

ADDITIONAL NEW SPECIES AND OTHER RECORDS OF
ACALYPTRATE DIPTERA (SAPROMYZIDAE, ASTEIIDAE,
DROSOPHILIDAE, EPHYDRIDAE AND TRYPETI-
DAE) FROM THE MARQUESAS ISLANDS*

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INTRODUCTION

In working on this material from the Marquesas I have been struck by the number of species in which sexual dimorphism is evidenced. In the Otitidae I have described *Perissoneura diversipennis* in which the wing venation is different in the sexes, and in *Prochaetops* I have noted distinctions in the wing markings and in the color of the body, in some species, apart from the normal distinctions due to sex. Here I again record similar features in yet other species and present descriptions of new species.

In the Marquesan material much interest attaches to such families as Sapromyzidae, Asteiidae, and Drosophilidae, and to those genera that are known from only this group of islands. In Sapromyzidae the one Marquesan species (*Homoneura hawaiiensis* Malloch) found outside of these islands occurs also in Hawaii, Samoa, and the Society Islands, having no doubt been distributed in commerce, though in just what manner it is impossible to conjecture. The discovery of the larval food habits may throw some light upon the matter. Ordinarily species of this family are quite limited in their range of distribution, and only a few, most of them in the same genus as the Marquesan example, of the same species are found in such widely separated regions as North America and Europe.

The taxonomist who limits his work to the fauna of a small region gradually acquires the ability to associate the sexes of dimorphic species either through the simultaneous field occurrence of the sexes or the discovery in his materials of the sexes taken in copula. But without these indicators the taxonomist who covers a large faunal scope is frequently at a loss to associate the sexes of such species reliably unless there should be but one or two species in the genus. In the Marquesas the genus *Prochaetops* has "run wild" in the matter of sexual diversity; there being more than a dozen species before me, it is difficult to associate the sexes in some. In *Chilocryptus* there

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are similar difficulties, but the species are not so numerous. In the family Asteiidae I find an example of sexual dimorphism that, though not so striking, is still quite noteworthy in a family that is comparatively rarely met with and also poor in the number of species.

Family SAPROMYZIDAE

But three Marquesan genera of this family, which may be separated as in the key given below, are known.

Key to the Genera

1. The closely placed black microchaetae on the costal vein ceasing abruptly at apex of the third vein; mesonotum with three pairs of postsutural and no presutural dorsocentral bristles; fore femur with a series of very short, erect, closely placed black bristles on the apical half of the anteroventral surface.....
.....**Homoneura** Van der Wulp
- The closely placed black microchaetae on the costal vein ceasing about midway between the apices of second and third veins; mesonotum with two postsutural and one presutural pair of strong dorsocentral bristles; fore femur without a series of short, erect, closely placed bristles on the apical half of the anteroventral surface 2
2. The presutural (posthumeral) bristle lacking.....**Chilocryptus** Malloch
The presutural (posthumeral) bristle present and well developed.....
.....(**Prochaetops** Bezzi) 3
3. Ocellar bristles lacking; anterior orbital bristle much closer to the posterior one than to the anterior margin of frons; gena with one or two outstanding long bristles.....Subgenus **Prochaetopsis** Malloch
Ocellar bristles quite distinct; anterior orbital bristle not closer to the posterior one than to the anterior margin of frons..... 4
4. Prescutellar pair of acrostichals well developed.....Subgenus **Prochaetops** Bezzi
Prescutellar pair of acrostichals undeveloped.....Subgenus **Aprochaetops**, new subgenus

Genus PROCHAETOPS Bezzi

Prochaetops Bezzi: Dipt. Brach. Ather. Fiji, p. 120, 1928.

I have already given a review of the Marquesan species of this genus.¹

Several characters appear to be worthy of mention apart from those noted in my first paper. One of these, and probably the most important, is the development of long, fine bristles on the under side of the proboscis. These occur on the heavily sclerotized ventral plate and are longer on the sides than in the center and as a rule much longer in the males than in the females. I have already noted that in some, not all, of the species in which the wings are marked the markings are found only in the males, a sexual distinction unknown to me in any other genus of the family though not at all uncommon in several others, notably the Dolichopodidae. In the Dolichopodidae the wing markings and leg adornments of the males are displayed before the

¹ Malloch, J. R., New species of Sapromyzidae from the Marquesas: B. P. Bishop Mus., Bull. 98, 1932.

female in courting, and it would be interesting to discover if any of the features peculiar to the males of *Prochaetops* are made use of in a similar manner.

In the material received since my paper on this genus went to press there is a remarkable new species in which the face of the male is much produced, noselike, and the wings instead of having a black mark near the apex in front have a narrow preapical strip on the membrane upon which the hairs are much denser than elsewhere, simulating a dark streak. This type of wing specialization is also found in other families, though not in this one as far as I know. Examples are met with in the males of some species of *Hydrotaea* Robineau-Desvoidy, and *Lispa* Meigen of the Muscidae. It would be of interest to find out if the female of the Marquesan species has the face produced as in the male. There are no females in this collection.

Subgenus APROCHAETOPS, new subgenus

Prescutellar pair of acrostichals undeveloped; frons of both sexes less than twice as long as its central width, the anterior orbital much nearer to the anterior margin than to posterior bristle.

Subgenotype, *Prochaetops* (*Aprochaetops*) *atricornis*, new species.

Keys to the Species

Males

1. Frons, antennae, and face entirely black, the frons with slight white dusting; mesonotum and scutellum black, the lateral edges of the mesonotum slightly yellowish..... **bicolor** Malloch
- Frons and face largely or entirely yellow; mesonotum and scutellum not entirely black on disc..... 2
2. Wings entirely hyaline, and rounded at tips; antennae black; frons with the central third black, the sides yellow; legs yellow, femora almost entirely glossy black..... **atricornis**, new species
- Wings with a more or less evident fuscous mark at apex of the costal margin, or if this is very faint the costa is almost straight from before the apex of second vein to apex of third, giving the wing a slightly angular apex; antennae yellow; frons entirely yellow, or with three faint brownish vittae; legs yellow 3
3. Apex of the wing subangular, the marginal cell quite abruptly narrowed and the dark costal cloud very faint and narrow; palpi yellow, with quite closely placed black bristles along the lower edges; the long bristles on edges of the proboscis dark brown to fuscous..... **adamsoni** Malloch
- Apex of the wing narrowly rounded, the apex of the marginal cell elongate and pointed, the dark costal cloud moderately broad and conspicuous; palpi yellow, with tips fuscous, their lower edges sparsely setulose; the long bristles on the lateral edges of the proboscis fulvous yellow..... **bivittata** Malloch

Females

1. Black species, with the lower occiput slightly yellowish and the knees narrowly yellow, the frons evenly but slightly gray dusted; knobs of the halteres black..... **anthrax** Malloch

- Paler species, at least the head preponderantly yellow, and the mesonotum with a broad, conspicuous, densely grayish-white dusted central vitta that is continued over the disc of the scutellum; knobs of halteres brownish yellow..... 2
2. Legs black, only the knees narrowly yellow; a dark-brown mark on the gena below the eye..... *fusca* Malloch
- Legs yellow, coxae and femora almost entirely black; no dark mark on gena below the eye..... *atricornis*, new species

Prochaetops (Aprochaetops) fusca Malloch.

