

AMERICAN MUSEUM NOVITATES

Published by
Number 1200 THE AMERICAN MUSEUM OF NATURAL HISTORY October 19, 1942
New York City

THE FLIES OF THE GENUS *MEROMACRUS* (SYRPHIDAE)

BY FRANK M. HULL¹

The genus *Meromacrus* contains large and handsome New World flies belonging to the group Eristalini and distinguished by broad form, bare eyes and usually spots and fascia of bright tomentum. Most of the species are found in the Neotropical region. In recent years the genus has been studied by Hine, Sack and later by Curran.

In presenting this key to the species I have been fortunate in studying thirty-one species. I am not certain that *funereus* Shannon represents a species distinct from *niger* Sack, and a type examination will be necessary to determine this. I have included two species in the key upon the basis of the valuable illustrations in Sack's study. As far as I am aware, of all of the described species, only *ghiliani* Rondani (Brazil) is omitted from the key. There are thirty-five known species.

The species fall into several groups on the basis of the presence or absence of the median mesonotal vitta, the sutural stripe, the submedial vitta and the arrangement of tomentum upon the abdomen. Another type of key might be constructed upon the basis of that group, the males of which have long pile-tufted venters, coxae and femoral bases. To such belong the species *anna* Curran, *aemulus* Williston, *linea-scripta* and *melmoth* Hull, *fucatus* Hull, *potens* Curran, *cinctus* Loew, *brunneus*, *pluto* and *hinei*, new species, and perhaps others. This would likely involve a key to each sex when the males of all species are known. For the better study of these hairy forms I suggest the subgeneric term *Metameromacrus*.

Meromacrus vittata Hull does not properly belong to *Meromacrus*, and I have erected a new genus elsewhere for its reception.

In carrying forward this study I have been greatly assisted by the loan of material from Dr. C. H. Curran, who placed before me all undetermined material of this genus in the American Museum collections and for this help I especially thank him. I also wish to thank Dr. C. L. Fluke of the University of Wisconsin, and S. H. de Souza-Lopes of Rio de Janeiro for the loan of material. Types unless otherwise stated are in The American Museum of Natural History.

KEY TO THE SPECIES OF *Meromacrus*

- 1.—Very dark, black or almost black flies; no conspicuous markings upon thorax or abdomen; loop of third vein filled with brown color along its inner margin, with or without a clear sinus above. 2.
At least the thorax or abdomen, or both, with yellow or brownish yellow or white spots or fascia of tomentum. Thorax with at most a single median vitta and short submedial, anterior vittae; more often non-vittate; loop of third vein always clear. 5.
- 2.—Hind femora extraordinarily massive and much thickened. *melmoth* Hull.
Hind femora thickened but not extraordinarily. 3.
- 3.—Thorax patterned with deep velvety black behind the humeri, above root of wing and along the transverse suture and on anterior border of scutellum; third antennal joint broadly rounded. 4.
Without these deep black areas; antennae elongate, third joint pointed.
. *pluto*, new species.
- 4.—Antennae entirely light reddish brown; hind trochanters with only short pale pile. *niger* Sack.
Third antennal joint darker than the basal joint; hind trochanters with some long pale hairs in addition to the short pile.
. *funereus* Shannon.
- 5.—A continuous transverse stripe or band across or bordering the suture of the dorsum of the thorax, usually conspicuous but sometimes barely visible to the naked eye. 11.
With only a spot of bright tomentum on

¹ University of Mississippi.

- the outer end of the transverse suture, rarely at both ends, or none at all upon the notopleura and transverse suture . . . 6.
- 6.—No prescutellar band of yellow tomentum or pile; no sutural or notapleural spots; handsome large black flies, the mesonotum opaque, velvety black with only humero-medial spots. . . *bruneri* Curran.
Prescutellar band or triangle, or other bright pile, present, sometimes quite narrow 7.
- 7.—Four bright yellow spots along the transverse mesonotal suture, two upon each side *decorus* Loew.
Sutural yellow spots confined to a single pair (one on each side of the thorax) at the outer ends of the suture, or absent . . . 8.
- 8.—Notopleural spots very small or absent, first abdominal segment with a yellow tomentose fascia, sometimes prominent; anterior margin of wing strongly colored brown 10.
Notopleura with large conspicuous yellow tomentose spots; abdomen similarly maculate but not before the base of the third segment; anterior margin of wing dilutely brown but not conspicuous in contrast to the remainder of the wing . . . 9.
- 9.—Fourth abdominal segment shining, steel blue, the abdominal base dark
 *potens* Curran.
Fourth abdominal segment shining, steel blue, the abdominal base light brick red *cinctus* Loew.
- 10.—First abdominal segment with a conspicuous cream yellow transverse median spot; yellow spot of anterior corner of thorax linear, bright yellow, encircling inside of humeri and reaching notopleura *anna* Curran.
First abdominal segmental spot brownish yellow, less conspicuous; anterior thoracic spot likewise obscure, confined to the mesial side of humeri, broadly disconnected from the obscure notopleural spot *hinei*, new species.
- 11.—Thorax with a yellow or yellow brown medial stripe of tomentum upon at least the posterior half of the dorsum and confluent with the prescutellar fascia 12.
Usually without any medial stripe of tomentum or, if present, confined to the anterior half or less of the dorsum and at least partly evanescent, or lead gray in color 17.
- 12.—With a short submedial vitta confined to the anterior part of the thorax and confluent with the sutural fascia at its inner (mesial) end 13.
Without the submedial stripes of tomentum and pollen 16.
- 13.—Confluence of prescutellar fascia and medial vitta forming a conspicuous yellowish or brownish triangle before the scutellum; the legs chiefly orange, or, if dark brown, the abdomen is extensively golden pilose 14.
Confluences of these bands barely rounded, almost rectangular; apical half of anterior tibiae and their tarsi blackish; femora chiefly dark brown. *obscura* Hine.
- 14.—A broad, silky, golden, pilose band running down the middle of the dorsum of the abdomen from first to fourth segments, inclusive; pile of fourth segment wholly golden yellow; fore and hind tibiae setaceous yellow pilose
 *auriferus*, new species.
Without such band and pilosity 15.
- 15.—Sutural stripe continuous; hind femora brownish red; fore and hind tibia with considerable black setaceous pile (French Guiana) *milesia* Hull.
Sutural stripe broken in the middle, leaving the notopleural stripe, itself connected with the humeral spot, disconnected from the short yellow fascia lying along the inner end of the suture which is confluent with the submedial vitta *basigera* Walker.
- 16.—The median stripe joins the prescutellar fascia almost at right angles; median vitta slender, fourth segment with two yellow fascia *abdominalis* Sack.
The median stripe forms a hollow sided triangle just before the scutellum; median vitta wider 30.
- 17.—With an inconspicuous linear median vitta on anterior third of thorax; abdomen chiefly orange brown, the pile beyond the second segment yellow; hind femora light reddish *lineascripta* Hull.
With no yellow median vitta, though slender lead gray or brown vittae of obscure pollen may be present 18.
- 18.—Abdomen everywhere reddish orange or orange brown, the basal two-thirds of second segment and its medial portion throughout, as well as the posterior fourth of the third segment, black, appressed, stubby pilose. First segment with conspicuous yellow tomentum along the lateral third. Mesonotum with a wide, medially truncate, continuous transverse fascia of yellow tomentum upon the suture; thick prescutellar fascia and a pointed anteromarginal submedial spot also yellow tomentose *canusium* Walker.
Not such flies 19.
- 19.—Third and fourth segments of abdomen with several bright yellow transverse bands; no bright yellow pile on first and second segments; thorax dark, without obvious vittae or spots . . . *cingulata* Sack.
Thorax usually with at least moderately conspicuous spots or fascia, or both; base of abdomen usually marked 20.
- 20.—Inner margins of humeri with a linear,

