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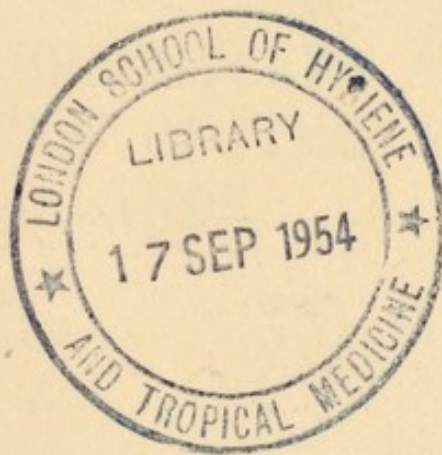
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DIPTERA BRACHYCERA AND
ATHERICERA OF THE FIJI
ISLANDS

DIPTERA BRACHYCERA
AND ATHERICERA OF
THE FIJI ISLANDS

BASED ON MATERIAL IN THE
BRITISH MUSEUM (NATURAL HISTORY)

By
MARIO BEZZI



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PREFACE

ISLAND faunas are of peculiar interest, both intrinsically and in connection with the origin of their component species, but as yet in the case of the Diptera, especially in the Pacific, this promising field of discovery has been very incompletely worked. As regards Fiji, the present volume raises the number of known Fijian species belonging to the groups of which it treats from thirty to two hundred and thirty-nine, and is therefore a very important contribution to knowledge. Endemic or presumably endemic species are more numerous than immigrants (one hundred and forty-four as compared with ninety-five), and of the former no fewer than one hundred and thirty-seven (95.1%) are described in the following pages as new. The conclusion at which the author arrives, after studying the material submitted to him, is that the dipterous fauna of Fiji is "a typically endemic one of Austro-Malayan origin, with a small number of imported elements."

For the opportunity of producing this volume, as well as for the first set of the material upon which it is based, including the types of all new species, the Trustees of the British Museum are once more indebted to the Imperial Bureau of Entomology, which, through its Director, Dr. G. A. K. Marshall, C.M.G., F.R.S., in 1924 and subsequent years forwarded to the late Professor Bezzi, for determination and description, Fijian Diptera received from a number of collectors.

Although Professor Bezzi's manuscript was actually completed in August, 1926, and handed over by Dr. Marshall in the autumn of the same year, various causes have delayed its publication until now. This volume is the third by the same author to be published by the Trustees, its forerunners having been "The Syrphidae of the Ethiopian Region" (1915) and "The Bombyliidae of the Ethiopian Region" (1924). Unhappily Professor Bezzi died on January 14th, 1927, so that "Diptera Brachycera and Athericera of the Fiji Islands" can have no successor, and has perforce to appear posthumously. Though a panegyric on its author would here be out of place, it is at least permissible to express the confident belief that the present work will form no unworthy memorial of the great Italian dipterist, who, in the course of an entomological career of well nigh forty years, by his

industry and discriminative and descriptive ability, no less than by the breadth of his knowledge of the Diptera, has left an impress upon Dipterology that can never be effaced.

It remains to add that the author's English manuscript has been most carefully revised throughout, and that in the course of this revision, pending a fresh relevant decision by the International Congress of Zoology, "Rhagionidae," "Trypaneidae" and "Trypaneinae," as written by Professor Bezzi, have been replaced respectively by the time-honoured designations Leptidae, Trypetidae and Trypetinae.

Mr. F. Barnett, under the writer's supervision, has seen the work through the press with painstaking attention to detail, and in the case of the Index has inserted the page-numbers and made a series of other additions to the entries supplied by the author.

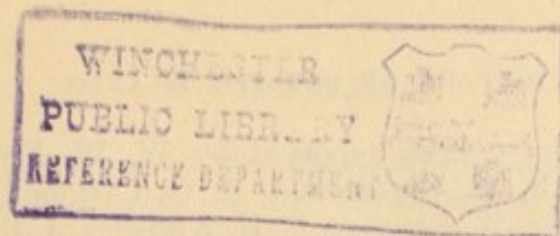
E. E. AUSTEN,
Keeper of Entomology.

*British Museum (Natural History),
May, 1928.*

LIST OF FIGURES IN THE TEXT

FIG.		PAGE
1.	<i>Haplofjia simplex</i> , sp. n. Wing of ♂. × 17	9
2.	<i>Eufjia albicornis</i> , sp. n. ♀. × 16	11
3.	<i>Eufjia tibialis</i> , sp. n. Head of ♂ from above. × 28	14
4.	<i>Bistinda castanea</i> , sp. n. Head of ♀ in profile. × 35	17
5.	<i>Bistinda castanea</i> , sp. n. Head of ♀ viewed from in front. × 35	18
6.	<i>Bistinda castanea</i> , sp. n. Wing of ♀. × 14	18
7.	<i>Pristaspis truncata</i> , sp. n. Wing of ♀. × 34	20
8.	<i>Obrapa leucostigma</i> , sp. n. Wing of ♂. × 42	21
9.	<i>Pegadomyia glabra</i> , sp. n. Wing of ♂. × 30	22
10.	<i>Pinaleus bivittatus</i> , sp. n. ♂. × 7	30
11.	<i>Pinaleus rostrifer</i> , sp. n. Head of ♀ in profile. × 28	32
12.	<i>Tabanus limbatellus</i> , sp. n.: <i>a</i> , head of ♀ in profile, × 12; <i>b</i> , head of ♀ viewed from in front. × 12	36
13.	<i>Neobolbodimyia veitchi</i> , sp. n. ♂. × 3	38
14.	<i>Despotiscus simmondsi</i> , sp. n. ♂. × 13	44
15.	<i>Ommatinus curvimargo</i> , sp. n. Wing of ♂. × 6½	49
16.	<i>Ommatinus strigicosta</i> , sp. n. Wing of ♂. × 10	51
17.	<i>Syneches (Epiceia) pullus</i> , sp. n. ♂ in profile. × 18	54
18.	<i>Paraclius subarcuatus</i> , sp. n. Wing of ♀. × 20	57
19.	<i>Chrysosoma leucochirus</i> , sp. n.: <i>a</i> , head of ♂ viewed from in front, × 28; <i>b</i> , head of ♂ in profile, × 28; <i>c</i> , genitalia of ♂, × 60	65
20.	<i>Condyllostylus nuptus</i> , sp. n.: <i>a</i> , wing of ♂, × 20; <i>b</i> , wing of ♀, × 20	67
21.	<i>Condyllostylus pulvillatus</i> , sp. n. Front tarsus of ♂ (greatly enlarged)	69
22.	<i>Dissoptera unicolor</i> , sp. n. ♀. × 6	78
23.	<i>Eumerus hemipterus</i> , sp. n. Wing of ♀. × 14	82
24.	<i>Sciomyza dives</i> , sp. n. Wing of ♀. × 16	86
25.	<i>Plagiostenopterina (Meringomeria) neurostigma</i> , sp. n. Wing of ♀. × 12	90

FIG.		PAGE
26.	<i>Pseudorichardia flavitarsis</i> , Macq., var. <i>interrupta</i> , var. n. Wing of ♀. × 14	92
27.	<i>Pseudorichardia aristalis</i> , sp. n. ♂. × 10	94
28.	<i>Naupoda simmondsi</i> , sp. n. Head of ♀ in profile. × 60	95
29.	<i>Naupoda simmondsi</i> , sp. n. Wing of ♀. × 30	96
30.	<i>Ocneros punctilabris</i> , sp. n. Wing of ♂. × 18	108
31.	<i>Euphranta rivulosa</i> , sp. n. Wing of ♂. × 12	109
32.	<i>Rhacochlaena greenwoodi</i> , sp. n. Wing of ♂. × 24	111
33.	<i>Pseudospheniscus bifidus</i> , sp. n. ♀. × 12	113
34.	<i>Pseudospheniscus curvinervis</i> , sp. n. Wing of ♀. × 20	114
35.	<i>Spheniscomyia binoculata</i> , sp. n. Wing of ♂. × 30	116
36.	<i>Euribia pentagonella</i> , sp. n. Wing of ♀. × 40	118
37.	<i>Prochaetops nigriseta</i> , sp. n. Head of ♀ in profile. × 50	122
38.	<i>Prochaetops nigriseta</i> , sp. n. Head of ♀ from above. × 50	122
39.	<i>Eucyclosis variegata</i> , sp. n. ♀. × 14	124
40.	<i>Eucyclosis splendida</i> , sp. n. Wing of ♀. × 30	126
41.	<i>Griphoneura insignis</i> , sp. n. Wing of ♀. × 24	127
42.	<i>Sapromyza cirrhicauda</i> , sp. n. Wing of ♂. × 25	130
43.	<i>Sapromyza caniventris</i> , sp. n. Wing of ♀. × 24	131
44.	<i>Sapromyza leucosticta</i> , sp. n. Wing of ♀. × 36	132
45.	<i>Sapromyza acrotoxa</i> , sp. n. Wing of ♀. × 12	134
46.	<i>Rhodesiella orthoneura</i> , sp. n. Wing of ♂. × 54	142
47.	<i>Gaurax platycephalus</i> , sp. n. Head of ♂ in profile. × 55	143
48.	<i>Gaurax platycephalus</i> , sp. n. Head of ♂ from above. × 55	144
49.	<i>Gaurax platycephalus</i> , sp. n. Head of ♂. × 35	144
50.	<i>Gaurax platycephalus</i> , var. <i>stigmatellus</i> , var. n. Wing of ♂. × 38	145
51.	<i>Gampsocera decussata</i> , var. <i>lissoxantha</i> , var. n. : <i>a</i> , head of ♀ from above; <i>b</i> , head of ♀ in profile (greatly enlarged)	147
52.	<i>Dichaetomyia prodigiosa</i> , sp. n. : <i>a</i> , middle leg of ♂, × 12; <i>b</i> , hind leg of ♂, × 12.	178
53.	<i>Rhinomyiobia plumifera</i> , sp. n. Head of ♀ in profile. × 20	195
54.	<i>Sipholeskia ignifrons</i> , sp. n. Head of ♀ in profile. × 14	198



DIPTERA BRACHYCERA AND ATHERICERA OF THE FIJI ISLANDS

INTRODUCTION

THE collection of Diptera forming the subject of the present work was brought together by Messrs. R. Veitch, W. Greenwood, H. W. Simmonds, D. S. North and others, and was submitted to me for study by the Imperial Bureau of Entomology, through the kindness of Dr. Guy A. K. Marshall, C.M.G., F.R.S., to whom my best thanks are due. The Diptera Nematocera, which were very few in number, were worked out by Mr. F. W. Edwards,* and are not taken into consideration here.

Though not a very large one (some thousand specimens, belonging to about two hundred and thirty species), the present collection is certainly the most extensive that has been received from the Fiji Islands, its importance being much increased by the fact that very little is known about the Fijian Dipterous fauna. An examination of all the published volumes of the *Catalogus Dipteroorum* (from Vol. III, 1908, to Vol. VIII, 1910) has shown that only two species (*Stichopogon (Clinopogon) scalaris*, Bigot, *op. cit.*, iv, p. 85, and *Pipunculus vitiensis*, Muir, *op. cit.*, vii, p. 383) are mentioned as occurring in Fiji, to which may be added another species (*Chromatopoda bicolor*, Macquart, *op. cit.*, iii, p. 90), which is found in Tonga.

A careful study of the whole literature to the end of the year 1925 has revealed that a few species have been recorded from the Fiji Islands by Macquart in 1855, by Bigot in 1878, by Speiser in 1904, by Muir in 1906, by Theobald in 1910, by Hendel in 1911 and 1914, by Summers in 1912, by Ricardo in 1914 and 1917, by Brues in 1919, by Sturtevant in 1921, by Alexander in 1921, by Aldrich in 1921, by Edwards in 1921 and 1924, by Enderlein in 1924, by Senior-White in 1925, by Ferris in 1925, and by Lindner in 1925. In addition, an examination of thirteen volumes of the *Review of Applied Entomology*, Series A and B (1913-1925) shows that a few more species (most of them without

* *Ann. and Mag. N.H.* (9) xiv, p. 574, 1924. See also F. V. Theobald, "The Culicidae of Fiji; including two New Species," *The Entomologist*, pp. xliii, 155-159, 1910.

specific names) have been reported by W. W. Froggatt, F. P. Jepson, R. Veitch, W. Greenwood, A. G. Carment, H. W. Simmonds, P. H. Bahr, W. Fawcett, C. H. Knowles, J. F. Illingworth, D. Miller, C. H. Wright, and others. Thus the Orthorrhapha Brachycera and Cyclorrhapha Athericera known to exist in Fiji (and the Tonga Islands) to the end of the year 1925 consisted of the thirty following species, that is, only 12·5% of the species enumerated in the present work :—

- Chromatopoda bicolor*, Macquart.
Chrysopilus coeruleothorax, Lindner.
Tabanus fijianus, Ricardo.
 „ *pacificus*, Ricardo.
Clinopogon scalaris, Bigot.
 **Pipunculus vitiensis*, Muir.
 **Chonocephalus dorsalis*, Wandolleck.
 **Puliciphora lucifera*, Dahl.
Sepedon costalis, Walker.
 **Duomyia fidschiensis*, Enderlein.
 **Lamprogaster flavipennis*, Macquart.
Scholastes cinctus, Guérin-Ménéville.
 „ *bimaculatus*, Hendel.
 **Dacus curvipennis*, Froggatt.
 „ *psidii*, Froggatt.
 „ *xanthodes*, Broun.
 „ *passiflorae*, Froggatt.
 „ *melanotus*, Coquillett.
 * „ *tongensis*, Froggatt.
 „ *facialis*, Coquillett.
 * „ *virgatus*, Coquillett.
 **Drosophila melanogaster*, Meigen.
Agromyza lantanae, Froggatt.
Atherigona excisa, Thomson.
Musca domestica, Linne.
Stomoxys calcitrans, Linne.
 **Myiophthiria reduvioides*, Rondani.
Stomorhina discolor, Fabricius.
Ceromasia sphenophori, Villeneuve.
Sturmia bimaculata, Hartig.

All the above-named species are recorded in their proper places in the following pages, which also include twenty-five species already identified by the Imperial Bureau, and of which specimens were received from Dr. Guy Marshall.

Many species of Diptera have been recorded from the other islands in the Pacific, and all of these have been taken into consideration in the preparation of this work, together with those of New Guinea, New Zealand, the East Coast of Australia and

* The species marked with an * are wanting in the present collection.

Tasmania. It was found also necessary to compare the descriptions of a large number of species belonging to Formosa, the Philippines and the Malayan Islands in general; as well as those recorded from distant islands, such as the Seychelles, Rodriguez, the Canaries, Madeira and the West Indies, some curious coincidences being revealed in the process.

PART I. GENERAL.

Island life being always interesting, some general observations may possibly be of value, especially in view of the intimate relations that exist between certain Diptera and Man, domestic animals, and cultivated plants.

It is to be remarked in the first place that, among the Fijian Diptera, the Orthorrhapha Brachycera are much less numerous (sixty species only) than the Cyclorrhapha Athericera (one hundred and seventy-nine species), the former comprising 25.2% and the latter 74.8% of the species dealt with. The Brachycera include no species associated with Man and are mostly weak flyers; but even the powerful flyers, like some Tabanidae and Asilidae, seem to have a restricted area of distribution, so that 83.3% of the Brachycera are endemic species. A similar fact was pointed out for the Hawaiian Islands by Grimshaw,* and this seems to be a peculiarity of the Islands of the Pacific Ocean.

In the Cyclorrhapha Athericera the Myiodaria are markedly preponderant (one hundred and sixty-one species), being about 90% of the group, or 67.2% of all the observed species. The Myiodaria Inferiora (or Acalyptera) are also very dominant, forming 67.5% of all the Myiodaria, or 45.3% of the whole collection. This last fact is a very striking feature of the Fijian Dipterous fauna; it has likewise been observed in the Hawaiian Islands.