Two additional females of this species but still no males.

Hivaoa: Kaava Ridge, altitude 2750 feet, January 6, 1932, sweeping on ferns; Kakahopuanui, Kaava Ridge, altitude 2800 feet, October 27, 1931, beating on *Weinmannia* species; LeBronnec.

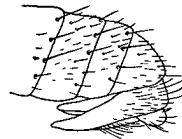


FIGURE 1. *Prochaetops atricornis*, hypopygium of male in profile.

Prochaetops (Aprochaetops) bivittata Malloch.

Two additional males, but still no females.

Hivaoa: Kaava Ridge, altitude 2750 feet, January 6, 1932, swept from ferns; and altitude 2800 feet, January 7, 1932, beating on *Rapanea* species; LeBronnec.

Prochaetops (Aprochaetops) atricornis, new species (fig. 1).

Male

Head dull whitish yellow, the upper half of back with a large subtriangular black mark on each side and the frons with the central third black, the antennae, arista, and palpi also black, and the labrum fuscous. Frons at vertex about one-third of the head width, slightly widened to anterior margin and about 1.25 as long as its width at vertex, the vertical and orbital bristles all long, strong, and black, the orbitals equally spaced and reflexed, the ocellar pair short and fine, black, the postvertical pair incurved, stout and short, yellow; a few microscopic black hairs on each side in front of the anterior orbital. Face very slightly convex; parafacial in profile very narrow; eye narrowed below; gena not as high as the width of third antennal segment, the latter fully twice as long as wide, its apex rounded below, slightly angulate above; arista with short pubescence; palpi slightly clubbed, with a few setulose longer hairs below and some shorter hairs amongst them; postocular cilia and genal hairs black, the hairs on lower occiput yellow.

Thorax brownish black, mesonotum with a yellow stripe along each lateral margin, and a densely whitish gray, uniformly wide, central vitta that extends to apex of scutellum under which the ground color appears to be yellow, propleura and part of the metapleura yellowish. Bristling normal; central gray vitta with the hairs in front biserial and some additional hairs close to each series of dorsocentrals.

Legs testaceous yellow, all coxae and femora almost entirely black, apical two segments of each tarsus browned. Fore femur with a series of quite long posteroventral

bristles, the other armature very weak, no bristles on the anteroventral surface of the hind femur.

Wings brownish hyaline, veins brown. Inner cross vein before middle of the discal cell; fifth vein as usual not attaining margin.

Abdomen black, with a brownish yellow dorsocentral vitta that is connected with a narrow transverse fascia on each tergite at apex. Hypopygium as figure 1.

Squamae and halteres yellow.

Female

Similar to the male, but the type has been crushed and is greasy so that it is impossible to give minute details. The agreement in general color, and especially in that of the legs is, however, noteworthy, there being no indication of any sexual dimorphism.

Uapou: Teoatea, Hakahetau Valley, altitude 1950 feet, November 21, 1931, beating on ferns, type male; Teavanui, altitude 2900 feet, November 26, 1931, at light, allotype female, LeBronnec.

Subgenus PROCHAETOPS Bezzi

I have some doubts about the placing of the Marquesan and Fijian species in the same subgenus, but apart from the difference in the hairing of the arista, which is much less dense in the Marquesan species, and a few other characters, of which the most important is the presence of an anterior series of some rather well developed genal bristles in the Fijian species, there appears to be no barrier to the course adopted by me, at least on the basis of Bezzi's description of the genotype.

There are two segregates in the Marquesan species, one with the frons much as in the genotype and in *Aprochaetops*, not twice as long as its central width, and the other in which it is very distinctly more than twice as long as wide, very markedly so in the males.

Key to the Species

Males

1. Mid and hind femora with long and rather strong bristles on ventral surfaces, the mid pair with them on only the posteroventral, the hind pair with them on both the anteroventral and posteroventral surfaces; frons hardly longer in center than wide in front..... 2
- Mid and hind femora, or at least the mid femora with no long ventral bristles; frons much longer in center than its anterior width..... 3
2. Wings in both sexes largely dark brown..... **armatipes** Malloch
- Wings entirely hyaline..... **armatipes** variety **claripennis** Malloch
3. Face produced noselike (fig. 2, *a*); fore tarsus with the hairs very distinctly longer than usual giving a fringed appearance; wing with the hairs between the second and third veins near their apices denser and longer than usual, so that the membrane appears to have a dark streak on it before the apex of the submarginal cell (fig. 2, *b*)..... **nasuta**, new species
- Face not produced noselike, and the other characters not as above..... 4
4. Wings entirely hyaline, without an apical dark mark.... **immaculipennis**, new species
- Wings with a distinct apical or preapical costal spot or cloud..... 5

5. Apical wing mark consisting of a small deep black round spot over the apex of second vein that does not extend midway along costal vein to tip of third; hypopygium large, the inferior forceps dilated; frons with a broad central dark brown vitta.....**unipuncta** Malloch
- Apical wing mark consisting of a brown streak from below apex of second vein to or almost to apex of third that is hardly visible above the second and is widest along its lower edge, becoming faint towards apex of third; hypopygium rather small, the inferior forceps normal; frons entirely yellow.....**delicatula**, new species

Females

1. Wing with a large dark brown mark on more than the apical half of anterior part; frons wider in front than behind and not twice as long as its anterior width; hind femur with some well-developed preapical anteroventral bristles.....**armatipes** Malloch
- Wings hyaline; frons not appreciably wider in front than behind and usually twice as long as the anterior width..... 2
2. All the femora with some widely separated and stout ventral bristles.....**setifemur** Malloch
- Mid and hind femora without well-developed ventral bristles..... 3
3. Ovipositor pronglike, dark brown, usually projecting.....**armiventris** Malloch
- Ovipositor not pronglike..... 4
4. Palpi entirely testaceous yellow; mesonotum with two complete dark vittae that are continued over the sides of the scutellum, leaving only a narrow central line yellow.....**delicatula**, new species
- Palpi distinctly infuscated at apices; mesonotum with two dark vittae, but the scutellum is paler on sides than in center..... 5
5. Scutellum conspicuously yellow on sides, brown on center of disc, and black at apex.....**immaculipennis**, new species
- Scutellum brownish black, slightly paler, yellowish on sides.....**unipuncta** Malloch

Prochaetops (Prochaetops) armiventris Malloch.

I have a number of additional specimens of this species before me, but as before they are all females. Below I describe a new species that has much in common with this one, but the female does not have the same type of ovipositor and it differs also in some less important details of color markings.

Hivaoa: Kaava Ridge, altitude 2750 feet, January 6, 1932, on ferns; Kakahopuanui, altitude 2500 feet, January 5, 1932, on ferns, LeBronnec.

Prochaetops (Prochaetops) nasuta, new species (fig. 2).