- curved stripe of yellow or white pile, reaching to notopleura and sometimes connected with the linear yellow sutural stripe. 32.
- Thorax along the anterior margin with a prominent pair of triangular, or oval and posteriorly pointed, yellow or white spots adjacent, except in *opulentus* Bigot, to the humeri; suture with a prominent yellow fascia widely interrupted in the middle of the thorax. 21.
- 21.—Very large species, the anterior marginal, submedial spots well separated from the humeri, their medial edge silvery. The dilated medial expansion of the yellow, transverse, sutural fascia also silvery; second abdominal segment with a yellowish brown, not tomentose, submedially truncate fascia; basal margins of first, third and fourth segments yellow tomentose (Cuba). *opulentus* Bigot.
Not such flies. 22.
- 22.—Mesonotum broadly lead gray down the middle or at least with gray pollen between anterior spots and medial ends of the tomentose fascia; again gray before a pair of opaque black spots lying between the anterior yellow tomentum; wings with anterior margin brown, the costal cell pale brown; second abdominal segment with an interrupted, laterally expanded light brownish yellow fascia; hind femora black above or basally, yellow or red apically. *zonatus* Loew.
Mesonotum blackish or brown black; wing margins yellowish toward the base, rarely wholly brown. 23.
- 23.—Third antennal joint wider than long.
. *ruficus* Wiedemann.
Third joint longer than wide. 24.
- 24.—Anterior border of the wing on the basal half strongly yellowish, especially the costal cell. 26.
Anterior border of wing brown, the brown extending to the base behind the costal cell; costal cell lighter. 25.
- 25.—Abdomen with three pairs of oval, yellow spots of about equal size and thickness, widely separated. *currani*, new species.
Abdomen not with such an arrangement of spots. *pratorum* Fabricius.
- 26.—Dorsal part of hind femora reddish or yellow pilose, rarely with a trace of dark pile on hind femora apically and dorsally; sometimes deceptive unless viewed carefully; legs wholly light orange red. 27.
At least some dark setose pile present; legs usually in part, or largely, blackish. 28.
- 27.—Abdomen chiefly light orange red, the third segment a little darker; sides of face golden pollinose, the third antennal joint blackish along the dorsal third; fourth abdominal segment much narrower than second and a little wider than the elongate hypopygium; vertex pale reddish. *gloriosus* Hull.
Abdomen chiefly blackish upon the upper surface; sides of face whitish pollinose, the antennae brownish yellow, vertex black. *stukei* Curran.
- 28.—Second abdominal segment predominantly black, with a shining steel bluish cast; facial stripe usually black, the antennae black or brownish black; spots and fascia of yellow tomentum large and conspicuous. 29.
Second abdominal segment chiefly reddish brown, its anterior and posterior margins and a median vitta black; facial stripe and lower two-thirds of front reddish brown. *draco*, new species.
- 29.—Hind femora light brownish red, a little darker in the middle.
acutus Fabricius var. *parvus*, new variety.
Hind femora almost wholly black, the base narrowly, and an oval area on either side near the apex, reddish. *acutus* Fabricius.
- 30.—The notopleuro-humeral and sutural stripes prominent and contiguous at outer ends. 31.
The notopleuro-humeral and sutural stripes slender and disconnected; flies with dark sepia or reddish brown abdomen, tomentum scanty or absent except upon first segment and there inconspicuous. 34.
- 31.—Posterior half of abdomen blackish and widely black setate; hind tibia wholly light brownish yellow.
. *strigulus*, new species.
Third and fourth segment each with a wide apical and basal band of flat orange tomentum; the intervening black upon the third segment more extensive than upon the fourth; basal half of hind femora blackish. *aemulus* Williston.
- 32.—Small species, the base of the wing yellowish. 33.
Large, dark brown flies, the entire anterior border of the wing dark brown; males with long, tufted hair on venter, coxae, etc. *brunneus*, new species.
- 33.—The lunate transverse sutural fascia very thin, narrow, sharply evanescent at each end; circular, inner, humeral fascia also narrow, almost or barely separated upon its posterior end from the sutural fascia. *simplex* Schiner.
The lunate transverse fascia wider, the inner mesial ends especially much thicker; inner humeral fascia thicker and wider than in *simplex*, and well separated from the transverse fascia. *circumdatus* Bigot.
- 34.—Mesonotum strongly light yellow pollinose in ground color upon the non-tomentose areas; scutellum light brownish yellow, subtranslucent and yellow pilose; abdominal pile, except upon the first seg-