The best represented families among the Brachycera are the Stratiomyiidae, with twenty-six species, and the Dolichopodidae with eighteen. The former are eminently characteristic, and include twenty-three new species and six new genera; they are weak flyers, and thus are all certainly endemic.

Among the Cyclorrhapha, the families richest in species are the Syrphidae (with thirteen species), the Orthalidae (with fourteen), the Trypetidae (with seventeen), the Lauxaniidae (with nineteen), the Chloropidae (with eighteen), the Muscidae (with twenty-two), and the Tachinidae (with eighteen). But the most characteristic are the Lauxaniidae, of which all the species are new and probably endemic; a noteworthy fact, because in other islands the dominant family is the Drosophilidae, as is especially evident in the Hawaiian

* *Fauna Hawaiiensis*, iii, pt. i, Diptera, p. 2, 1901.

Islands, and in a minor degree in the Seychelles (Lamb) and the Island of St. Vincent (Williston). The families Ortalidae, Trypetidae, Chloropidae and Muscidae contain, on the other hand, a good many non-endemic forms, probably because they include a number of species associated with Man; the same may be said of the Syrphidae, but in this case many of the species are strong flyers. Again, the Calliphoridae, with seven species, which are all powerful flyers, include only a single new one which is probably endemic in the Pacific Islands.

Passing now to an analysis of the elements composing the Fijian Dipterous fauna from a zoo-geographical standpoint, it must be observed that our knowledge of the Diptera is at present too incomplete to permit us to advance conclusions like those proposed by Dr. R. J. Tillyard for the Odonata.* But from a careful investigation of the numerous data concerning these difficult problems, the following grouping of the species may be formulated.

A. Endemic, or presumably endemic Species.

These are the most numerous (one hundred and forty-four species), forming 60.5% of the whole collection; and among them one hundred and thirty-seven (95.1%) are here described as new.

The following new genera may be considered as probably endemic: *Haplofijia*, *Eufijia*, *Sphaerofijia*, *Bistinda*, *Pristaspis* and *Pinaleus*, of the Stratiomyidae; *Despotiscus*, of the Asilidae; and *Eucycloisis*, of the Lauxaniidae. They contain, in all, fifteen species.

The endemic species of non-endemic genera belong either to Pacific genera, like *Chromatopoda*, *Pseudorichardia* and *Prochaetops*; or to Australian genera, like *Brachycara*,† *Neobolbodimyia*, *Duomyia*, *Rutilia*, *Rhinomyiobia*, *Microcalliphora* and *Microceromasia*; or to Austro-Malayan or Oriental genera, like *Obrapa*, *Pegadomyia*, *Chrysosoma*, *Clinopogon*, *Maira*, *Dissoptera*, *Scholastes*, *Chaetodacus*, *Trimerogastra*, *Dichaetomyia* and *Therobia*; or to Ethiopian-Austro-Malayan genera, like *Asarcina*, *Plagiostenoptera*, *Naupoda*, *Ocneros*, *Euphranta*, *Rhacochlaena*, *Pseudospheniscus*, *Sphenisomyia*, *Rhodesiella*, *Gampsocera*, *Scoliophthalmus*, *Pygophora*, *Passeromyia* and *Graphogaster*. The remainder belong to forty-two genera of world-wide distribution. But it is specially remarkable that there are a few endemic species belonging to genera otherwise exclusively or prevalently American, such as *Paraclius*, *Heteromeriingia*, *Griphoneura*, *Elliponeura*, *Sarcophagula* and *Sipholeskia*.

Among the endemic subspecies of non-endemic species, the most important is *Syrphus corollae vitiensis*, as an example of the formation of a new variety from an imported European species,

* "The Dragonflies (Order Odonata) of Fiji:" *Trans. Ent. Soc. London*, p. 305, 1924; see pp. 342-346.

† Reported also from Cocos-Keeling Islands and the Seychelles.

by convergence of characters with allied local forms. We likewise have in the three following Acalyptrate flies well-defined variations due to isolation, arising (a) from a Pacific type (*Pseudorichardia flavitarsis interrupta*); (b) from an Australian type (*Sepedon costalis latus*); and (c) from an Oriental type (*Rivellia basilaris perspicillaris*); while the Syrphid fly, *Asarcina ericetorum oceanica*, is derived from an Ethiopian-Austro-Malayan type.

B. Species from other Pacific Islands.

These form 6.3% of the collection, and are as follows: *Chromatopoda annulipes*, *Ch. annulipes bicolor*, *Tabanus solomensis*, *T. fijianus*, *Chrysosoma patellifer*, *Syritta oceanica*, *Scholastes bimaculatus*, *S. lonchiferus*, *Pseudorichardia flavitarsis*, *Chaetodacus melanotus*, *Ch. facialis*, *Ch. psidii*, *Ch. tongensis*, *Ch. xanthodes*, *Ch. virgatus*.

Of these species, the two *Tabanus* and the *Syritta* may perhaps have been spread by flight; but all the others, and especially the very numerous and peculiar species of *Chaetodacus*, have been distributed by commerce, in fruits or other vegetable matter. There are indeed many records of the breeding of the above-named fruit-flies from imported fruits in New South Wales, New Zealand and even in California.

Another natural means of dispersion, however, is also possible, namely, in trees or other vegetable matter drifted by the sea. Evidence of this was brought forward by Prof. de Meijere, when dealing with the new Dipterous fauna of Krakatau Island.*

C. Species from the Eastern Coast of Australia, Tasmania, New Zealand or from New Guinea.

These form 6.7% of the collection and are as follows:—*Odontomyia chloris* (N.Z.), *Medetera femoralis* (N.G.), *Chrysosoma nigrolimbatum* (N.G.), *Ch. tenuitarsis* (N.G.), *Puliciphora lucifera* (N.G.), *Chonocephalus dorsalis* (N.G.), *Rivellia connata* (Austr.), *Lamprogaster flavipennis* (Austr.), *Lonchaea cyaneiventris* (N.G.), *Gaurax pubicollis* (N.G.), *Oscinis subpilosa* (Austr.), *Chrysomyia rufifacies* (Austr., N.Z.), *Microcalliphora varipes* (Austr.), *Microceromasia sphenophori* (N.G.), *Carcelia leptcephala* (Austr.), *Winthemia dispar* (Austr.).

Even these species, with the exception of the two Calliphoridae, are almost all dependent for their dispersal on commerce or drifting vegetable matter. The three Tachinidae are also closely connected with cultivated plants, being parasites of plant-feeding insects.

D. Austro-Malayan Species.

These form only 5.4% of the collection, namely: *Melanostoma univittatum*, *Asarcina papuana*, *Ischiodon scutellaris*, *Xantho-*

* "Die neue Dipterenfauna von Krakatau": *Tijdschr. v. Entom.*, liii, p. 58 (1910); see also pp. 171-190.

gramma javanum distinctum, *Telostylinus lineolatus*, *Scholastes cinctus*, *Cadrema bilineata*, *Drosophila ananassae*, *Melanagromyza phaseoli*, *Ophyra nigra*, *Stomorphina discolor*, *Sarcophaga fuscicauda*, *Sturmia sericariae*.

In this group good flyers are predominant, as might be expected among such widely distributed species.

E. *Oriental Species, chiefly from Java, Formosa and the Philippines.*

These are about the same in number as those of preceding group, and consist of *Chrysotus javanensis*, *Lathyrphthalmus nitidus*, *Lonchaea filifera*, *L. calva*, *Piophila contecta*, *Rhodesiella nitidifrons*, *Oscinis poecilogaster*, *Paralimna lineata*, *Leucophenga guttiventris*, *L. subacutipennis*, *Desmometopa palpalis*, *Stomoxys limbata*, *Myiophthiria reduvioides* and *Chrysomyia megacephala*.

The foregoing species are almost entirely associated with transported vegetable matter, only the *Lathyrphthalmus* and *Chrysomyia* being good flyers; the *Myiophthiria* lives on birds of the genus *Collocalia*.

F. *Ethiopian-Austro-Malayan Species.*

The same percentage as for the two preceding groups; the species are: *Lonchaea aurea*, *Spathulina acroleuca parca*, *Ensina sororcula*, *Rhinoessa sexseriata*, *Discomyza maculipennis*, *Mycodrosophila gratiosa*, *Orchisia costata*, *Atherigona excisa trilineata*, *Lispa assimilis*, *Rhinia testacea*, *Carcelia evolans*, and *Sturmia inconspicua*.

These also are nearly all species with habits like those of the preceding group, except the last three, which are parasitic on insects. *Rhinoessa* is a small fly of the sea-shore, widely distributed as such insects usually are. It may be remarked that all these species belong to the Myiodaria.

G. *Circum-tropical, or even Cosmopolitan Species.*

More numerous than the elements of the preceding groups, being twenty-one in number or 8.4%, viz.: *Dohniphora cleghorni*, *Aphiochaeta xanthina*, *Euxesta quadrivittata*, *Acrosticta pallipes*, *Piophila casei*, *Siphunculina signata*, *Drosophila ampelophila* (*melanogaster*), *Milichiella lacteipennis*, *Desmometopa tarsalis*, *D. M-nigrum*, *Ophiomyia lantanae*, *Liriomyza pusilla*, *Dizygomyza bellidis*, *Leptocera punctipennis*, *Atherigona excisa*, *Synthesiomyia nudiseta*, *Musca domestica*, *Stomoxys calcitrans*, *Gastrophilus nasalis*, *Lucilia cuprina* (*L. argyrocephala*), and *Sarcophaga dux* (*syn. S. harpax*).

All these flies are associated with Man and commerce, and curiously enough they are all Myiodaria, except the first two, which are Phorids. Of these nineteen Myiodaria, twelve (61.2%) are Myiodaria inferiora, or Acalyptera. The members of Group G

breed in fruits or in decaying vegetable matter, in the leaves of plants (as miners) in cheese, in excrement or decaying animal matter, or are parasitic on Mammals and even on Man (the *Lucilia*). The *Ophiomyia* was introduced purposely for controlling the lantana shrub.

To these may be added the following four European species of holarctic distribution: *Psilopa polita*, *Leptocera puerula*, *L. ferruginata* and *Pseudonapomyza atra*. They live in manure, or mine in leaves of graminaceous plants.

Conclusions. If to the endemic species (60.5%) we add those that occur also in the other Pacific islands, and in Australia and Austro-Malaya, we have 79%, or nearly four-fifths of the whole Dipterous fauna. The remaining fifth is composed of extraneous elements, which are almost exclusively Myiodaria connected with Man.*

The Fijian dipterous fauna is therefore a typically endemic one of Austro-Malayan origin, with a small number of imported elements.

PART II. DESCRIPTIVE LIST.

I. ORTHORRHAPHA BRACHYCERA.

Family STRATIOMYIDAE.

Subfamily PACHYGASTRINAE.

There are many species of this subfamily, most of them of small size and all belonging to undescribed, probably endemic forms; several of them are interesting on account of the great reduction of the wing-veins. The genera may be distinguished as follows:

- 1 (6). Scutellum with two long spines, as long as, or longer than scutellum itself; body narrow and elongate, with parallel-sided abdomen; wings cuneiform at base, without distinct alula; second longitudinal vein completely wanting; head carried on a long neck.
- 2 (5). Third antennal segment more or less elongate, usually with thick pubescent style; third segment, if rather short, never broadly rounded.
- 3 (4). Third longitudinal vein simple at end; eyes of male distinctly, even if narrowly, separated.....*Haplofijia*, gen. n.
- 4 (3). Third longitudinal vein forked at end; eyes of male united for a long distance.....*Eufijia*, gen. n.
- 5 (2). Third antennal segment broadly rounded, with long, thin, bare style.....*Sphaerofijia*, gen. n.

* For interesting considerations on this subject, see F. Knab, "The Dispersal of some Species of Flies"—*Science*, xliii, pp. 75—76 (1916), and "Dispersal of some Ortalidae"—*Bull. Brooklyn Ent. Soc.*, xi, pp. 40—46 (1916); also C. H. T. Townsend, "Non-intentional dispersal of Muscoid Species by Man, with particular reference to Tachinid Species"—*Trans. Ent. Soc. Washington*, xviii, pp. 18—20 (1916).

- 6 (1). Scutellum with four spines, shorter than scutellum, or with numerous very short spines or tubercles, or even with smooth hind border; second vein usually well developed, but sometimes hardly visible.
- 7 (8). Scutellum with four spines; style of antenna elongate, dilated, band-like; second vein well chitinized. *Bistinda*, gen. n.
- 8 (7). Scutellum with finely denticulate or smooth hind border; style of antenna not dilated, filiform or hair-like; second vein distinct, but less chitinized.
- 9 (10). Third vein simple at end; scutellum with numerous spinules on hind border; abdomen parallell-sided, longer than broad.
Pristaspis, gen. n.
- 10 (9). Third vein forked at end; hind border of scutellum smooth or with very short tubercles; abdomen rounded, broader than long.
- 11 (12). Second vein faintly developed, originating before anterior transverse vein, which is rather long; eyes of male with small facets; scutellum with minute tubercles on hind border; anal cell short, with its terminal cross-vein perpendicular; alula small. *Obrapa*, Walk.
- 12 (11). Second vein originating beyond anterior transverse vein, which is punctiform; eyes of male with upper facets very large; hind border of scutellum with broad but smooth margin; anal cell long, its terminal cross-vein oblique; alula greatly developed. *Pegadomyia*, Kert.

HAPLOFIJIA, gen. nov.

In the present genus the reduction of the wing-veins is more pronounced than in the following genera, even the third vein not being forked at the end.

Head transverse, in profile a little broader than high, in front view broader than high, about as broad as thorax, supported on a rather long and thin neck. Occiput but moderately developed, excavated in middle above neck. Eyes bare, with equal small facets, greatly developed, occupying almost entire head, eyes horizontally ovate, very closely approximate above antennae but not actually in contact, frons being always visible as a narrow stripe between them. Vertical triangle narrow, twice as long as broad, with greatly developed and prominent ocellar tubercle; three ocelli of large size and disposed in an isosceles triangle; frontal triangle much smaller than vertical one. Face short and narrow, flat and nearly horizontal; oral opening elongate; proboscis very short and retracted. Eye-border distinct only below, prominent but narrow; peristomialia linear. Antennae in side view inserted below middle of eyes, longer than head, carried horizontally and curved outwards; two basal segments short; third (the so-called complex) oval, longer than two basal segments, together, with three annulations; terminal style is more than twice as long as whole antenna, appearing thickened owing to rather long and dense pubescence, with three short, distinct annulations at base. Thorax elongate, parallell-sided, one-and-a-half times as long as broad, gibbous anteriorly, ending perpendicularly above neck; transverse suture deep, narrowly interrupted in middle; dorsum finely punctulate and clothed with very short pubescence; humeral and postalar calli small but rather prominent; mesopleurae concave in middle, scutellum subquadrate, one-fourth as long as main portion of

thorax (scutum), in same plane with it and similarly shaped, with two slightly divergent and widely separated spines (one on each posterior angle), about as long as scutellum itself. Mesophragma transverse, but little developed. Halteres large, with inflated globose knobs, much shorter than stalks. Abdomen as long as thorax and head together, much longer than broad, almost parallel-sided, but narrower at base than at tip, and not broader than distal extremity of thorax; all five visible segments well separated, and of about same length. Legs simple and slender. Wings long and broad, as long as entire body and much longer than abdomen, with rather strong veins. First vein very close to costa, and even in contact with it for a considerable distance at end; second vein wanting or fused with small stigma; third vein strong, quite straight, not forked at end, ending before wing-tip, costa being prolonged beyond it and ending precisely at tip of wing; anterior transverse vein long and strong, longer than basal portion of third vein, discal cell rather small, situate in middle of wing, longer than broad, of almost pentagonal shape, but with its exterior cross-vein very short, second posterior cell being narrowed at base; all three veins issuing from discal cell complete to end; first and second basal cells fused into a single cell, their dividing vein being quite vestigial and hardly visible; anal cell long and broad, its terminal cross-vein long and oblique, even a little longer than last portion of anal vein, which is complete to end. Axillary lobe narrow; alula rudimentary.