Male

Head entirely lemon-yellow; antennae missing in all specimens available; palpi yellow. Profile as in figure 2, *a*. Vertical hairs and bristles brown, orbitals yellow.

Thorax darker than head, the mesonotum brownish yellow and rather dull, but the only dark mark consists of a black spot at apex of the scutellum. Mesonotal and scutellar bristles and the hairs on anterior part of mesonotum brown, pleural bristles and remainder of hairs paler, brownish yellow to yellow.

Legs yellow, apices of tarsi whitish yellow. Fore tarsus with rather dense dark hairs on posterior sides of all segments and anterior side of the apical two that are about three times as long as the diameter of the segments; mid and hind tarsi shorter than fore pair, slightly thickened, without long hairs and with the basal segment of each about as long as the other segments combined. Mid femur with the hairs on the anteroventral and posteroventral edges black and more conspicuous than elsewhere.

Wings hyaline, with a dark shade near apex caused by the greater density of the surface hairs than elsewhere, the part beyond the stripe almost bare (fig. 2, *b*).

Abdomen shining brownish yellow, with long brown bristles at apices of all the tergites. Hypopygium as figure 2, *c*. Squamae yellow, fringes brown. Halteres yellow. Length, 5-6 mm.

Hivaoa: Kakahopuanui, altitude 2500 feet, January 5, 1932, sweeping herbage, type and 2 paratypes; Kaava Ridge, altitude 2750 feet, January 6, 1932, sweeping on ferns, 2 paratypes, LeBronnec.

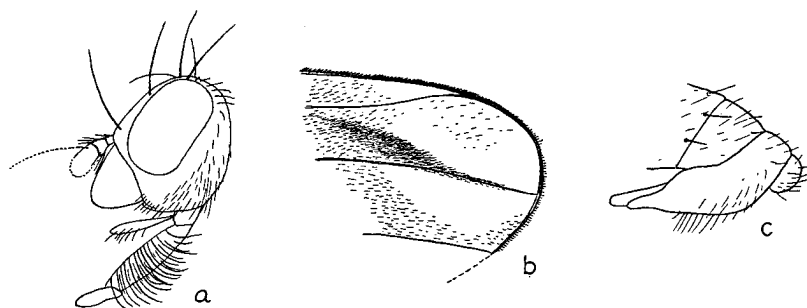


FIGURE 2. *Prochaetops nasuta*: *a*, head of male in profile; *b*, apex of wing of male; *c*, hypopygium of male in profile.

It is noteworthy that in recent keys to the genera of this family use has been made of the structure of the face in segregating groups. I have no fault to find with the application of this rule as far as previously known genera are concerned, but it appears to me that it can not be made use of in respect to the genus now under consideration. *Prochaetops nasuta* is undoubtedly congeneric with those with which it is associated herein; placing it with the forms with pronouncedly convex face in segregations of groups of genera would result in its removal to a section far from that in which it rightfully belongs. I have long held that in nature we find just so many colors, and just so many forms or types of structure, and that in diverging from an ancestral form species assume color markings or structural forms that must result in related or unrelated groups in the production of species closely similar in appearance. It is in the recurrence of such similarities that we find the so-called "mimicry" about which one reads much of late years, but I am disinclined to consider such cases as more than the mere recurrence of color markings or structures caused by the limitations of scope of variation and fail to accept the theory that such accidental mimicry can be of material benefit to the organisms involved. In any event, the noselike production of the face here is not unique in the family, nor can it be assumed that it can be of material benefit to this one species in a genus of a dozen or more closely related forms all living under similar conditions in a very restricted habitat.

Prochaetops (Prochaetops) immaculipennis, new species.

Head yellow, general color as in *P. nasuta*, but the structure quite different. The eye is not as elongate, and the face while convex is not prominently produced. The type specimen has the head damaged so that it is impossible to give its proportions, but the face in profile does not extend beyond the anterior margin of the eye a distance more than equal to the height of the gena. Palpi yellow, rather long and but slightly clubbed.

Thorax testaceous yellow, the mesonotum with traces of two brownish vittae, the scutellum darker centrally than on sides, the apex dark brown or black.

Legs testaceous yellow, the tarsi slightly paler apically, the fore tarsi with a few rather longer hairs on the posterior side of the apical two segments. Mid and hind tarsi not as stout as in *P. nasuta* and a little longer. Wings hyaline, without either markings or structural development from the normal.

Abdomen shining brownish yellow, with slight traces of darker paired marks on the tergites, the apical tergal bristles well developed, brown. Hypopygium smaller than in *P. nasuta*, of the same general form. Squamae and halteres brownish yellow. Length, 5.5 mm.

Female

Differs from the male in having the apices of the palpi infuscated, the mesonotal vittae and central mark on the scutellum and the paired tergal marks on the abdomen more developed. Length, 5.5 mm.

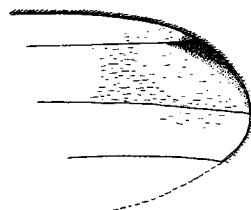


FIGURE 3. *Prochaetops delicatula*, apex of wing of male.

Hivaoa: Kaava Ridge, altitude 2750 feet, January 6, 1932, sweeping on ferns, type male; allotype, topotypical, altitude 2800 feet, January 8, 1932, on *Hibiscus tiliaceus*, allotype, topotypical, LeBronnec.

I am a little doubtful about the propriety of associating the female with the male as one species because of the difference in the color of the palpi, but pending the receipt of more material it appears wise to do so. There is also a striking resemblance between the female and that of *armiventris*, but no indication of the pronglike ovipositor in the specimen in hand.

Prochaetops (Prochaetops) delicatula, new species (fig. 3).

Male

Head pale yellow, the orbits slightly pale dusted, all the frontal and vertical bristles golden yellow; antennae with the apex and upper margin of third segment fuscous; palpi yellow. Shape such as in *P. nasuta*, but the face is hardly visible beyond the eye in profile and it is not as high. Bristles on proboscis yellow and weak.

Thorax testaceous yellow, mesonotum slightly brownish, and gray dusted, the bristles brown except the anterior two pairs of dorsocentrals and those on the pleura, which are yellow. Scutellum entirely testaceous yellow.

Legs yellow, without abnormal form or armature, the hairs and bristles yellow except basally on the mid and hind femora.

Wings hyaline, with a dark-brown narrow costal mark at apex (fig. 3). Abdomen yellow, very similar to that of *P. immaculipennis*. Squamae and halteres yellow.

Female

Differs from the male in having the dorsal bristles dark brown, the mesonotum with two broad dark-brown vittae that are carried over the disc of the scutellum, leaving only a narrow yellow central line, and the dorsum of the abdomen largely dark brown with a yellow central and apical mark on each tergite. The wings are also unmarked. The palpi are entirely yellow. Length, 5-5.5 mm.

Uapou: Teoatea, Hakahetau Valley, altitude 1950-2000 feet, November 19-21, 1931, beating on ferns, type male, allotype female, 10 paratypes, Le-Bronnec.

Subgenus PROCHAETOPSIS Malloch

For the one species of this subgenus I present some additional records.

