

# NOTES ON AMERICAN TWO-WINGED FLIES OF THE FAMILY SAPROMYZIDAE

By J. R. MALLOCH

*Of the Biological Survey, United States Department of Agriculture*

Through a coincidence Dr. F. Hendel and the present writer recently published papers<sup>1</sup> dealing with South American Sapromyzidae. Doctor Hendel included all the genera of the family known to him, while I dealt only with South American species. As some of the new genera erected contain species which are not rare, it is not remarkable that several synonyms resulted, and those which I am certain of are noted below.

## Genus NEOMINETTIA Hendel

This generic name was proposed by both authors (Malloch, p. 9), and *contigua* Fabricius was cited as genotype by both. As Hendel's paper antedates mine, the genus should be credited to him.

## Genus DRYOMYZOTHEA Hendel

My genus *Dryomyzoides* is the same as this, but my genotype, *advena* Malloch, is apparently distinct from his, *setinervis* Hendel.

## Genus DEUTOMINETTIA Hendel

This genus was erected for a species, *pulchrifrons* Hendel, which has most of the characters of *Minettia* Robineau-Desvoidy, differing in having the scutellum haired on the disk. I have before me a species which is evidently referable to the genus; and though the face is a little more convex than in normal *Minettia*, it is not so much so that I would place it in the group with markedly convex face. I have not seen the genotype, so can not say whether it has the mid tibia with well-developed bristles on the posterior surface; but if it has, and its similarity to the other included species leads me to believe so, it might be better to base the generic distinction on

<sup>1</sup>Hendel, Encyclopédie Entomol., Diptera, vol. 2, pp. 103-142, 1925, and Malloch, Proc. U. S. Nat. Mus., vol. 68, art. 21, pp. 1-35, 1926.

the presence of these rather than on the form of the face and the setulose scutellum. In this case the genus would contain the genotype and four species known to me—*frontalis* Macquart, *assimilis* Malloch, *geniseta* Malloch, and the species described below. Only the genotype and the last of these have the scutellum haired on the disk, and these two and *frontalis* have the frons with a pair of velvety black marks in front. However *pulchrifrons* may not have mid tibial setulae.

I present below a key for the separation of the above-mentioned species and the new one described herein.

## KEY TO THE SPECIES OF DEUTOMINETTIA

1. Frons with two black marks in front; scutellum in some species with distinct setulose hairs on disk in addition to the four marginal bristles.....2  
Frons yellow, unspotted; scutellum with the disk bare, only the four marginal bristles present.....4
2. Wings without dark markings.....*bimaculata*, new species.  
Wings with distinct dark markings.....3
3. Only the third wing vein dark at apex; disk of scutellum setulose.  
*pulchrifrons* Hendel.  
Costal margin dark brown, more broadly so from opposite inner cross vein to beyond apex of fourth vein, the dark color on apices of third and fourth veins narrowly divided by a longitudinal hyaline streak inwardly, both cross veins broadly dark brown, fifth vein faintly clouded; disk of scutellum bare .....*frontalis* Macquart.
4. Cross veins of wings very distinctly clouded.....5  
Cross veins of wings almost imperceptibly clouded.....*geniseta* Malloch.
5. Costa without an apical suffusion; mid tibia with about three rather long posterior bristles; hind femur with at least one evident preapical anteroventral bristle.....*assimilis* Malloch.  
Costa with a trace of an apical suffusion; mid tibia with about seven short posterior setulae; hind femur without an evident preapical anteroventral bristle.....*approximata*, new species.

Should the presence of scutellar setulae be considered as the distinctive generic character, the four species lacking these would then require to be placed in a separate genus, but the absence or presence of similar hairs has not been considered as sufficient grounds for the erection of genera in related families such as Helomyzidae.

A careful examination of Hendel's description of his genus *Allominettia* and its genotype, *maculatifrons* Hendel, leads me to conclude that this is the same species which I have identified as *frontalis* Macquart.<sup>2</sup> Hendel's specimens came from Peru, while those I had came from Costa Rica. He makes no mention of the mid tibial bristles, but there is nothing remarkable in that, as this character has been ignored by all writers who have dealt with the family until the appearance of my recent papers on the Oriental species of *Homoneura sens. lat.* As indicated in my previous paper,

<sup>2</sup> Hist. Nat. Dipt., vol. 2, pt. 3, p. 346, from Brazil.

definite decision as to the identity of Macquart's species may depend upon the discovery of his type.

DEUTOMINETTIA APPROXIMATA, new species

*Male*.—Glossy fulvous yellow, the center of frons shining; antennae and palpi yellow. Both cross veins of wings distinctly, but not broadly, clouded, costa apically slightly suffused with brown.

Anterior orbital bristles over half as long as posterior pair; ocellars minute; postverticals long; arista plumose; face almost flat, glossy, orbits whitish dusted. Thoracic bristles long and strong, anterior sternopleural very short and fine. Mid tibia with about seven short posterior bristles; mid femur without anteroventral bristles. Inner cross vein a little beyond middle of discal cell.

Length, 6 mm.

One male, Trinidad River, Panama, May 2, 1911 (A. Busck).

*Type*.—Cat. No. 40965, U.S.N.M.

