

SOME ACALYPTRATE DIPTERA FROM
THE MARQUESAS ISLANDS*

By JOHN R. MALLOCH

U. S. BUREAU OF BIOLOGICAL SURVEY

FAMILY MILICHIIDAE

Genus MILICHIELLA Giglio-Tos

This genus was inadvertently credited to Meigen by Bezzi.¹

Milichiella lacteipennis Loew.

A very widely distributed species, occurring, as far as I am aware, in the Palearctic region, North and South America, the Malayan region and southward to Australia, including the Hawaiian, Fiji, and Society islands (A. M. Adamson).

Uahuka: Teuaua Island, September 21, 1929, 6 specimens, A. M. Adamson.

Eiao: above Vaituha, altitude 1,100 feet, September 28, 1929, 1 female, A. M. Adamson.

This species is a scavenger in the larval stages, which no doubt accounts for its wide dispersal. The flies are frequently found on flowers and foliage.

Genus HYPASPISTOMYIA Hendel

Hypaspistomyia species.

A smaller species than the next preceding one, very similar to *H. albipennis* Malloch described from Australia,² but the condition of the only specimen, which is considerably matted and discolored, prevents a definite specific determination.

Hatutu [Hatutaa]: center of island, altitude 1,010 feet, September 30, 1929, 1 specimen, Adamson.

No doubt a scavenger like the preceding species. The genotype, *H. latipes* Meigen, has about the same distribution as *Milichiella lacteipennis* and may yet be turned up in the Marquesas.

FAMILY EPHYDRIDAE

The members of this family are mainly aquatic, most of them living in the larval stages in slow-running streams or quiet bodies of water, the adults occurring on the margins of streams, lakes, or on the seashore.

¹ Bezzi, Mario. Diptera Brachycera and Athericera of the Fiji Islands, p. 162, 1928.

² Proc. Linn. Soc. New South Wales, vol. 49, pt. 3, p. 336, 1924.

* Pacific Entomological Survey Publication 7, article 1. Issued February 27, 1933.

SUBFAMILY CANACINAE

Recently this group has been given full family rank by Hendel and in this course he was followed by Becker in his treatment of the Palearctic Ephydriidae. I am not inclined to adopt the idea, and rank the group as a subfamily of Ephydriidae, there being so many points of similarity in the two groups.

Although a comparatively small group it is very widely distributed, occurring in Europe, Asia, the Orient, New Zealand, and North America. The species from the Marquesas is rather similar in most details to *Canace* Haliday, the epistome being transverse, the general armature of the head similar to that of the genotype, *C. nasica* Haliday, and the wing venation almost identical with that of the latter. The description of the genus below gives a summary of the main distinguishing characters of the new genus from the Marquesas.

Genus NOCTICANACE, new genus

Head much as in *Canace*, but the ocelli are not on an elevation, they are much more widely separated, and very minute (fig. 1, *b*). Thorax with similar bristling to the other genera, differing from *Canace* in lacking the anterior notopleural and prescutellar acrostichal bristles; both the sternopleura and the mesopleura with one bristle and a number of strong setulose hairs.

Genotype, *Nocticanace peculiaris*.

Nocticanace peculiaris, new species.

Male

Dull black, with grey dust on lateral margins of mesonotum anteriorly, the pleurae, and to a less extent on the abdomen, the face, cheeks, genae, and lower occiput white dusted. Wings greyish hyaline, veins fuscous. Legs black.

Head in profile as figure 1, *a*; arista very short-haired; dorsal view of head as in figure 1, *b*; proboscis stout, when the apex is expanded there is a slender chitinous lateral marginal rod resembling a mandible on each side (fig. 1, *c*); antennae black; palpi fuscous, of moderate length, slightly clubbed, and with one subterminal hair.

Mesonotum brownish black except at anterior lateral angles where it is distinctly grey dusted, without distinct vittae. Dorsocentrals strong, four pairs, the third and last pairs closer together than any of the other pairs, surface without short hairs except on the region in front of the presutural and laterad of the anterior dorsocentral bristles; one or two fine hairs on humeri besides the strong bristle; scutellum convex, subtriangular, with four strong bristles. A few strong setulose hairs on the mesopleura and sternopleura besides the single bristle on each.

Abdomen narrow, subcylindrical, with six visible tergites in dorsal view exclusive of the rudimentary basal one and inclusive of the one forming base of hypopygium; the surface hairs short but strong; apex in profile as in figure 1, *d*.

Legs black, rather slender, fore femur with four or five strong posteroventral bristles which are quite widely separated, the other femora without well-developed bristles; all tibiae without a preapical dorsal bristle.

Wings greyish hyaline, slightly brownish along costa, the veins fuscous. Costa without distinct spines, merely setulose, all veins bare, inner cross vein almost directly below apex of subcosta and about three-sevenths from base of discal cell, ultimate section of fifth vein subequal to penultimate section of fourth and nearly half as long as ultimate section of the latter; section of costa between apices of second and third veins not over half as long as that between apices of third and fourth, the latter two about equally far in front and behind extreme apex of vein respectively.

Squamae and fringes fuscous. Knobs of halteres pale yellow.

Female

Similar to the male except in the structure of the abdomen, the apex of which is figured showing the bifid genital organ (fig. 1, *e-f*).

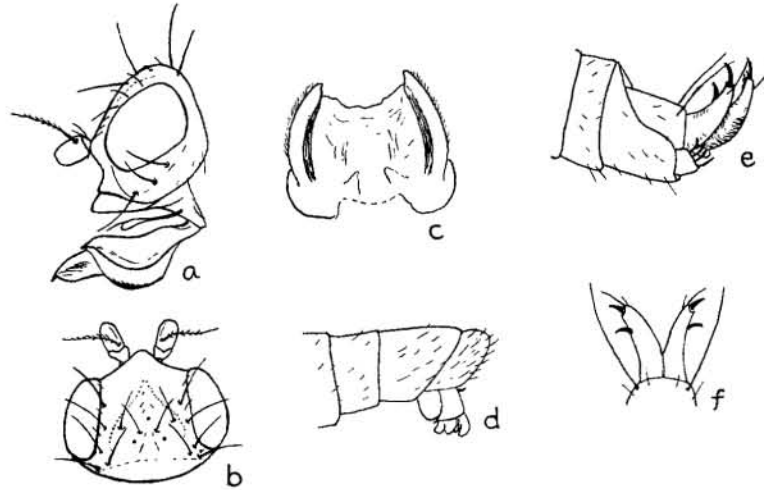


FIGURE 1. *Nocticanace peculiaris*: *a*, head in profile; *b*, head from above; *c*, apex of proboscis expanded; *d*, apex of abdomen of male in profile; *e*, apex of abdomen of female in profile; *f*, genital thorns of female from above.

Eiao: Vaituha, October 2, 1929, at light, type male, allotype, and two female paratypes, Adamson.

Nukuhiva, no data, 12 paratypes, L. E. Cheesman.

This is the first record of the occurrence of a member of this subfamily at light, and it would appear worth mention that the ocelli are exceptionally small in the species. In crepuscular Hymenoptera (Halictinae, Ophioninae) these organs are much larger than usual, but it is also the case that in most Diptera that are regularly active at night the ocelli are lacking (Culicidae, Chironomidae, etc.). The only species known to me as occurring in North America that are related to the one described above are active during the daytime and frequent in salt marshes. In the North American species *macatei* Malloch, the ocelli are of normal size, the genital organ of the female

ends in two long slightly upwardly curved chitinous simple thorns, and the fore femur in both sexes has a series of strong bristles on the apical half of the antero-ventral surface.

Canace nudata Cresson, from the west coast of the United States, is very similar in general appearance and structure to the present species from the Marquesas, but it has a distinct though small anterior notopleural, and the disc of the scutellum has a few long erect setulose hairs which are lacking in the new species. The frons is also more weakly bristled, there are two long genal bristles instead of three, the ultimate section of the fifth vein is considerably shorter in comparison with the penultimate section of fourth, and the genital segments of the female differ in having the two hairs much shorter and in various details of the armature of the two apical spines and the penultimate lateral plates at their bases. The fore femur in *C. nudata* is very much less strongly bristled on the postero-ventral surface than in the new species, the bristles are closer together, and as they approach the middle there is a gradual increase until they become biserial or even triserial and mere hairs.

SUBFAMILY EPHYDRINAE

This subfamily differs from the preceding one in lacking the cross vein between the discal and posterior basal cells, and the anal cell and well-developed anal vein.

Genus SCATELLA Robineau-Desvoidy

This genus is one of the most widely distributed in the family, occurring from the far north to the extreme south in both hemispheres, several species having been described from New Zealand and Patagonia. The genotype *S. stagnalis* (Fallen) is one of the most generally distributed species and is amongst those from the Marquesas.

I append a key to the Marquesan species.