ment, black or dark red brown. Hind femora wholly light ochraceous.....
 *fucatus* Hull.
 Mesonotum blackish in ground color; scutellum dark brown at base, lighter near the apical half with some scattered black pile; abdominal pile dark reddish on second and fourth segments, the first segment yellow tomentose, the third basally, with a quite slender inconspicuous fascia of tomentum; all of the femora black.....*ceres* Hull.

Meromacrus auriferus, new species

Figure 12

Similar to *basigera* Walker. Distinguished by the broad, longitudinal belt of pale, silky yellow appressed pile upon the middle of the abdomen, besides differences in pattern.

MALE.—Length 10.5 mm.

Head: eyes bare, the vertical and upper occipital pile bright yellow, the lower occipital pile yellowish white. The front is shining brownish black, the orbital margin light brown pubescent and pale yellow pilose. The central pile of the front is black. The cheeks and a broad middle stripe on the face are shining black; the broad sides of the face and the area immediately beneath the antennae are light yellowish brown, densely yellowish white pubescent and on the upper two-thirds pale yellowish pilose. The third antennal joint is oval, reddish brown, the first two joints black, the arista light brown.

Thorax: chiefly opaque black in ground color, the humeri reddish brown, the post calli and the sides of the mesonotum light brown, the scutellum pale reddish brown with somewhat reddish brown pile. On the mesonotum there is an extensive pattern of deep bright egg yellow tomentum. There is a large triangle on the base of the mesonotum before the scutellum that runs narrowly over the posterior part of the post calli and is produced forward in the mid-line as a narrow median stripe. On either side of the anterior part of the mesonotum submedially is a similar narrow stripe expanded upon its anterior end and posteriorly widely connected with a continuous stripe of similar width lying along the mesonotal suture. The pile of the intervening dark areas of the mesonotum is short, stiff and golden. There is a vertical stripe of pale yellow upon the posterior margin of the mesopleura, and a tuft upon the pteropleura.

Abdomen: dark reddish brown in ground color, the first segment and the extreme margin of the second, black in ground color; almost the whole of the first segment and a broad middle band occupying the entire length for three-fifths of the width of the second segment, pale golden or sulphur yellow. The pile of the first segment is better described as tomentum in the usually accepted sense in this genus; the pile of the second segment is perfectly flat and posteriorly directed, and this broad middle band

of pile is continued a little more narrowly upon the whole length of the third segment but spreads out upon the fourth segment to cover the whole of that segment except its narrow base. There is a prominent, basal, practically continuous band of flat-lying, yellow tomentum on the base of the third segment and one of similar length and conspicuousness upon the base of the fourth segment. The outlying pile upon the sides of the second segment and postero-laterally upon the third segment is almost wholly dark reddish brown and in places black.

Legs: whole of the middle femora and their tibiae and basi tarsi, whole of the anterior femora and the basal two-thirds of its tibiae, bright reddish brown; remaining joints of middle tarsi slightly darker, the anterior tarsi and apex of their tibiae, black. Hind femora, their tibia and tarsi, dark reddish brown, moderately thickened.

Wings: the anterior margin strongly tinged with brown as far as the end of the third longitudinal vein. The costal cell, the cell immediately behind it and the base of the stigmal cell, light yellow.

FEMALE.—Similar to the male in almost every respect. The golden pile of the second and third segment tends to occupy the whole of the segment to the exclusion of the dark reddish brown pile, but this is not true in every case.

TYPE MATERIAL.—Holotype, male; allotype, female; paratypes, two males and two females; all from Nova Teutonia, Brazil, November 22, 1939 (Fritz Plaumann). A paratype of each sex in the author's collection.

Meromacrus hinei, new species

Related to *anna* Curran, but without the conspicuous, cream yellow, first segment spot of that species; mesonotal markings less conspicuous, the anterior thoracic spot disconnected from the notopleural spot.

MALE.—Length 13 mm.

Head: eyes bare, vertical and post vertical pile black. The pile of the post occiput is yellow. Front shining black with sparse silvery pile and along the eye margins a very narrow band of yellowish pile. Cheeks and a broad middle stripe shining, dark brownish black, the broad sides of the face light brown with pale yellow pubescence and upon the upper two-thirds pale yellow pile. The antennae are dark brownish black; the extreme base of the third segment and the apex of second segment are dark red. The third joint is definitely longer than wide and with a slight upturned point at the apex; the arista light brown.