DEUTOMINETTIA BIMACULATA, new species

*Male and female*.—Testaceous yellow, distinctly shining. Orbital stripes glossy, ceasing at anterior orbitals, a velvety deep black mark on each side from anterior orbital to anterior margin of frons which extends posteriorly, forming a wedge-shaped mark between orbit and eye almost as far as posterior bristle; parafacials silvery. Abdomen with a faint dark apical line on each tergite in male. Legs yellow. Wings hyaline. Halteres yellow.

Frons slightly widened anteriorly, with some microscopic surface hairs, all bristles long and strong; arista plumose; face slightly bulging out over mouth, a little convex; eye narrowed below, slightly emarginate on lower half behind; two strong bristles on lower part of occiput. Thorax with three postsutural dorsocentrals, about eight series of introdorsocentral hairs, the intra-alar strong, disk of scutellum black setulose, and the anterior sternopleural bristle very weak. Fore femur without an anteroventral comb; all tibiae with preapical dorsal bristle, mid pair each with a series of eight or more distinct posterior setulae. Inner cross vein of wing close to middle of discal cell; apical section of fourth vein but little longer than preceding section; first posterior cell slightly narrowed apically.

Length, 6-7 mm.

One male, Trinidad Rio, Panama, May 1, 1911; allotype and one male paratype, same locality, March 16 to 23, 1912 (A. Busck).

*Type*.—Cat. No. 40708, U.S.N.M.

Genus ASILOSTOMA Hendel

This genus was erected for the reception of a single species, *enderleini* Hendel, from Bolivia. Before me there is a species undoubt-



edly belonging to this genus, and another which agrees with the general description of the genotype, but differs in the bristling of the vertex and in some other respects. I deprecate the erection of monobasic genera and, as I find included in some related genera species which differ in a similar manner, I do not propose to erect a new genus for the species now before me.

All of the species have the basal and second antennal segments of about the same length, the first haired below, the third not less than six times as long as wide at middle, the arista plumose, face prominently protruded and convex, thorax with two pairs of postsutural dorsocentrals, no presutural (posthumeral), and one sternopleural; scutellum bare, flattened above, and with four bristles. The venation is different in *palpalis* from that of the other species. In three the wings are marked with fuscous, and the second, third, and fourth segments of fore tarsi of all five are compressed.

I present below a key for the identification of the species, the genotype being unknown to me except from the description.

KEY TO THE SPECIES OF ASILOSTOMA

1. Distance from bases of antennae to lower margin of face not half as great as that from bases of antennae to vertex; frons testaceous yellow, except the dark ocellar spot, face concolorous, the lower lateral angles and most of the cheeks glossy black; labrum large, its area almost as great as that of face, glossy black; palpi deep black, and much dilated; anterior pair of orbital bristles about as long as posterior pair, and close to middle of frons.
 

palpalis, new species.

Distance from bases of antennae to lower margin of face not much less than that from bases of antennae to vertex; frons and face black; labrum narrow; palpi slender.....2
2. Anterior pair of orbital bristles not half as long as posterior pair; legs entirely stramineous.....3
 

Anterior pair of orbital bristles fully as long as posterior pair; legs yellow, fore tibia and fore metatarsus, except apex of latter, black.
 

enderleini Hendel.
3. Frons and face glossy black.....pallipes, new species.
 

Frons with a large velvety black mark in front, the remainder glossy black...4
4. Face entirely glossy black.....atriceps, new species.
 

Face and cheeks entirely glossy yellow.....flavifacies, new species.

ASILOSTOMA PALPALIS, new species

*Male*.—Head shining testaceous yellow, ocellar spot, a large mark on each side of upper half of frons, and the lower lateral angle of face and contiguous portion of each cheek, black; upper side of basal segment of antennae, and the third segment except base fuscous; palpi black, arista yellow, the hairs brownish. Thorax and abdomen brownish yellow, a dark streak over each humerus, and a velvety black vitta along upper half of pleura and sides of abdomen.

Legs testaceous yellow, a mark on apices of fore femora, another near bases of fore tibiae, and the fore metatarsi except their apices, black, the dilated portion of fore tarsi whitish. Wings marked with fuscous as in Figure 2.

Frons fully twice as long as wide, the surface uniform in texture; ocellars microscopic; cheek almost linear; face concave below antennae, the lower half prominently convex (fig. 1); third antennal segment about seven times as long as its width at middle. Thorax appearing finely granulose on dorsum, with two or three closely placed series of microscopic intradorsocentral hairs, and a series of similar hairs in line with each series of dorsocentrals; prescutellar acrostichals lacking. Fore femur without bristles or anteroventral



FIGS. 1-2.—1. HEAD OF ASILOSTOMA PALPALIS FROM SIDE. 2. WING OF ASILOSTOMA PALPALIS

comb; tibiae with the preapical dorsal bristle very short except on mid pair. Venation as in Figure 2.

Length, 5.5 mm.

One male, Barro Colorado, Panama Canal Zone, July 27, 1923 (R. C. Shannon).

*Type*.—Cat. No. 40710, U.S.N.M.