Key to the Species

1. Wings fuscous, each with five hyaline spots (fig. 2, *a*).....**stagnalis**
Wings fuscous, each with six or more hyaline spots.....2
2. Wing with six hyaline spots (fig. 2, *b*).....**sexpunctata**
Wing with seven hyaline spots.....3
3. Outer hyaline spot in submarginal cell close to the tip of the cell, not larger than the inner one in same cell, and, like the one at apex of first posterior cell, rather faint (fig. 2, *c*).....**septempunctata**
Outer hyaline spot in the submarginal cell much larger than the inner one and quite conspicuous, the outer one in the first posterior cell not at apex of the cell (fig. 2, *d*).....**varipennis**

Scatella stagnalis (Fallen).

Face densely brown dusted, the frontal triangle slightly shining, very broad, and carried to the anterior margin; the antennae and palpi fuscous; mesonotum rather dull because of the presence of brownish dust, without a trace of vittae on mesonotum; lateral margins of mesonotum and pleura more greyish than brownish dusted. Abdomen more distinctly shining than the thorax, with brownish dust, and a bronzy tinge. Wings marked as in figure 2, *a*, the spots whitish hyaline. Halteres yellow.

Ocelli hardly elevated, all bristles including the genal one well-developed. Humeral lacking, both notopleurals well-developed; scutellum with two long apical bristles and a short fine hair in front of each but closer to the bristle than is the case when the basal pair of bristles are represented.

Legs black, without any abnormal armature, the fore femur with some very fine hair-like posteroventral bristles, and the fourth segment of the fore tarsus lacking strong apical bristles. Halteres with the knobs yellow.

Eiao: Vaituha, near sea level, October 1, 1929, altitude 200 feet, October 3, 1929, Adamson.

Tahuata: Hanahevane Valley, sea level, July 17, 1930, LeBronnec and H. Tauraa.

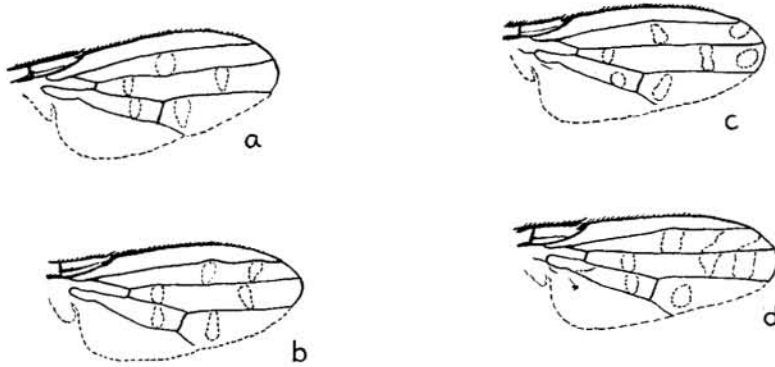


FIGURE 2. Wings, diagrammatic: *a*, *Scatella stagnalis*; *b*, *S. sexpunctata*; *c*, *S. septempunctata*; *d*, *S. varipennis*.

On both dates last listed and at the same localities along with the next species; apparently very common, as there are about 100 specimens in the collection.

This species is the genotype of *Scatella* as restricted by Hendel,³ and is distinguished from *Lamproscatella* Hendel by the chaetotaxy of the mesonotum, having two pairs of strong postsutural dorsocentral bristles and one pair of well-developed acrostichals close to the suture, *Lamproscatella* having either two or three pairs of dorsocentrals and no outstanding acrostichal bristles close to the suture. In addition to this character the genal bristle is conspicuous in *Scatella* and undeveloped in *Lamproscatella*. Becker accepted

³ Deut. Ent. Zeits., p. 42, 1917.

the latter as a subgenus and beyond pointing out the difference of treatment and the characters of the segregates I do not intend to go at this time, but will revert to the matter in dealing with the next following genus. All the four species placed in *Scatella* possess the characters cited by Hendel as criteria for the genus in the restricted sense.

All four species before me are rather similar in coloration, being entirely dark, with dark legs, the wings more or less infuscated and with whitish hyaline spots which are best seen when the wing is viewed from the tip towards the base at a low angle, almost horizontally and against the light. The figures given herein are diagrammatic, the hyaline spots being indicated in the cells by lines drawn round their approximate circumference.

***Scatella septempunctata*, new species.**

Very similar to the preceding species, differing essentially in the markings of the wings as shown in figure 2, c. The knobs of the halteres are yellow as in *S. stagnalis*. Length, 1.75 to 2.5 mm.

Type, allotype and 22 paratypes as follows:

Eiao: Vaituha, altitude 200 feet, October 3, 1929, type, allotype and 3 paratypes, Adamson.

Hivaoa: Tahauku, sea level, July 10, 1929, Mumford and Adamson.

Tahuata: Hanamenino Valley, sea level, July 17, 1930, LeBronnec and H. Tauraa.

Fatuhiva: Omoa [Oomoa] Valley, near sea level, August 21, 1930, LeBronnec.

***Scatella sexpunctata*, new species.**

Female

A much more shining species than either of the two preceding, the head bronzy, with face much less distinctly dusted, the mesonotum almost glossy except on the anterior and lateral margins, the color deep blue or violet, and the dust on lateral margins and pleura dark brown and very dense; scutellum blue or violet; abdomen less noticeably blue, shining bluish black.

Head almost as in *S. stagnalis*, all the frontal and the genal bristles strong; face distinctly shining, becoming slightly dusted on sides, the lower marginal bristles longer than in *S. stagnalis*, genae brownish grey dusted, about one-sixth of the height of eye; aristae short-haired.

Thorax as in *S. stagnalis* except in color.

Legs black. Fore femur with slightly stronger and more widely spaced posteroventral bristles; fore tibia with usually two apical ventral bristles; fourth segment of fore tarsus with a lanceolate bristle on each side at apex which are protruded forward close against the venter of the fifth segment almost to its apex.

Wing as in figure 2, b.

Knobs of halteres black.

Length, 2.5 mm.

Eiao: Vaituha, altitude 200 feet, October 3, 1929, type and four paratypes, Adamson.

Scatella varipennis, new species.

Male

Similar to the next preceding species in general coloration, but the head is lacking from the type so that characters on that part can not be ascertained. The halteres have black knobs, a character separating this and the next preceding species from the first two dealt with herein.

One very striking character consists of the very dark part of the wing in the apices of the submarginal and first posterior cells beyond the large hyaline spots, this and the costal cells are dark brown, and the two hyaline spots in first posterior cell beyond the cross vein are almost fused though when viewed almost horizontally against the light only the inner one is whitish.

The specimen is so mounted that it is impossible to distinguish the fourth segment of the fore tarsus, so one can not say if the bristles present in the next preceding species are present here also.

Wing as in figure 2, *d*.

Length, 2.5 mm.

Eiao: Vaituha, altitude 200 feet, October 3, 1929, type, Adamson.

It may be of interest to note here that the North American *S. lugens* Loew is quite similar to *S. septempunctata*, but the mesonotum is distinctly vittate, which is not the case in the latter, and the American species has the arista pubescent instead of short-haired.

Genus **NEOSCATELLA**, new genus

This genus is distinguished from *Scatella* by the possession of three pairs of long dorsocentral and one long and one short anterior pair of acrostichal bristles. The aristae are more distinctly short-haired above than is usual in that genus, the wings lack hyaline spots in the genotype, and the scutellum has four well-developed bristles, the apical pair longer than the lateral pair.

Genotype, *Neoscatella atra*.

Neoscatella atra, new species.

Male

An entirely shining black species, the face slightly brownish grey dusted, the mesonotum with a faint violaceous tinge, and the wings greyish hyaline, with black veins.

Head much as in *Scatella stagnalis*, the frons more declivitous anteriorly, but with the same bristles, the face similar, with short and rather dense hairs on entire surface of the central convexity, two or three moderately long outwardly curved bristles on each side of the convexity on upper half and a much longer similarly curved bristle on each side near lower margin, the epistome with a fringe of bristly hairs, one at each extremity longer than the others; gena about one-fifth of the eye height, the bristle long. Longest hairs on the arista fully twice as long as its basal diameter.

Thorax almost glossy, with very faint dust, the three pairs of dorsocentrals long and strong, about equally spaced, the anterior pair slightly presutural, the anterior acrostichals about half as long as the second pair, the latter behind the level of the anterior dorsocentrals; prescutellar acrostichals lacking; humeral undeveloped; both notopleurals long, posterior postalar undeveloped, anterior one long; mesopleura and sternopleura each with one long bristle and numerous hairs.

Abdomen colored as thorax, fourth visible tergite as long as the preceding two combined in male.

Legs black. Fore femur with four or five long bristles, very fine at apices; fore tibiae without exceptional hairing; mid tarsus of male with some very fine hairs along the anteroventral edge that are longer than those on the posteroventral, or either of these edges in the other tarsi; claws long, much curved; pulvilli well-developed.

