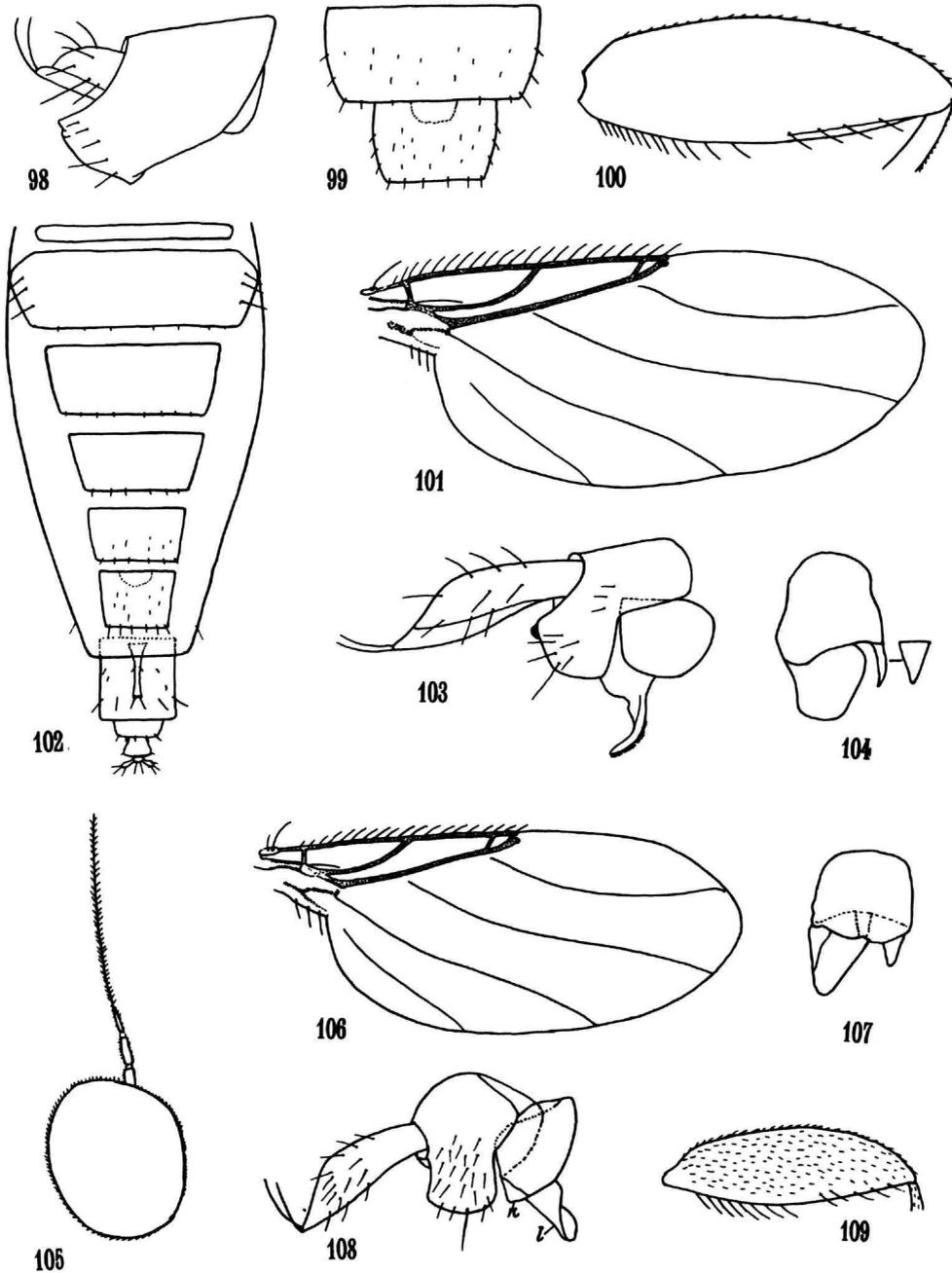
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