*ASILOSTOMA PALLIPES*, new species

*Female*.—Head glossy black, antennae testaceous, third segment black except extreme base; aristae and the hairs, except those on basal half on upper side, white; palpi fuscous. Thorax colored as in *palpalis*, but without black markings. Abdomen brownish black. Legs entirely pale yellow. Wings marked with fuscous as in Figure 3. Halteres yellow.

Frons a little longer than wide, posterior orbitals about middle of frons, and fully twice as long as anterior pair; antennae as in *palpalis*; face but slightly concave below antennae, and quite prominently convex below, much as in genotype, the labrum narrow, cheek about as high as width of third antennal segment. (Fig. 4.) Thorax not so long as in *palpalis*, the anterior pair of dorsocentral bristles much

nearer to suture, and the intradorsocentral hairs farther apart. Fore femora with two or three fine posteroventral bristles. Venation as in Figure 3.

Length, 3.5 mm.

One female, Trinidad Rio, Panama, March 23, 1912 (A. Busck).

*Type*.—Cat. No. 40709, U.S.N.M.

ASILOSTOMA ATRICEPS, new species

*Female*.—Head black, upper portion of frons to below the upper orbital bristle on sides and to a point a little higher in middle distinctly shining, anterior portion deep velvety black, with a white dusted mark on each margin above level of bases of antennae; face glossy, with a purple tinge; basal two antennal segments testaceous yellow, third fuscous; aristae white, the long hairs at base above dark; palpi fuscous. Thorax pale brown, more or less dusted on dorsum and not noticeably shining except on sides of mesonotum, propleura, scutellum, and metanotum testaceous yellow, a large mark in front



FIGS. 3-4.—3. WING OF ASILOSTOMA PALLIPES. 4. HEAD OF ASILOSTOMA PALLIPES FROM SIDE

of each wing base velvety black. Abdomen brown, shining. Legs pale stramineous, the fore tarsi palest. Wings grayish hyaline, with faint brown clouds along fifth vein, outer cross vein, apex of second vein, and on a short subapical section of third and fourth veins. Halteres yellow.

Vertex with inner pair of bristles long and strong, outer pair lacking, postverticals minute, anterior orbital bristles very small; third antennal segment about six times as long as wide; arista long haired basally above, the hairs decreasing rapidly in length apically, the lower side short haired; face in type damaged, but evidently not so much swollen as in some of the other species. Thorax normal, the two pairs of dorsocentral bristles long and strong. Legs long, fore tarsi thickened. Inner cross vein a little beyond middle of discal cell; second vein slightly arched with costa, third and fourth slightly convergent on apical sections to near apices.

Length 2.75 mm.

One female, Higuito, San Mateo, Costa Rica (P. Schild).

*Type*.—Cat. No. 40954, U.S.N.M.



**ASILOSTOMA FLAVIFACIES**, new species

*Female*.—Head as in preceding species but the face and cheeks are honey yellow. The thorax is colored as in *atriceps* but the anterior margin is more yellowish and vittate, and the sternopleura is yellow, not dark, and the dark mark on sides of metathorax is deeper black. Abdomen shining fuscous. Wings with but faint indications of the cloud on fifth vein and outer cross veins, none on apices of other veins.

Structurally similar to *atriceps*.

Length, 3 mm.

Type and one defective paratype, Higuito, San Mateo, Costa Rica (P. Schild.).

*Type*.—Cat. No. 40955, U.S.N.M.

**Genus BLEPHAROLAUXANIA** Hendel

This genus has the base of third vein setulose to beyond the inner cross vein, the face convex below, and two pairs of normal backwardly inclined orbitals. The most striking character of the genus is the presence of fine hairs on the upper surface of the third antennal segment which are as long as, or longer than, the width of the segment itself. There is no other genus except the next following one so far described in which such hairs occur.

**BLEPHAROLAUXANIA TRICHOCERA** Hendel

This is the only known species of the genus, and occurs in Peru. It is a yellow species, with the wing veins mostly browned. The arista is very long haired and the thorax has three pairs of postsutural dorsocentrals.

I have not seen the species.

**Genus PLATYGRAPHIUM** Hendel

This genus lacks the presutural (posthumeral) bristle, has the third antennal segment three times as long as wide, and long haired on upper surface as in the preceding genus. It differs from that genus in having no presutural bristle, the third wing vein without bristles, and the arista with the hairs about half as long as width of third antennal segment. *Platygraphium penicillatum* Hendel is the only known species, and it is recorded only from Bolivia. It is yellow in color, with the abdomen browned, and has the wings grayish hyaline, with the base and costa yellowish. It is unknown to me.

**Genus ERIURGUS** Hendel

This genus lacks the presutural bristle, has the wing veins without bristles, and the third antennal segment orbicular and without hairs

above. The distinguishing character is the presence of long fine hairs on the posterior and ventral surfaces of the fore femora and tibiae. *Eriurgus pilimanus* Hendel is the only known species of the genus and occurs in Peru. It is entirely yellow in color and similar in most respects to *Dryomyzothea setinervis* Hendel.

The genotype from which the description was made is a male and it is possible the female may not have long hairs on the forelegs.

#### Genus ALLOMINETTIA Hendel

For discussion of this genus see under *Deutominettia* in this paper.