Genotype: the following new species.

1. **Haplofijia simplex**, sp. n., ♂.

An elongate, shining black fly, not unlike some species of *Geosargus*, and readily recognisable owing to its antennae and wing-venation.

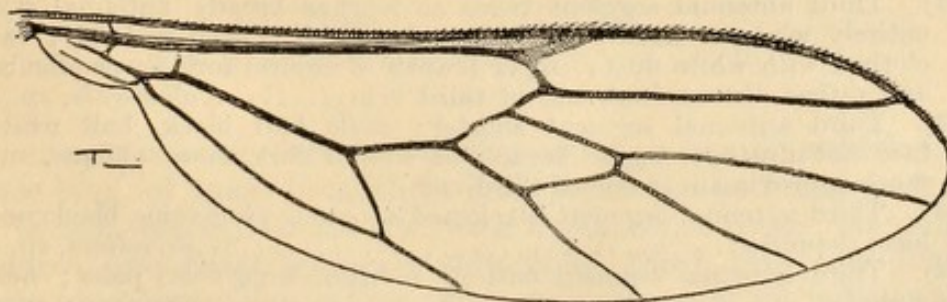


FIG. 1.—*Haplofijia simplex*, sp. n. Wing of ♂. $\times 17$.

Type ♂, a single specimen from Mt. Evans, 18.vi.1922 (*W. Greenwood*).

♂. Length of body and wing 3.5 mm.

Head shining black, quite bare; antennae reddish; style and its pubescence black on basal half, white on terminal half; labella

of proboscis dirty yellowish. Thorax shining black, more glistening on pleurae; short, scattered pubescence on dorsum and pleurae golden yellow, wanting on anterior convexity. Scutellum like scutum, with thick spines. Halteres whitish. Abdomen shining black, with short, sparse, whitish pubescence on sides; tergites smooth in middle, but on each side with from two to three irregular rows of rather broad, impressed sulci; venter shining black, smooth and bare, indistinctly punctate on sides of sternites. Legs, including coxae, entirely pale yellowish; hind coxae narrowly blackened basally; very short and indistinct pubescence on legs whitish; last segment of all tarsi distinctly, even if slightly infuscated. Wings greyish hyaline, iridescent; veins blackish, narrowly yellowish at base; veins on hind border thinner and paler than those elsewhere; stigma pale yellowish, very small.

EUFIJIA, gen. nov.

Very closely allied to the preceding genus, and distinguished only by the forked third longitudinal vein of the wings.

Head viewed from in front as broad as high, more globular than in preceding genus; frons of female much broader than that of male, as broad as half an eye, about one-fifth of breadth of head. Antennal style moderately thickened, finely and shortly pubescent. Thorax, scutellum, abdomen and legs as in foregoing genus, but abdomen narrower towards base and more dilated posteriorly. Wings similarly shaped and with same venation, but with upper branch of cubital fork well developed, straight, or more or less oblique.

Genotype: *Eufijia albicornis*, sp. n.

Species somewhat numerous, and distinguishable as follows:

- 1 (6). Legs entirely yellow; antennal style rather thick; scutellar spines black; discal cell at least twice as long as broad.
- 2 (3). Third antennal segment twice as long as broad; antennal style entirely white or narrowly black at base only; head globular; face clothed with white dust; upper branch of cubital fork perpendicular, and rather distant from end of third vein.....*albicornis*, sp. n.
- 3 (2). Third antennal segment shorter; style half black, half white; face not dusted; upper branch of cubital fork more oblique, and more approximate to end of third vein.
- 4 (5). Third antennal segment blackened at end; wing-veins blackened, head depressed.....*dimidiata*, sp. n.
- 5 (4). Third antennal segment entirely reddish, wing-veins paler; head globular.....*flavinervis*, sp. n.
- 6 (1). Hind legs black in part; style more finely pubescent or nearly bare; third antennal segment short.
- 7 (8). Scutellar spines black; arista blackish; hind tibiae narrowly black at base; hind tarsi entirely whitish; discal cell about as broad as long.
tibialis, sp. n.
- 8 (7). Scutellar spines yellow; arista white; hind tibiae entirely black; hind tarsi black with yellowish rings; discal cell twice as long as broad.
tarsalis, sp. n.

2. *Eufijia albicornis*, sp. n., ♂♀.

A shining black, elongate species, distinguished by the almost entirely white antennal style.

Type ♂ and type ♀ from Lautoka Mountains, 4.iv.1920 (*W. Greenwood*); other specimens of both sexes from Savu-Savu, iii.1922, and Suva, 30.xi.1921 (*H. W. Simmonds*); Nausori, x.1920, and Lautoka, xi.1920 (*R. Veitch*).

♂♀. Length of body and wings 3-3.5 mm.

Head perfectly globular, with rounded eyes; occiput and frons shining black; in male eyes in contact for a long distance, in female frons a little broader than ocellar tubercle, which is

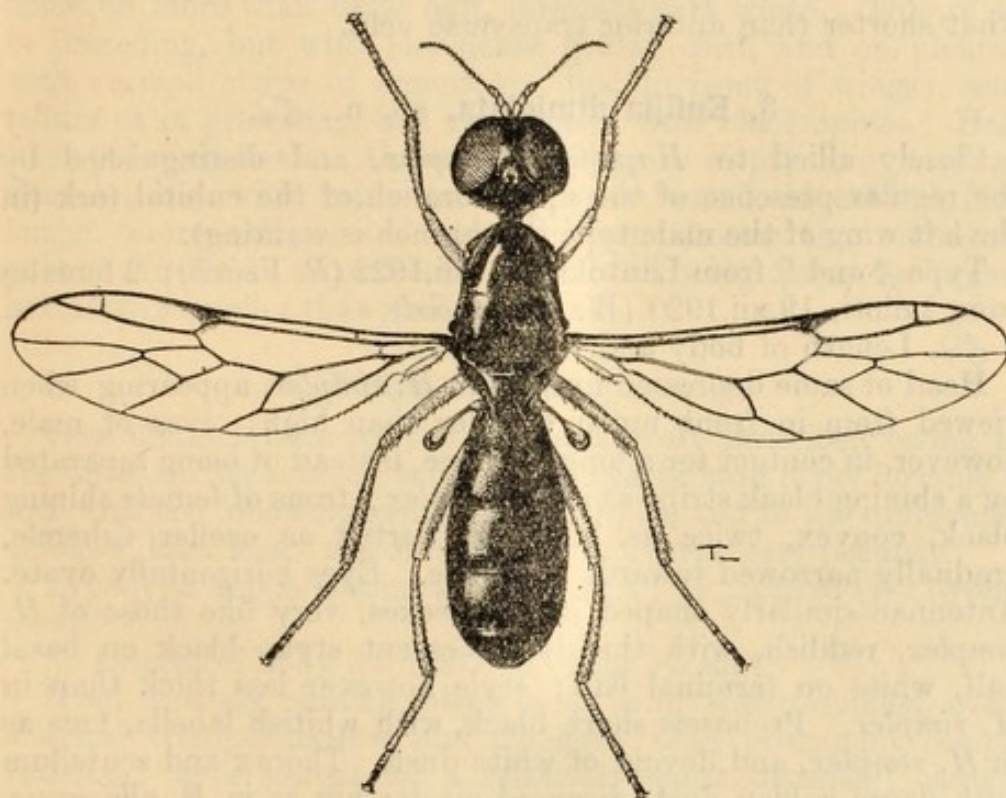


FIG. 2.—*Eufijia albicornis*, sp. n. ♀. × 16.

prominent in both sexes; ocelli disposed in an equilateral triangle. Face long, of equal breadth in both sexes and as broad as frons of female, black, but clothed with dense white dust. Antennae reddish, two basal segments very small, third, thin and ovate; style long, appearing rather thick on account of its pubescence, entirely white in female, with narrow black base in male. Proboscis prominent, shining black on the basal half, with whitish labella. Thorax and scutellum shining black, clothed with rather dense golden dust in male, and more sparsely so in female, but anterior gibbosity quite devoid of dust and shiny; on mesopleura, in front of root of wing, a vertical stripe of argenteous dust, golden dust being denser in male in front of this stripe.

Scutellar spines black. Halteres yellowish. Abdomen rather parallel-sided, obtuse at tip, sharply margined at sides, shining black, punctulate, with short, sparse whitish pubescence; venter shining black and smooth; female with long, fleshy ovipositor, half as long as abdomen. Legs, including coxae, entirely pale yellowish, with last tarsal segment slightly infuscated; pale pubescence hardly visible. Wings greyish-hyaline, iridescent, with faint, more or less distinct infuscation in middle and along fore border, chiefly in male. Veins blackish, anterior ones thickened; stigma dark yellowish; third vein very strong, with upper branch strongly developed, perpendicular, rather distant from end of lower branch and shorter than latter, discal cell relatively narrow, twice as long as broad, with its terminal cross-vein somewhat shorter than anterior transverse vein.

3. *Eufijia dimidiata*, sp. n., ♂♀.

Closely allied to *Haplofijia simplex*, and distinguished by the regular presence of the upper branch of the cubital fork (in the left wing of the male type this branch is wanting).

Type ♂ and ♀ from Lautoka, 22.viii.1922 (*R. Veitch*); 2 females from Loloti, 19.xii.1920 (*W. Greenwood*).

♂♀. Length of body and wing 3 mm.

Head of same depressed form as in *H. simplex*, appearing when viewed from in front much broader than high; eyes of male, however, in contact for a long distance, instead of being separated by a shining black stripe as in *H. simplex*; frons of female shining black, convex, twice as broad at vertex as ocellar tubercle, gradually narrowed towards antennae. Eyes horizontally ovate. Antennae similarly shaped in both sexes, very like those of *H. simplex*, reddish, with thickly pubescent style, black on basal half, white on terminal half; style however less thick than in *H. simplex*. Proboscis short, black, with whitish labella, face as in *H. simplex*, and devoid of white dust. Thorax and scutellum with dense golden dust, disposed on dorsum as in *E. albicornis*, and much more developed than in *H. simplex*; dust on pleurae almost entirely argenteous. Scutellar spines black. Halteres pale yellowish. Abdomen distinctly spatulate, being much broader at tip than at base, though even there a little broader than thorax; abdomen shining black, punctulate, with faint pale dust. Legs, including coxae, entirely pale yellowish, with last tarsal segment not infuscated. Wings greyish-hyaline and iridescent in both sexes; veins disposed as usual, blackish, yellowish at base, those of anterior half thicker than remainder; upper branch of cubital fork short and oblique, situate very near end of third vein, being about as long as portion of third vein beyond it; second submarginal cell therefore small and triangular. Stigma not distinct.

4. *Eufijia flavinervis*, sp. n., ♀.

Closely allied to the preceding species and perhaps only a variety of it, but apparently distinguished by the more globular form of the head.

Type ♀, a single specimen from Lautoka Mountains, 11.iv.1920 (*W. Greenwood*).

♀. Length of body and wing 2.8 mm.

Head in shape more like that of *E. albicornis* than that of *H. simplex*; eyes rounded. Frons as in preceding species; face long, black, devoid of dust. Antennae bright reddish, third segment larger and more spheroidal, and style distinctly thicker than in foregoing species; style about as thick as in *H. simplex*, black on more than basal half, terminal part white. Thorax as in preceding, but with less dense golden dust, and on pleurae with vertical stripe of argenteous dust in front of wings; scutellum as in preceding, but less dusted, with black spines. Halteres pale yellowish. Abdomen and legs as in preceding; wings likewise, but with veins paler; upper branch of cubital fork longer, more oblique and more distant, shorter than terminal part of third vein, second submarginal cell being distinctly larger, but always smaller than in *E. albicornis*.

5. *Eufijia tibialis*, sp. n., ♂.

Very distinct from all the species already described owing to the antennal style being thinner and nearly bare (thus forming a link with the following genus, *Sphaerofijia*), and to the differently coloured hind legs; the discal cell is moreover very peculiar.

Type ♂, a single specimen from Loloti, 19.xii.1920 (*W. Greenwood*).

♂. Length of body 3.8 mm.; of wing 3.5 mm.

Head entirely shining black and bare, with rounded eyes. Vertical triangle narrow and elongate, with prominent ocellar tubercle; eyes united for a relatively short distance; supra-antennal triangle very small; face horizontal, destitute of white dust. Antennae short, entirely reddish; third segment short and small, only a little longer than broad, but not broadly rounded; style twice as long as antennae, blackish, with very short pubescence. Proboscis short, with broad, reddish labella. Thorax, including scutellum, shining black, finely punctate, with sparse grey pubescence, chiefly beneath suture and on scutellum; pleurae with conspicuous argenteous pubescence on propleura and on hind part of mesopleura. Scutellar spines quite black, longer than scutellum itself; halteres very long, white, with strongly developed, spherical knobs. Abdomen entirely shining black, finely punctulate, with scattered erect pale hairs. Legs, including coxae, entirely yellowish; hind femora narrowly blackened at extreme tips; hind tibiae with basal halves black; hind tarsi entirely pale yellowish or whitish.

Wings distinctly infuscated, more intensely along terminal part of fore border, in submarginal cells, and in upper part of first posterior cell; thickened veins of anterior half black, those of posterior half thin and dark yellowish; stigmal spot blackish. No distinct second vein; middle cross-vein long; upper branch of third vein rather distant from end of vein, terminal part of third vein being twice as long as branch itself. Discal cell strongly developed, broad, only a little longer than its breadth; in middle, the three veins issuing from it complete to end; ter-

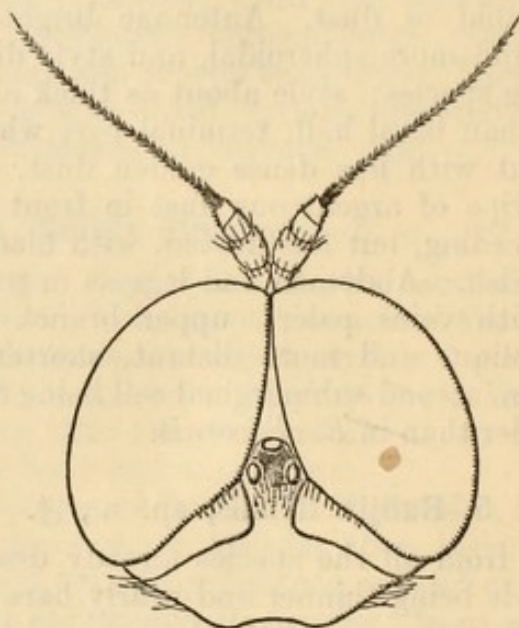


FIG. 3.—*Eufijia tibialis*, sp. n. Head of ♂ from above. × 28.

minal cross-vein of anal cell not very oblique, about as long as portion of the sixth vein beyond it.

6. *Eufijia tarsalis*, sp. n., ♂.

Very distinct from the other species owing to the scutellar spines being yellow, and the hind tarsi differently coloured.

Type ♂ and one additional specimen of same sex from Loloti, 14.iv.1922 (*W. Greenwood*).

♂. Length of body 3.7–3.8 mm.; of wing 3.3–3.4 mm.

Head globular, entirely shining black; eyes united for a rather short distance; supra-antennal triangle distinct, with two narrow spots of argenteous dust; face narrow and long, with a stripe of white dust on each side. Antennae red, with two basal segments very short, and third rounded, but small; style thin, much more shortly pubescent than in the other species, entirely white, with very narrow black base. Proboscis black, with whitish labella. Thorax, including scutellum, as in *E. albicornis*, but very long scutellar spines yellowish instead of black; posterior border of mesopleura with vertical stripe of white dust. Halteres pale yellowish. Abdomen much more spatulate than in the other

species, the first three segments being narrow, and last two forming a broad club; abdomen shining black and punctulate, with short, pale pubescence. Legs, including coxae pale yellowish, last tarsal segment not infuscated; hind legs peculiarly coloured, femora being narrowly black at extreme apex, tibiae entirely black, two proximal segments of tarsi blackish with narrow, pale yellowish tips, three short remaining segments pale yellowish, last segment slightly infuscated; knees of middle legs somewhat infuscated. Wings as in *E. albicornis*, but distinctly a little shorter than body; veins blackish; upper branch of cubital fork rather perpendicular and distant from tip, portion of third vein beyond it being twice as long as branch itself. Stigma well developed, blackish.