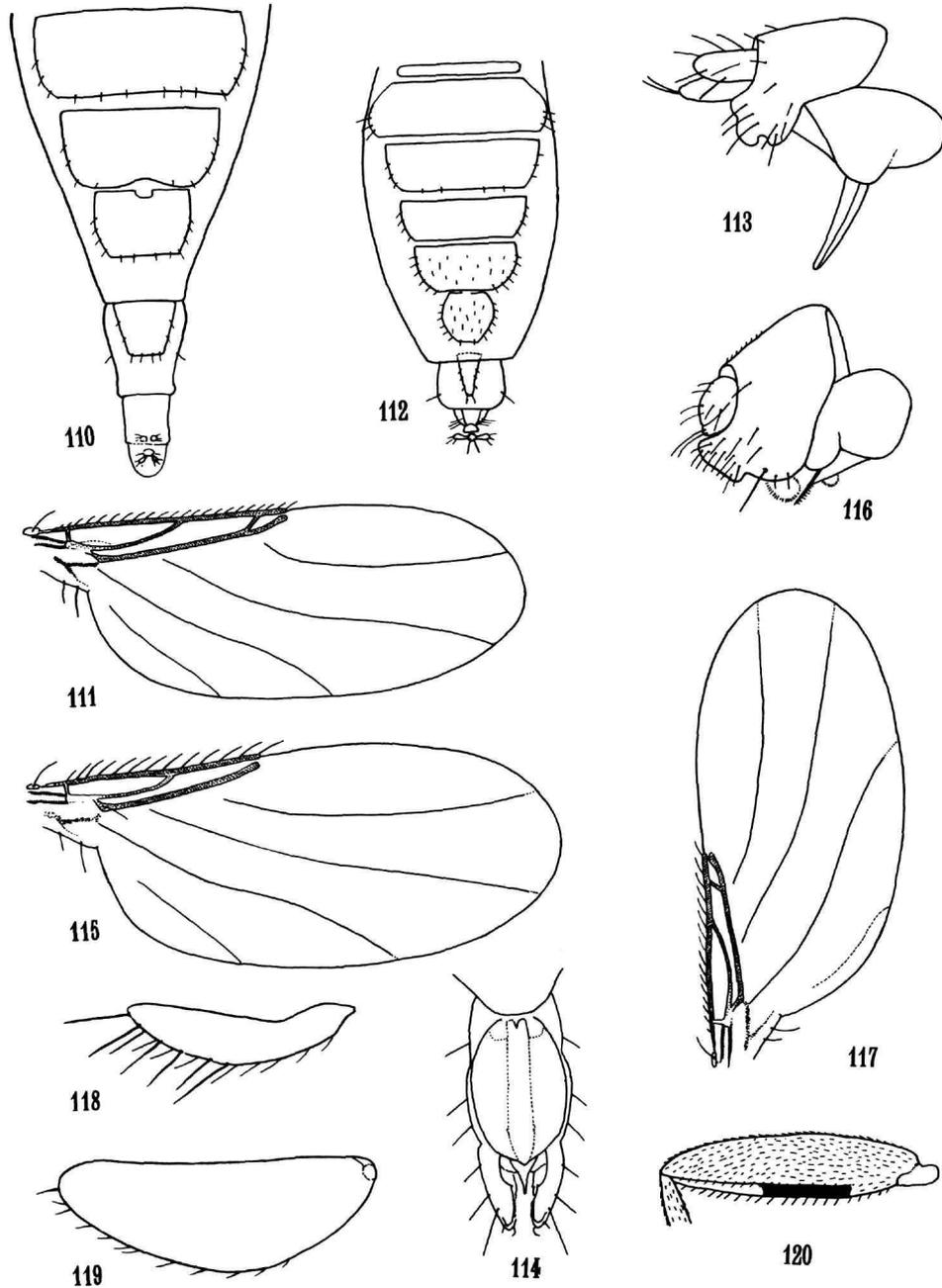
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