Wings greyish hyaline, without a trace of hyaline or whitish spots, the veins black, costal vein rather thick, slightly thicker in male than in female, to apex of subcosta, at which latter point there is a short fine bristle as in *Scatella*, no costal spines beyond apex of first vein; inner cross vein proximad of apex of first vein, outer cross vein at less than its own length from apex of fifth vein; penultimate section of fourth vein about four-fifths as long as ultimate section, section of costa between apices of second and third veins more than half as long as the succeeding section.

Halteres yellow.

Length, 3 to 3.5 mm.

More than 300 specimens. Type, allotype, and paratypes as follows:

Hivaoa: Atuona Valley, altitude 330 feet, March 28, 1929, type, male, allotype and a large series of paratypes, Mumford and Adamson.

Tahuata: Amatea, altitude 2,000 feet, June 28, 1930; Hanatuuna Valley, altitude 1,000 feet, June 18, 1930, on wet rock by stream; LeBronnec and H. Tauraa.

Fatuhiva: Teaotu, Hanavave Valley, altitude 800 feet, September 9, 1930, on wet rock by stream, LeBronnec.

Nukuhiva: no data, L. E. Cheesman, British Museum; Vaioa, Hakau Valley, September 16, 1929, Mumford and Adamson.

Uahuka: Vaikivi Valley, altitude 1,000 feet, March 6, 1931, some resting on wet rock; Matapopo, Hane Valley, altitude 800 feet, February 27, 1931; LeBronnec and H. Tauraa.

Uapou: Hakahetau Valley, altitude 2,000 feet, December 6, 1929, on wet rock by stream, Adamson.

I have ventured to erect a new genus for this species though I might have followed a different course and ranked *Lamproscatella* and this as subgenera of *Scatella* on the strength of the evidence of connecting links in the groups; *Scatella* with two pairs of dorsocentrals and a pair of anterior acrostichal bristles, *Lamproscatella* with two pairs, or three pairs, of dorsocentrals and no outstanding anterior acrostichal bristles, and *Neoscatella* with three pairs of long dorsocentrals and one or two pairs of well-developed anterior acrostichals. It may be noted here that Cresson has described a species from North America, *intermedia*, which appears to belong to *Neoscatella*. There is another segregate of the genus that has the costal vein ceasing beyond the apex of the third vein, but possibly that would fall within the genus *Scatophilila* Becker. The last-mentioned genus has the costal vein ceasing at the apex of the third vein, and it would suggest itself to me as a proper course to pursue either to sink the genus or to erect another one for the connectant

form with the character intermediate between the two extremes. As this segregate is not in the present collection I merely draw attention to it for its significance in connection with the present discussion and make no attempt to name it.

There is a possibility that some of the Hawaiian species referred to *Scatella* may belong to *Neoscatella*, but they all differ from the genotype in having the wings spotted.

Genus PARALIMNA Loew

This genus contains a number of species in which the mid tibia has three long dorsal bristles, one close to base, a second basal of middle, and a third near apex, and the costal vein extending distinctly to apex of fourth vein.

The distribution is almost cosmopolitan, and the habits of the species are as in the preceding genus.

Paralimna lineata de Meijere.

I accept as this species a number of specimens that agree in all details with specimens from the Philippines, though there are some discrepancies between them and the description by de Meijere. Bezzi has recorded the species from Fiji and there is no doubt in my mind that this is the species he had before him. There is little to distinguish it from one now before me from the southwestern United States.

Fatuhiva: Omoa [Oomoa] Valley, near sea level, August 21, 1930, nine specimens, LeBronnec.

The small size, 2 to 2.5 mm., black legs, and lack of developed postvertical bristles, are the outstanding characters of the species.

Genus HECAMEDE Haliday

This genus contains very few species, but is rather widely distributed in the Old World, extending from the Palearctic region southward to New Zealand. How many species there are is a debatable matter, though there are as far as I have seen personally at least three. One species which I described from New Zealand has the fore femur with a series of short stout closely placed bristles on the apical half of the anteroventral surface much as in many species of Sapromyzidae, and I have before me a specimen from Hawaii that has this same character and may be my *femoralis*. The other species known to me lack these fore femoral bristles, and the species from the Marquesas Islands differs from the Palearctic *albicans* Meigen, which is the genotype, in having the genal bristle minute. I assume that *grisescens* Becker has this bristle long, but in any event it has the mesonotum with four broad brown spot-like vittae on the anterior portion of the mesonotum, which character readily distinguishes it from the one now under discussion.

Hecamede inermis, new species.

Male

Very similar to *lacteipennis* Lamb, described from the Seychelles, and to *nivea* de Meijere, described from the island of Simalur in the East Indies, differing from the first in having the frons much darker, the wings with darker veins, and the apical tarsal segment not darkened, and from *nivea* in the darker frons, and as de Meijere says that the legs are colored as in *albicans*, apparently by the unicolorous yellow tarsi.

Head brown or fuscous, densely grey dusted except on the central part of the facial convexity, which is glossy; and less densely dusted on the lateral anterior portions of the interfrontalia, which are distinctly yellowish brown; antennae yellow, third segment usually slightly darkened above; palpi yellow. Frons as in *lacteipennis*, the frontal triangle with two pairs of distinct proclinate bristles that are as long as the proclinate anterior pair of orbitals and of which the anterior pair are in line with these, the surface with a number of much shorter hairs; ocellar bristles of moderate length, just behind the level of posterior margin of the posterior ocelli; profile as in figure 3, *a*, the genal bristle very short; face bare except for the three or four marginal bristles, the upper one on a small raised base; arista with four or five moderately long upper rays, bare below.

Thorax with the usual bristles, either almost uniformly grey dusted or with the mesonotum and upper part of the mesopleura and disc of scutellum largely yellowish brown dusted, and sometimes with minute dark brown dots at bases of the surface hairs and bristles.

Abdomen silvery grey dusted, elongate subtriangular, exclusive of the rudimentary basal tergite with only three visible dorsal segments, the surface with very few black hairs, fourth tergite over 1.5 as long as third; hypopygium as in figure 3, *b*.

Legs testaceous yellow, coxae and femora fuscous and grey dusted. Fore coxa with one anterior bristle near middle; fore femur with a series of rather short and fine closely placed posteroventral bristles and no armature on the apical half of the anteroventral surface, mid and hind femora with bristles on the anteroventral surface similar to those on the posteroventral surface of fore pair.

Wings whitish hyaline, veins brown, becoming paler behind.

Halteres yellow.



FIGURE 3. *Hecamede inermis*: *a*, head in profile; *b*, apex of abdomen of male from the side.

Hivaoa: Tahauku, sea shore, July 10, 1929, type and two male paratypes, Mumford and Adamson.

It is possible that this may really be *lacteipennis* Lamb, but I consider it safer to give it a name because of the distinctions between the specimens and the description given by Lamb. It may be worth noting that the genal

bristle in the specimens of *albicans* that I have examined is not nearly as long and strong as figured by Becker.⁴

Genus *MOSILLUS* Latreille

In this genus I am placing a species which differs from the genotype and the other species properly referable here in having the face without small wart-like elevations at the bases of the hairs on each side. In other respects, however, it agrees very well with the definition of the genus. For other departures from typical forms see the description below.

Mosillus marquesana, new species.

Female

A rather dull black species with very little trace of bronzy sheen, the frons slightly shining, abdomen with greyish dust at bases of some of the tergites, legs black, tarsi testaceous yellow, apical segment darkened, wings hyaline, not whitish, veins fuscous, halteres dull brownish yellow.

Head much as in *Hecamede*, but the lateral bristles on the face much weaker, hair-like, more numerous, and not on raised bases, and the arista almost nude (fig. 4, *a*). Frons smooth at vertex, about one-fourth of the head width, slightly narrowed to anterior margin, its width at vertex a little less than equal to its length in center, the surface with thin yellowish dust except narrowly along the sides where the dust is much denser and more conspicuous; triangle very feebly indicated, extending to anterior margin; inner incurved vertical bristles rather short but distinct, outer verticals lacking; post-verticals lacking; a pair of proclinate divergent bristles on the triangle slightly anterior to the front ocellus and about in longitudinal line with the posterior pair; a reclinate orbital in line with these bristles, and one or more very short proclinate hairs in front of it; back of head slightly emarginate from dorsal view, the ocelli close to vertex; genal bristle lacking.

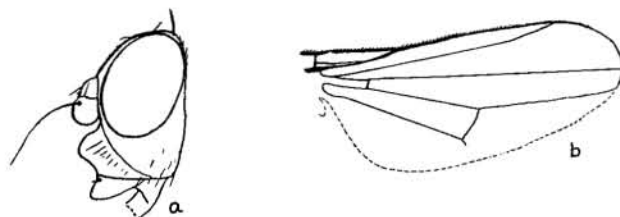


FIGURE 4. *Mosillus marquesana*: *a*, head in profile; *b*, wing.