SPHAEROFIJA, gen. nov.

Very like the two preceding genera, and distinguished only by the antennae.

Head globular; eyes rounded. Third antennal segment relatively very large and perfectly circular; arista long, thin, appearing bare.

Genotype: the following new species.

7. *Sphaerofija evazaeformis*, sp. n., ♀.

Very like *E. tarsalis* in the colour of the legs, but differing in the antennae, and the uniformly yellowish hind tarsi.

Type ♀, a solitary specimen from Lautoka, xii.1921 (*R. Veitch*).

♀. Length of body 4.2 mm.; of wing 4 mm.

Head shining black; frons at vertex twice as broad as ocellar tubercle, gradually narrowing forwards, smooth and shining towards middle. Antennae entirely red; style thin, white, with infuscated base. Face short, black, white-dusted on sides; proboscis with yellowish labella. Thorax, including scutellum, shining black, punctulate, with sparse, scattered golden dust; pleurae with stripe of argenteous pubescence in front of root of wings, and in addition with an argenteous patch on propleural region; scutellar spines very long, yellowish. Halteres whitish. Abdomen very spatulate, basal half narrow, distal half broader than thorax; abdomen shining black, finely punctulate, with sparse, short, pale pubescence; venter shining black, with whitish pubescence. Legs, including coxae, pale yellowish, four posterior coxae blackened at base; hind femora narrowly black at extreme tips; hind tibiae entirely black; hind tarsi entirely yellowish. Wings greyish-hyaline, iridescent, with strong, blackish veins; stigma well developed, blackish; upper branch of cubital fork strong, rather perpendicular, distant from tip, being half as long as portion of third vein beyond it. Discal cell narrow, twice as long as broad.

BISTINDA, gen. nov.

This new genus is allied to *Tinda* in the form of the body and the shape of the antennae, of which the style is dilated and blade-like; but it differs in the more globular form of the head (with only a linear orbital keel in the female), in the insertion and mode of carriage of the antennae (which are geniculate and erect), and in the wing-venation, the second longitudinal vein originating before (and not beyond) the anterior transverse vein.

Head, in male, globular, eyes not being depressed above; in female rather depressed, but less than in *Tinda*; head, broader than anterior part of thorax, and viewed from in front distinctly broader than high. Occiput noticeably concave above neck, which is short; posterior orbital keel wanting in male, very slightly developed in female, narrow, almost linear, not at all dilated towards middle. Eyes bare, in male united for a long distance and with upper facets much enlarged; eyes, in female narrowly separated, with facets of uniform size. Vertical triangle of male narrow and long, its basal half wholly occupied by prominent and broad ocellar tubercle, which bears three very large and about equidistant ocelli; supra-antennal triangle small, deep, with an acute prolongation above. Frons of female very narrow, gradually broadening slightly towards vertex, being anteriorly not broader than one ocellus; ocellar triangle less developed than in male and with distinctly smaller ocelli; frons smooth, not furrowed as in *Tinda*. Face almost horizontal, and very short. Antennae inserted much lower than in *Tinda*, about on level with inferior corners of eyes equally developed in both sexes; first segment elongate, bare, distinctly longer than second, which is clothed with short hairs; third segment (as a complex) not longer than second, oval in shape, with seven annulations; terminal style in form of a broad blade, distinctly longer than first three segments together, finely but shortly ciliated at sides, and with a rather long terminal bristle. First segment horizontal, but beyond it entire antenna suddenly bent upwards, bend forming a right angle or even an acute angle, tip of style thus being higher than upper border of eyes. Palpi long and thick, somewhat prominent anteriorly; proboscis very short. Thorax elongate, gradually broadened behind, one-and-a-half times as long as broad, rather flat, finely rugulose, with elongate, prominent humeri and a prominent notopleural keel; transverse suture narrowly interrupted in middle; disc shortly tomentose; pleurae rather narrow, anterior half of mesopleura distinctly concave, posterior half slightly swollen; mesophragma but little developed. Scutellum on same level as scutum, broad, and equal to one-fourth of the scutum in length, armed on hind margin with four spines of equal length, spines being half as long as scutellum; scutellum rugulose like scutum, but with longer pubescence. Halteres with elongate

knobs, about as long as stalks. Abdomen as long as thorax and about as broad, or only a little broader, with parallel sides; five visible segments all of about same length, and all distinctly separated by well developed sutures; abdomen rather flat, and with a distinct margin. Genitalia very small. Legs rather stout, but without special characters. Wings considerably longer than abdomen, folded in middle. Auxiliary vein complete to end, terminating about in middle of fore border, while first vein terminates beyond middle; second vein well developed, originating before anterior transverse vein, and ending in costa, where it unites with first; third vein with base not chitinized, rather thick beyond base, long, ending near wing-tip, forked at end, upper branch issuing a little before middle of last portion and directed obliquely; costa prolonged beyond end of third vein to mid-way between ends of third and fourth veins; anterior transverse vein punctiform; discal cell regularly hexagonal, but with

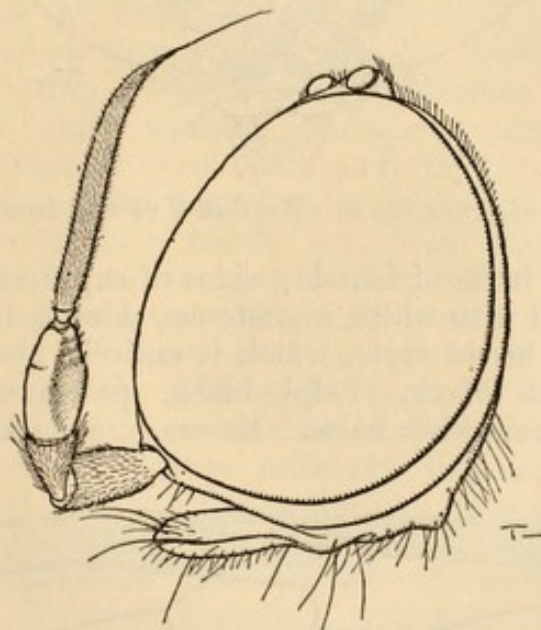


FIG. 4.—*Bistinda castanea*, sp. n. Head of ♀ in profile. × 35.

the two interior sides longer than the two exterior ones; discal cell only a little longer than broad; three veins issuing from it all well chitinized, first perfectly straight, complete to end and terminating a little below wing-tip; two others upturned at ends, and disappearing near wing border. Cubital vein very thick; anal cell long, its terminal cross-vein very oblique and three times as long as portion of anal vein beyond it. Axillary lobe elongate; alula well developed, but long and not rounded.

Genotype: the following new species.

8. *Bistinda castanea*, sp. n., ♂♀.

The giant of the Pachygastrinae at present known to occur in Fiji, and at once distinguished from all the others by its chestnut coloration.

Type ♂ and ♀ from Loloti, 19.xii.1920 (*W. Greenwood*).

♂♀. Length of body 6.5-7 mm.; of wing 5.7-6 mm.

The under sides of the body and legs are much paler than the upper sides. Head entirely black, quite bare, very shiny on

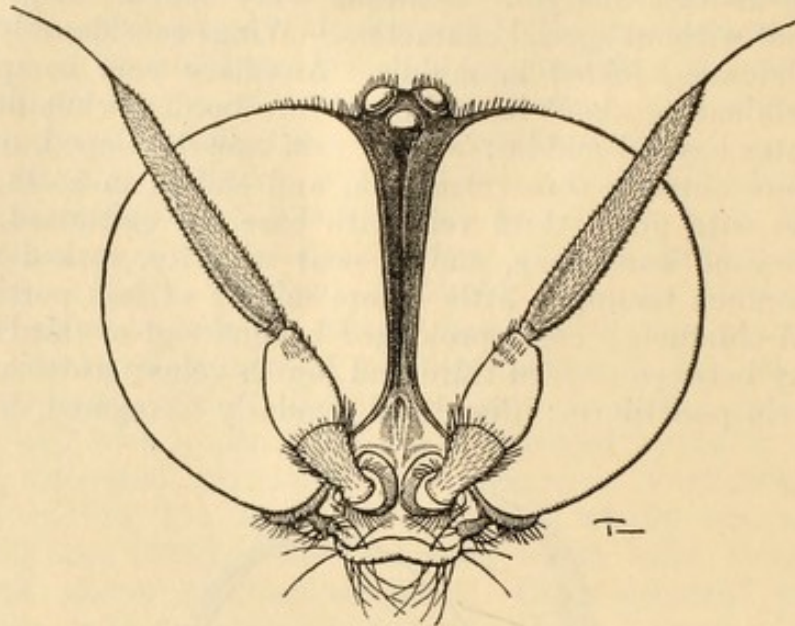


FIG. 5.—*Bistinda castanea*, sp. n. Head of ♀ viewed from in front. × 35.

occiput and on frons of female; sides of supra-antennal triangle and face clothed with white, argenteous, shining dust. Antennae reddish except broad style, which is entirely blackish; hair on second segment black. Palpi black, pale-haired; proboscis reddish, with yellowish hairs. Mesonotum dark castaneous in

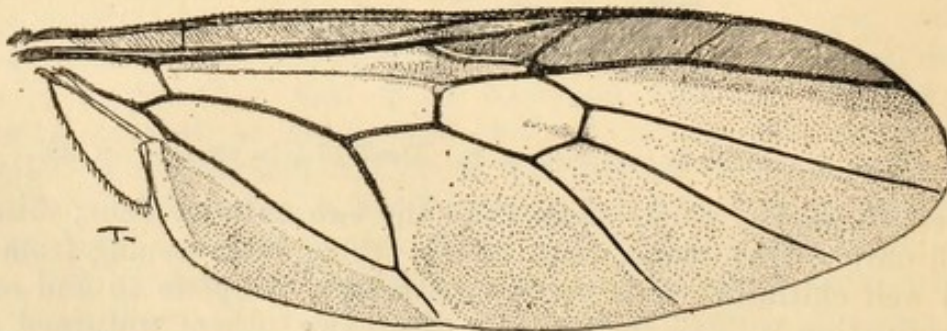


FIG. 6.—*Bistinda castanea*, sp. n. Wing of ♀. × 14.

middle and behind, paler in front, with yellowish humeri and notopleural line; pleurae more yellowish, and breast even paler; scutellum coloured like scutum. Pubescence of posterior part of scutum, and of scutellum, yellowish; hind border of scutellum and spines pale yellowish. Halteres with yellowish stalks and blackish knobs. Abdomen coloured like mesonotum, but darkened towards tip, last segment being nearly black; narrow

lateral margin, and venter, paler or even yellowish; hairs dark. Legs, including coxae, entirely pale yellowish to tips of tarsi, with sparse short yellowish or whitish hairs. Wings faintly infuscated, more intensely so along fore border to a little below third longitudinal vein, but costal cells and wing-bases pale yellowish; veins black, narrowly yellowish at base; stigmal region appearing a little paler than surrounding parts, owing to vein being less chitinized there to permit folding of wing.

PRISTASPIS, gen. nov.

This new genus seems to be allied to *Asyncritus*, Kertész, of New Guinea, but is at once distinguished by the third vein not being forked at the end.

Head, not broader than thorax, rather narrow in profile, viewed from in front broader than high. Occiput concave above neck, which is rather long. Eyes bare. Frons of female rather narrow, towards middle not broader than small third antennal segment flat, with a narrow furrow along middle. Ocellar tubercle very slightly prominent, with closely approximate ocelli; posterior ocular border quite wanting. Antennae inserted very low, near lower border of eyes, short and small, with very minute basal segments; third segment (or complex) rounded almost sphaeroidal, with four widely separated annulations; arista bare, thin, inserted near upper border, rather short, not quite twice as long as entire antenna. Face very short; palpi and proboscis short. Thorax about as broad as long, not very convex but distinctly gibbous in front; humeri prominent; notopleural keel sharp; mesonotum bare and punctulate, pleurae smooth; transverse suture narrowly interrupted in middle. Scutellum equal in length to one-third of scutum, on same level, and similarly punctulate; hind margin distinct, with from ten to twelve denticles on hind border. Halteres with spherical knobs, much shorter than stalks. Abdomen as long as thorax including scutellum, but not broader, with sides gently curved; it is punctulate like mesonotum, rather smaller and convex, with five visible segments, all of about same length. Legs normal. Wings short and broad, longer than abdomen and very obtuse at tips. First vein ending in middle of fore border, stigmal patch not chitinized; second vein hardly visible, at any rate situate before middle cross-vein, which is punctiform; third vein short, thick, not forked, ending much considerably before wing-tip; discal cell small, pentagonal, longer than broad; three veins issuing from it complete, reaching hind border, first straight and ending at wing-tip, second straight and diverging from first, third gently curved. Anal cell short, its terminal cross-vein straight and perpendicular, shorter than portion of vein beyond it. Axillary lobe narrow; alula very little developed.

Genotype: the following new species.

9. *Pristaspis truncata*, sp. n., ♀.

An entirely black species, easily distinguishable on account of its peculiar wing-pattern.

Type ♀, a solitary specimen from Labasa, xii.1921 (*R. Veitch*).

♀. Length of body about 3 mm.; of wing 2.2 mm.

Head entirely black; occiput densely clothed above with opaque grey dust, but with a shining perpendicular median stripe from vertex to neck, and shining on lower half. Frons less shining on account of its deep punctuation; sides of supra-antennal triangle and of face clothed with white shining dust, like linear peristomialia. Antennae dark reddish, more infuscated above; arista thin and whitish. Palpi black; proboscis dirty reddish. Thorax entirely black, but its sheen diminished by strong punctuation; smooth anterior part of front gibbosity

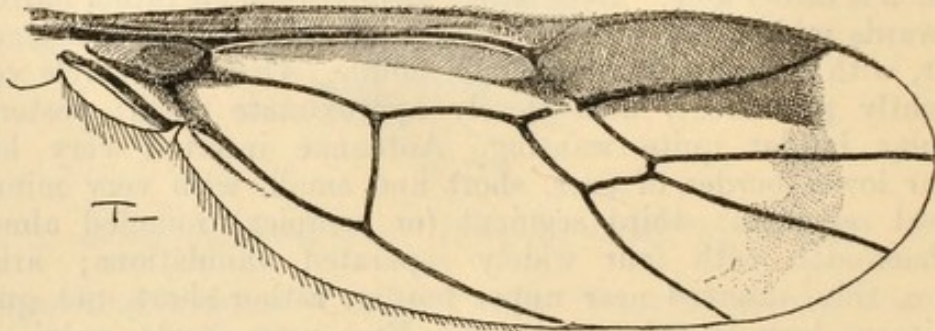


FIG. 7.—*Pristaspis truncata*, sp. n. Wing of ♀. × 34.

and smooth pleurae with a strong sheen. Scutellum and scutum with no trace of pubescence or dust, denticles on posterior border of scutellum also black. Halteres with reddish stalks and white knobs. Abdomen entirely black and punctulate like disc of mesonotum, but with distinct pale yellowish pubescence; venter shining, sternites smooth towards middle. Legs, including coxae, shining black; all tarsi whitish, but with basal segments of front pair black. Wings greyish-hyaline, with a sharply defined fuscous band along fore border, extending below to third vein and ending abruptly at end of same vein in middle of first posterior cell; thence there starts an indistinct suffusion, forming an arcuate praeapical band, which ends below at tip of lowest vein issuing from discal cell. All veins intensely black to extreme wing-base, which is narrowly infuscated; alula narrow and likewise infuscated, while before it there is a narrow hyaline streak just below base of anal vein.