Thorax: opaque dark brown, practically black, the humeri concolorous with the mesonotum although the extreme posterior outer edge of the humeri is dark shining red. There are

markings of sulphur yellow tomentum as follows: a narrow, transverse stripe before the scutellum bordering upon the posterior margin of the post calli, an oblique spot of similar tomentum on the inside of each humerus, and a small similar spot upon each notopleuron. The posterior margins of the mesopleura and pteropleura are covered with abundant, long, crinkly, pale yellow, silky pile. The pile of the mesonotum over most of the dorsum is rather long, quite fine and black. It becomes stubby and setaceous on the post calli and on the base of the wing. Scutellum brown in color, the basal two-thirds dark brown, the posterior margin light, clay yellowish brown; pile of scutellum black.

Abdomen: dark blackish brown, the posterior part of the fourth and the large hypopygium dark reddish brown but somewhat lighter than the remainder of the abdomen. The posterior margin of the first segment on all but the outer lateral corners is covered with sulphur yellow tomentum which in the very middle is directed posteriorly and from each side of the segment is directed toward the midline. Second segment densely covered with appressed, short, black, setaceous pile except that the anterior basal lateral region has erect, light yellow pile which does not show up unless carefully viewed from an oblique angle. The marginal pile of the second and succeeding segments is abundant, long, delicate and pale shining yellow. The third segment is covered with short black setae like the second, and on either side from the lateral margin along the basal margin is a short narrow fascia of flat-lying, yellow tomentum. Fourth segment black setose except for the extreme lateral pile and without basal tomentum. Hypopygium yellow pilose and with sparse yellow pubescence. Venter with very long, silky, yellow pile.

Legs: anterior and middle femora and tibiae dark brown with sparse yellowish pubescence, the knees barely lighter, the pile except for a small ventral and apical group of bristles entirely shining, light silky yellow, quite long upon the femora. Hind femora moderately thickened, dark, shining, mahogany brown, the apex somewhat lighter, especially toward the ventral part. The pile upon the hind femora on the lateral basal third and the upper basal third or more, pale silky yellow and long and crinkly along the sides. All of the lateral and ventral pile and most of the apical pile dark brown or blackish. Hind tibiae brownish red, the pile chiefly shining yellow. All of the tarsi light reddish brown.

Wings: margined with brown, especially upon the anterior apical half; the brown upon the basal part tends to become yellow, and the costal cell and base of the stigmal cell are entirely yellow.

HOLOTYPE.—Male, middle Rio Maranon, Peru, December 17, 1930 (H. Bassler).

Meromacrus currani, new species

Figure 7

Reddish flies, related to *decorus* Loew. Notable for the three pairs of nearly equal, conspicuous, yellow tomentose spots upon the abdomen.

FEMALE.—Length 13.5 mm.

Head: vertical pile black, the occiput with a wide conspicuous band of dense yellow tomentum. The front is shining black, giving way just before the antennae to light brownish red. The pile of the front down the middle dark brown on the upper part and black below, except that the sides of the front are widely covered with bright yellow tomentum that becomes quite dense upon the sides of the upper two-thirds of the face; the brown pile of the front proceeds from an area that is covered with brown pubescence. Cheeks pale brown, the middle of the face with a broad black stripe, the sides of the face extensively light yellowish brown with whitish pubescence and pile as described above. Antennae reddish brown, the third joint paler below but gray upon the upper dorsal four-fifths, with a prominent sub-basal puncture. Arista missing.

Thorax: mesonotum black in ground color, feebly shining, the humeri dark shining brown, the mesonotum marked as follows with bright thick patches of yellow tomentum: a conspicuous transverse band lying below the scutellum which covers the posterior margin of the post calli; a prominent oval, posteriorly pointed, submedial spot on the inside of each humerus, not actually touching them, the posterior point of this spot diagonally directed away from the humerus. There is a large notopleural spot laterally contiguous with a vertical, posterior, marginal, mesopleural spot and conspicuous, upper sternopleural spot; upon the mesial side the notopleural spot is confluent with a narrow fascia along the suture which gives way to a whitish submedial patch upon the end of the suture where the tomentum may have been denuded. Pile of the mesonotum elsewhere very short, black and stubby. Scutellum clay brown in color, short black setose, with a few pale marginal hairs.

Abdomen: broad, pointed at apex, actually dark brown in ground color, appearing black from the abundant short black setae. It is marked with three pairs of conspicuous spots of bright yellow tomentum as follows: a pair on either side of the second segment, oval in shape and diagonally placed; a widely separated basal, sublateral pair on the third segment, the posterior margins of which are quite convex, the spot about twice as wide as long; and a similar widely separated pair of sublateral spots upon the base of the fourth segment, perhaps longer than those of the third segment but much less wide.

Legs: wholly bright brownish red, the pile chiefly pale golden; there are some black setae

along the antero- and postero-ventral margins of the middle femora upon their outer two-thirds and a conspicuous patch upon the ventral apical area of the hind femora and dorsally at the apex of the hind femora. Hind femora only moderately thickened, the outer lateral surface conspicuously flattened.

Wings: anterior margins strongly tinged with brown, the costal, subcostal and base of stigmal cell pale yellow.

HOLOTYPE—Female, British Honduras (C. L. Lundell).

Meromacrus cingulatus Sack

Conspicuous because of the numerous yellow fasciae upon the apex of the abdomen. Related to *circumdatatus* Bigot, this species has more numerous annulate fascia.

There is a female from Nova Teutonia, Brazil (Fritz Plaumann), in the material studied. Several males have been lent by Dr. Fluke.

Meromacrus draco, new species

Distinguished from *acutus* Fabricius by the reddish base of the abdomen and the reddish brown facial stripe and lower part of front.

MALE.—Length 14 mm.