Thorax entirely covered with sparse yellowish dust, the hairs very short, the usual large triangle marked off by incised lines at the suture on each side, the bristles rather poorly developed, only the posterior notopleural, posterior pair of dorsocentrals, and one postalar distinct; scutellum slightly flattened on disc, subtriangular, with a pair of apical closely placed, and a pair of basal, bristles, and the disc and sides with many stiff black hairs; mesopleura with short decumbent black hairs and two fine post-marginal bristles, scutellum with short hairs and one bristle.

Abdomen colored as mesonotum, with four distinct dorsal segments in addition to

⁴ Die Fliegen der Paleark. Reg., 10, p. 18, 1926.

the rudimentary basal one, the second and third with a transverse patch of grey dust on each side at base.

Fore coxae brownish in front and with one fine anterior submedian bristle; fore femora without well-developed posteroventral bristles.

Wing as in figure 4, *b*.

Length, 2.25 mm.

Hivaoa: Tahauku, seashore, July 10, 1929, type, Mumford and Adamson.

It is very probable that some other systematist would place this species in a different and new genus on the basis of the lack of facial elevations at the bases of the hairs, and the different frontal sculpture, or rather lack of the latter, but it appears to me that there are already too many quite poorly defined genera in this immediate group in the family and that the erection of more would merely further complicate the classification which is already quite badly confused.

Genus NEOHYDRELLIA, new genus

Differs from *Hydrellia* in the strict sense in having the eyes very sparsely short-haired, the arista with very short hairs above, frons with a shining triangle that almost fills the area, and only the incurved pair of verticals and the ocellar pair of bristles developed; face very slightly convex and glossy in center on entire height, the sides densely dusted and with a few hairs; mesonotum with a pair of long dorsocentrals about two-thirds of the length from suture to hind margin, one short postalar, and one long notopleural, the surface with very few microscopic hairs; pleura bare except for one fine bristle near upper posterior angle on mesopleura; scutellum with two long apical and two much shorter and finer lateral bristles; wing as in figure 5, *b*.

Genotype, *Neohydrellia hivaoae*.

Neohydrellia hivaoae, new species.

Male

Head black. Frontal triangle distinctly shining, occupying almost all of the frons except a very narrow side strip, which is enlarged anteriorly into a deep velvety black triangle; frons at vertex not sharp, distinctly rounded, its length in center about equal to half its vertical width, only the inner incurved vertical and divergent proclinate ocellar bristles present; ocelli in a triangle on a slightly raised central base, distance across posterior pair hardly more than half that from either to nearest point of eye; no orbital bristles, merely a few very minute hairs on each side of anterior half; triangle appearing to merge into the similarly colored lunule and interantennal carina, the latter not prominent. Head in profile as in figure 5, *a*; face glossy black in center, with microscopic transverse striae on lower half, the upper half slightly more sharply convex; parafacials densely brassy yellow dusted, and the sides of face narrowly, but more silvery, dusted, the strip on each side with the inner margin straight so that the width becomes greater as the face widens below the eye; each side of face with four or five very fine hairs in a series on lower half; epistome transverse; labrum retracted. Antennae brownish black, lower third of third segment fulvous yellow; second segment with some fine hairs, longest at apex below; third segment downy, over 1.5 as long as wide, with upper apical angle more narrowly rounded than the lower one; arista with the longest hairs on

upper surface about twice as long as its basal diameter, those on lower surface shorter.

Thorax shining black, mesonotum with brown dust on disc, more greyish dusted on sides, the pleura more densely grey dusted. Mesonotum in addition to the pair of strong dorsocentrals with a series of very minute hairs running forward from them to, or nearly to, the anterior margin, and with one or two similar hairs only in the acrostichal series.

Abdomen colored as mesonotum, less distinctly dusted, and with a slight coppery sheen.

Legs honey yellow, apices of tarsi slightly browned, no outstanding bristles present.

Wings brownish hyaline, veins brown (fig. 5, *b*).

Knobs of halteres honey yellow.

Length, 1.5 mm.

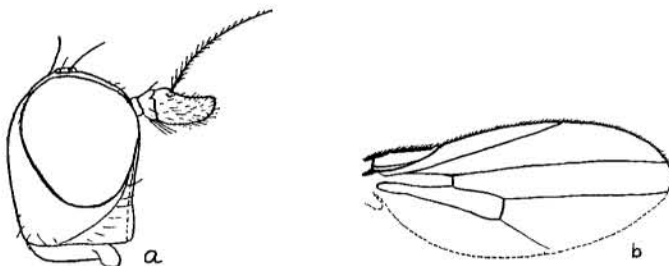


FIGURE 5. *Neohydrellia hivaoae*: *a*, head in profile; *b*, wing.

Hivaoa: Tahauku, near shore, July 10, 1929, type and one paratype, Mumford and Adamson.

This genus is similar in some respects to *Hyadina* Haliday, especially the segregate containing the two New Zealand species, but the latter though having the same cephalic and thoracic bristling have the wings marked and the face with the entire surface dusted.

Genus PHILYGRIOLA Hendel

This genus was erected in 1917 for the reception of *picta* Fallen, a European species which has been recorded also from North America. The distinguishing characters separating it from *Philygria* Stenhammer (= *Hyadrina* Robineau-Desvoidy) as given by Hendel and afterwards accepted by Becker in his paper on the Palearctic species lie in the presence of but two instead of three pairs of dorsocentrals, and the short-haired upper side of the arista. There is one species in the Marquesas Islands material which is evidently undescribed.

Philygriola monticola, new species.

Female

A small species with black thorax and abdomen bearing whitish dusted markings, fuscous marked wings (fig. 6, *b*), and black and yellow legs.

Head discolored in type, but the face showing yellowish centrally below, and the frons deep black in center and grey dusted on sides. Profile as in figure 6, *a*; frons nearly one-half of the head width, very short in center, where it is much depressed in front and roundly emarginate behind, both pairs of vertical bristles present and quite long, the inner pair longer than the outer, ocellars about as long as the outer verticals, orbits without distinct bristles, with one or two microscopic hairs. Antennae fuscous, third segment fulvous yellow, darkened on upper margin; aristae much longer-haired above than in the genotype; labrum and palpi dark.

Thorax greasy, but with traces of pale grey dust on mesonotum. The anterior pair of long dorsocentrals close behind suture, both notopleurals rather weak, no acrostichal hairs evident in type; scutellum with one long apical, and one shorter lateral, pair of bristles; mesopleura with one hind marginal bristle.

Abdomen brownish black, with whitish grey dusting, the second to fourth tergites each with a central and a lateral black mark on dorsal exposure.

Legs brownish black, fore tibiae and tarsi, a narrow median ring on hind tibiae, and the basal four segments of mid and hind tarsi, whitish yellow. No bristles developed.

Wings greyish hyaline marked with fuscous as in fig. 6, *b*, the spots in submarginal cell not constant, and some of them, notably the one from apex of second vein, the one in second posterior cell, and the one on center of fifth vein, usually with more or less distinct spur veins inclosed.

Length, 1.25 mm.

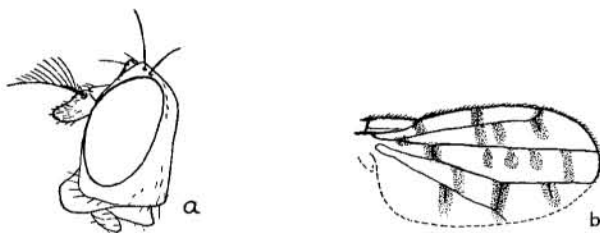


FIGURE 6. *Philygriola monticola*: *a*, head in profile; *b*, wing.

Hivaoa: Kopaafaa, altitude 2,800 feet, February 25, 1930, beating on *Sclerotheca* species, type, Mumford and Adamson.

The different hairing of the upper side of the aristae and the spur veins of the wings might be utilized as generic criteria by some workers, but I prefer to give a wider scope to the genera rather than to erect others, unless too much violence is done to the system by the former course, so leave the species in *Philygriola*.

FAMILY TETHINIDAE

This family is rather doubtfully entitled to the rank given it by Hendel, but owing to the small amount of importance attached to the occurrence of the single species in this collection I prefer not to go into the matter of its status herein.

The character of the frons is the principal one distinguishing it from most of the related groups dealt with in this paper, the interfrontalia having

crossed central bristles extending from the anterior ocellus to the anterior margin. This is a character met with in some members of the preceding family, but the wing venation is more complete here.

I cannot identify the following species as having been described by previous writers on the group and present a full description below.

***Tethina lasiophthalma*, new species.**

Male

A fuscous species, with the thorax and abdomen rather densely grey dusted, the head mainly orange-yellow, third antennal segment dark above, and the legs yellow except the dark apical segment of the tarsi. Wings hyaline.