Genus **OBRAPA**, Walk.

10. *Obrapa leucostigma*, sp. n., ♂♀.

A small, shining black species, distinguished by its infuscated wings, which have a whitish stigma, and by its deep black front tarsi.

Type ♂ and ♀, Labasa, xii.1921 (*R. Veitch*).

♂♀. Length of body and of wing about 2 mm.

Head rather narrow in profile, the eyes being narrowed above; head viewed from in front distinctly broader than high. Occiput shining black, deeply concave above. Eyes bare, with small facets in both sexes; in male they touch for a short distance towards middle of frons, while in female they are narrowly separated. Ocellar triangle in male very narrow and long, shining black; supra-antennal triangle short, equilateral, clothed with white dust; frons of female in middle not broader than ocellar tubercle, shining black towards vertex, broadly argenteous above antennae, and there with a narrow black median stripe. Ocellar tubercle only slightly prominent, with small ocelli. Face very short in both sexes, shining black. Antennae short and small, inserted very low, near lower corner of eyes; basal segments short and thin; third segment rounded, but small; style thin,

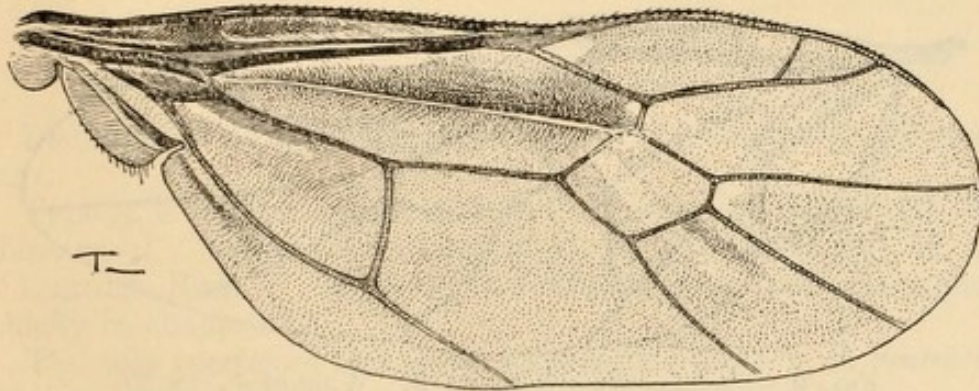


FIG. 8.—*Obrapa leucostigma*, sp. n. Wing of ♂. × 42.

bare, not much longer than whole antenna; antennae pale yellowish, with dark style. Proboscis short, black, with black labella. Thorax regularly convex, not gibbous anteriorly, finely punctulate, shining black, without dust; pleurae shining black, smooth and likewise bare. Scutellum as long as one-third of scutum, and on a level with it; hind border sharply margined, and provided with a series of very small tubercles, like those of *O. celyphoides*. Halteres whitish. Abdomen rounded, shining black, finely punctulate, with very short, sparse, pale pubescence; venter smooth, shining black. Legs short and rather stout, black, including coxae, but the four posterior tarsi pale yellowish; front tarsi deep black in both sexes, somewhat dilated and serrulate on upper side. Wings short and broad, folded in middle like those of the genus *Stegana*; they are entirely infuscated, but a little paler on posterior half, slightly iridescent, and with whitish stigma. Veins black, those of anterior half thickened, those issuing from discal cell very thin. Second vein before anterior cross-vein, third vein short and straight,

ending much before wing-tip, its upper branch oblique, and a little shorter than portion of vein beyond it; discal cell as broad as long, pentagonal, but its anterior cross-vein much shorter than the other sides; the three veins issuing from discal cell are complete and divergent; terminal cross-vein of anal cell perpendicular, about as long as last portion of sixth vein, anal cell being therefore much shorter than usual. Alula very small; axillary lobe narrow, with long ciliation.

Genus **PEGADOMYIA**, Kert.

11. **Pegadomyia glabra**, sp. n., ♂.

A shining black species, with partly yellowish legs, and with entirely whitish-hyaline wings.

Type ♂, a single specimen from Buca Bay, 27.xii.1921 (*H. W. Simmonds*).

♂. Length of body 2.7 mm.; of wing 3 mm.

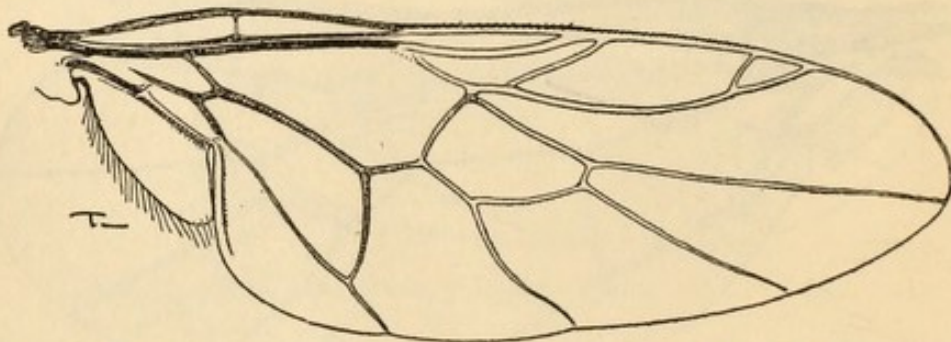


FIG. 9.—*Pegadomyia glabra*, sp. n. Wing of ♂. × 30.

Occiput shining black, not very concave above. Eyes bare, very strongly developed, rather depressed above, united for a long distance, with greatly enlarged facets on the upper two-thirds, sharply separated from the smaller, inferior ones. Vertical triangle black, small and very narrow, occupied by the not very prominent ocellar tubercle; ocelli of large size; supra-antennal triangle equilateral, white-dusted; face short and broad, black, white-dusted. Antennae inserted very low; basal segments short and thin; third segment rounded, as long as basal ones; style bare, very thin, not much longer than whole antenna; basal segments dark yellowish, third segment blackened. Proboscis short, black. Thorax regularly convex, not gibbous anteriorly, about as broad as long, shining black, punctulate, destitute of pruinescence and bare; pleurae quite smooth. Scutellum as long as one-third of scutum on a level with it and resembling it in colour and sculpture; hind border rounded, with broad and sharp margin, without tubercles. Halteres white. Abdomen transverse, as broad as thorax, but shorter, shining black, with very sparse, short, pale pubescence. Legs rather

short and stout; coxae black; front legs stouter than remainder, and entirely deep black; posterior femora and tibiae black, former broadly reddish on basal half, latter broadly yellowish in middle; tarsi yellowish. Wings not folded, longer than broad, and considerably longer than abdomen, entirely whitish-hyaline, iridescent; veins pale yellowish, black at extreme base only, rather thin, even anterior ones not much thickened. Second vein proportionately long, oblique, originating beyond anterior cross-vein, which is punctiform; third vein long, curved, ending much before wing-tip, with upper branch a little shorter than portion of vein beyond it; second submarginal cell short and triangular; discal cell rather irregular, with broad base, the three veins issuing from it all complete; anal cell of usual shape, with its terminal cross-vein oblique, much longer than last portion of sixth vein. Axillary lobe short and broad, with short ciliation; alula greatly developed.

Subfamily *CLITELLARIINAE*.

Genus **BRACHYCARA**, Thoms.

12. *Brachycara thomsoni*, sp. n., ♂.

Distinguishable from the genotype by the differently coloured legs.

Type ♂, a solitary specimen from Port Kinnaird, x.1922 (*H. W. Simmonds*). Named in honour of C. J. Thomson, who in his "Eugenies Resa . . . Diptera" introduced many new characters, chiefly in chaetotaxy.

The only species of this genus at present known is *B. ventralis*, Thoms., described from a specimen from the Ross Islands, and recorded from New Guinea (Van der Wulp, 1908, but with differently coloured legs), from the Seychelles (Kertész, 1912) and from the Cocos-Keeling Is. (Brunetti, 1920).

♂. Length of body 4 mm.; of wing 3.5 mm.

Occiput convex, black, densely grey-dusted, with short white pubescence at eye-borders. Vertical triangle narrow and elongate, black, with broad, flat, shining, prominent ocellar tubercle. Eyes bare, rounded, with equal small facets, united for a short distance towards middle of frons; supra-antennal triangle shining black, nearly equilateral. Antennae inserted considerably below middle of eyes; basal segments short, black; remainder wanting in case of type. Face broad, flat, black, grey-dusted, with short, dense pale pubescence; mouth-opening transverse; proboscis not prominent. Thorax shining black, not very convex on dorsum, and there with short, pale pubescence, which is very sparse on pleurae, without golden dust; a narrow, whitish notopleural line; scutellum like scutum, subtriangular, rather small. Halteres with white knobs. Abdomen whitish, with first and last segments black; there is moreover a small black spot on each side of third and fourth segments; venter whitish,

with black lateral borders, and black tip. Coxae and femora black, but four anterior femora with reddish tips; four anterior tibiae entirely reddish, hind tibiae black, with reddish tips; anterior tarsi blackish, four posterior ones reddish. Wings whitish-hyaline, iridescent, with blackish stigma; anterior veins thick and blackish, posterior ones thin and pale. Neuration normal.

Subfamily STRATIOMYIINAE.

In the collection only species of the *Odontomyia* group are represented, but, like the new genus here described, many of them appear to be endemic. Most of the species have the second vein distinct, but the third vein is not forked; several of them are like the European *Hoplodonta viridula*, both in shape and coloration, but have a much more complete venation.

The rather numerous species may be distinguished as follows:

- 1 (2). Pleurae black, with yellow spots; scutellum entirely yellow.
chloris, Walk.
- 2 (1). Pleurae without yellow spots; scutellum black.
- 3 (8). Third antennal segment blackened at tip, with short, thick style; mesonotum shining.
- 4 (5). Femora black; body bare, entirely shining black; wing on fore border with a black elongate spot at end of costal cell.
gagathina, sp. n.
- 5 (4). Femora reddish or yellowish; thorax with distinct pubescence; abdomen in part reddish; no costal black spot on wings.
- 6 (7). Abdomen mainly black, with narrow reddish border; mesonotum with golden dust.....*heterogastra*, sp. n., ♀.
- 7 (6). Abdomen reddish, with broad, parallel-sided, black middle stripe; middle femora with dark ciliation on hind borders.
heterogastra, sp. n., ♂.
- 8 (3). Third antennal segment, entirely reddish, with thinner and longer style; mesonotum never shining; abdomen entirely as mainly reddish, yellowish or green, with or without black markings in median line; middle femora with pale ciliation on hind borders.
- 9 (14). Face and peristomialia entirely black.
- 10 (11). Abdomen with a rather broad, parallel-sided, black median stripe.
parallelina, sp. n., ♂.
- 11 (10). Abdomen entirely destitute of black median markings.
- 12 (13). Female.....*parallelina*, sp. n., ♀.
- 13 (12). Male.....*pura*, var. n., ♂.
- 14 (9). At least peristomialia reddish or yellowish.
- 15 (16). Face yellowish in middle; abdomen in both sexes without black median markings.....*aegrotata*, var. n., ♂♀.
- 16 (15). Face black in middle, only peristomialia reddish.
- 17 (18). Abdomen of female devoid of black median stripe.
pavida, var. n., ♀.
- 18 (17). Abdomen in both sexes adorned with an interrupted median black stripe.....*fulminans*, sp. n., ♂♀.

Genus ODONTOMYIA, Meig.

13. *Odontomyia chloris*, Walker.

I have not seen this species, which was determined in the British Museum, by comparison with Walker's types.

14. *Odontomyia gagathina*, sp. n., ♀.

An entirely shining black species, distinct from all the others in the absence of all pubescence or dust on the thorax, and in having black femora.

Type ♀, and some other specimens of the same sex from Ovalau, 7.xii.1921, and Savu Savu, v.1922 (*H. W. Simmonds*).

♀. Length of body 5-5.5 mm.; of wing 4.5-5 mm.

Head entirely shining black, without any dust on face or frons, only posterior eye-border being narrowly argenteous; occiput concave. Frons as broad as one eye, punctulate, with a thin, longitudinal median furrow, a broad transverse furrow in front, just above antennae, and another less marked one towards middle; ocellar tubercle broad and flat; face broad, bluntly convex, rather prominent in profile; peristomialia narrow, with a few whitish hairs. Eyes bare, rounded, unicolorous. Antennae inserted towards middle of eyes, reddish, with third segment blackened at tip; basal segments of about same length; third segment twice as long as first two segments together, with a thick terminal style, which bears no bristle at tip. Proboscis strong, shining black, with scattered, rather long, white hairs. Thorax shining black, quite bare, with only sparse yellowish dust in front of scutellum; latter entirely deep black, but less shining than scutum, with two thin, rather long, yellowish spines; mesophragma shining black. Halteres with pale yellowish or greenish knobs. Abdomen quite bare, broad and depressed, broader than thorax, entirely shining black, without any yellow marking above or below. Legs with shining black coxae and femora, only trochanters partly reddish; tibiae pale yellowish, front pair with a narrow blackish ring round middle, four posterior tibiae with basal halves blackened; all tarsi pale yellowish, last three or four segments blackened; fringe of hair on posterior side of middle femora well developed and whitish. Wings entirely hyaline, shining, iridescent; thick veins on fore border yellowish, but black in middle, thus forming an elongate black spot on fore border; stigma yellowish, only twice as long as broad. Second vein well developed; third vein short, not forked, distant from end of first vein; discal cell rather small, with two angles outwardly, from which issue two spurious veins.

15. *Odontomyia heterogastra*, sp. n., ♂♀.

Allied to the preceding species on account of the almost entirely black abdomen of the female, but distinguished by the well-developed pubescence and dust on the body, as well as by the entirely yellowish legs.

Type ♂, Savu Savu, v.1922 (*H. W. Simmonds*); type ♀ and an additional specimen from Nausori, v.1921 (*R. Veitch*).

♂♀. Length of body 4.5-4.8 mm.; of wing 4-4.5 mm.

Head entirely shining black, with narrow, argenteous posterior

border to eyes in female; occiput concave, not dusted. Eyes bare, in male in contact for a long distance, and with upper facets enlarged, sharply separated from lower (smaller) ones; eyes in female broadly separated, facets small and of uniform size. Vertical triangle of male shining black, narrow and long; supra-antennal triangle very small, white-dusted; frons in female as broad as one eye, shining black, bare, with furrows as in preceding species; face shining black, short, bluntly convex, very small in male, with a few pale hairs on sides. Antennae yellowish, with blackish tips, and shaped as in preceding species; proboscis as in preceding species. Thorax entirely shining black, but in both sexes covered with rather dense golden dust, chiefly on scutum, and moreover clothed in male with rather long, erect, greyish pubescence. Scutellum entirely deep black, without pubescence or dust even in male, with two yellowish spines. Postscutellum and mesophragma shining black; halteres with white knobs. Abdomen broad and flat, broader than thorax, clothed in male with rather long, erect, greyish or whitish pubescence, and shining reddish, with a broad, parallel-sided, black median stripe broader than reddish lateral borders; venter entirely reddish; abdomen of female shining black and bare, only venter having a reddish stripe on each side, not or hardly visible dorsally. All coxae shining black; legs otherwise pale yellowish, unspotted, terminal segment of all tarsi infuscated; ciliation on middle femora blackish in male, white in female. Wings entirely hyaline, slightly iridescent, with pale yellowish veins and without a black costal spot; stigma pale yellowish, elongate, thrice as long as broad, second vein, being distant from end of first; third vein short, not forked; discal cell small, with two angles, and two vestigial veins arising therefrom.

16. *Odontomyia parallelina*, sp. n., ♂.

A small species, very like the European *Hoplodonta viridula* in coloration and variability, but distinguished by the wing-venation being less reduced; the entirely black face and black peristomialia are also characteristic.