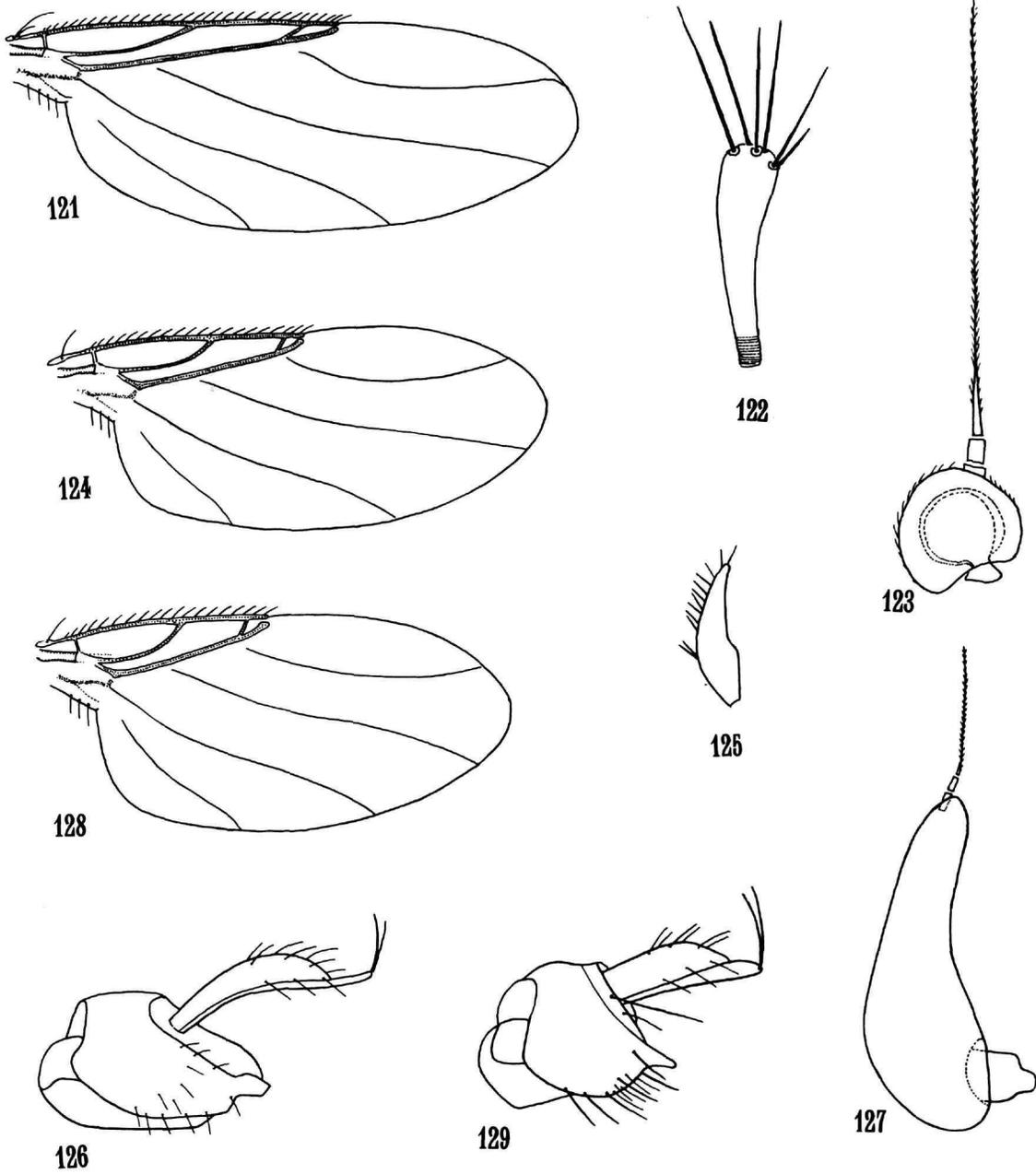
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