#### Genus SCUTOLAUXANIA Hendel

This genus has the scutellum with hairs above, and the stem of veins 2 and 3 setulose as in *Xenochaetina* Malloch. The thorax has two pairs of postsutural dorsocentrals, and the arista is long haired. *Scutolauxania piloscutellaris* Hendel is the only known species of the genus; it occurs in Peru. A yellow species resembling *Allogriphoneura nigromaculata* Hendel except that there are no black spots at apex of the scutellum. It is unknown to me.

#### Genus RHABDOLAUXANIA Hendel

There are very slight distinctions given for this genus, the principal being the lack of ocellar bristles, and the very strong orbitals, of which the anterior pair is longest. *Rhabdolauxania schnusei* Hendel, is a yellow species, with six dark spots on each wing, the one at apex of second vein being very large. Bolivia and Peru. *Rhabdolauxania laevifrons* Hendel, is a smaller species, with less conspicuously marked wings, the spot at apex of second vein being very small. Peru.

#### FREYIA, new genus

This genus resembles *Lauxania* Latreille in many respects, but is readily distinguished from it by the much shorter third antennal segment, slightly incurved anterior orbitals, very short ocellars, conspicuous transverse depression below middle of face, lack of presutural (posthumeral) bristle, and the presence of but one pair of postsutural dorsocentrals and no acrostichals. The sixth wing vein is also extremely short, barely extending beyond anal cell. In Hendel's key it runs to *Asilostoma* but it is readily distinguished from it by the shape of the head, presence of but one pair of dorsocentrals, etc.

I dedicate the genus to Dr. R. Frey, who has done some fine work in this and related families of Diptera.

*Genotype*.—The following species.



## FREYIA NIGRITA, new species

*Female*.—Glossy black, convex upper portion of face brownish yellow, third antennal segment at insertion of arista, and base of latter, yellow; arista apically, and its hairs, white; fore legs with the trochanters, basal two-thirds of femora, and extreme bases of tibiae, yellow; mid and hind tibiae and tarsi yellow, apices of the tibiae black. Wings yellowish, slightly darker at bases. Knobs of halteres black.

Head in profile as Figure 5; frons uniform in texture, anterior orbitals slightly incurved, almost as long as, but much finer than, posterior pair; basal and second antennal segments equal in length, the former not haired below; hairs on arista rather dense, and about half as long as width of third antennal segment; postverticals rather short; outer verticals about half as long as inner pair. Surface hairs on mesonotum sparse and short; anterior sternopleural weak; scutellum slightly flattened above, rounded in outline, basal bristles shorter than apical pair. Fore legs slightly thickened, the femur with 2-3 bristles on apical half of posteroventral surface and no anteroventral comb; all tibiae with preapical dorsal bristle. Inner cross vein close to middle of discal cell, outer one at fully its own length from apex of fifth vein; penultimate section of fourth vein less than one-third as long as ultimate.



FIG. 5.—HEAD OF FREYIA NIGRITA FROM SIDE

Length, 3 mm. exclusive of antennae.

One female, Higuito, San Mateo, Costa Rica (P. Schild.).

*Type*.—Cat. No. 40879, U.S.N.M.

## Genus HALIDAYELLA Hendel

This generic name was proposed by Hendel as a substitute for *Calliope* Haliday, the latter being preoccupied.

When my previous papers were written I was uncertain of the characters of *Calliope*, and referred the American species *flaviceps* Loew to the genus. Hendel cites *aenea* Fallen as the genotype of *Halidayella*, the sole original species of *Calliope*, *scutellata* Meigen, being a synonym of this; and I have that species, *elisae* Meigen, and *atrocaerulea* Becker, before me now. These species have the face entirely glossy black, distinctly convex on upper half, and with a transverse depression at middle, below which it is almost flat or slightly convex; the thorax has three pairs of strong postsutural dorsocentrals and no intra-alar; and the frons is shining, with the orbits broad, and but poorly distinguished from the interfrontalia. In the males of these species there is a dense patch of short black

setulae at apices of ventral surfaces of the hind tibiae. I have not seen the female of any of the three species.

I have seen no species of the genus from America, so the genus should be deleted from our list.

#### PSEUDOCALLIOPE, new genus

This genus has the face evenly convex, without a transverse depression near middle; the frons almost uniformly glossy; the arista pubescent; thorax with the anterior one of the three pairs of post-sutural dorsocentrals reduced in size, and a short but distinct intralar present.

*Genotype*.—*Lauzania flaviceps* Loew.

The presence of the intra-alar bristle and lack of a transverse impression of face, and a ventral patch of setulae on hind tibia, distinguish the genus from *Halidayella* to which it runs in Hendel's key to the genera of the world.

The species described as *Minettia verticalis* in this paper resembles *flaviceps* in some respects, but the face and frons are not glossy, and the former is not so noticeably convex.

#### Genus MINETTIA Robineau-Desvoidy

*Minettia* ROBINEAU-DESVOIDY, Myodaires, 1830, p. 646.