Prochaetops (Prochaetopsis) tahuatae Malloch.

I noted in my original description the striking sexual dimorphism in this species, though my association of the sexes was made on only the basis of the material in hand. I have now had this association verified by the receipt recently of a pair taken in copula and so mounted; the pale-colored male with dark apical mark on the wing and the much darker female with immaculate wing belong to the same species. It is noteworthy that in teneral specimens the dark apical wing mark in the male consists mainly or entirely of hairs which are denser and stronger there than elsewhere, but in matured specimens there is an additional pigmentation of the membrane of the wing which makes the dark mark much more conspicuous. I did not make any reference in my original description to the exceptionally long, slender, and bare arista of the species, but now include it in the diagnosis though possibly if there are other species that belong to the subgenus the arista may not be as distinctive.

Hivaoa: Kakahopuanui, altitude 2600 feet, January 5, 1932, 1 male in alcohol and 1 pinned; Kaava Ridge, altitude 2800 feet, January 7, 1932, 1 pair in copula and 2 pinned males on *Freycinetia* species, 1 female on *Hibiscus tiliaceus*, and 1 sweeping on herbage; LeBronnec. Kopaaftaa, altitude 2770 feet, August 2, 1929, Mumford and Adamson. The original type material was all from Tahuata.

Genus CHILOCRYPTUS Malloch

When I erected this genus I had two species before me, both of them distinguished from other Sapromyzidae by the lack of distinct fore tarsal claws in the males. Now I have a third species that has distinct fore tarsal claws in the male and some additional material in both the other species, so that a revision of the genus is called for.

The lack of the presutural thoracic bristle distinguishes the genus from the other two found in the Marquesas, and though it might be considered as associating it with *Trigonometopus* Meigen and others in which this bristle is also lacking, there do not appear to be any other characters that would justify this association, the general form of the head being quite distinct from that of *Trigonometopus* and its closest allies.

Key to the Species

- | | |
|--|-----------------------------------|
| 1. Males | 2 |
| Females | 4 |
| 2. Fore tarsal claws moderately well developed and distinct; all the tarsi thickened and rather short, fourth segment of hind tarsus wider than long; mesonotum with four broad fuscous vittae..... | crassitarsis , new species |
| Fore tarsal claws not developed, or minute and hidden; all tarsi rather slender, fourth segment of hind tarsus longer than wide; mesonotum with two vittae along the lines of dorsocentrals that are sometimes mere lines, the two sub-lateral vittae lacking or very short and faint..... | 3 |
| 3. Frontal and mesonotal bristles and hairs yellow; palpi yellow; mesonotum with at most two narrow dark lines along the series of dorsocentral bristles..... | bilineatus Malloch |
| Frontal and mesonotal bristles dark brown or fuscous; palpi dark at apices; mesonotum with four rather broad dark vittae, the inner pair most distinct and complete..... | quadrilineatus Malloch |
| 4. Tarsi very decidedly thickened, especially the basal segment, the dorsal hairs longer than usual; palpi blackened at apices; mesonotum with four broad fuscous vittae, the inner pair continued over sides of the scutellum..... | crassitarsis , new species |
| Tarsi not at all thickened, normal both as to strength and hairing..... | 5 |
| 5. Face with a central fuscous mark, and the basal antennal segment fuscous on the outer side..... | quadrilineatus Malloch |
| Face without a fuscous mark in center and the basal antennal segment yellow..... | bilineatus Malloch |

Chilocryptus bilineatus Malloch.

A large number of specimens of both sexes:

Uapou: Teavanui Pass, altitude 2900 feet, November 26, 1931, at light, 33 specimens; Tekohepu Summit, altitude 3300 feet, November 27, 1931, beating on *Metrosideros collina*, 2 specimens; altitude 3000 feet, 1 specimen; LeBronnec.

The female has the fore tarsal claws present though rather small, the palpi blackened at apices, the cephalic and thoracic bristles dark brown instead of yellow. The mesonotal vittae are rather variable in width.

Chilocryptus quadrilineatus Malloch.

Nukuhiva: altitude 2500 feet, August 4, 1931, beating on *Metrosideros collina*, 1 female, LeBronnec and H. Tauraa.

Uahuka: Hitikau Crest, altitude 2850 feet, March 4, 1931, on *Weinmannia* species, 1 female, LeBronnec and H. Tauraa.

Chilocryptus crassitarsis, new species (fig. 4).

Agrees in general color with the two preceding species, but the mesonotum has four broad blackish vittae, the inner pair of which extend over the sides of the scutellum.

Structurally similar in the sexes, the fore tarsal claws distinct, the tarsi all distinctly thickened, especially the basal segment, and with rather long hairs above. Frons as figure 4.

Hivaoa: Feani Ridge, Tenatinaei, altitude 3970 feet, January 4, 1932, at light, type male, allotype, and 7 paratypes; Temetiu Summit, altitude 4160 feet, January 20, 1932, 5 specimens; Kakahopuanui, January 5, 1932, at light; LeBronnec.

This species is rather aberrant in the genus in having distinct claws on the fore tarsi in the male. However, as it is so very similar in all other respects, and as the females of the other species have distinct fore tarsal claws, I do not care to consider it as other than congeneric with them.



FIGURE 4. *Chilocryptus crassitarsis*, frons of female.

The center of the frons is dark brown in both sexes. There is the same sexual difference in the color of the palpi in this species as is evident in the other two, the male having these organs entirely yellow whereas the female has them blackened on their apical halves.

The species seems to be readily attracted to lights. Whether the species flies in the evening or after dark is unknown, but it is rather notable that in the very many species of Diptera that are attracted to lights and also in some of the parasitic Hymenoptera, as the Ophioninae, the general color is yellow. Some writers have suggested an association between the yellow color of some flies and the attraction such insects find in lights. Possibly all species that are habitually active after dark or just at dusk may be attracted to lights as are most Lepidoptera with this habit, and the yellow color of certain species may be indicative of crepuscular or nocturnal flight habits.

Homoneura hawaiiensis Malloch.

Specimens from the following localities are to hand.

Hivaoa: Avaoa Valley, altitude 1350 feet, January 4, 1932, on *Piper latifolium*; Kakahopuanui, altitude 2460 feet, January 5, 1932, at light; LeBronnec.

Uapou: Teoatea, Hakahetau Valley, altitude 1950 feet, November 21, 1931, beating on ferns, LeBronnec.

Family ASTEIIDAE

Up to the present I have found in the Marquesan material representatives of but one genus, *Asteia*, but there is considerable difference in the structure of some of the species and possibly if less emphasis had been placed upon the wing venation and its basal structure and more on the chaetotaxy of the head and thorax by systematic writers a different alignment of the species would have resulted. However, the members of the family now under consideration are undoubtedly derivatives from a common source, and nothing is to be gained from the proposal of a new arrangement on this basis.