Apparently common in the Islands. Type ♂ and ♀, and numerous additional specimens of both sexes from Lautoka, ii.-iii.1920, Labasa, 31.viii.1922 (*W. Greenwood*); Cuvu, 31.viii.1915, Natova, x.1918, Nausori, v.-x.1921, Lautoka, 12.v.1921 (*R. Veitch*); Sigatodea R., x.1922, Taviuni, 3.ix.1922, Moturiki, v.1921 (*H. W. Simmonds*); Nadi, 1913 (*D. S. North*).

♂♀. Length of body, 5.5-8 mm.; of wing 5-7 mm.

Head shining black, with narrow, argenteous posterior borders to eyes in female; occiput concave, not dusted. Eyes of male in contact for a long distance, with upper facets enlarged and sharply separated; vertical triangle shining, narrow, elongate, with a band of greyish hairs on vertex; supra-antennal triangle very small with a white stripe on each side. Eyes of female

widely separated with uniform small facets; frons shaped as in the two preceding species, but distinctly a little narrower, being narrower than one eye. Face bluntly conical, very small in male, entirely shining black in both sexes, even on peristomialia, and with long pale hairs on sides. Antennae entirely reddish, not at all infuscated at tips; basal segments of equal length; third segment one-and-a-half times as long as first two segments together, with rather long and thin terminal style. Lower part of head clothed with abundant whitish hairs; proboscis thick, shining black, with long, scattered, pale hairs. Thorax entirely black, but not shining, clothed in male with rather long, greyish pubescence, and in both sexes with yellowish dust. Scutellum black on disc, clothed with yellowish tomentum on margin, with two yellowish spines; postscutellum and mesophragma deep black, latter slightly shining. Squamulae blackish; halteres with whitish or greenish knobs. Abdomen differently coloured in the two sexes: in male greenish or yellowish, shining, and adorned with a complete, parallel-sided, black median stripe, which is not broader than lateral borders, and is clothed with rather long, pale pubescence; venter unspotted; abdomen of female entirely greenish or yellowish, quite unspotted above and below; pubescence much shorter than in male, and distinct only on sides. Coxae black; legs otherwise entirely yellowish; ciliation of middle femora white in both sexes. Wings perfectly hyaline, unspotted, iridescent, with yellow veins; stigma proportionately short, pale yellowish; second vein rather approximated to end of first; third vein forked; discal cell rather large, with two angles and two vestigial veins arising therefrom.

17. *Odontomyia parallelina*, var. *pura*, var. n., ♂.

Exactly like smallest specimens of typical form, but differing in absence of black median stripe on abdomen; male of this form thus very like typical female.

Type ♂, a single specimen from Nadi, 1913 (*D. S. North*).

18. *Odontomyia parallelina*, var. *pavida*, var. n., ♀.

Differing from typical females in having broadly reddish peristomialia.

Type ♀, Natova, 1.xii.1919 (*R. Veitch*); another female, Waialailai, 16.x.1921 (*H. W. Simmonds*).

19. *Odontomyia parallelina*, var. *aegrota*, var. n., ♂♀.

Male with abdomen quite unspotted, as in var. *pura*; both sexes distinguished by face being entirely yellowish, even in middle. In both var. *pavida* and var. *aegrota* the golden dust of the frons of the female is more abundant than in the female of typical *O. parallelina*.

Type ♂ and ♀, Rarawai, 27.x.1915 (*R. Veitch*); Nadi, 1913 (*D. S. North*).

20. *Odontomyia fulminans*, sp. n., ♂♀.

Distinguished from *O. parallelina* and its varieties by the very different shape of the median black stripe on the abdomen, which is similar in the two sexes.

Type ♂, Natova, 1.xii.1919 (*R. Veitch*); type ♀, Waialailai, 16.x.1921 (*H. W. Simmonds*); Cuvu, 10.x.1919 (*W. Greenwood*).

♂♀. Length of body 6–8 mm.; of wing 5–6.5 mm.

Head and its appendages in both sexes as described for *O. parallelina*, but peristomialia narrowly reddish, and vertical triangle of male and frons of female clothed with rather abundant golden dust. Thorax and scutellum as in *O. parallelina*, but with denser golden dust. Abdomen very different, having a peculiar black pattern, similar in the two sexes; ground-colour yellowish or greenish, shining, with a narrow black median stripe, formed by isolated spots of different sizes, viz. one triangular or rounded spot in middle of second segment, smaller in female; one small, elongate spot on third segment; two triangular contiguous spots, on fourth and fifth segments respectively, these four spots forming an interrupted, irregular stripe, recalling that of the European *O. angulata*, Panz.

PINALEUS, gen. nov.

Distinguished from *Odontomyia* by its narrow, elongate body, and the very different form of the head. The genus *Euceromys*, Bigot, 1877, seems to be allied, but has hairy eyes; it is based on *Stratiomyia nexura*, Walker, 1859, redescribed by Brunetti in 1923. Judging from descriptions, *O. stricta*, Erichson, 1842, and *O. angusta*, Walker, 1854, may belong to the present genus. The genus *Scapanocnema*, Enderlein, 1914, of Lombok, has also the frontal prominence, but has a forked third vein and dilated front tibiae.

Head rounded, but viewed from in front distinctly broader than high. Occiput deeply concave, with very narrow, prominent eye-borders in female. Eyes bare in both sexes, with upper facets very little enlarged in male; eyes united in male, broadly separated in female; ocellar tubercle prominent, with three ocelli of large size. Supra-antennal triangle in male, and anterior part of frons in female produced into a strong prominence, on which antennae are inserted. Face prominent, sometimes strongly tuberculate. Antennae inserted below middle of eyes; two basal segments short and equal in length; third segment elongate, with three annulations, and with short thick terminal style. Proboscis short and bicubitate, rather thin. Thorax elongate, not very convex, with transverse suture oblique, and narrowly interrupted in middle; mesopleura concave; pectus very convex; scutellum with two small spines. Abdomen flat and elongate, with parallel sides, not broader than thorax. Legs simple, front pair shortened. Wings narrow and long,

with bare, but wrinkled membrane. Second longitudinal vein well developed; third not forked, short; ending much before wing-tip, costa being only a little produced beyond it; discal cell with two prominent angles, emitting two veins; axillary lobe broad, alula well developed.

Genotype: *Pinaleus bivittatus*, sp. n.

The species are as follows:

- 1 (6). Face rounded; halteres whitish or greenish; abdomen with green or yellowish markings; wings entirely hyaline, with veins issuing from discal cell all vestigial.
- 2 (3). Coxae and femora black; antennae entirely black, like palpi and proboscis.....*bivittatus*, sp. n., ♂.
- 3 (2). Coxae and femora reddish.
- 4 (5). Antennae entirely black, like palpi and proboscis; venter of female mainly black.....*bivittatus*, sp. n., ♀.
- 5 (4). Antennae broadly reddish, or at least with reddish second segments; palpi and proboscis reddish; venter entirely greenish or reddish in both sexes.....*conformis*, sp. n., ♂♀.
- 6 (1). Face with a very prominent tubercle; halteres black; abdomen entirely black; wings infuscated with second vein issuing from discal cell well chitinized.....*rostrifer*, sp. n., ♂.

21. *Pinaleus bivittatus*, sp. n., ♂♀.

A strikingly coloured fly, remarkable on account of the sexual dimorphism in the coloration of the legs.

Type ♂ and another specimen of the same sex, Nausori, x.1920 (*R. Veitch*); type ♀, Ovalau, vi.1922 (*H. W. Simmonds*).

Mr. Simmonds supplied the following note: "Black antennae, malachite green thorax and between eyes, pale green abdomen."

♂♀. Length of body and wings 6-6.5 mm.

Head black; occiput shining, not dusted, narrow eye-borders of female clothed with shining green scales. Eyes rounded, reddish brown, apparently unicolorous; Vertical and supra-antennal triangle of male shining black, latter wrinkled and clothed with faint whitish dust at sides; frons of female narrower than one eye, but gradually broadened anteriorly, shining black, with a broad band of purplish-green scales across middle, and also with green scales on orbits; antenniferous prominence black and very shining. Face of male dark grey dusted, clothed with long greyish hairs and green scales, which are more abundant below and on peristomialia; face in female blacker, with green scales, but with sparse short hairs, even on peristomialia; mouth-border is entirely black; proboscis and palpi quite black. Antennae entirely black in both sexes; third segment (without style) twice as long as basal segments together. Thorax entirely black, but densely clothed with purplish dust, and with green scales, ground-colour appearing only as a shining black stripe along notopleural suture; dorsum clothed with greyish pubescence, not visible in female; pectus shining black in both sexes. Scutellum clothed like mesonotum; two small black spines;

postscutellum deep black; mesophragma narrow and but little developed, shining black. Halteres green or pale yellowish, knobs sometimes infuscated. Abdomen shining green, often pale yellowish after death; two black longitudinal lines in male broadly confluent at base and apex, and dilated interiorly on fore border of each segment, thus including three broad triangular green spots, narrow lateral border being continuously green; in female two black stripes more regular, parallel, separated at base and confluent at apex, venter in male green, unspotted, though black dorsal stripes sometimes visible; venter in female shining black on terminal half, perhaps owing to drying of internal contents. Legs, including coxae, entirely shining black in male,

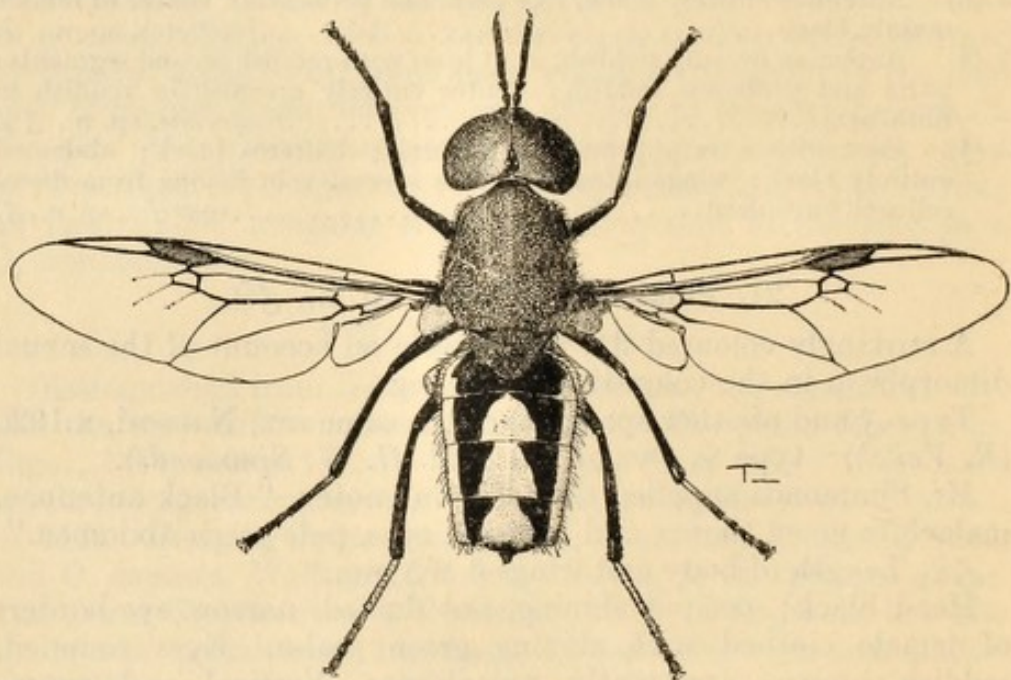


FIG. 10.—*Pinaleus bivittatus*, sp. n. ♂. × 7.

only praetarsi of four posterior legs being pale yellowish, and sometimes middle tibiae being reddish at base; legs nearly bare, even ciliation on posterior side of middle femora being very sparse and short. Legs in female, including coxae, reddish yellow, all knees narrowly black; hind femora and four posterior tibiae with a more or less distinct black ring in middle, tips of front tibiae black; all tarsi black, those of front pair entirely, four posterior ones with pale yellowish praetarsi. Wings entirely hyaline, iridescent, with intensely black stigma; thick veins black; discal cell small, not broader than stigma; both veins issuing from discal cell completely vestigial, hardly visible; upper terminal vein of anal cell unchitinized.

22. *Pinaleus conformis*, sp. n., ♂♀.

Nearly allied to the preceding species, but distinguished by the reddish legs of the male, and in both sexes by the paler antennae and proboscis.

Type ♂, Labasa, xii.1921 (*R. Veitch*); type ♀, Ovalau, vi.1922; additional specimens of same sex from Levuka, v.1921, and Moturiki, v. 1921 (*H. W. Simmonds*).

♂♀. Same dimensions as in preceding species.

Head and its appendages as in preceding, but face of male with less abundant and shorter hairs; mouth-border broadly reddish in both sexes; antennae in both sexes with at least second segments entirely reddish, but sometimes even third segment more or less broadly reddish at base, thus whole antenna reddish, with black base and black tip. Proboscis broadly reddish, or with reddish labella in both sexes; palpi reddish. Female sometimes with a reddish spot beneath ocelli; frontal orbits devoid of green scales. Thorax and scutellum as in preceding species, but pteropleural region broadly reddish in female; halteres pale yellowish or whitish. Abdomen as in preceding species, but venter of female entirely greenish or yellowish. Legs of male, including coxae, entirely reddish yellow; hind femora and all tibiae with more or less developed black rings round middle; tarsi black, but all praetarsi broadly reddish at base, even those of front pair. Legs of female exactly as in preceding species. Wings as in preceding, but stigmal spot seems to be less intensely black, at least in male.

23. *Pinaleus rostrifer*, sp. n., ♀.

More robust than the two preceding species, and very distinct from them owing to the quite different form of the face, and the colour and venation of the wings.

Type ♀, a solitary specimen from Ovalau, vi.1922 "on wet rock" (*H. W. Simmonds*).

♀. Length of body 9.5 mm.; of wing 9 mm.

Occiput shining black, with shining green eye-borders. Eyes greenish, with a purplish band above middle. Frons about as broad as one eye, with a not very prominent median longitudinal keel, shining black, with two transverse furrows, one in middle and one at base of frontal prominence, both clothed with greenish scales; frontal prominence shining black. Face shining black, prominent, with a well-developed, rounded, small tubercle in middle, and thus very prominent in profile; lower part of face, as well broad peristomialia, clothed with whitish scales and scattered whitish hairs. Proboscis black. Antennae reddish brown, with third segment blackened at tips. Thorax elongate, black, with reddish humeri, entirely clothed with purplish dust even on notopleural line; pleurae slightly shining, with greenish scales; pectus shining black. Scutellum like mesonotum;

two small spines pale yellowish; postscutellum and mesophragma grey-dusted. Halteres with yellowish stalks and black knobs. Abdomen nearly bare, entirely black, less shining on dorsum, more shining on the venter; entire lateral borders narrowly and indistinctly yellowish. Legs, including coxae, reddish, front pair more robust and shorter than remainder; all knees narrowly black; tibiae with black middle rings and black tips, less distinct on front pair; tarsi black, front pair entirely so, remainder with pale yellowish praetarsi. Wings distinctly infuscated, more intensely on terminal part of fore border, thus having an apical, ill-defined fuscous band; stigma and thickened veins intensely black; discal cell considerably larger than in two preceding species, being broader than stigma; second of two veins issuing from it chitinized, black, like fourth

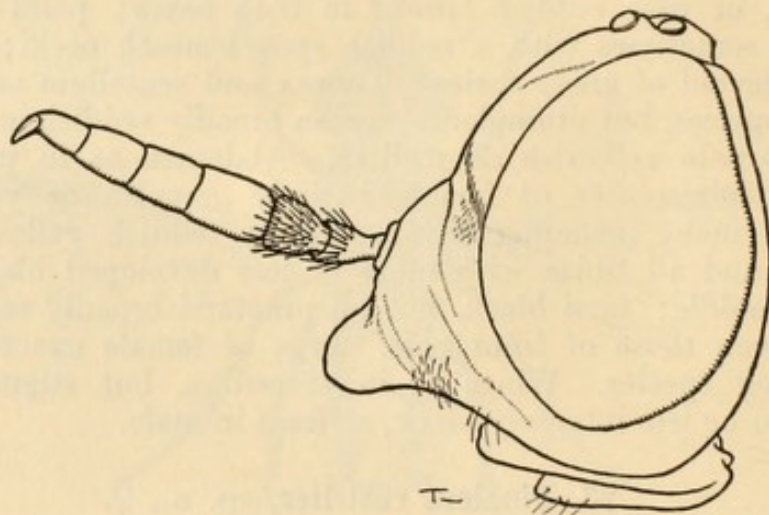


FIG. 11.—*Pinaleus rostrifer*, sp. n. Head of ♀ in profile. × 28.

branch of M (or Cu_1); upper terminal vein of anal cell chitinized, thick, and black.

