

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

By

JOHN R. MALLOCH

BUREAU OF BIOLOGICAL SURVEY, U. S. DEPARTMENT OF AGRICULTURE.

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

* Pacific Entomological Survey Publication 7, article 14. Issued January 30, 1934.

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
2. Mesonotum with but two regular series of stiff setulose intradorsocentrals..... 2
3. 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
4. Mesonotum without a pair of outstanding short bristles in the intradorsocentral series close to the suture..... 3
5. Arista with but two long hairs above and none below..... *biseta* Malloch
6. 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.

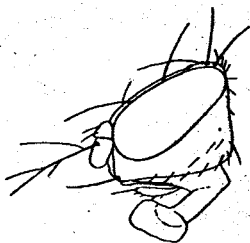


FIGURE 7. *Rosenwaldia kaavae*, head in profile.

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*).....Nocticanace 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