Head orange-yellow, ocellar spot, vertex, and upper half of back of head fuscous, the latter with two white dusted marks just above neck in center, frontal orbits narrowly grey dusted, third antennal segment more or less broadly infuscated above and at apex, arista fuscous, palpi yellow; all hairs and bristles black. Frons at vertex over one-third of the head width, each orbit with three strong bristles, the upper one less distinctly outwardly curved than the other two and very slightly higher than the anterior ocellus, the anterior two markedly outwardly curved and stronger than the upper; interfrontalia with a slightly differentiated greyish stripe on each side of central line, convergent anteriorly, and with some fine hairs and two stronger incurved or cruciate bristles; orbits with two series of minute hairs, the inner curved inward, the outer curved outward; all four verticals and the ocellars strong, postvertical minute, divergent; eyes densely short-haired, occupying almost all the side of head, the parafacials showing as a mere line in profile, gena about one-eighth of the eye height; third antennal segment a little longer than wide, broadly rounded at apex; arista with the longest hairs fully as long as its basal diameter; two or three of the marginal genal bristles immediately behind the vibrissa upwardly curved and stronger than it; proboscis stout.

Thorax fuscous, densely grey dusted and but slightly shining, the humeri, sutures of pleura, and generally the margin of the scutellum showing slightly tawny yellow, no mesonotal vittae. Dorsocentrals 1 + 3, humeral, notopleural, presutural, and prescutellar acrostichal, bristles well developed; prealar short but distinct; mesopleura with two hind marginal bristles, sternopleura with one; stigmatal and propleural bristles present; basal pair of scutellars almost as long as the apical pair; intradorsocentral setulae in six series; all hairs and bristles black.

Abdomen colored as thorax, the apices of the tergites brownish yellow. Hairs and bristles black.

Legs yellow, apical segment of all tarsi fuscous. Hairs black.

Wings greyish hyaline, veins brown. Inner cross vein below or slightly proximad of level of apex of first vein and not over two-fifths from base of discal cell, ultimate section of fifth vein subequal to penultimate section of fourth, the latter not over half as long as ultimate section of fourth.

Halteres yellow.

Length, 2 to 2.5 mm.

Hivaoa: Tahauku, seashore, July 10, 1929, type, male, allotype, and three male paratypes, Mumford and Adamson.

Other paratypes as follows:

Tahuata, Hanahevane Valley, seashore, July 15, 1930, LeBronnec and H. Tauraa.

Fatuhiva: Omoa [Oomoa] Valley, near seashore, August 21, 1930, Le-Bronnec.

Eiao: Vaituha, October 2, 1929, at light, Adamson.

All the species as far as known frequent the seashore and possibly this one will be found on other islands in the group with Hivaoa, and even in the other group.

Both the species described by Lamb from the Seychelles and placed in *Rhinoëssa* are much paler in color, with yellow or ferruginous bristles and hairs; Bezzi has placed *Rhinoëssa ferruginea* Lamb as a synonym of *sexseriata* Hendel in his paper on the Diptera of Fiji, the latter having been described from Formosa. The Australian species *nigriscta* Malloch has quadriseriate intradorsocentral setulae and the basal pair of bristles on the scutellum about half as long as the apical pair in addition to several other distinguishing characters.

FAMILY AGROMYZIDAE

I have found but one genus of this family amongst the Marquesan material and of this but one species, represented by a single much-damaged specimen. It is possible that intensive collecting, and especially in the larval stages in mines in leaves, will produce a number of native species.

Genus MELANAGROMYZA Hendel

This genus is rather poorly differentiated from the other segregates into which Hendel recently separated the old genus *Agromyza* Fallen, the character of the subcostal vein being distinct or fused with the radial vein being difficult to determine, but in the matter of relationships it appears to me that the species that have the knobs of the halteres black are more closely related to each other than any of them are to the groups in which these organs are yellow, so I accept the name herein, though with reservations as to its claim to distinct generic rank. The species in the collection lacks a well-defined central carina between the bases of the antennae, and has but one bristle on the vibrissal angles instead of a fasciculus so that it may be separated from those that are referable to *Ophiomyia* Brash., in which group such species as *Agromyza lantanae* Froggatt fall. I have some hesitation in describing the following species because of the fragmentary condition of the specimen, but it appears to be distinct from any other known to me, and having been reared it may be the more probably subsequently identified so I am giving it a name for future use in connection with the fauna of the islands.

Melanagromyza marquesana, new species.

Male

An entirely black species, with shining black abdomen and thorax, and greyish hyaline wings.

Head including the antennae and palpi entirely black, hairs and bristles concolorous. Profile as in figure 7; arista bare; face with a narrow central vertical carina which widens between the bases of the antennae, but is nowhere prominent; frons in type partly collapsed so that it is not possible to be exact in either its proportions or armature, but it is apparently distinctly longer than its width at vertex, the frontal triangle does not extend to middle, and the orbits are rather glossy and narrow.

Thorax glossy black, with two pairs of postsutural dorsocentrals, one pair of prescutellar acrostichals, and eight or ten series of intradorsocentral setulose hairs.

Abdomen shining black, tapered to apex, sixth tergite about 1.5 as long as fifth, and twice as long as the basal swollen segment of hypopygium.

Legs black, rather stout, fore femur without well-developed posteroventral bristles; mid tibiae broken off so that it is impossible to tell if there are any posterior median bristles.

Wings greyish hyaline, veins black, only the base of one wing present, which shows the venation as follows: discal cell ending well before the middle of wing, inner cross vein distinctly beyond apex of first vein and at one-third or less from apex of discal cell, the outer cross vein at not over its own length from inner and about one-third as long as discal cell.

Squamae dark grey, with fuscous margin and fringe. Halteres with black knobs. Length, 2 mm.

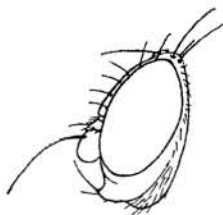


FIGURE 7. *Melanagromyza marquesana*, head in profile.

Hivaoa: Kopaafaa, February 26, 1930, type, pupa in leaf of *Sclerotheca* species emerged March 1 to 5, 1930, Mumford and Adamson.

Apparently nearly related to *alysicarpi* Bezzi, but larger, with more numerous intradorsocentral setulose hairs, and wider frons. Bezzi's species was described from Fiji, where the larvae were taken mining the leaves of *Alysicarpus vaginalis* D. C. Another closely related species is *phaseoli* Coquillett, the widely distributed Oriental bean-fly, but the latter has a more greenish or bluish body and white squamae.

FAMILY DROSOPHILIDAE

I have in a preceding paper reported on a few of the more interesting species of this family, but have as yet not had the time available to make identifications of the large number of specimens in the collection, particularly

of those belonging to the genus *Drosophila* Fallen in the wide sense. I present below some additional data on the family.

It may be of interest to note here that the Marquesan fauna is, on the basis of this collection, less diversified in so far as this family is concerned than that of the Samoan or Hawaiian groups. There is, however, a much greater diversity of the forms related to and belonging to *Scaptomyza* than is the case in either of the other two island groups, a fact that will be more emphasized when I publish my report⁵ on the Samoan species.

Genus MYCODROSOPHILA Oldenberg

***Mycodrosophila halterata* Malloch.**

This species, which is closely related to *gratiosa* de Meijere, was originally described from Society Islands, the type and one other specimen from there being now before me.

Tahuata: Tehue Valley, altitude 800 feet, May 27, 1930, 5 specimens, sweeping over grasses, LeBronnec and H. Tauraa.

Possibly searching on fungi would reveal this species, and perhaps others, in numbers, as the related species stick rather closely to the vicinity of their food plants and are more readily obtained from the under sides of fungi than by any other manner of collecting.

Genus DROSOPHILA Fallen

Within recent years Dr. O. Duda has proposed a number of new genera and subgenera for the reception of species previously placed in *Drosophila*, and besides the latter in its restricted sense there is before me one of the named segregates, *Spinulophila* Duda, which group contains a number of species all having the apical half of the anteroventral surface of the fore femora in both sexes furnished with a series of short but stout closely placed black spines. I am using for the segregate the first name proposed for it by Duda, although later on he changed it to *Acanthophila*.

***Drosophila (Spinulophila) nasuta* Lamb.**

General color tawny yellow, with the frontal orbits generally whitish dusted in the male, and in well-preserved specimens also in the female; when seen against the light the entire frons of the male is usually whitish dusted, and there are no definite dark marks on the abdomen. The outer cross vein of the wing is very slightly clouded. Apart from the fore femoral armature of both sexes there is no abnormal armature of either the tibiae or the tarsi.

Length, 2 to 3.5 mm.

A very large number of specimens from various islands as follows:

Hivaoa: Tanaeka Valley, altitude 1,450 feet, June 4, 1929; Atuona Valley, altitude 325 feet, July 6, 1929; Mumford and Adamson.