Key to the Species

1. Mesonotum with but two pairs of strong dorsocentral bristles; a yellow species, with the epistome hardly paler than the remainder of the head, the latter in profile as figure 5, *a*; thorax, abdomen, and legs yellow; arista with some long hairs..... **marquesana**, new species
- Mesonotum with four pairs of moderately strong dorsocentral bristles; a yellow species, with the lateral angles of the epistome and the center of the labrum black, the frons, genae, and a large central mark on posterior margin of the mesonotum and the entire scutellum white, pleura paler than the mesonotum, with a black central mark; legs yellow; knobs of halteres black; arista bare..... **atriceps** Malloch
- Mesonotum with three pairs of strong dorsocentrals, the anterior pair presutural; a black species, the pleura sometimes at least partly yellow; arista with three or more long hairs..... 2
2. Frons with a yellow line on each side of the ocellar triangle that extends from the vertex to or beyond level of the anterior ocellus (males)..... 3
- Frons without yellow lines as described above (females)..... 5
3. Pleura and legs almost entirely testaceous yellow; fore tarsus not thickened or abnormally haired..... **minor**, new species
- Pleura and legs preponderantly black; fore tarsus thickened and rather long-haired 4
4. Arista with four hairs including the apical one, that is with four free extremities..... **dimorpha**, new species
- Arista with five hairs including the apical one..... **tarsalis** Malloch
5. Pleura and legs entirely or almost entirely yellow..... **minor**, new species
- Pleura and legs preponderantly black..... 6
6. Arista with four hairs..... **dimorpha**, new species
- Arista with five hairs..... **tarsalis** Malloch

Asteia tarsalis Malloch.

Hivaoa: Mount Temetiu, altitude 3200 feet, September 13, 1929, miscellaneous sweeping, 1 specimen, Mumford and Adamson.

Asteia marquesana, new species (fig. 5).

Male

Head entirely yellow, the frons with a small black mark between the ocelli, the epistome not noticeably paler than the face above it. Profile as figure 5, *a*; frons flat, dull except on the upper half of orbits and the ocellar triangle, the two lines that show

pale yellow in the males of the other species are evident when the frons is viewed from the side against the light as more glossy raised lines enclosing a dull incised line and they extend to or almost to the level of the orbital bristles; vertex with the same central emargination behind the ocelli as is found in *A. tarsalis*, and the incurved vertical bristle behind and slightly mesad of the outwardly curved one (fig. 6, *a*). This last character distinguishes this and the black species from the Marquesas from *A. atriceps*, providing another character besides the plumose arista for generic separation if one feels so inclined. Arista with four hairs.

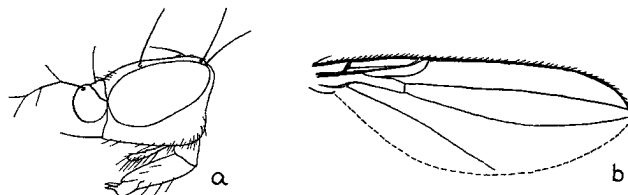


FIGURE 5. *Asteia marquesana*: *a*, head in profile; *b*, wing.

Thorax yellow, mesonotum more brownish and dull. Dorsocentrals 2 pairs, the anterior one close to suture; humeral and acrostichals lacking, a series of microscopic hairs in front of each anterior dorsocentral, both notopleurals present as well as one posterior intra-alar and one postalar; sternopleurals 2, both yellow; scutellum with two long bristles and in front of each a short hair; the mesonotal and scutellar bristles dark brown. Legs yellow and yellow-haired. No distinct bristles present; apical segment of all tarsi slightly enlarged and the claws somewhat irregularly scimitar-shaped, the hairs not exceptionally developed. Wings hyaline, veins yellow, the shape and venation normal for the genus (fig. 5, *b*). Abdomen brown, elongate, the hypopygium yellow, of moderate size. Knobs of halteres brown. Length, 2.25 mm.

Upou: Tekohepu Summit, altitude 3200 feet, November 28, 1931, at light, LeBronnec.

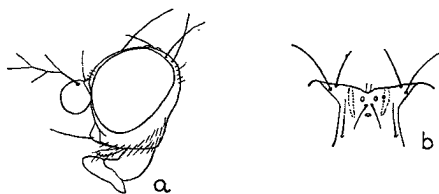


FIGURE 6. *Asteia dimorpha*: *a*, head of male in profile; *b*, frons of male.

Asteia dimorpha, new species (fig. 6).

Male

Similar to the male of *A. tarsalis*, differing mainly in being larger and in having the arista with one less hair. The frontal bristling is the same as in *A. marquesana* (fig. 5), but the head is not as elongate (fig. 6, *a*), and the eyes being more rounded, the height of the gena is much reduced.

Thorax shining black, the sutures of the pleura narrowly brownish yellow. Chaetotaxy similar to that of *A. tarsalis*, differing from that of *A. marquesana* in having a pair of strong presutural dorsocentrals. All the bristles are black.

Legs black, trochanters, apices of tibiae, and all the tarsi testaceous yellow. Fore tarsi a little thicker than the mid and hind pairs, the latter not as thick as in *A. tarsalis*, nor as strongly haired. Wings distinctly browned, the venation similar to that of *A. marquesana*. Abdomen black, stouter than in *A. marquesana*, the hypopygium black. Knobs of halteres black.

Female

Differs from the male in having no indication of the two yellow frontal lines, the glossy black orbits being fused with the similarly colored triangle. The abdomen is narrowed apically, and the wings are slightly paler. Legs as in male. Length, 2.5-3 mm.

Uapou: Tekohepu Summit, altitude 3000 feet, November 28, 1931, holotype male, allotype, and 11 paratypes, some beaten from *Cyrtandra* and others from *Freycinetia* species, LeBronnec.

Asteia minor, new species.

Male

Very like a small *A. dimorpha*, differing essentially in having the pleura and legs, including the fore coxae, entirely yellow.

Head differing from that of *A. dimorpha* in having the frons entirely shining, the central stripe or interfrontalia not dull black in front of the anterior ocellus, but distinctly shining though less glossy than the orbits, and no well defined anterior marginal reddish yellow transverse stripe, the anterior margin slightly and very narrowly brownish. Unfortunately in all the specimens available except two the antennae are broken off. In the two that have these organs intact, one has the arista with five, the other with six hairs, or free ends.

Thorax black, glossy, the pleura either entirely yellow or the sutures largely bordered with that color. Chaetotaxy as in *A. dimorpha*. Legs yellow, sometimes the femora, and rarely the tibiae largely blackened, the tarsi much less thickened and less haired than in *A. tarsalis*. Wings grayish hyaline, venation normal. Abdomen black, largely dull above, the hypopygium yellowish. Knobs of halteres fuscous.

Female

Differs from the male in lacking the two yellow frontal lines, and in having the abdomen more tapered apically and generally yellow on apical half.

Hivaoa: Kakahopuanui, altitude 2500 feet, January 5, 1932, sweeping herbage, male holotype and one paratype, LeBronnec.

Uapou: Teoatea, Hakahetau Valley, altitude 1950 feet, November 21, 1931, sweeping on ferns, allotype and 8 paratypes, LeBronnec.