Head: eyes bare, the vertical pile black with yellow pile behind and also in front of the anterior ocellus, beneath which is yellow pubescence. The front is shining reddish brown, light in color, the front rather narrow and long, the ocular margin whitish pubescent and pilose, the remainder of the front much more sparsely white pilose, a very few black hairs before the antennae. The face has a prominent, vertical, median brownish black spot beneath the antennae, giving way to light brownish yellow with pale, shining, yellowish white pubescence and pile. Cheeks light brown, becoming darker near the eyes. Upper occipital pile yellow tomentose, giving way to whitish pile ventrally. Antennae relatively short, light reddish brown, the dorsal margin of the third joint dark grayish brown; the antennal pile is black, the arista quite thickened and pale yellow. Third antennal joint oval, about as long as wide or barely longer.

Thorax: dull shining black with a prominent oval patch of yellow tomentum on the anterior margin inside of the humeri and diagonally pointed toward the midline, from which it is some distance away. The transverse suture is widely margined with similar yellow tomentum which continues to run down the posterior margin of the mesopleura, giving way to shining pile on the lower part of the mesopleura. There is a tuft of yellow tomentum on the upper part of sternopleura, but the pteropleura are entirely

black pilose. The posterior margin of the mesonotum is banded with yellow tomentum, a little wider in the middle though not produced forward; it is continued laterally over the posterior and lateral margins of the post calli. Pile of mesonotum otherwise black, although there is some small amount of reddish yellow pile in the middle and upon the dark brown humeri. Scutellum light brown and black pilose with, however, a fringe of yellow pile along the ventral posterior rim. There are also a few pale hairs in the corners.

Abdomen: first segment black with a conspicuous patch of pale yellow tomentum three times as long as wide, placed diagonally on either side of the segment; the median posterior corners of these patches lie on the posterior margin of the segment and are narrowly separated from one another. Second segment largely light reddish brown, the extreme posterior margin lined with opaque yellow; just in front of this there is a narrow dark brown band. The posterior lateral corners of the second segment have a small black spot which appears to have been a part of an evanescent transverse fascia. The basal margin has a narrow but conspicuous black fascia widely separated from the lateral corners; in the midline it is produced posteriorly as a slightly wider, pointed black spot reaching almost to the apex of the segment. Remainder of abdomen distorted but darker brown in color, extensively black setose with a fairly conspicuous fringe of yellow tomentum along the basal margin of the third segment, and a less extensive, more oval, basal, sublateral patch along the margin of the fourth segment, at least the latter patches widely separated. It is impossible to say whether the pale markings of the third segment were separated or continuous, though probably separated. Hypopygium large, quite elongated and pointed; dark brown, almost black, with pale, sparse, yellow pile and sparse yellow pubescence.

Legs: entirely light orange, except that the hind femora are brownish black and have on either side near the apex upon the ventral two-thirds an elongate orange brown patch; all of the tibiae are basally somewhat more yellow. Pile of the legs entirely pale yellow, except that the distal, ventral setae of the hind femora and the somewhat shorter, ventral, distal setae of the middle femora are black.

Wings: anterior border dark brown; the costal and the basal part of the subcostal cell to just beyond the stigmal cross vein light yellow; the base of the marginal and first basal cells is more yellowish. The area of the submarginal cell produced by the loop of the third vein is entirely clear.

FEMALE.—Similar to the male. The middle of the face entirely dark reddish brown, the upper half of the front is only dull black with a faint, narrow, median, cinnamon brown streak and similar colored pubescence along the ocular

margin. Upper frontal pile chiefly, though not wholly, pale; the pile on the lower middle portion of the front is short and black. Mesonotum not different from that of the male. First and second segment of the abdomen similar except that the median vitta is connected with a transverse, posterior, marginal fascia of about the same thickness as upon the anterior margin. Third, fourth and fifth segments black, somewhat shining, the anterior basal margin of the third segment with a suggestion of red beneath the widely separated, basal, marginal, somewhat rounded fascia of yellow tomentum. Base of fourth segment with a mere trace of yellow tomentum distributed as a small basal spot. The legs and wings are quite similar.

TYPE MATERIAL.—Holotype, male, Quirigua, Guatemala (J. Bequaert); allotype, female, Benge Viejo, British Honduras, in the U. S. National Museum; paratypes, three males and four females from Costa Rica, Guatemala and British Honduras, in the U. S. National Museum and the author's collection.

Meromacrus pluto, new species

Figure 13

Small black flies with longer pile than in *niger* Sack and more slender femora than in *melmoth* Hull. Without the deep velvety black areas and differently pilose.

MALE.—Length 11 mm.

Head: eyes touching for only a short distance, not greater than the distance separating the posterior ocelli. Front feebly shining black with, along the eye margin, dense pale yellow pollen and scalelike pile sufficient quite to obscure the ground color. The whole of the remainder of the front is thickly covered with pile of the same color but with the ground color showing through. Face and cheeks shining brownish black, the former with, on either side, a wide stripe of yellowish white pubescence from eye margin to epistoma, upon the upper two-thirds of which is pile of the same color. Antennae elongate, the second joint almost twice as long as the first, the third joint a little longer than the second and drawn out until the apical half is rather narrow and the apex somewhat pointed. The first joint is dark brown, the second lighter, the third joint light brownish gray, somewhat reddish near the base, the arista pale yellowish brown.

Thorax: mesonotum dull, barely shining black, the humeri dark brown. There is a narrow, small, slightly diagonal patch of opaque whitish yellow tomentum lying on the anterior part of the mesonotum just inside of the humeri. Just before the scutellum there is a narrow transverse band of similarly colored tomentum reaching over the posterior margin of the post-

calli but in no wise produced forward in the midline. There are no traces of tomentum upon the transverse suture or mesopleura or notopleura, although the anterior margin of the transverse suture is narrowly lined with short, pale colored pile which is only visible in some lights from the side. The mesonotum is broadly and extensively short, black, setose behind the suture. Posterior half of the mesopleura, all of sternopleura and pteropleura with long fine, shining, yellowish white pile. Scutellum dark, dully shining brown with short black pile.