I described several species of this genus in the paper already referred to but gave no synoptic key. Doctor Hendel also described a few species in his paper. Below I am presenting a key to the species which I have been able to identify, but there are no doubt many more which are unknown to me, so that care must be exercised in using it for identifications. I omit the North American species which do not occur south of the United States so far as I know.

I have included *Sapromyza schwarzi* Malloch in the key because it may be confused with this genus by those not well versed in the generic distinctions.

#### KEY TO THE SPECIES OF MINETTIA

1. Face yellow, with at least a black central spot on lower margin; scutellum with a black spot at base of each of the apical bristles, which may sometimes be continued forward toward base of scutellum, forming two dark vittae.....2
- Face either black or yellow, if yellow and with a black central spot the scutellum is without black apical spots.....8
2. Wings with at most the cross veins slightly clouded, no other markings present.....3
- Wings with quite conspicuous dark markings in addition to any on cross veins.....6
3. Mesopleura and sternopleura each with a small round black spot; antennae entirely yellow.....slossonae Coquillett.
- Pleura with, or without, two partial blackish vittae, no round black spot on the mesopleura.....4

4. Palpi and antennae yellow-----zebroides Hendel.  
Palpi black at apices-----5
5. Antennae entirely yellow; a brown mark on each cheek.  
octopunctata Wiedemann.  
Basal two antennal segments black, third yellow; no dark mark on cheek,  
but one on each side of labrum below eye-----picticornis Coquillett.
6. Face with a round black spot above middle on each side and one in center of  
lower margin; a blackish spot on each cheek below eye; basal two antennal  
segments black-----tripuncticeps Malloch.  
Face with but one black mark, in center of lower margin; no dark mark  
on cheek; antennae entirely yellow-----7
7. Thorax with four blackish vittae; a dark mark about middle of apical section  
of fourth vein-----octovittata Williston.  
Thorax without dark vittae; no dark spot near middle of apical section of  
fourth vein, but one at its apex-----evittata Malloch.
8. Face yellow, with a black central mark-----9  
Face either entirely yellow or entirely black-----10
9. Forelegs and antennae testaceous yellow; thorax usually very faintly vittate.  
valida Walker.  
Forelegs black from apical third of femora to apices of tibiae; antennae  
fuscous, base of third segment yellowish; thorax conspicuously quadri-  
vittate with black on dorsum-----Sapromyza schwarzi, new species.
10. Scutellum yellow, with a black spot at base of each apical bristle-----11  
Scutellum black or yellowish, without evident black apical spots-----14
11. Wings hyaline; mesonotum with four large black spots.  
nigripunctata, new species.  
Wings partly infuscated; mesonotum without black spots-----13
12. Wing marked almost exactly as in *Neominettia contigua* Fabricius, with two  
brown spots on third vein between inner cross vein and apex which are  
connected with the broad brown costal streak, a conspicuous cloud over  
each cross vein, and one on apex of third vein and another on apex of  
fourth, the two last connected along costa with the costal cloud.  
tucumanensis, new species.  
Wing without evident spots on third vein between inner cross vein and  
apex-----12
13. Wings broadly brown on costal region, the infuscation extending almost to  
third vein up to a point nearly in line with outer cross vein, and over third  
vein from there to apex, the fourth and fifth veins not narrowly clouded;  
abdomen with a central black spot on fourth and fifth tergites, and with-  
out conspicuous lateral apical black marks-----bipunctata Say.  
Wings narrowly dark brown along costa from apex of auxiliary vein to apex  
of fourth, more broadly so on both cross veins, narrowly brown on third  
and fourth veins from inner cross vein to apices, and on fifth from near  
base to apex; abdominal tergites each with a narrow, centrally interrupted,  
black fascia on apical margin, broadest on sixth tergite, where it forms a  
large spot on each side, no central black spot present-----tinctinervis Malloch.
14. Thorax black or brownish black; arista long haired-----15  
Thorax yellow, sometimes with black spots or vittae; if dark brown the  
arista is only pubescent-----16
15. Thoracic dorsum velvety black and faintly vittate; scutellum brown on mar-  
gin and slightly shining; abdomen with white, almost silvery, dust on  
basal three tergites; only two pairs of dorsocentral bristles on thorax;  
wings black at extreme bases-----argentiventris, new species.