⁵ Insects of Samoa, manuscript in preparation.

Tahuata: Vaitahu Valley, altitude 100 feet, June 11, 1930; Tehue Valley, altitude 650 feet, May 27, 1930; LeBronnec and H. Tauraa.

Fatuhiva: Teavaitapu Valley, altitude 350 feet, August 23, 1930, LeBronnec.

Uahuka: Pouau, Hokatu Valley, altitude 500 feet, March 9, 1931, LeBronnec and H. Tauraa.

In addition to the above there are specimens from Tahiti, Society Islands, Papenoo Valley, 10 kilometers from the sea, altitude 150 meters, October 23, 1928, A. M. Adamson.

Originally described from the Seychelles, and probably distributed over most of the Pacific islands.

I am accepting as this species one that is very common in the collection and appears to be quite widely distributed, as there are specimens that appear to belong to it in material I have examined from Samoa, Society Islands, and the Marquesas. I have a very strong suspicion that this is also the species described by Duda as *albovittata* and by Bezzi as *bilimbata*, the latter being from Fiji. As the larvae feed in decaying fruits, there is a likelihood that it is generally distributed throughout the Indo-Australian region.

***Drosophila (Drosophila) ampelophila* Loew.**

This very widely distributed species is readily known in the male sex by the presence of a comb of short, stout, glossy, black bristles on the apical half of the outer side of the fore metatarsus. The female lacks this comb and is less readily distinguished from such species as the next one listed herein.

Hivaoa: Matauuna, altitude 3,700 feet, March 2, 1930, Mumford and Adamson.

Tahuata: Hanamiai, altitude 150 feet, May 28, 1930, on rotten mangoes, LeBronnec and H. Tauraa.

Fatuhiva: Omoa [Oomoa] Valley, near sea level, August 18, 1930, 1 doubtful male specimen, at light, LeBronnec.

***Drosophila (Drosophila) errans*, new name.**

Drosophila similis Lamb, Trans. Linn. Soc. London, 16, pt. 4, p. 347, 1914; not Williston, 1896.

This species resembles *D. ampelophila* but lacks the comb on the fore metatarsus, and has the dorsal hairs and preapical dorsal bristle on the fore tibia in the male more erect, longer, and slightly curled. The two basal segments of the fore tarsi in the same sex have the ventral setulae arranged in transverse series that are quite conspicuous when seen transversely and as well figured by Lamb in the paper in which he originally described the species from the Seychelles. This same figure shows the peculiar curved dorsal hairs of the fore tibia, although these are not mentioned in the description.

Apparently a common species, occurring with *D. nasuta*, some of the specimens of both species bearing labels stating that they were taken on horse manure and rotten mangoes.

On the islands Fatuhiva, Hivaoa and Tahuata, from near sea level to an elevation of 2,150 feet (Fatuhiva, August 25, 1930).

It is quite possible that this species has been described by some other worker besides Lamb, but I have been unable to identify it as any such species, and having been unable also to discover any new name having been proposed for the species I am substituting for *D. similis* Lamb, the new name given above.

Genus SCAPTOMYZA Hardy

I have already presented a summary of the more typical species of this genus occurring in the Marquesas Islands, and now describe a species that differs from the others very markedly in possessing a pair of strong acrostichal bristles close to the suture on the mesonotum. In the structure of the face and the hairing of the central area of the mesonotum it agrees with the genotype, but there are other differences that will be noted in the description of the species given below.

Scaptomyza mumfordi, new species.

Male

A dark species, with yellowish grey frontal triangle and orbits, yellow antennae of which the third segment is almost white, yellowish to brownish grey dusted trivittate mesonotum, glossy brownish black abdomen, yellow legs except the femora, which are fuscous, and hyaline wings.

Head brown, frontal orbits and triangle yellowish, with grey dust, paler in front, the orbits widened at anterior margin and the triangle carried to center of frons, the intervening parts of the interfrontalia reddish brown, forming a broad V. All four vertical, the ocellar, and upper reclinate orbital, bristles long, the postvertical pair about as long as the proclinate orbital, the anterior orbital a short hair, nearer to proclinate than to reclinate bristle and slightly nearer to eye than the former, no hairs on anterior margin of interfrontalia. Face with a narrow central vertical carina which is widened below, but separated from the epistome by a distinct transverse furrow, general color black, the parafacials yellow, carina greyish on center. Width of face at vibrissae hardly more than half of that at bases of antennae; epistome convex, not higher than lower extremity of carina, both slightly visible in profile. Gena linear, yellow; vibrissa rather short, a fine setula below it and the lower genal margin with some fine hairs. Eye higher than long, the lower half of hind margin slightly emarginate, the facets almost uniform in size, the hairs dense, erect and stiff, longer in front, tapered off behind. Antennae yellow, third segment almost white; arista dark, with five or six rays above and one or two below. Palpi fuscous.

Thorax fuscous, densely yellowish to brownish grey dusted, the mesonotum with three dark brown vittae, the usual bristles present, the acrostichal hairs in two series, with a pair of quite conspicuous bristles at or close to the suture, the prescutellar acrostichals undeveloped, dorsocentrals two pairs, with a much weaker anterior pair usually present, one humeral, and the posterior notopleural and postalar short; scutellum flattened above and with a slight marginal rim.

Legs normal, hairs on dorsal surfaces of fore tarsal segments slightly longer than on the other tarsi.

Wings hyaline, veins brown, slight clouds over both cross veins and in marginal cell below apical third of first vein, inner cross vein slightly beyond apex of first vein, penultimate section of fourth vein a little less than half as long as ultimate one, subequal to penultimate section of costa and 1.5 as long as ultimate section of fifth, ultimate section of costa half as long as penultimate.

Halteres yellow.

Female

Differs from the male in having the frontal orbits, triangle, and parafacials brownish yellow, and the third antennal segment also brown.

Length, 2 to 2.5 mm.

Uapou: Hakahetau Valley, altitude 1,000 to 2,000 feet, January 29, 1930, type, male, allotype, and a large number of paratypes of both sexes, on the wing, Whitten.

Other paratypes as follows:

Hivaoo: Tanaeka Valley, altitude 1,100 feet, June 4, 1929; Tapeata, east slope of Mount Ootua, altitude 2,500 feet, May 25, 1929, on *Papsalum conjugatum*; Ootua Spring, altitude 2,500 feet, February 13, 1930, in flowers of *Zingiber* species; Mumford and Adamson.

Tahuata: Hanamiai Valley, altitude 1,000 feet, May 28, 1930; Tehue Valley, altitude 800 feet, May 27, 1930, sweeping over grasses; Hanamiai Valley, altitude 1,300 feet, June 4, 1930, and altitude 1,600 feet, May 28, 1930; LeBronnec and H. Tauraa.

Fatuhiva: Vaikoao, Omoa [Oomoa] Valley, altitude 1,600 feet, August 29, 1930, sweeping herbage, LeBronnec.

Uapou: Hakahetau Valley, altitude 1,200 feet, December 6, 1929, Adamson.

FAMILY BORBORIDAE

I have been unable to examine thoroughly the material in this family, but can report that it belongs entirely to the genus *Leptocera* Olivier in the wide sense, no species of *Borborus* Meigen or *Sphaerocera* Latreille, the two other most widely distributed genera, occurring, though at least the former ought to be found in the Marquesas.

The larvae of all the species are found in manure, decaying vegetation, or in a few cases in fungi or nests of Hymenoptera.

One small species that is present appears to be *Leptocera* (*Scotophilella*) *puerula* Rondani as identified by Duda, but the identification of the Marquesan specimens is only tentative. Bezzi has recorded the species from Fiji. There are no specimens of *Leptocera* (*Coprophila*) *ferruginata* Stenhammer, nor *Leptocera* (*Poecilomella*) *punctipennis* Wiedemann, in the collection, both these being recorded from Fiji by Bezzi, and the last named

represented by many specimens in my hands from the Society Islands. It is very widely distributed over the tropical and subtropical portions of both hemispheres. Although *L. ferruginata* is found commonly in more northern latitudes in both hemispheres, it also is widely distributed in subtropical portions as it is a more general feeder, frequently feeding in the larval stages in dead fish and carrion. Both these species may be expected to occur in the Marquesas group.

As far as I can determine at present there are three species in the collection, all less than 1.5 mm. in length on the average. One of these is represented by only two females, and belongs to the subgenus *Coprophila*; it appears to be undescribed, but I leave it aside pending receipt of more material and specimens of the male. The other one is a *Scotophilella*, closely resembling *S. albinervis* Duda, but there are some points in which it differs from that species, and meanwhile I prefer to leave it as a possible undescribed form, hoping later to return to it in connection with a survey of the family from other groups of Pacific Islands.