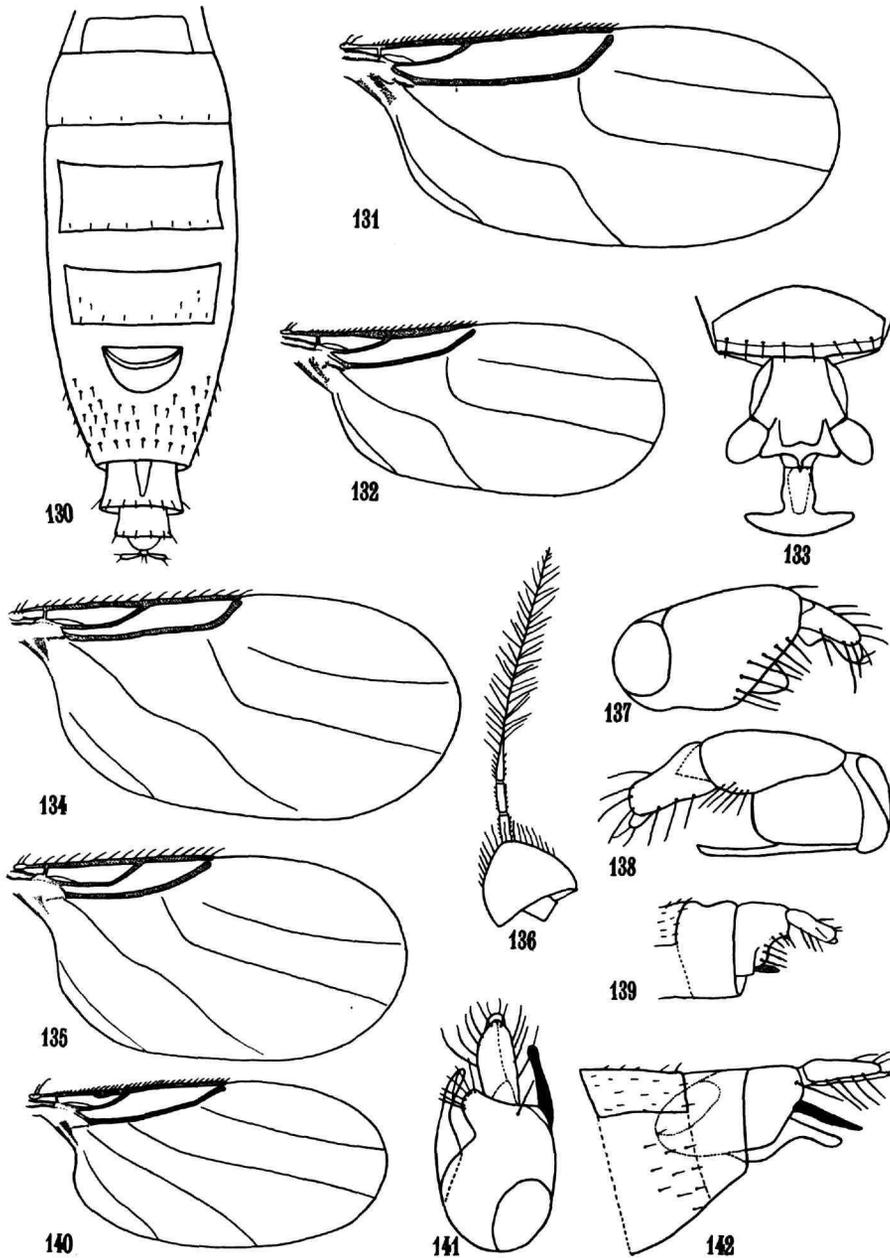
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