Subfamily *CHRYSOCHLORINAE*.

Genus *CHROMATOPODA*, Brau.

The genus *Chromatopoda* is characteristic for the Pacific Islands, and is very abundantly represented in the Fiji material. The specimens before me are referable to the three forms that have already been described, all of which possibly represent but a single species, *Ch. annulipes*, Walk. These three forms are distinguishable as follows:

- 1 (2). Abdomen quite black, even on venter; females only.
annulipes, Walk.
- 2 (1). Abdomen partly red, at least on venter; males.
- 3 (4). Abdomen black, two terminal segments alone red.
frontalis, Thoms.
- 4 (3). Abdomen red, with only base black.....*bicolor*, Macq.

24. *Chromatopoda annulipes*, Walker, 1849.

Ch. frontalis, Thomson, 1868, is the male of this species, of which Walker described only the female, from a specimen from an unknown locality. Thomson's type (erroneously believed to be a female, but in reality a male) was obtained in Tahiti.

There are numerous specimens of both sexes: Ovalau, v.1922, Moorea, xi.1920, Vunilagi, v.1921 (*H. W. Simmonds*); Natova, Cuvu, i.-x.1917-18 (*R. Veitch*). There is also a specimen from Tahiti, summer 1920-21 (*H. W. Simmonds*).

25. *Chromatopoda annulipes* var. *bicolor*, Macquart.

Certainly nothing but a variety of the male of the preceding species; the type was taken in Tonga.

Several males from Cuvu, 1.i.1917 (*R. Veitch*); Nabavatu, 9.xii.1921 (*H. W. Simmonds*).

Subfamily GEOSARGINAE.

It is noteworthy that there are no species of *Ptecticus* or *Geosargus*, but only the following new species.

Genus MICROCHRYSA, Lw.

26. *Microchrysa maxima*, sp. n., ♂♀.

Distinguished from all known species of the genus by its very large size.

Type ♂ and ♀, Suva, "bred from banana refuse," 24.viii.1921, "at office," 3.ix.1921, "at light," 21.iii.1923 (*H. W. Simmonds*); Cuvu, 8.vi.1915, Nausori, v.1921, Natova, v.1918, Lautoka, 22.v.1920 (*R. Veitch*); Nadi, 1924 (*D. S. North*); Fiji, 2.iii.1917 (*F. P. Jepson*).

♂♀. Length of body 8-10 mm.; of wing 7.5-9 mm.

Occiput deeply concave, shining black in male, shining blue in female, like eye-borders of female, rather broad above and shining white below; neck, concealed in occipital cavity, greatly swollen and wax-white. Eyes bare, depressed above; those of male very greatly developed, in contact for a long distance, with upper facets greatly enlarged and separated by a sharp line from small lower ones which occupy not more than one-third of entire eye; eyes of female much smaller, widely separated, with small, equal facets. Vertical triangle of male narrow, reduced to ocellar tubercle, which is black, with only a narrow stripe in front of it; supra-antennal triangle small, equilateral, dullish-black; vertex of female with thin, whitish pubescence. Frons of female very long, parallel-sided, as broad as one-fourth of transverse diameter of head, with a thin, impressed median line, extending from ocelli to white callosity; frons of female shining blue, with purplish reflections and a swollen, white, transverse band just above

antennae, but extending below on to sides of face; ocellar tubercle black. Face very short in both sexes, flat, that of female broader than that of male; face dullish black, more shining in female and in this latter with short whitish pubescence, extending across narrow peristomialia. Antennae inserted below middle of eyes (in male even below bisection-line), of usual shape, entirely reddish, with thin bare arista, which is reddish at base. Proboscis short, black, with broad whitish labella. Thorax dullish blue on dorsum, with purplish reflections, clothed with sparse pale dust and exhibiting sericeous reflections; humeral calli and a narrow notopleural line whitish; pleurae in male shining reddish-yellow above, and shining black below, like pectus; pleurae in female entirely shining black, with pale pubescence. Scutellum like scutum, with narrow yellowish hind border; postscutellum convex, strongly developed, shining blue; mesophragma small, black, with white pruinescence on sides. Halteres whitish or pale yellowish. Abdomen entirely shining blue, with metallic reflections; pubescence white, rather long basally on sides; short pubescence on dorsum forming white transverse bands, equally deep on both sides of each suture, and more distinct in female than in male. Male genitalia reddish, black at base, rounded, rather large. Venter dark blue, somewhat shining, with thin whitish pubescence. Legs, including coxae, whitish or greenish; terminal halves of all femora black, but tips narrowly yellowish; hind tarsi shortly ciliated below, blackish, each segment with narrowly yellowish tip. Wings of male hyaline, with pale yellowish stigma; wings of female faintly infuscated, more intensely so towards discal cell, and with blackish stigma; thick veins black in female and infuscated in male; second vein near end of first; upper branch of third vein in middle of last portion of this vein; all three veins issuing from discal cell well developed, second more chitinized than remainder, and only third abbreviated, not reaching hind border.

In *M. fuscistigma*, De Meij. 1913, ♀, of New Guinea, the pterostigma is likewise infuscated; but it is described as being half the size, and as having differently coloured legs.

Family TABANIDAE.

The Tabanid fauna of the Pacific Islands is little known; Miss Ricardo has described two Fijian species of *Tabanus*, and another found originally in the Solomon Islands, to which two new species are added here.

These five species, and a new one belonging to the genus *Neobolbodimyia*, are distinguishable as follows:

- 1 (8). No trace of an ocellar tubercle; supra-antennal triangle (subcallus) small, flat, not at all prominent and clothed with greyish or yellowish dust; first antennal segment of ordinary shape and colour.
- 2 (7). Palpi of female long, slender, of about same breadth throughout; frons of female very narrow, with lineal extension of callus reaching

- nearly to vertex; beard sparse; mesonotum without white stripes; abdomen without median triangular spots; wings not spotted.
- 3 (6). Elongate, narrow-bodied species, with pale yellowish or brownish legs; sides of face almost bare; upper branch of cubital fork with well-developed appendix.
- 4 (5). Dark-coloured species, with black palpi and dark antennae and legs; frontal callus blackish, reaching eyes below; wings faintly tinged with brown.....*pacificus*, Ric.
- 5 (4). Ochraceous species, with yellowish palpi and pale yellowish antennae and legs; frontal callus reddish, not reaching eyes below; wings faintly tinged with yellowish.....*solomensis*, Ric.
- 6 (3). Broad species of usual shape, with deep black legs; sides of face with short hairs; upper branch of cubital fork without appendix; calypters with long white fringes; abdomen shining black, with narrow whitish hind borders on all segments.....*limbatellus*, sp. n.
- 7 (2). Palpi of female stout, with very broad base and ending in a point; frons of female moderately broad, lineal extension of callus not so prolonged; beard abundant; mesonotum with two whitish stripes; abdomen with median triangular spots of yellowish tomentum; calypters with golden fringes; wings distinctly clouded with brown on cross-veins.....*fijianus*, Ric.
- 8 (1). A distinct ocellar tubercle in both sexes; subcallus broad, rounded, shining black and very prominent in both sexes; first antennal segment globose and shining black; abdomen of male very pointed at end.
Neobolbodimyia veitchi, sp. n.

Genus **TABANUS**, L.

27. *Tabanus pacificus*, Ricardo, 1917.

The eyes are quite bare.

Type from Suva; there are several female specimens from Ovalau, 27.x.1921 and v.1922 (*H. W. Simmonds*); Nausori, v.1921 (*R. Veitch*).

28. *Tabanus solomensis*, Ricardo, 1915.

Tabanus ardens, Froggatt *nec* Wied. (*Sci. Bull.*, iii, p. 6, 1911) is a synonym.

The male and female types were obtained in the Solomon Islands. *T. pseudoardens*, Taylor, of Queensland, is very similar.

A fairly large series of specimens of both sexes from Ovalau and Levuka, v.1922, Rabi and Savu Savu, v.1921 (*H. W. Simmonds*); Nausori, v.1921, Loloti, xii.1920 (*R. Veitch*).

The only differences from the original description are that in the female the palpi are entirely clothed with black hairs; and that the wings of the male are much darker than those of the female, and always have an appendix at the base of the cubital fork; but some males (*Veitch*) have the body and wings of a paler colour, thus answering better to the original description.

These two species (*T. solomensis* and *T. pacificus*) form a peculiar group, distinguished by the narrow body, very narrow frons, face and callus, the entirely bare sides of the face, etc.; they are not unlike some Australian species of *Silvius*, but have no ocelli and no spurs at the end of the hind tibiae.

29. *Tabanus limbatellus*, sp. n., ♀.

This species has in common with those of the preceding group only the elongate and narrow form of the female palpi; the female frons is distinctly a little narrower and the body is broad and short. It differs in the deep black legs and the shining black abdomen, which has narrow and equal white hind borders on all the segments, above and below.

T. caledonicus, Ric., of New Caledonia (syn. *T. albonotatus*, Bigot, 1892, nec Bellardi, 1859) has partly red legs and median triangular spots on the abdomen, but similar palpi to those of *T. rubricallosus*, Ric., which likewise belongs to New Caledonia, but is very different in other respects. *T. wollastoni* and *T. pollinosus*, Ric., of New Guinea, are both of much larger size.

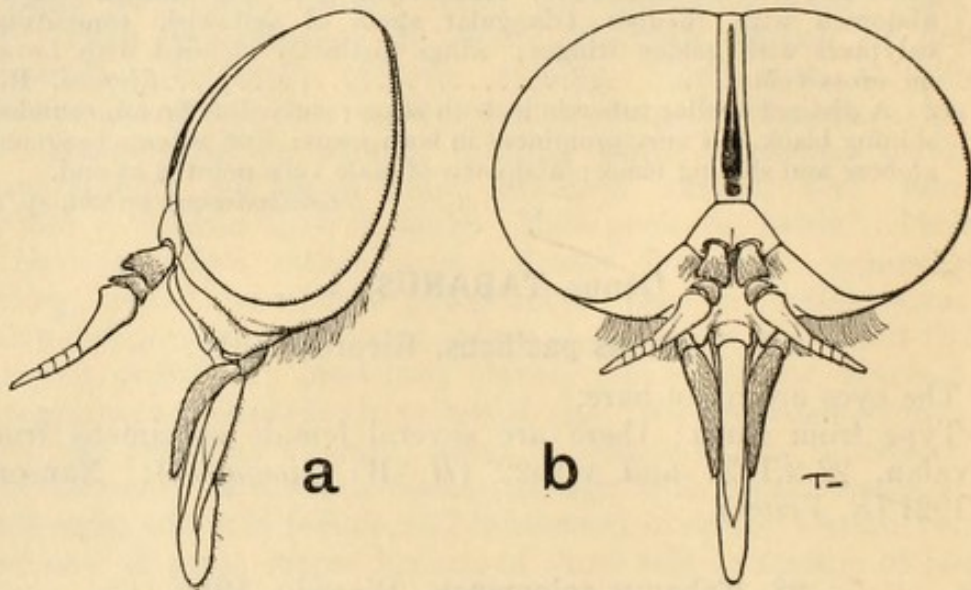


FIG. 12.—*Tabanus limbatellus*, sp. n.: a, head of ♀ in profile. $\times 12$; b, head of ♀ viewed from in front. $\times 12$.

Some described Australian species show a similar abdominal pattern, like *T. macquarti*, Ric., and *T. doddi*, Tayl., both of which however have white median triangles on the abdomen, broadly infuscated wings and a long basal tooth on the third antennal segment; *T. notatus*, Ric., and *T. innotatus*, F. & H., have partly red legs; *T. musgravi*, Tayl., and *T. rivularis*, F. & H. (*T. pygmaeus*, F. & H.) also have the legs partly red; *T. dubiosus*, Ric., has median abdominal spots and reddish knees.

Type ♀, a solitary specimen from Cuvu, 10.vi.1921 (*W. Greenwood*).

♀. Length of body 10.5 mm.; of wing 9.5 mm.

Head entirely black; occiput clothed with opaque, dark grey dust, without ciliation on eye-borders, and with only very short hairs. Frons narrow, about seven times as long as broad below; callus black, elongate, ovato-triangular, not reaching eyes laterally, its lineal prolongation extending for two-thirds of length of frons.

Eyes bare and apparently unicolorous. Subcallus densely clothed with brownish-grey dust. Antennae inserted below middle of eyes, entirely dark reddish; third segment with a triangular prominence, but not toothed. Face entirely grey-dusted, with short hairs on sides; beard very short and sparse, pale yellowish; palpi black, narrow, long, not inflated at base, with yellowish pubescence; proboscis black, thick, as long as vertical diameter of head. Thorax entirely dull black, without distinct pattern, but clothed on dorsum with short aureous pubescence; pleurae black, with long and dense aureous pubescence on upper half; scutellum black, with aureous pubescence. Halteres black; calypters with long white fringes on hind borders. Abdomen entirely shining black above and below; each segment on hind border with a uniform, narrow, whitish band, continued even on venter; pubescence whitish on sides, on hind borders of segments and along middle line, but there not forming a stripe or spots. Legs, including coxae, entirely and intensely black; pubescence black, partly pale on basal half of coxae. Wings greyish-hyaline, unspotted, with elongate yellowish stigmal spot, and with extreme base dark yellowish to humeral and basal cross-veins, this dark part being abruptly terminated outwardly. Veins black, dark yellowish towards base; cubital fork very broad, upper branch devoid of basal appendix and ending considerably before wing-tip; all posterior cells broadly open, first posterior cell, dilated outwardly and even a little broader than second at end; middle cross-vein near base of discal cell, but in front of basal cross-vein of fourth posterior cell; anal cell with rather long stalk.

30. *Tabanus fijianus*, Ricardo, 1914.

A species of the usual shape, but readily distinguishable by reason of the frons and palpi of the female, the clouded cross-veins, and the very distinct pattern on the mesonotum and dorsum of the abdomen. Hairs on sides of face, and beard long and abundant, in contrast to the preceding species. Described from specimens from Suva and Viti Levu; recorded also from the New Hebrides.

One female specimen from Lautoka Mountains, i.1920 (*W. Greenwood*).

Genus **NEOBOLBODIMYIA**, Ric.

31. *Neobolbodimyia veitchi*, sp. n., ♂♀.

Very distinct from the type species *N. nigra*, Ricardo (*Nova Guinea*, p. 402, 1913; Surcouf, *Gen. Ins.*, 93, pl. ii, fig. 13a, b) owing to the presence of an ocellar triangle, the well-developed frontal callus of the female, the reddish legs and the greyish-hyaline wings. It agrees with the type species in the generic characters, but is hardly separable from *Tabanus*; if the eyes

were pubescent it would agree with the American genus *Hybomitra*, Enderlein, 1922.

Type ♂ and type ♀, a single couple of specimens from Cuvu, 1.i.1917 (*R. Veitch*), in whose honour this fine insect is named.

♀. Length of body 14 mm.; of wing 13 mm.