- Thorax and abdomen shining black, the former thinly bluish grey dusted, not vittate, scutellum not paler on margin than on disk; two strong, and one very weak, pairs of dorsocentral bristles present behind suture; wings slightly and almost uniformly infuscated, the extreme bases of veins yellowish.....*infuscata*, new species.
16. Wings either largely infuscated or with well-defined dark markings in addition to any that are present over the cross veins.....17  
Wings hyaline, with at most clouds over the cross veins, and rarely with a slight costal suffusion but no distinct markings; arista plumose.....20
17. Yellow species, with clean-cut markings on the wings; arista short haired..18  
Dark brown species, with the wings intensely brown on costa and gradually becoming less dark posteriorly, but with no well-defined markings; arista bare or pubescent.....19
18. Thoracic dorsum with two blackish vittae which extend to apex of scutellum, the pleura with two similar vittae, one on upper margin and the other on upper margin of sternopleura; wings marked with black as follows: A costal streak from base extending to over second vein and running obliquely across cross wing to hind margin in second posterior cell covering all of apex of wing, a cloud over inner cross vein, and another over outer one, the latter extending to apex of fifth vein and back along that vein almost to base of discal cell; in the large apical dark portion there are three hyaline spots, one in submarginal cell and two in first posterior cell; legs conspicuously marked with black.....*geminata* Fabricius.  
Thorax entirely yellow; wings each with six large blackish spots, three along costa, all of which extend more narrowly to third vein, the basal one inclosing the inner cross vein, one at apex over tips of veins 3 and 4, sometimes divided into two, one over outer cross vein and one in fifth vein just beyond middle of discal cell; legs yellow, with extreme apices of hind femora black.....*quadrata*, new species.
19. Anterior one of the three pairs of postsutural dorsocentrals distinctly proximal of middle of mesonotum, and distinctly closer to the suture than to the posterior pair; vertex not abnormally setulose.  
*brunneicosta*, new species.  
Anterior one of the three pairs of postsutural dorsocentrals distinctly behind the middle of mesonotum, and about as close to posterior pair as to suture; vertex much more strongly and numerously setulose than usual.  
*verticalis*, new species.
20. Cross veins of wings very faintly clouded; species but slightly shining; mid tibia with about seven short regular posterior setulae; hind femur with at least one preapical anteroventral bristle.  
*Deutominettia geniseta* Malloch.  
Cross veins of wings quite distinctly infuscated; species distinctly shining...21
21. Costa without any trace of a dark suffusion; mid tibia with about three rather long posterior bristles; hind femur with at least one evident preapical anteroventral bristle.....*Deutominettia assimilis* Malloch.  
Costa with a slight trace of a dark suffusion apically; mid tibia with about seven short regular posterior setulae; hind femur without an evident preapical anteroventral bristle.....*Deutominettia approximata*, new species.
- NOTE.—I have included in the above key the three species lacking the scutellar setulae and without frontal black spots which I have now placed in *Deutominettia* in this paper as there is some question as to whether they belong to the latter or not. Only a thorough revision of the family by someone who has access to a much larger amount of material than either Hendel or I have will settle the matter of generic limits.

## MINETTIA ZEBRA Hendel

This species appears to me to be the same as *tripuncticeps* Malloch, and though the description was evidently published prior to that of the latter the fact that *Minettia zebra* Kertész was described some years before should bar *zebra* as the name for the American species and validate *tripuncticeps*.

## MINETTIA ZEBROIDES Hendel

The description of this species agrees with *picticornis* Coquillett in most particulars but the palpi are given as entirely yellow, which is not the case in that species.

## MINETTIA NIGROPUNCTATA, new species

*Male and female*.—Pale testaceous yellow, with rather dense whitish dusting; antennae and palpi yellow, the thorax with eight large black spots as follows: One at suture laterad of each anterior dorso-central bristle, one between each posterior dorsocentral and pre-scutellar acrostichal, one on each side of scutellum occupying the space between the lateral and apical bristle, and one on each mesopleura at base of the bristle. Abdomen with a black central spot on one or two of the apical tergites. Legs yellow. Wings yellowish hyaline. Halteres pale.

Frons a little wider than long, narrowest behind, the orbits hardly differentiated, with the anterior bristle a little shorter than posterior and very slightly incurved at tip, postvertical bristles a little shorter than outer verticals, the latter about half as long as inner pair; ocellars very short and hairlike; no surface hairs on frons; face evenly convex; third antennal segment fully twice as long as wide; arista with its longest hairs about half as long as width of third antennal segment; cheek about half as high as eye. Thorax with three pairs of postsutural dorsocentrals, six series of intra-dorsocentral hairs, one pair of long prescutellar acrostichals, the intra-alar quite weak, four long scutellars, and one sternopleural; scutellum flattened above. Hypopygium of male quite large, lateral exposed portion about as wide and nearly as long as hind femur. Legs normal, all tibiae with a preapical dorsal bristle, fore femur without anteroventral comb. Inner cross vein a little beyond middle of discal cell; apical section of fourth vein a little over twice as long as preapical; outer cross vein at about its own length from apex of fifth vein.

Length, 3.5 mm.

*Type*.—Male, allotype, and three paratypes, Bolivia (Germain), in Deutsches Entomologisches Museum.

## MINETTIA ARGENTIVENTRIS, new species

*Male*.—Head brownish black; frons velvety black, more brownish on orbits and a narrow central vitta, and with grayish dust at bases of the bristles; antennae brownish yellow; aristae fuscous, paler at bases; face slightly white dusted; occiput testaceous on each side of lower half, and with whitish dust; palpi fuscous. Thorax deep brownish black, almost velvety on dorsum, and when seen from the side and in front with dark vittae; some slight whitish dust round prothoracic spiracle; margin of the scutellum more brownish than disk and slightly shining. Abdomen brown, first to third visible tergites with white, almost silvery, dusting which is not very dense, and is most conspicuous when viewed from in front. Legs dark brown, the tarsi except their apices testaceous. Wings yellowish hyaline, black at extreme bases and on costal vein at apex of auxiliary vein. Halteres yellow.