Family DROSOPHILIDAE

As there are two apparently endemic genera in the Marquesas I am presenting below a generic key for their further elucidation. I also give some additional data on some of the already described species and the description of one new species of considerable interest from the point of view of generic limitations. I have no additional records of *Marquesia* and *Mycodrosophila*, which are represented in the Marquesas by one species each.

Key to the Genera

1. Mesonotum with three or four pairs of strong dorsocentrals, at least one of which is presutural..... 2
 Mesonotum with but one or two pairs of strong dorsocentrals, all postsutural..... 3
2. Mesonotum with four pairs of strong dorsocentrals, and the intra-dorsocentral hairs in more than two series behind the suture; eye not longer than high.....
 **Marquesia** Malloch
 Mesonotum with three pairs of strong dorsocentrals, and the intra-dorsocentral hairs biseriate on the entire length; eye much longer than high (fig. 7).....
 **Rosenwaldia**, new genus
3. Intradorsocentral hairs in at least six more or less irregular series..... 4
 Intradorsocentral hairs in two or four regular series..... 5
4. Wing with a deep incision or notch in the costa at point where the subcostal vein should enter it and the costa deep black just before incision; thorax markedly convex above, the mesonotum glossy black, the scutellum also black, but its disc velvety; mesonotum with but one pair of strong dorsocentrals.....
 **Mycodrosophila** Oldenburg
 Wing with but a slight notch at apex of subcostal cell and not black before it; thorax not markedly convex above, nor colored as above; mesonotum with two pairs of strong dorsocentrals..... **Drosophila** Fallen
5. Arista furcate, with but two free extremities, the two branches subequal in length, sometimes the lower branch with a very short preapical hair on upper side..... **Dicladochaeta** Malloch
 Arista with at least two long upper hairs..... 6
6. Face evenly and rather prominently convex below on its entire width, sloping gradually to epistome..... **Bunostoma** Malloch
 Face varying from almost flat to distinctly carinate, the carina separated from epistome by a distinct depression..... **Scaptomyza** Hardy

Genus **DROSOPHILA** Fallen

I did not present a key to the species of this genus in my previous paper and now do so in order to amplify my previous report.

Key to the Species

1. Fore femur with a series of short, black, closely placed bristles on the apical half of its anteroventral surface; mid tarsus with a short black bristle about one fourth from its base below (*Spinulophila*)..... **nasuta** Lamb
 Fore femur without a series of short, closely placed bristles on apical half of its anteroventral surface; mid metatarsus without a ventral bristle about one fourth from base (*Drosophila*)..... 2
2. Fore tarsus of the male with a comb of short glossy-black spines on apical half of the posterior surface of its basal segment..... **ampelophila** Loew
 Fore tarsus of male without a comb of spines as above, but the two basal segments with the ventral setulae more erect and longer than usual, arranged in transverse series that are quite conspicuous when the tarsus is seen from the side....
 **errans** Malloch

Drosophila nasuta Lamb, **Drosophila errans** Malloch.

These two species are apparently found almost invariably in company with each other, generally on flowers or decaying fruits, and are evidently widely distributed throughout the Marquesas at all altitudes.

The species recorded from Fiji by Bezzi as *D. ananassae* Doleschall may be the same as *D. errans*, but Bezzi gives no details of the tarsal structure of the male.

Genus SCAPTOMYZA Hardy

Three species of this genus from the Marquesas have been described, and here I give a key to these species, together with the description of a new one which is quite aberrant in that it is robust and very similar to many species of *Drosophila*; but there are only four regular series of intradorsocentral hairs, a character that, trivial as it may appear, is useful in distinguishing the two genera.

Key to the Species

1. Mesonotum with four regular series of short, stiff setulose intradorsocentrals; general color black, the mesonotum slightly shining, with faint brownish dust and without a trace of dark vittae.....**quadriseriata**, new species
- Mesonotum with but two regular series of stiff setulose intradorsocentrals..... 2
2. Mesonotum with a pair of outstanding short bristles in the intradorsocentral series close to the suture, and the surface with four dark brown vittae **mumfordi** Malloch
- Mesonotum without a pair of outstanding short bristles in the intradorsocentral series close to the suture..... 3
3. Arista with but two long hairs above and none below..... **biseta** Malloch
- Arista with more than two long hairs above and with at least one below..... **latifrons** Malloch

Scaptomyza quadriseriata, new species.

Head black, face grayish dusted, the frons with the orbits and triangle slightly shining and brownish gray dusted, the triangle extending as far forward as the orbits, to beyond middle, back of head grayish dusted behind the ocelli; antennae and palpi fuscous. Proclinate orbital slightly in front of the level of the small anterior reclinate one and nearer to inner margin of orbit than it; all the bristles except the anterior reclinate one well developed, the postverticals moderately long. Eyes with minute stiff hairs. Face carinate, the transverse impression above epistome not very deep. Arista with rather variable hairing, but usually three above, and one near apex below.

Thorax black, slightly shining, the mesonotum with thin, even brownish dust and no trace of dark vittae. Dorsocentrals 2 pairs, humeral 1, the intradorsocentral hairs in four regular series between the lines of hairs anterior to the dorsocentrals and back to between the dorsocentrals; sternopleura with one long posterior and one very short anterior bristle.

Legs black, knees and tarsi testaceous yellow, the tibiae brownish. No exceptional armature present. Wings brownish hyaline, the costa rather distinctly broken at apex of subcostal vein where there are two distinct setulae. Inner cross vein distinctly beyond level of apex of first vein and at one third or a little more from base of discal cell. Abdomen shining black. Halteres fuscous. Length, 2.5 mm.

Hivaoa: Temetiu Summit, altitude 4160 feet, January 20, 1932, type female and 2 paratypes on *Piper latifolium*, allotype, and 1 paratype, on *Weinmannia*, and 1 paratype, beating on *Cheirodendron*, LeBronnec.

It is entirely probable that the occurrence of the species on these plants is not indicative of a direct association with them, as the larvae are very probably to be found in decaying fruits or vegetation, none of the species of the genus being restricted to one plant as far as we at present know.

Genus **DICLADOCHAETA** Malloch

Dicladochaeta biseriata Malloch.

This species which is the only one of the genus known at present is represented in my new material by two specimens.

Hivaoa: Temetiu Summit, altitude 4160 feet, January 20, 1932, *Cyrtandra* species and *Cheirodendron* species, LeBronnec.

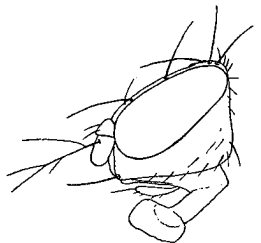


FIGURE 7. *Rosenwaldia kaavae*, head in profile.

Genus **ROSENWALDIA**, new genus

This genus is named in honor of the Julius Rosenwald Fund, which has so generously contributed toward studies of Pacific insects in 1934.

This genus, though having the mesonotum with but two series of intradorsocentral hairs, is, I consider, not closely related to *Scaptomyza*, nor if the shape of the head is any indication is it closely allied to any other genus from the Marquesas. The head (fig. 7) reminds one very strongly of the genus *Stegana* of which I have not seen any representative from Oceania. The discal and basal cells are not separated by a cross vein, and there are three pairs of strong dorsocentrals on the mesonotum, the anterior pair slightly presutural. Genotype, *Rosenwaldia kaavae*.