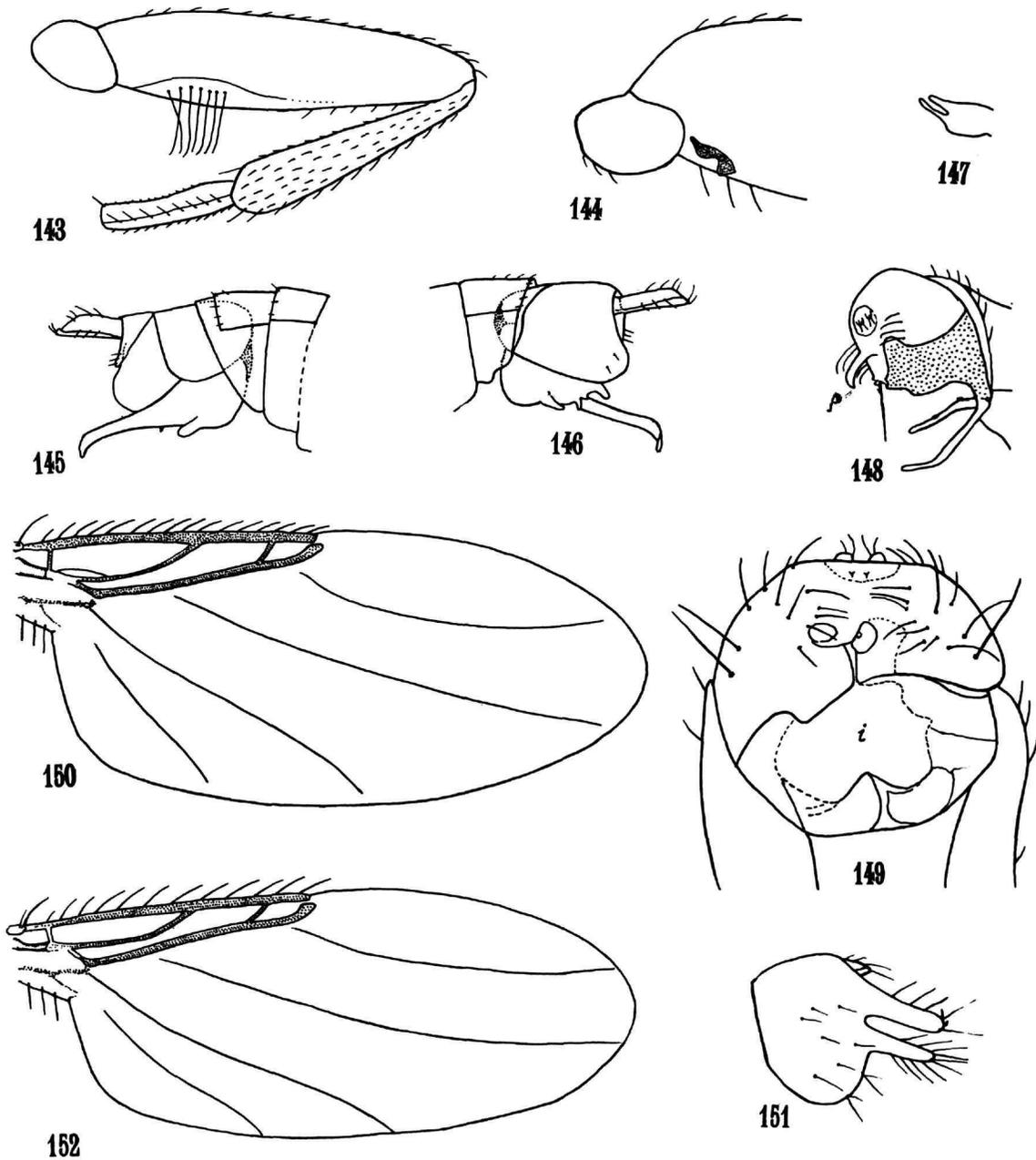
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