Abdomen: dark brown, almost black, upon the first, second and third segments; the posterior margin of the first segment with a narrow band of opaque whitish yellow tomentum, quite dense, that runs from side to side when viewed from above, but viewed laterally it does not actually extend to the posterior lateral corners of the segment. The pile of the abdomen is chiefly black upon the second segment, short and appressed with some appressed pale yellow pile on the posterior margin of the segment, and the lateral pile is of this color. The pale yellow pile grows more abundantly upon the third segment but viewed from above is overshadowed by the black pile. Upon the fourth segment there is relatively little black pile. Venter with tufts of extremely long pale pile on the terminal portions.

Legs: dark brown, the apices of the femora, all of the tibiae and tarsi somewhat lighter brown, the middle tarsi being somewhat lighter, almost yellowish brown. Hind femora greatly thickened, provided with long pale pile on the outside below the middle of the basal two-thirds, which is replaced ventrally and distally by dark brown pile. The ventral apex of the femur is equipped with numerous fine black bristles; middle femora and anterior femora provided with long, crinkly, bushy, pale yellow pile, especially upon the basal three-fifths. Posterior surfaces of the middle and anterior tibiae with rather long, similarly colored pile, their anterior surfaces with short yellow pile.

Wings: heavily margined with dark brown that grows just a little lighter throughout the marginal and submarginal cells. The submarginal cell, the posterior margin of the third longitudinal vein, the whole basal half and the whole anterior half of the first basal cell filled with brown.

FEMALE.—Similar to the male; the third antennal joint tapering and not quite so slender, but pointed; the front feebly shining black; the ocular marginal pile not quite so extensive, with a few black hairs in the middle of the front. The vertical pile, as in the male, is black.

Thorax: the anterior patches of tomentum are more yellow in color, are smaller and might easily be evanescent in other individuals. The obscure marginal pile of the transverse suture is still more obscure and almost wanting.

Abdomen: black instead of brown and almost

wholly short, black appressed pilose. Only the lateral margins of the segments with yellow pile, the posterior marginal yellow tomentose band of the first segment present but less conspicuous.

Legs: darker than in the male, all of the femora black, the apices of the anterior four narrowly, of nearly the whole inner surface of the hind pair and its outer apical fourth dark brown. All of the femora lack the long yellow pile that is present in the male. The pile on femora and tibiae, though much shorter, is wholly pale yellow, the ventral apical setae of the hind pair and the antero-ventral surface of the anterior tibiae excepted. The setae of the posterior femora are black and the antero-ventral surface of the anterior tibiae covered with very dense, somewhat shining, reddish bristly pile similar to that upon the ventral surface of the anterior tarsi. This anterior tibial pile is not greatly different from the male except that it is dark red in color and appears to extend more widely over the anterior surface.

Wings: similar to the male.

TYPE MATERIAL.—Holotype, male, middle Rio Ucayali, Peru, November 17, 1923 (H. Bassler); allotype, female, same locality and collector, November 18, 1923; paratype, female, Rio Huallaga, Peru (H. Bassler), in the author's collection.

Meromacrus strigulus, new species

Related to *aemulus* Williston, but the posterior half of the abdomen is black and black setose; hind tibiae wholly light yellowish brown. Also related to *abdominalis* Sack.

FEMALE.—Length 10 mm.

Head: vertex black, obscured by dark brown pollen which is also widely present over all of the front except upon the shining, bare, black lower third, and except that just below the ocelli the more yellowish pubescence that borders the frontal margin of the eyes extends across the upper portion of the front. The pile of the front is black with some black hair behind the ocelli, the entire upper half of the occiput is covered with thick, light, yellowish brown tomentum. The face is shining black with pale yellowish gray pubescent stripes on either side bordering the eyes and running down to the epistoma. On the upper part of these stripes toward the outer margins of the face there is considerable whitish yellow scalelike pile, a little of which continues up very narrowly along the frontal orbits. There is a patch of gray pubescence in the midline beneath the antennae. The cheeks are bare, shining brownish black. The first and second joints of the antennae are dark brown; the third joint is lighter, one and one-half times as long as wide; the arista light brown.

Thorax: the mesonotum is dark brown in ground color, over which is a conspicuous

pattern of light yellowish brown tomentum and some blackish vittae in spots. There is a stripe of light tomentum running diagonally from near the anterior end of the median tomentose stripe to connect narrowly with the lateral ends of the transverse sutural stripe. The transverse sutural stripe of tomentum is continued from the inner end of the suture to the lateral margins where it forms a rounded spot and is slightly narrowed before it joins the spot. On the posterior margin of the mesonotum before the scutellum there is a conspicuous fascia of similar tomentum bordering the posterior half of the post calli, and this fascia is broadly, triangularly produced in the midline to send forward a median vitta all of the way to the anterior margin of the mesonotum. This vitta is of the same width as the transverse sutural fascia and is separated from this and the anterior fascia by a distance equal to its own width. Anteriorly on either side of the median vitta there is an opaque blackish vitta and a conspicuous, oval, opaque, black spot laterally between the posthumeral and sutural tomentose stripes; laterally just behind the transverse suture there is a suggested continuation of this black spot. Scutellum light brown, black pilose, a scant marginal fringe pale in color, and a few pale hairs on the disc.