FAMILY SAPROMYZIDAE

When I made my preliminary report on the above family from the Marquesas I had three specimens before me that required some further study before I cared to commit myself to a generic identification, and in the hope that more specimens would be found before a final disposition had to be made of them I refrained from making an attempt to work out their relationships. Now in order to record the occurrence of these specimens I have been compelled to attempt their elucidation without further additions, and present my deductions.

In the family much weight has been placed upon the presence or absence of the posthumeral or presutural bristles on the mesonotum in distinguishing genera in one of the subfamilies, and as a general rule the bristle is either invariably present or invariably absent in certain genera which as a rule are readily distinguishable also on the basis of other characters. In *Trigonometopus* Meigen the presutural bristle is absent, while in *Sapromyza* Fallen and similar genera it is present and generally quite strong. It must be borne in mind that genera are merely convenient means of segregating groups of more or less closely related species in accordance with the ideas of certain specialists in classification, and that the acceptance of one or more structural characters for such separations by the original describer of a genus does not necessarily bind subsequent workers to accept the same characters for that purpose, though of course any redefinition of any particular genus must of necessity be such that it will admit the genotype. In my recent paper on the Oriental species of this family I attempted to bring together in key form

the genera related to *Trigonometopus* Meigen, and in another key those related to *Trigonometopsis* Malloch. In the first-mentioned group those species that lacked the presutural bristle were listed, and in the other those that possessed it were included. In the two groups the venation of the wings is identical with that of *Sapromyza*, having the costa to apex of fourth vein and the short closely placed black setulae ceasing about midway between the apices of second and third veins, instead of at apex of third as in *Homoneura* Van der Wulp. All genera related to *Trigonometopsis* have the dorsocentral bristles on the mesonotum in three pairs, the anterior pair presutural, the others postsutural. Included in the latter group there were four genera in addition to *Trigonometopsis*, namely, *Maquilingia* Malloch, *Kerteszmomyia* Malloch, *Panurgopsis* Kertész, and *Chaetolauxania* Kertész. The two species now before me do not lend themselves readily to assignment in accordance with the characters listed above. One of them has the presutural bristle present, though it is not very strong and is slightly nearer to the central line of the mesonotum than usual, and the other lacks this bristle. Thus we are faced with the problem of placing the species in one of the old genera despite the fact that one of them will not fit perfectly into the scheme, or else erecting one or two genera for their reception. A careful study of the species convinces me that they are closely related, and they must be accepted as congeneric, the variation in the development of the presutural bristle notwithstanding. My conviction is that the two species are offshoots from the stem from which *Prochaetops* Bezzi was derived, and that they are not at all closely related to *Trigonometopus*. I consequently erect for their reception the new genus described below.

Genus **CHILOCRYPTUS**, new genus

Head much as in typical *Sapromyza*, all the bristles well developed, both pairs of orbitals reclinate; postvertical pair well below vertex; third antennal segment a little longer than wide, rounded at apex, basal segment shorter than second; arista bare. Mesonotum with 1 + 2 pairs of dorsocentrals; the presutural lacking or rather short; scutellum flattened and bare on disc, subtriangular, with four bristles; sternopleurals 2, anterior one shorter than the posterior one; propleural long. All tibiae with well-developed preapical dorsal bristle; fore femur without apical anteroventral comb. Wing venation as in *Sapromyza*; upper and lower surfaces of the costal vein both with a series of fine setulae in addition to the series on the anterior edge. Claws of fore tarsi of males minute, almost hidden.

Genotype, *Chilocryptus bilineatus*.

The two species may be distinguished as follows:

- A. Head including the antennae and palpi pale stramineous, only the ocellar spot faintly brownish; mesonotum with a dark brown line from base of the anterior pair of dorsocentrals to hind margin; scutellum entirely yellow.....**bilineatus**
- AA. Head stramineous, with brown or fuscous marks as follows: on ocellar triangle, on outer side of basal segment of antennae and at insertion of the arista on third segment, apices of palpi, and a central spot on face; mesonotum with four fuscous vittae, the inner pair along the lines of dorsocentrals, but much wider than in the above species and carried along the sides of the scutellum, but not round the apex, the outer vittae between these and the lateral margin.....**quadrilineatus**

Chilocryptus bilineatus, new species.

Male

A very pale yellow species, with the mesonotum marked by two dark lines from anterior dorsocentrals to hind margin.

Head in profile as in figure 8, frons at upper angles of eyes, which are almost in transverse line with the posterior ocelli, over one-third of the head width, narrowed to anterior margin, where it is barely two-thirds as wide, the surface with a few short hairs on anterior half or less; all the bristles long, and, like the hairs, pale yellow.

Thorax stramineous, with the two vittae well defined, but mere lines which do not extend in front of the presutural dorsocentrals nor beyond hind margin; all the bristles except the presutural (posthumeral) well developed, the latter short and fine and rather nearer to dorsocentrals than usual, possibly only occasionally present; prescutellar acrostichals lacking; intradorsocentral hairs in four series in addition to the one in line with the dorsocentrals, the outer one on each side irregular; all hairs and bristles yellowish brown, or yellow.

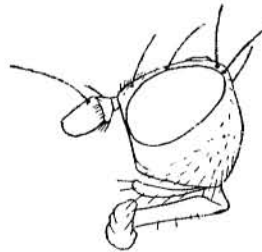


FIGURE 8. *Chilocryptus bilineatus*, head in profile.

Abdomen stramineous, tapered apically, with yellow hairs and bristles; hypopygium small, with two finger-like processes.

Legs stramineous, with pale hairs and bristles, the claws on mid and hind tarsi brown, the apical segment of fore tarsus produced somewhat shelf-like over the claws and with a series of marginal setulose hairs that are as long as the segment, the pulvilli also enlarged and with dense downy hairs, the claws minute, almost invisible between the fifth segment of tarsus and the pulvilli.

Wings hyaline, the veins yellow, the apical section of third, fourth, and all of fifth a little darker. Costal vein with the usual series of short closely placed stout spinules on the upper anterior edge from near humeral cross vein to beyond apex of second, a more widely spaced series of longer and much finer hairs on the lower anterior edge, and two series of short, rather widely spaced setulose hairs, one in center below and the

other in center above on the same extent as that of the stout spinules. Inner cross vein almost below apex of first vein and slightly beyond middle of discal cell; first posterior cell not narrowed at apex; ultimate section of fourth vein about 2.5 as long as penultimate; ultimate section of fifth vein not entirely attaining margin of wing, as long as outer cross vein.

Squamae and halteres yellow.

Length, 3 mm.

Uahuka: crest of north ridge, altitude 2,000 feet, September 29, 1929, type, miscellaneous sweeping, Adamson.

Chilocryptus quadrilineatus, new species.

Male

A rather larger and more robust species than the foregoing one, with four dark mesonotal vittae, the head marked with fuscous, and the bristles and hairs, especially on the head and thorax, fuscous.

Structure of head and its chaetotaxy as in *C. bilineatus*, but the arista longer.

Thorax differing in the presence of four dark vittae, the one along each series of dorsocentrals much wider, extending slightly in front of the presutural dorsocentrals and along the sides of the scutellum to the bases of the apical bristles, and the intra-dorsocentral hairs more distinctly quadriseriate.

Wing veins a little darker than in *C. bilineatus*, the outer cross vein very faintly clouded with pale brown.

In other respects similar to the genotype, the fore tarsi similarly formed.

Female

Differs from the male in having a larger dark central spot on the face, the abdomen stouter and more tapered to apex, the fore tarsi with the claws of moderate length and similar to those of the mid and hind pairs, and both cross veins slightly clouded with brown.

Length, 3.5 to 4 mm.

Nukuhiva: Puokoke, Tunoa Ridge, altitude 3,485 feet, October 22, 1929, type, male, on shrub, field number 565, Mumford and Adamson.

Uahuka: Hitikau Crest, altitude 2,850 feet, March 4, 1931, allotype, on *Weinmannia* species, LeBrons and H. Tauraa.

I have very little hesitation in associating the sexes above as one species, but subsequent collecting may disprove my determination.

FAMILY CHLOROPIDAE

I have already submitted a partial report on this family, but have a number of additional species before me and now present some data on these. All of the genera so far submitted to me belong to the subfamily Oscinosominae. This is as might be expected, the Chloropinae being much rarer in the Indo-Australian region than the other subfamily, and this is especially the case in the Pacific islands.

Genus CADREMA Walker

This is the same generic concept as *Hippelates* Loew, though there is some doubt about the synonymy. Several recent writers on the family have accepted the present assignment and it appears better to follow this course than to revert to the old generic name which was proposed for a North American species, in which region the genus is very well represented. I have recently described one species from New Zealand and several from Australia. As far as I know now the genus is almost cosmopolitan in its distribution, though the records of its being a pest to man in the habit of settling on the face, and especially in the eyes, are reported only from North America.

Cadrema bicornis, new species.