Frons subquadrate, anterior orbitals hardly more than half as long as posterior pair, ocellars very short and fine, postverticals short; third antennal segment fully twice as long as wide, slightly narrowed at apex; arista plumose; face with a slight but distinct hump on each side below; palpi broad. Thorax with two pairs of strong postsutural dorsocentrals, one pair of prescutellar acrostichals, about 12 series of intradorsocentral hairs, one sternopleural, the prosternal plate broad and with microscopic hairs, the scutellum convex, rounded in outline, and with four bristles, the basal pair incurved, the apical pair divergent. Abdomen stout, apices of tergites 2 and 3 bristled. Legs normal, no anteroventral comb on fore femur. Inner cross vein at about three-sevenths from base of discal cell, penultimate section of fourth vein subequal to ultimate, the latter slightly forwardly sloped apically.

Length, 6 mm.

One male, near Para, Brazil (Miss H. B. Merrill).

*Type*.—Cat. No. 40711, U.S.N.M.

This species is readily distinguished from any black one by the white-dusted abdomen and its large size. It belongs to the segregate containing the genotype, in which there are two slight but evident humps on lower portion of the face.

## MINETTIA INFUSCATA, new species

*Female*.—Head black, subopaque, slightly shining on frontal orbits, with pale gray dusting, most dense on face; antennae fuscous, base of third segment yellowish below; palpi fuscous. Thorax black, shining, the dorsum evenly and slightly gray dusted, and without vittae, pleura more densely gray dusted. Abdomen shining black, hardly dusted. Legs testaceous yellow, whitish dusted, femora



almost entirely blackened; apices of tarsi dark. Wings almost uniformly fuscous, paler along costa at base, and slightly hyaline along hind border basally. Halteres yellow.

Frons a little longer than wide, all the bristles except the ocellar pair long and strong; antennae normal; arista with its longest hairs not as long as width of third antennal segment; face almost flat; eyes tapered below, cheek very narrow. Thorax with two pairs of long strong dorsocentral bristles, in front of anterior pair a pair of short setulae, one pair of strong, prescutellar acrostichals, and about 12 series of intradorsocentral hairs; intra-alar short; only one sternopleural present. Fore femur without an anteroventral comb. Inner cross vein close to middle of discal cell.

Length, 4.5 mm.

One female, Cabima, Panama, May 29, 1911 (A. Busck).

*Type*.—Cat. No. 40957, U.S.N.M.

MINETTIA TUCUMANENSIS, new species

*Male*.—Shining pale brownish yellow. Frons except the orbits dull; antennae and palpi pale. Thoracic dorsum not vittate; scutellum with a deep black spot at base of each apical bristle. Abdomen with a black central streak on each of the apical three or four tergites. Wings clear, with the following dark brown marks: A broad costal streak from base round apex, extending to middle of submarginal cell, connecting with the dark marks on apices of veins 3 and 4 and fused with the spot over inner cross vein and the two spots on apical section of third vein, a conspicuous cloud over outer cross vein, and a fainter one on base of third vein. Halteres brownish yellow.

Frons a little longer than wide, parallel-sided, orbital and vertical bristles long and strong, ocellar pair very short and fine; face almost flat; arista pubescent; some of the bristles on lower portion of occiput quite well developed. Thorax with three pairs of strong postsutural dorsocentrals, one pair of strong prescutellar acrostichals, the intra-alar not very strong, and about 10 series of intradorsocentral hairs; both sternopleurals strong; prosternum haired. Abdomen ovate. Fore femur without a definite anteroventral comb; mid tibia without posterior setulae. Inner cross vein a little beyond middle of discal cell.

Length, 5 mm.

One male, collected at light between Tucuman and Jujuy, Argentina, on May 4, 1927, by Max Kislink, jr.

*Type*.—Male; Cat. No. 40956, U.S.M.C.

MINETTIA QUADRATA, new species

*Female*.—Shining testaceous yellow. Ocellar spot slightly darkened; antennae and palpi yellow. Thorax not vittate. Abdomen

with a dark central streak in middle of apical three tergites. Wings clear, with seven large dark brown marks as follows: An angulated streak from stigma extending over inner cross vein, a subquadrate spot on middle of fifth vein, a subquadrate mark on costa between apices of first and second veins, which is carried over third vein at less than one-half its width on costa, a similarly shaped spot at apex of second vein, a spot on apex of third vein which connects along costa with one on apex of fourth, and a large spot enclosing outer cross vein. Legs and halteres yellow.

Frons subquadrate, all bristles except the ocellar pair long and strong; arista rather distinctly pubescent; eyes rather abruptly narrowed below; cheeks narrow. Thorax with three pairs of strong dorsocentral bristles, the anterior pair close to suture, a pair of long prescutellar acrostichals, six series of intradorsocentral hairs, and the intra-alar bristles very short; sternopleura with one bristle. Fore femur without an anteroventral comb, inner cross vein about two-fifths from middle of discal cell.

Length, 3.5 mm.

One female, Cayuga, Guatemala, April, 1915 (W. Schaus).

*Type*.—Cat. No. 40958, U.S.M.C.

The black costal setulae extend rather near to apex of third vein but do not attain it.