Abdomen: chiefly black in ground color, the posterior margin of the third, fourth and fifth segments becoming narrowly brownish. The second segment has on either side a large but very diffuse, somewhat elongate, narrowly sub-basal spot of light brown which is directed posteriorly. The pile over this spot is flat-lying and golden, elsewhere on this segment, except in its extreme lateral margin, it is appressed, black setose. There is creamy brown tomentum on the abdomen as follows: a conspicuous, wide, appressed fascia parallel-sided over the posterior two-thirds of the first segment which is, however, evanescent in the corners of this segment and does not extend into the anterior lateral extension of the first segment. There is a similar, somewhat less wide but continuous basal fascia on the third segment reaching the lateral corners narrowly; upon the fourth segment there is a similar, still narrower fascia. While these last two fasciae are connected across the midline, they are slightly narrowed there. The pile of the third and remaining is almost wholly appressed, black setose but with some reddish golden setae posteriorly on the fourth segment.

Legs: chiefly light yellowish brown, the hind femora diffusely darker brown upon the basal two-thirds. Pile of the legs pale in color except for black pile on the dorsal surfaces of the tarsi and for black setae upon the distal ventral portion of the middle and hind femora.

Wings: anterior border of the wings brown; the area left in the submarginal cell by the dip of the third vein and the costal, subcostal cell just beyond the stigmal cross vein is clear.

HOLOTYPE.—Female, middle Rio Ucayli, Peru, December 1, 1923 (H. Bassler).

Meromacrus brunneus, new species

Figure 8

This dark blackish brown fly is not close to any described species. It belongs to the group with long pile on venter and femora, such as *melmoth* Hull. It is characterized by the evanescence of the sutural stripe laterally and the complete absence of a medial tomentose stripe with the substitution of black pile.

MALE.—Length 16 mm.; wing 10.5 mm.

Head: vertex shining black, quite small; the upper part of the occiput yellow tomentose. The silver pile of the occiput begins some distance away from the occiput, yet, owing to the breadth of the head, it begins almost at the top of the eyes; there are a few yellow hairs on the lower part of vertex below the ocelli. Ocelli large, set close to the eyes. The front is much rounded, flat in profile, considerably thrust forward; it is shining black and bare except on the sides; the pile on the sides of the front and of the face, where it is much longer, is shining, yellowish white. On the front opposite the antennae and widely on the face, there is much thick silver pubescence that runs as a broad band down to the epistoma. Cheeks and middle of face shining black and bare. The middle of the face is very gently convex but concave beneath the antennae. The antennae are short, the second and third joints in length subequal; the third joint is pointed bluntly, ventroapically; it is somewhat truncate dorsally. Arista thickened and pale.

Thorax: dorsum of the thorax is dull, somewhat shining black, with a band of yellow tomentum diagonally placed upon the anterior part of the thorax running from each side of the humeri to the base of the suture. Lying along the mesial two-thirds of the transverse suture, widely separated from the aforementioned band, is a much more slender, short band of similar tomentum. Just before the scutellum there is a transverse band of yellow tomentum, which, while it is a little thicker in the middle, is in no way produced forward medially. The post calli ventrally have long thick yellow hair. Humeri and pleura are without tomentum. Scutellum basally blackish, posteriorly light brown, everywhere black bristly, except on the extreme base and margin. There is no tomentum on the scutellum.

Abdomen: broad basally, of typical *Meromacrus* shape. There is a posterior marginal narrow band of yellow tomentum on the first segment; it is widely separated from the sides and basal corners of the abdomen. There is a similar, even narrower, band of tomentum on the extreme base of the third segment; it barely reaches the sides and grows narrower toward the middle and is widely evanescent in the middle. There is a similar band at the base

of the fourth segment, not separated in the middle. The lateral margins of all the segments are yellow pilose; the posterior median part and the lateral third of the fourth segment are sparsely yellow pilose. The anterior middle part of the fourth segment and most of the second and third segments are appressed, black setose. Hypopygium very prominent; dark reddish.

Legs: everywhere dark black, except the tarsi which appear to be dark brown. Squamae dark brown, the halteres orange, yellow tipped. Hind femora very thick, the thickening greatest in the middle; there are brushy bristles along the ventral margin, and near the apex is a patch of stiff, black, spinous bristles. Base and posterior ventral part of middle femora and anterior femora covered with a brush of long, thick, crinkly, pale yellow hair.

Wings: with anterior half of the wing brown, the vena spuria heavily chitinized, the wings pilose; the stigmal cross vein is prominent.

HOLOTYPE.—Male, Wismar, British Guiana, November 20–December 11, 1931 (A. S. Pinkus).

Meromacrus canusium Walker

Figure 1

The type was studied and illustrated by the author while visiting the British Museum (Natural History). It appears to be related to *pratorum* Fabricius. It is characterized by its orange brown color and the configuration of the tomentum. The humeri are reddish brown; the scutellum is covered with numerous black short stubby bristles which are much appressed and with longer delicate yellow hair. The first segment of the abdomen is black, the ground color shining broadly in the middle, the lateral third of the segment with thick, rather long tomentum. The middle of the second segment laterally has black, stubby, appressed pile; this pile extends medially down the middle third clear to the posterior margin. The posterior margin of the third segment, somewhat more broadly in the middle, is similarly pilose. The wings are yellow on the basal border, thence brown anteriorly nearly to the tip. The hind coxae are silver pubescent; there is a nearly upright band of brownish yellow tomentum upon the middle of the pleura.

Meromacrus canusium was described by Walker in the genus *Milesia* from Cape of

Good Hope; the locality must be regarded as doubtful and is probably an error inasmuch as all other known species are Neotropical.