Male and Female

A yellow species, with black markings on head and thorax, and most of the abdomen glossy black. Wings hyaline.

Head in profile as in figure 9, honey yellow, with a dark mark on each side of occiput,

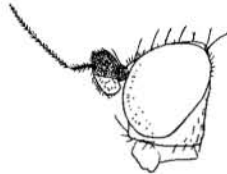


FIGURE 9. *Cadrema bicornis*, head in profile.

a small central mark over ocelli, the arista, and antennae above a line drawn from lower edge of arista to base of third segment in line with the lower level of apex of second segment black. Frons at vertex as wide as long in center, gradually but slightly narrowed to anterior margin, the four vertical bristles moderately long, ocellars short, erect, and cruciate, each orbit with three or four rather well-developed bristles and a number of minute hairs, all black, triangle almost filling the vertex, extending to anterior margin, with a series of black hairs along each side, the two near apex longer than the others. Face narrowed below; eyes with rather sparse, but quite evident, pale hairs; vibrissae and genal hairs yellow; palpi yellow; third antennal segment reniform; arista haired.

Thorax glossy yellow, with the usual three black vittae fused and forming a large discal mark, which is incised slightly on each side at suture and tridentate on hind margin, only the central tooth extending to posterior margin; humeri yellow; pleura without dark markings; scutellum flattened on disc, with a slight marginal rim, slightly emphasized by the dark edges against the yellow disc, the surface hairs short and set in slight punctures, as are those on the mesonotum, the marginal bristles consisting of two at apex and one shorter on each side, notopleurals 1 + 2 as usual, postnotum black in center.

Abdomen glossy brownish black, narrowly yellowish at base.

Legs yellow, fore femora usually slightly browned above centrally. Femora not noticeably thickened; hind tibial spur about as long as diameter of apex of tibia.

Wings hyaline, venation normal, third vein slightly upwardly curved at apex so that the first posterior cell is widened at tip.

Halteres yellow.

Length, 2 to 2.5 mm.

More than 50 specimens. Type, allotype, and paratypes as follows:

Uahuka: Putataua, Vaipae Valley, altitude 880 feet, September 20, 1929, type, male, allotype and two paratypes, Adamson.

Hivaoa: Mt. Temetiu, altitude 2,800 feet, August 3, 1929; Atuona Valley, altitude 325 feet, July 6, 1929; Mumford and Adamson.

Fatuhiva: Hanavave Valley, altitude 50 feet, September 9, 1930, sweeping over *Paspalum conjugatum*; Teavaitapu Valley, altitude 350 feet, August 23, 1930; LeBronnec.

Society Islands, Tahiti: up to 1,000 feet, September and December, 1928, Mumford and Adamson.

Genus TRICIMBA Lioy

This genus is closely similar to *Oscinosoma* Lioy, differing from it in having the mesonotum with two or three well-developed longitudinal sulci.

Tricimba adamsoni, new species.

Male

A very small brown species, with yellow legs and centrally browned femora.

Head dark brown, anterior third of the frons orange-yellow, more narrowly so on sides; face dark brown, shining; genae brownish yellow; antennae brown, third segment becoming yellow below; palpi testaceous yellow; hairs and bristles yellow. Thorax fuscous, densely grey dusted, slightly shining, the mesonotal sulci brownish behind; scutellum colored as mesonotum. Width of frons at vertex about equal to its length, slightly narrowed to anterior margin, the bristles very short, surface with a few very short hairs, those along the orbits rather close, but inconspicuous. Antennae of moderate size, third segment disc-like; arista nude or almost so and not over 1.5 as long as width of third antennal segment; palpi normal; face without a definite central carina; eyes with very sparse short hairs; gena about half as high as width of third antennal segment and equal to postocular orbits near middle of eye. Mesonotum with but two sulci, which are shallow, impunctate, and present only behind suture, narrow in front and widened behind, the surface with short, yellow, stiff hairs, three series between the sulci posteriorly. Scutellum flattened above, about 1.5 as long as its basal width, tapered to apex, where it is not one-third as wide between the apical bristles as it is at base, the surface with many short, decumbent, stiff, pale bristles, those on the edges longer, and the apex with two stronger rather closely placed bristles.

Abdomen brown above, pale below, tapered to apex, with very short hairs which are finer than those on the mesonotum.

Legs testaceous yellow, mid and hind femora distinctly browned in middle.

Wings hyaline, veins dark brown, first posterior cell slightly widened at apex, outer cross vein oblique, ultimate section of fifth vein subequal to penultimate section of fourth, third section of costa about 1.5 as long as fourth and over one-half as long as second.

Halteres yellow.

Length, 1.25 mm.

Eiao: near center of island in coconut plantation, altitude 1,450 feet, October 1, 1929, type, Adamson.

The smallest species of the genus known to me. Differs from the Seychelles species *trisulcatus* Lamb in size, lack of central mesonotal sulcus, and

other characters, and from the Australian species in lack of a facial carina and several other characters.

Genus *OSCINOSOMA* Lioy

I have already described one species of this genus from the Marquesas and below I add one other.

Oscinosoma bicoloripes, new species.

Male and Female

A glossy black species, with the coxae and femora black and the tibiae and tarsi clear yellow. Wings hyaline.

Head black, anterior margin of frons, sides and lower part of face, and bases of antennae yellowish, third antennal segment infuscated except at base; palpi fuscous; all hairs and bristles fuscous. Frons at vertex much widened from upper angles of eyes backward, at the latter, which are almost in line with the posterior ocelli, the width is about two-fifths that of head and as great as its length in center, the surface with numerous stiff black hairs, longer in front, the orbits each with four well-developed setulose hairs; triangle largely glossy black, slightly dusted in front, the sides almost straight, tip acute, at anterior margin of frons; ocelli forming a very small triangle; vertical bristles well developed, rather pale; ocellars short, erect, and cruciate. Eyes in profile almost twice as high as long, with sparse, short, fine, pale hairs; gena linear, vibrissa small, but distinct; head from in front more than 1.5 as wide as high, wider than thorax, the face dusted, concave in center, the epistome very slightly carinate, width at vibrissal angles hardly more than half that of eye on same plane. Antennae of moderate size, third segment higher than long, broadly rounded in front; arista with short hairs.

Thorax entirely glossy black, mesonotum slightly and microscopically shagreened or alutaceous on disc, the hairs rather pale, numerous and decumbent, upper posterior notopleural undeveloped, scutellum convex on disc, rounded in outline, disc haired, margin with two apical and two shorter subapical bristles.

Abdomen shining black.

Legs clear yellow, coxae and femora shining black, the apices of latter in the male narrowly yellow.

Wings hyaline, veins pale brown.

Length, 1.5 to 2 mm.

Type, allotype, and fourteen paratypes as follows:

Eiao: Vaituha, altitude 200 feet, October 3, 1929, type, male, and allotype; near center of island, altitude 1,665 feet, September 28, 1929, altitude 1,400 feet and 1,855 feet, September 29, 1929, Adamson.

Hivaoa: Tahauku, near shore, July 10, 1929, Mumford and Adamson.

Fatuuku: September 19, 1930, H. Tauraa.

Uahuka: Putatauuu, altitude 880 feet, September 20, 1929, Adamson.

FAMILY PHORIDAE

The great majority of the members of the family Phoridae are either carnivorous or fungivorous in the larval stages, but some of them are parasitic on insects. The few that are present in the Marquesan material are of

the first listed class, one species of *Dohrniphora* being possibly a feeder on dead molluscs or similar matter.

Genus DOHRNIPHORA Dahl

Dohrniphora species.

A male specimen with black mesonotum and scutellum, yellow pleura, black spots on each side of second to fifth tergites, which are narrowly separated in center, and a broad black apical margin on sixth tergite, the remainder of the abdomen and all of the legs yellow. Wings hyaline, venation similar to that of *D. concinna* Meigen, the costal fringe very short. Halteres yellow. Hind tibia without a basal bristle.

Length, 2 mm.

Hivaoa: Tahauku, seashore, July 10, 1929, Mumford and Adamson.

Genus MEGASELIA Lioy

Megaselia species.

A male specimen of a small yellow species, with dorsum of abdomen dark brown. The mesopleura lacks hairs or setulae on the upper posterior angle, and the costal fringe is long, while the third vein extends to beyond the middle of the wing.

Length, 1.75 mm.

Nukuhiva: Teuanui, Toovii, altitude 1,900 feet, October 16, 1929, Mumford and Adamson.

Probably an undescribed species, but it is not desirable to describe it on the basis of the single specimen in rather poor condition.

Megaselia species.

A rather larger and stouter species than the one above, and shining black, with the tibiae and tarsi yellow in varying degree.

Length, 1.5 to 2 mm.

Hivaoa: Kopaafaa, altitude 2,770 feet, August 2, 1929, six specimens. Mumford and Adamson.