Rosenwaldia kaavae, new species (fig. 7).

Female

Head whitish yellow below, the upper half from slightly below middle of the facial carina and from neck, including the frons, dark brown, the latter more grayish on the orbits and triangle which extend to anterior margin and are slightly shining, the antennae brown, second segment red; palpi with apices blackened. Armature of the frons as in *Drosophila*, but the proclinate orbital is slightly behind and distinctly mesad of the small anterior reclinate bristle; inner incurved vertical in front of the outer outwardly curved one. Facial carina quite prominent, and rather narrow.

Thorax yellowish brown, greasy in type, but showing three dark-brown vittae on the mesonotum; pleura dark brown on upper third, yellow below. Mesonotum with three

pairs of strong dorsocentrals, one humeral, and the intradorsocentral hairs in two regular series. Legs yellow, much obscured by the mounting medium in type, but showing brown at apices of femora and tibiae and bases of tibiae. Wings brownish hyaline, much as in *Scaptomyza quadriseriata*, but more pointed. Abdomen brownish black, with narrow yellowish apices to the tergites. Halteres brown. Length, 2.5 mm.

Hivaoa: Kaava Ridge, altitude 2820 feet, January 6, 1932, LeBronnec.

Family EPHYDRIDAE

I have not given a key to the genera of this family in my other papers on the Marquesan material but here present one that includes all genera known to me from these islands and the Society Islands.

There is considerable difference of opinion among workers on the Ephydridae as to the characters useful in dividing the family into subfamilies. Becker and Hendel have disagreed on the number of the subfamilies that ought to be recognized in Europe. I have accepted Canacinae as a subfamily, and the two writers just referred to considered it as a distinct family.

A careful study of the material available to me leads me to suspect that there are several segregates in the subfamily Ephydrinae as accepted by me, but that they are not distinguishable along the lines suggested by either Becker or Hendel. In the genus *Ephydra* Fallen and its closest relatives the prosternum and propleura are haired, the abdominal tergites have no trace of spiracles in their sides, and the pulvilli are rudimentary or lacking. In *Napaea* Robineau-Desvoidy (= *Parhydra* Stenhammer) and its relatives the prosternum and propleura are bare, the abdominal tergites have rudimentary spiracles near their lateral edges, and the pulvilli are present. In the remainder of the genera the spiracles are not visible in the tergites and the prosternum and propleura are bare. It appears to me extremely probable that ultimately the classification will take into consideration some if not all of these characters and that there will be a radical realignment of the genera.

In the Marquesan material there are no species related closely to the *Napaea* group. Although the lack of pulvilli in one genus in these islands and in another in the Society Islands might suggest to some taxonomists that they are related to the *Ephydra* group, I incline to the opinion that they are, rather, offshoots from the *Scatella* group, which is well represented in the Marquesas.

Key to the Genera

1. Discal and posterior basal cells separated by a cross vein, and the anal cell and anal vein distinct (*Canacinae*).....**Nocticanae** Malloch
- Discal and posterior basal cells not separated by a cross vein, and the anal cell and anal vein undeveloped (*Ephydrinae*)..... 2
2. Mid tibia with one or more long bristles on posterior surface, if only one present it is close to base; disc of the scutellum haired.....**Paralimna** Loew
- Mid tibia with no strong posterior bristles..... 3

- | | | |
|---|------------------------------------|----|
| 3. Scutellum haired on disc; each frontal orbit with one reclinate and one proclinate bristle almost transversely placed at middle; ocellar bristles in transverse line with the anterior ocellus..... | Discocerina Macquart | |
| Scutellum with no discal hairs; frons not bristled as above..... | | 4 |
| 4. Face entirely covered with hairs on center, and usually some bristles near the sides, evenly convex, the mouth opening large..... | | 5 |
| Face not entirely covered with hairs, bare in center, usually with some bristles on the sides..... | | 8 |
| 5. Pulvilli small but distinct; face strongly haired, the hairs stronger above in center | | 6 |
| Pulvilli lacking; face with very fine short hairs which are not stronger above in center | | 7 |
| 6. Mesonotum with three pairs of strong dorsocentrals, the anterior pair presutural, and one long and one short pair of acrostichals near suture..... | Neoscatella Malloch | |
| Mesonotum with two pairs of strong dorsocentrals and one pair of discal acrostichals | Scatella Robineau-Desvoidy | |
| 7. Mesonotum with at least one pair of long acrostichals close to the suture; ocellars well-developed; costa with some widely separated bristles that are much longer than the diameter of the costal vein..... | Chaetoscatella , new genus | |
| Mesonotum without long acrostichals; ocellars minute; costa without long outstanding bristles..... | Apulvillus , new genus | |
| 8. Face almost flat, not excavated below bases of antennae..... | | 9 |
| Face prominently produced either above or at middle or at epistome, in one case broadly convex below and depressed above..... | | 10 |
| 9. Face entirely covered with dust; arista long-haired above..... | | |
| | Hydrellia Robineau-Desvoidy | |
| Face gray dusted on sides, glossy in center; arista very short-haired..... | | |
| | Neohydrellia Malloch | |
| 10. Arista without distinct hairs..... | Mosillus Latreille | |
| Arista long-haired above, bare below..... | | 11 |
| 11. Face slightly and evenly convex on lower two thirds, with a slight eminence at upper central edge of the convexity and above that rather abruptly excavated.... | | |
| | Ilythea Haliday | |
| Face with center or lower margin prominently produced..... | | 12 |
| 12. Face produced noselike in center, the tip of the protuberance shining, remainder densely gray dusted; gena more than half as high as eye..... | Hecamede Haliday | |
| Face produced noselike at epistome; gena not more than one fourth as high as eye | Philygriola Hendel | |

Of the genera included in the above key the following are before me from the Marquesas: *Nocticanace*, *Apulvillus*, *Neohydrellia*, *Mosillus*, *Hecamede*, and *Philygriola*. The following genera are in material from both groups of islands: *Paralimna*, *Scatella*. The genera from the Society Islands are: *Chaetoscatella*, *Discocerina*, *Hydrellia*, and *Ilythea*. *Nocticanace* and *Apulvillus* are known only from the Marquesas and *Chaetoscatella* only from the Society Islands up to date.

Genus APULVILLUS, new genus

This genus has much in common with one described immediately below from the Society Islands, both lacking distinct pulvilli, having the face similar in structure and haired on disc, with some lateral bristles. The distinctions, however, are in my opinion of more than mere specific value, and

I erect a new genus for each of the species, which genera belong to the same section as *Scatella*. I have noted the principal distinguishing characters of this genus in the foregoing key to the genera; they consist in the main of the lack of costal bristles and the minute ocellar bristles which are distinguishable only with a high-power lens.