Meromacrus opulentus Bigot

Figures 2, 3

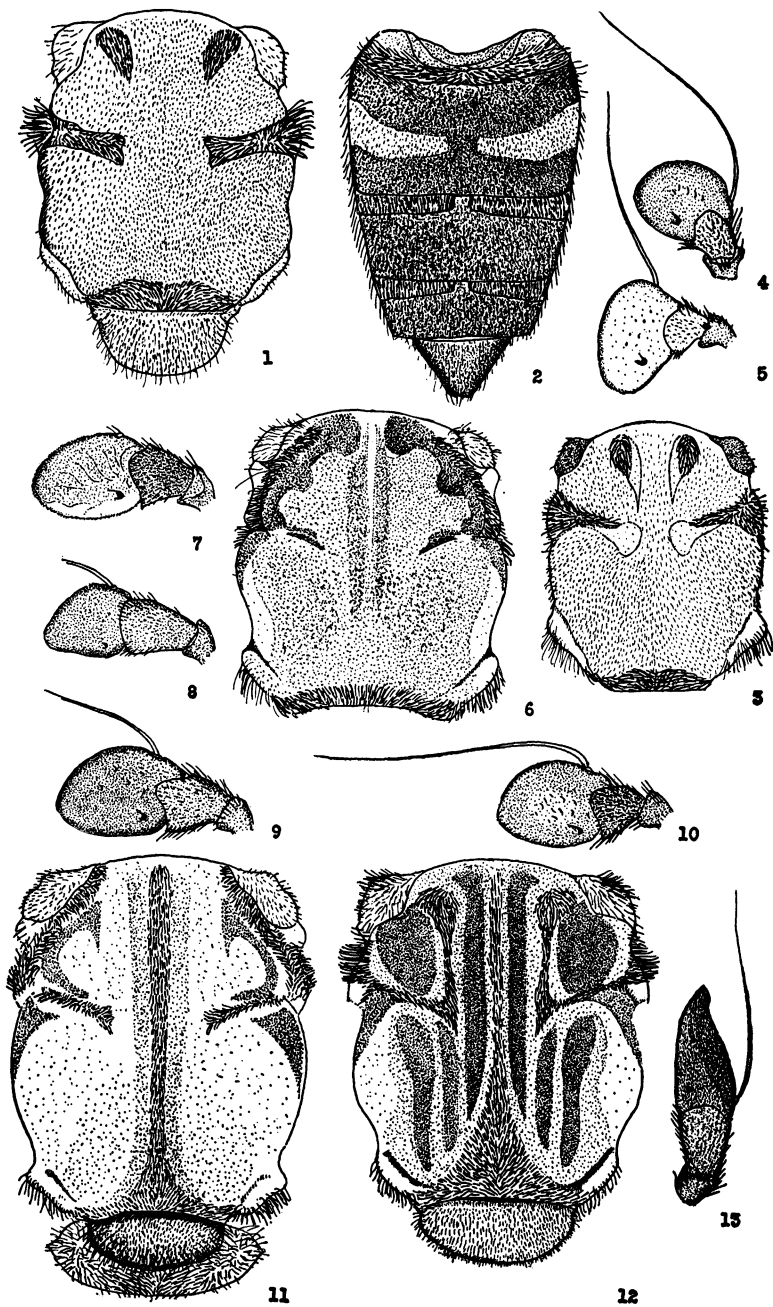
The type was studied and drawn at the British Museum (Natural History). This is a very large species. There is a narrow, divided, laterally expanded, yellow brown, non-tomentose fascia upon the second segment of the abdomen. The first segment and base of third and fourth segments are yellow tomentose. The hind femora are basally black but narrowly red at the base and upon the outer two-fifths; their pile is entirely yellow except for ventral apical bristles and a few dorsal ones at tip. The antennae are black; facial stripe broad and black; margin of wing brown, not yellow, at base.

Meromacrus basigera Walker

This species, described as *Eristalis basigera* Walker (1860), appeared, upon examination of the types, to be conspecific with *Meromacrus milesoides* Bigot (1880). The species is figured by Sack.

Meromacrus ghiliani Rondani

Type, male. Length 14 mm. The species is described by Rondani as follows. Black in color, the third antennal joint blackish brown, the eyes bare. Face pale yellow pollinose and yellow pilose with the exception of a black median stripe and black cheeks behind. Front in the middle black, on the sides yellow pilose. The dorsum of the thorax is black; anteriorly it has two yellow pilose punctate spots and posteriorly a yellow fascia in front of the scutellum. Scutellum blackish upon the base, blackish brown toward the apex. Squamae whitish, the border black with a white fringe. Abdomen black. Upon the first segment is a transverse yellow pilose cross band, and there is a second one upon the base of the third segment. The sides of the second segment are yellow pilose; the sides of the third and fourth have whitish pile. Legs black, yellow pilose. The femora below have long hair and blackish spines apically; anterior tarsi brown above, yellow pilose beneath; the middle and hind tarsi are wholly reddish. The wings have the anterior border rusty brown, the costal and subcostal cells yellowish. Brazil. Not seen.



FAGE del.

- Fig. 1. *Meromacrus canusium* Walker, mesonotum and scutellum.
 Fig. 2. *Meromacrus opulentus* Bigot, abdomen.
 Fig. 3. *Meromacrus opulentus* Bigot, mesonotum.
 Fig. 4. *Meromacrus potens* Curran, antenna.
 Fig. 5. *Meromacrus ruficus* Wiedemann, antenna.
 Fig. 6. *Meromacrus simplex* Schiner, mesonotum.
 Fig. 7. *Meromacrus currani*, new species, antenna.
 Fig. 8. *Meromacrus brunneus*, new species, antenna.
 Fig. 9. *Meromacrus acutus* Fabricius, antenna.
 Fig. 10. *Meromacrus acutus* Fabricius, antenna.
 Fig. 11. *Meromacrus fucatus* Hull, mesonotum and scutellum.
 Fig. 12. *Meromacrus auriferus*, new species, mesonotum and scutellum.
 Fig. 13. *Meromacrus pluto*, new species, antenna.