MINETIA BRUNNEICOSTA, new species

*Male and female*.—Shining brown; the head more clay yellow, with frontal orbits and face gray dusted; thorax gray dusted, when seen from behind with four darker vittae anteriorly, the outer vittae on lines of dorsocentrals, the regions laterad of these darker; abdomen almost without dusting. Legs brownish testaceous. Wings dark brown on costal half, the dark color fading out posteriorly, and disappearing behind fourth vein. Halteres brownish yellow.

Frons nearly twice as long as wide, parallel-sided, all bristles except the ocellar pair long and strong; arista long and slender, finely pubescent; eyes narrowed below; cheek about as high as width of third antennal segment. Thorax with three pairs of postsutural dorsocentral bristles, one pair of presutural acrostichals, eight series of intradorsocentral hairs, and the intra-alar quite strong; both sternopleurals present. Fore femur without an anteroventral comb. Inner cross vein beyond middle of discal cell.

Length, 3.5–4 mm.

Female and allotype, Cano Saddle, Gatun Lake, Panama, May 13, 1923 (R. C. Shannon); paratype male, Cacao Trece Aguas, Alta vera Paz, Guatemala, April 21 (Barber and Schwarz).

*Type*.—Cat. No. 40959, U.S.N.M.

## MINETTIA VERTICALIS, new species

*Female*.—General color and habitus similar to the last preceding species, but the femora and tibiae are darker than the tarsi, the frons is only about 1.5 as long as wide, the antennae are comparatively smaller, the face more noticeably convex below, and the arista is bare. A striking feature of the species is the large number of rather strong, moderately long, bristles across the vertex. The outer cross vein of wing is slightly oblique.

Length, 5 mm.

One female, Cayenne, French Guiana (W. Schaus).

*Type*.—Cat. No. 40960, U.S.N.M.

## SAPROMYZA SCHWARZI, new species

*Female*.—Testaceous yellow, shining. Frons with a broad brown central vitta which is fully one-third of the width of frons and is bifid in front; antennae brownish fuscous, third segment yellow at base; face with a brown spot in centre of lower margin; palpi fuscous. Thoracic dorsum with four conspicuous dark brown vittae, the submedian pair the narrower and continued to beyond middle of scutellum; an oblique vitta of same color on mesopleura and a large spot on upper part of sternopleura. Abdomen in both specimens before me shriveled so that it is impossible to give details of markings, but there are evidences of dark-brown markings on the tergites. Wings clear. Legs testaceous, fuscous on apices of fore and hind femora, most of mid femora, all of fore tibiae and tarsi, and apices of mid and hind tibiae. Halteres yellow.

Frons subquadrate, of almost uniform texture, shining, and without fine hairs, anterior orbital farther from eye than posterior and much shorter than it, ocellars rather short, about equal to postverticals; arista with its longest hairs fully as long as width of third antennal segment. Thorax with two pairs of postsutural dorso-centrals, a pair of prescutellar acrostichals in line with posterior dorso-centrals, four series of intradorsocentral hairs, situated on the sides of the two submedian dark vittae, and only one sternopleural; scutellum convex. Legs normal, no anteroventral comb on fore femur. Inner cross vein a little beyond middle of discal cell, apical section of fourth vein about three times as long as preapical.

Length, 3 mm.

Two females, Cacao, Trece Aguas, Alta Vera Paz, Guatemala (Barber and Schwarz); paratype, Higuito, San Mateo, Costa Rica (P. Schild).

*Type*.—Cat. No. 40961, U.S.N.M.

This species is dedicated to Dr. E. A. Schwarz.



## Genus GRIPHONEURA Schiner

*Griphoneura* SCHINER, Novara Exped., 1868, p. 281.—MALLOCH, Proc. Biol. Soc. Wash., vol. 38, p. 75, 1925.

My paper on this genus, which appeared in May, 1925, antedates the part of Doctor Hendel's paper in which he deals with it.

## GRIPHONEURA SUFFUSA Malloch

There appears to be no doubt that *proxima* Hendel is the same as this species.

## GRIPHONEURA TRIANGULATA Hendel

This species is distinct from any known to me in having the apex of wing clouded and the cross veins with isolated clouds, the palpi black, and several other characters not found in the other species. I have not seen it.

Described from Peru.

## GRIPHONEURA FERRUGINEA Schiner

*Griphoneura ferruginea* SCHINER, Novara Exped., 1868, p. 281.

When I wrote my revision of the genus I had not seen this species, which is the genotype. It is strikingly different from the other species in color, being brownish or yellowish testaceous, with the thoracic dorsum darkest, especially laterally at the suture, and the wings are yellowish hyaline, without dark apices.

The fore tarsus in the male has the same flattened area on base of first segment as have the other species, and here it is over half the length of the segment. There are two conspicuous bristly hairs at apex of fore tibia above which extend to middle of first tarsal segment. The first posterior cell is practically closed at the apex and the bend of fourth ven is evenly rounded.

Length, 4 mm.

Locality, Higuito, San Mateo, Costa Rica (P. Schild). Two specimens in the United States National Museum.

I have compared the above two specimens with the type specimen of *ferruginea* Schiner, sent me for examination by Doctor Zerny of the Austrian National Museum, and find they agree in all particulars with it.