A quite remarkable feature of the species is that the female has the fore femur modified. When such a character occurs in species of this family it is almost invariably the male that has it and the female that has the femora normal. The differences in the wing structure of the sexes are not as remarkable, the greater thickening of the costal vein before the apex of the first vein being met with in the males of a few other species, notably in *Scatella*, though I do not remember any such modification of the wing tip and the veins of that section of the wing as is seen here.

Genotype, *Apulvillus bronnecki*.

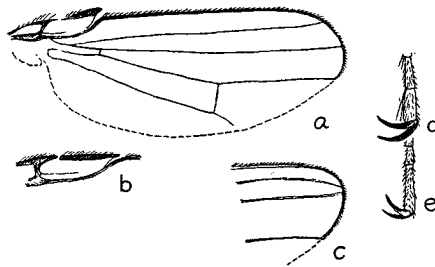


FIGURE 8. *Apulvillus bronnecki*: a, wing of male; b, base of costa of wing of female; c, apex of wing of female; d, apical two segments of fore tarsus of male; e, apical two segments of fore tarsus of *Chaetoscatella cheesmanae*.

***Apulvillus bronnecki*, new species (fig. 8).**

Male

A black species, with the face and sides of frons dull, brown dusted, the frontal triangle glossy and with a coppery to aeneous tinge, the thorax and abdomen shining, legs black, wings brownish hyaline with dark brown veins, and halteres black.

Head almost as in *Chaetoscatella*, but the facial hairs are shorter and weaker, the lateral bristles are usually two in number, the ocellars are sometimes entirely lacking, and at most consist of two microscopic hairs. The frons is about twice as wide as long, with a broad central glossy bronzy black triangle and the sides dull brown.

Thorax shining black, thinly overlaid with brown dust, the mesonotum uniformly colored, with two widely separated pairs of postsutural dorsocentrals, one well-developed presutural intra-alar, the anterior notopleural shorter than the posterior one, the intradorsocentral hairs almost indistinguishable, and the scutellum with two long apical bristles basad of which there is one fine short hair on each side.

Legs black, the femora practically nude, the tibiae with less evident hairs than in *Chaetoscatella*, the fourth and fifth tarsal segments of the forelegs almost equal in length, the fourth with a pair of moderately long apical ventral bristles that lie close against the ventral surface of the fifth segment (fig. 8, d). Wings brownish hyaline, the veins thick and black (fig. 8, a). Abdomen black, lightly brownish dusted. Fifth tergite tapered apically, about twice as long as fourth, the latter distinctly shorter than third. No well-developed bristles in evidence. Halteres black.

Female

Differs from the male in having the basal part of the costa less dilated on the costal vein (fig. 8, *b*), the wings less evenly rounded and more narrowed at tip and with the second and third veins more approximated at their apices (fig. 8, *c*). The fore femur is also slightly but distinctly emarginate at apex below, and the slight eminence before the emargination is rather densely short-haired. The tarsi are more slender and the claws less developed than in the male. Length, 3-3.5 mm.

Uapou: Vaikokoo, Paaumea Valley, altitude 2200 feet, November 26, 1931, resting on wet rocks, type male, allotype, and 11 paratypes, LeBronnec.

This apparently endemic species is named in honor of the collector.

Genus CHAETOSCATELLA, new genus

This genus has much the same appearance and general characters as *Apulvillus* but differs in the characters listed in the foregoing generic key, and in addition to these the wings and legs are the same in structure in both sexes, and the fifth tarsal segment is very much longer than the fourth, while the fourth has no pair of black bristles at its apex (fig. 8, *e*).



FIGURE 9. *Chaetoscatella cheesmanae*, head of male in profile.

***Chaetoscatella cheesmanae*, new species (fig. 9).**

Entirely black, center of frons, the mesonotum and dorsum of abdomen shining, the face with dense brown dust. Wings brownish hyaline. Knobs of halteres black.

Head black, the frons with a broad central glossy greenish-black triangle that extends to anterior margin, laterad of which the sides are but slightly shining and densely brown dusted, the face densely brown dusted; antennae and palpi fuscous. Vertex with all four bristles well developed, the postverticals lacking, ocellars moderately long, erect and divergent, each orbit with two outwardly curved bristles and a few minute hairs. General form and armature as in figure 9.

Thorax shining black, with a slight aeneous tinge on mesonotum and scutellum, the mesonotum and upper half of the pleura rather densely brown dusted, the lower half of pleura partly gray dusted. Mesonotum with two pairs of long postsutural dorsocentrals in front of which there are some setulose hairs in the same lines, and one long and one or two shorter pairs of acrostichals, the long pair at suture, the others anterior to them; scutellum with four bristles, the anterior pair fully half as long as the posterior pair.

Legs black, the coxae slightly grayish white dusted. Fore femur in neither sex with abnormal form or armature; fifth segment of all tarsi distinctly longer than the fourth, longest in male, the fourth without long apical ventral bristles (fig. 8, *e*). Wings brownish hyaline, without markings, the costal vein broken beyond humeral cross vein and again at apex of subcosta, not particularly thickened in either sex between the breaks, and with a

series of widely spaced bristles on the anterior edge between the apices of first and second veins, most of the bristles very distinctly longer than the diameter of the vein. In other respects the wing is very similar to that of *Apulvillus*. Abdomen colored as thorax, much the same as in *Apulvillus*, the female with a pair of apical genital bristles that are fine and generally concealed. Halteres black. Length, 4-4.5 mm.

Society Islands: Tahiti, April 9, 1925, type male, allotype and 8 paratypes, L. E. Cheesman. Material submitted by the British Museum and to be returned to that institution.

Neoscatella atra Malloch.

Uahuka: Matapopo, Hane Valley, altitude 800 feet, February 27, 1931, LeBronnec and H. Tauraa.

Nukuhiva: Hakau Valley, Vaioa, November 16, 1929, Mumford and Adamson.

Scatella septempunctata Malloch.

Eiao: Vaituha, altitude 200 feet, 1 headless specimen, A. M. Adamson.

Family TRYPETIDAE

I have already recorded two species of this family from the Marquesas, one of which is an endemic species of *Dacus*, the other a species of the widely distributed genus *Trypanea* Schrank. Now I have to record a third species, this time one that is widely distributed over the Old World from Africa to Oceania, and also in the New World, where it is not uncommon in the United States.

Genus PAROXYNA Hendel

Many of the species included by Hendel in his genus have been described in *Oxya* Loew, or in *Ensina* Loew.

Paroxyyna sororcula Wiedemann.

I am not at all convinced that the synonymy given by Hendel in his paper on the Palearctic Trypetidae¹ is correct in all respects, as there are, in my opinion, at least two species involved in the complex in South America. However, this is not the place to discuss the matter and I accept the species before me as *P. sororcula* without committing myself to a definite opinion as to its being identical with the forms occurring in South America.

Uapou: Tekohepu Summit, altitude 3000 feet and 3200 feet, November 28, 1931; Teavanui, altitude 2900 feet, November 26, 1931, at light; LeBronnec. This record is noteworthy, as members of this family rarely come to light.

A large series of this species was also taken by the Pacific Entomological Survey in the Society Islands.

¹Linder, Die Fliegen der palarktischen Region, 49, Trypetidae, p. 158.