Occiput concave, densely grey-dusted, opaque; eye-borders with a row of very short, greyish hairs. Eyes subtriangular, with small facets, apparently unicolorous and bare. Frons narrow, gradually widened below, being at vertex only one-half as broad as below, near lower corner of eyes; frons about five times as long as width below, densely grey-dusted, with short dark hairs and a shining black callus, which does not reach eyes

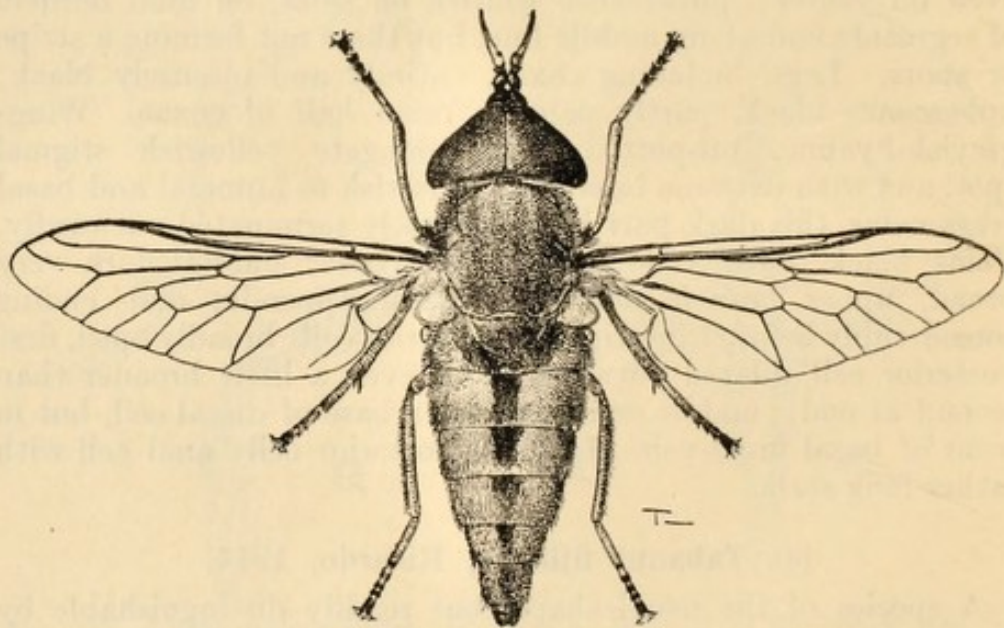


FIG. 13.—*Neobolbodimyia veitchi*, sp. n. ♂. × 3.

below and extends above into a long, broad, acute prolongation, which reaches almost to rudimentary ocellar tubercle; latter well developed and prominent, of oval shape, reddish in colour and devoid of ocelli. Subcallus developed into a broad, rounded, very prominent, bulbous tubercle, (bearing antennae), shining black and in contact above with frontal callus. First antennal segment greatly swollen, globular, clothed with short black hairs, and shining black above, reddish below; second segment very small, dark, reddish, black-haired; third segment shaped as in typical *Tabanus*, with a rather prominent basal tooth, bright reddish, with four terminal divisions darker, last one blackish. Face broad, densely clothed with opaque grey dust, and with short whitish pubescence; an oblique, shining black stripe on each side above, near eyes, just below antennae; sides of face with very short hairs; beard white, but sparse. Palpi reddish,

with short black hairs, not much swollen at base, gradually prolonged into a thin point; proboscis black, not longer than palpi, with broad labella. Mesonotum black, clothed with dark grey dust and short greyish pubescence, and with two dark, somewhat indistinct, longitudinal stripes; notopleural line with a stripe of blackish hairs, forming a sharp contrast with lateral whitish stripes of dorsum and entirely whitish dusted and white-haired pleurae. Scutellum like scutum, with black and greyish hairs. Halteres with blackish knobs, having a whitish spot below; calypters with yellowish fringes. Abdomen dark reddish, with a broad, blackish, longitudinal median stripe, bearing subtriangular spots of whitish dust, becoming smaller towards tip; first segment entirely clothed with whitish dust; pubescence short, blackish, but yellowish on whitish middle spots, near hind border and on sides. Venter entirely reddish, with faint whitish dust, and with short pubescence, black along middle, elsewhere yellowish; two basal sternites blackish in middle. Coxae black, grey-dusted, with long greyish hairs; legs otherwise reddish, with narrowly black knees and terminal segments of tarsi blackish; hair greyish or yellowish, rather conspicuous on posterior legs and especially on hind femora; spurs of middle tibiae black, like claws; front tarsi not ciliated above. Wings greyish-hyaline, with faint fuscous tinge along fore border, and darkish stigma; veins yellowish, partly blackish; appendix present, but short; first posterior cell broadly open, about as broad at end as fourth; anal cell closed and stalked.

♂. Length of body 14 mm.; of wing 11 mm.

Occiput as in female, with a row of very short black hairs on upper eye-borders; ocellar tubercle greyish, well developed, but not prominent in profile, bare, without ocelli; eyes touching for a very long distance, quite bare, with upper facets only a little broader than inferior ones, and not abruptly separated; a horizontal, green band across middle. Swollen, shining black subcallus, and antennae, exactly as in female; face grey-dusted, with a shining reddish stripe near eyes on each side; sides with short pale hairs; beard relatively short and sparse. Palpi reddish, shortly ovate, with black pubescence. Thorax, including scutellum, as in female, but black notopleural stripe less evident. Abdomen conical, very acute behind, entirely red, with a middle row of triangular black spots on second to fifth segments inclusive; whitish middle triangles less distinct than in female, except on second segment; venter entirely reddish, unspotted, except an elongate, blackish, median spot at base; short hairs blackish on sides of tergites, but aureous on sides of sternites. Coxae black, grey-dusted; trochanters deep black; femora and tibiae reddish, with narrowly black knees; tarsi reddish, each segment with black tip, last segment quite black. Wings as in female, but upper branch of cubital fork without appendix.

Family LEPTIDAE.

Genus **CHRYSOPILUS**, Macq.32. **Chrysopilus coeruleothorax**, Lindner, 1925.

Characterised by the distinctly pilose arista, the clothing of blue scales on the thorax (including scutellum), the yellow, black-banded abdomen, and the slightly spotted wings.

A female specimen from Ovalau, v.1922 (*H. W. Simmonds*), bearing the note: "blue eyes and stripes of thorax."

Length of body 6 mm.; of wing 5.5 mm.

Occiput black, densely grey-dusted, opaque, eye-borders with fringe of rather long hairs, which are black on vertex and above, pale yellowish below. Frons parallel-sided, narrow, one-third of one eye in width, with a deep median longitudinal furrow; frons black, opaque, with a whitish-grey band just above antennae, and clothed throughout with abundant erect, rather thick, black hairs; ocellar tubercle not very prominent. Antennae very small and short, dark reddish; third segment very small, rounded, with a long, black, distinctly pilose arista. Eyes bare, rounded, greenish blue. Face short, with reddish, not very swollen tubercle, and with scattered, short, dark hairs; palpi narrow, flat, long, reddish, with sparse hairs; proboscis yellowish. Thorax on dorsum dark yellowish-brown, opaque, with short, sparse, dark pubescence, clothed on sides and behind with shining blue scales. Pleurae pale yellowish, unspotted, slightly shining, bare, except row of yellowish hairs in front of halteres. Scutellum above blackish and entirely clothed with blue scales, yellowish below, with eight or ten black bristly hairs on hind border. Mesophragma pale yellowish; halteres with dirty blackish knobs. Abdomen yellowish, with black pubescence; second to fourth segments inclusive each with broad, opaque, black band at base, emarginated in middle behind; first segment very narrowly black at base; venter yellowish, unspotted. Legs, including coxae, pale yellowish, tips of tarsi darkened; hairs on coxae and femora pale yellowish. Wings hyaline, iridescent, with black veins and narrow, blackish stigma; faintly infuscated spots situate at base of upper branch of cubital fork, at end of discal cell, and at base of second and third posterior cells; first submarginal cell likewise slightly infuscated at tip. Second vein short and very close to first, first submarginal cell being much dilated; cubital fork narrow and long; second posterior cell with acute base, and longer than third, which is very narrow and parallel-sided; discal cell narrow and short, with parallel sides, and with anterior cross-vein situate near its base.

Family ASILIDAE.

Subfamily LEPTOGASTRINAE.

Genus LEPTOGASTER, Meig.

33. *Leptogaster pacifica*, sp. n., ♀.

A small, shining black species, reminiscent of the Australian *L. bancrofti*, Ricardo, 1912.

Type ♀ from Ovalau, v.1922 (*H. W. Simmonds*); another ♀ from Labasa, vii.1921 (*R. Veitch*).

♀. Length of body 12 mm.; of wing 11 mm.

Head black; occiput deeply concave, densely clothed with opaque grey dust, and with short, scattered, stiff black hairs on eye-borders. Frons short and deep, clothed with brownish dust, opaque and bare; ocellar tubercle black. Eyes bare, large and rounded, with a small patch of greatly enlarged facets on inner side, a little below insertion of antennae. Face bare, about as long as frons, narrow, but gradually dilated below, densely clothed with dark grey dust, like narrow peristomialia; mystax formed by four or five thin, soft, whitish hairs, all placed near mouth-border; proboscis shining black. Antennae inserted much above middle of eyes, small and short, entirely black; narrow third segment twice as long as first two segments together, thin terminal style shorter than third segment. Mesonotum strongly gibbous anteriorly, shining black, with reddish humeri; posterior part, in front of scutellum clothed with dark grey dust, and with a rather broad grey stripe on each side, just above notopleural line, interrupted at suture; pleurae densely grey-dusted, bare, only sternopleura a little shining. The two macrochaetae (one posterior notopleural and one dorsocentral) very strong, long and black. Scutellum small, flat above, densely grey-dusted, with two bristles on hind border. Halteres black. Abdomen entirely black, opaque, with narrow yellowish sutures and narrow bands of whitish pubescence on posterior borders of segments, more developed on sides; venter clothed with dark grey dust. Coxae black, grey-dusted, bare; four anterior legs shining black, femora and tibiae with reddish stripes, tarsi with yellowish bases to segments, middle femora almost entirely reddish; tips of front femora with strong bristles; posterior femora very long and clavate, with two strong bristles at tips; tibiae long, with two rows of scattered black spicules; tarsi with long black spines below, disposed in two rows. Wings not longer than abdomen, hyaline, iridescent, distal extremities with small blackish borders. All veins thick and black, especially middle portion of costa, which is so close to first vein as to form a black border; anterior cross-vein at middle of discal cell; stalk of cubital fork about as long as branches, which slightly converge towards end; anal cell broadly open at tip; cross-vein

closing second basal cell situate towards middle of stalk of fourth posterior cell; tip of second longitudinal vein curved distinctly downwards.

Subfamily *DASYPOGONINAE*.

Genus **CLINOPOGON**, Bezzi.

34. **Clinopogon scalaris**, Bigot, 1878.

Originally described, from a specimen from Fiji, as a *Stichopogon*, but very near the type species of my genus *Clinopogon*, of Formosa. Miss Ricardo (*Ann. and Mag. N.H.* (8) x, p. 352, 1912) seems to regard the present species as a synonym of *Dasyopogon congressus*, Walk., of Celebes, and of *D. albicapillus*, v.d. Wulp, of Java and New Guinea.

Two males from Kawatu, 12.x.1921 (*H. W. Simmonds*); Cuvu, x.1919 (*W. Greenwood*).

The present species differs from *C. sauteri* in being smaller and darker, in the want of the argenteous pubescence on the legs and body, and in the cubital fork being much narrower at the end, with less divergent branches. The ventral tufts of hairs in the male are situate on the second to fifth sternites inclusive, but only those of the third are much developed, those of the two following segments becoming gradually smaller. In *C. sauteri* the ventral hairs are not disposed in differentiated tufts, and are longer on the second segment.

Subfamily *LAPHRIINAE*.

DESPOTISCUS, gen. nov.

This very interesting new genus belongs to the *Atomosia*-group, which is chiefly American, but has several representatives in the Old World. But curiously enough, instead of being allied to the Australasian genera *Clariola*, *Cenochromyia*, *Epaphrodytus*, etc., it is nearer the Ethiopian and Australian genus *Goneccalypsis*, the Palaearctic *Löwinella* and the Indian *Opeatocerus*, in having the spiniferous tooth on the third antennal segment, situate just at the end of the latter, near the style.

Small, black species with punctulate abdomen and with a differently shaped mystax in the two sexes. Head broader than high, with deeply excavated vertex. Frons a little broader behind ocellar tubercle than in front of it, very concave between the eyes, and with a very prominent, narrow ocellar tubercle; bristles of the occipital row well developed; two long ocellar bristles, and beneath them another pair of smaller ones. Face narrow, a little broadened below, flat, slightly prominent above the mouth-border, but without distinct tubercle; the mystax in the male is formed by a dense, sericeous tuft of long hairs, extending above nearly to the base of antennae; in the female

it is formed by four or five pairs of distinct bristles, extending above to the antennae. Antennae inserted above the middle of the eyes; first segment longer than the second; third a little longer than the first two segments together, of oval shape, with a very short and small style at the tip, and just above the base of this style a very small spine. Eyes with the middle facets on the inner side equally enlarged in both sexes. Proboscis strong, but not thick; palpi very small. Mesonotum convex, smooth; presutural, one anterior and one posterior supra-alar bristle; metapleural tuft long, formed of thin bristly hairs. Scutellum small, without bristles on hind border; mesophragma with a tuft of short stout bristles on each side. Abdomen elongate, parallel-sided, with seven segments, the last one much shorter; the five anterior segments punctulate on dorsum; male hypopygium small, rounded. Legs relatively long, the last pair stronger than the others, with distinctly clavate femora and tibiae; tibiae and tarsi with very long bristles; hind trochanters much longer than the others and rather swollen; tips of front tibiae simple; pulvilli about as long as the claws. Wings rather short and broad, with very small, almost linear alulae. Terminal stalk of marginal cell rather short and straight; branches of cubital fork diverging towards end; anterior cross-vein a little before middle of the long and narrow, parallel-sided discal cell, the terminal cross-vein of the latter being parallel with that of the fourth posterior cell, but rather distant; first posterior cell very broad outwardly, as broad at end as the second; first basal cell much longer than the second; anal cell closed and stalked.

Type: the following new species.

35. *Despotiscus simmondsi*, sp. n., ♂♀.

A small, pretty species, readily distinguishable owing to the bright yellow mystax of the male.

Type ♂, Ovalau, v.1922, type ♀, Waialailai, 12.x.1921, another ♀ from Taviuni, 19.iii.1922 (*H. W. Simmonds*), in whose honour the species is named.

♂♀. Length of body 5-6 mm.; of wing 4-4.5 mm.

Head black; occiput shining towards middle, broadly clothed on sides with golden dust in male, and with argenteous dust in female; bristles of occipital row strong and black in female, thin and yellowish in male; soft hairs on lower part long in both sexes, golden in male, argenteous in female. Frons clothed with opaque whitish dust, darker in male, ocellar tubercle black; face clothed with dense dust, yellowish in male, argenteous in female; dense, soft mystax of male bright golden-yellow, mystax in female composed of from eight to ten black bristles; beard whitish. Antennae entirely black, basal segments with black hairs; bristles and hairs of frons yellowish in male and black in female. Thorax, including scutellum, entirely shining black, with scattered golden scales on dorsum, denser in male, sparse

and sometimes wanting in female; thoracic bristles yellowish in male, black in female; metapleural tuft yellowish in male, whitish in female; lateral spines of mesophragma yellow in male, black in female; hind border of scutellum with sparse, short, erect hairs; pleurae grey-dusted below. Halteres pale yellowish or reddish; mesophragma shining black in middle, whitish or yellowish dusted on sides. Abdomen shining black, with rather long, soft, yellowish or whitish pubescence on sides; five proximal tergites in male clothed with scaly golden tomentum, like that on mesonotum; hypopygium shining black; venter black, not

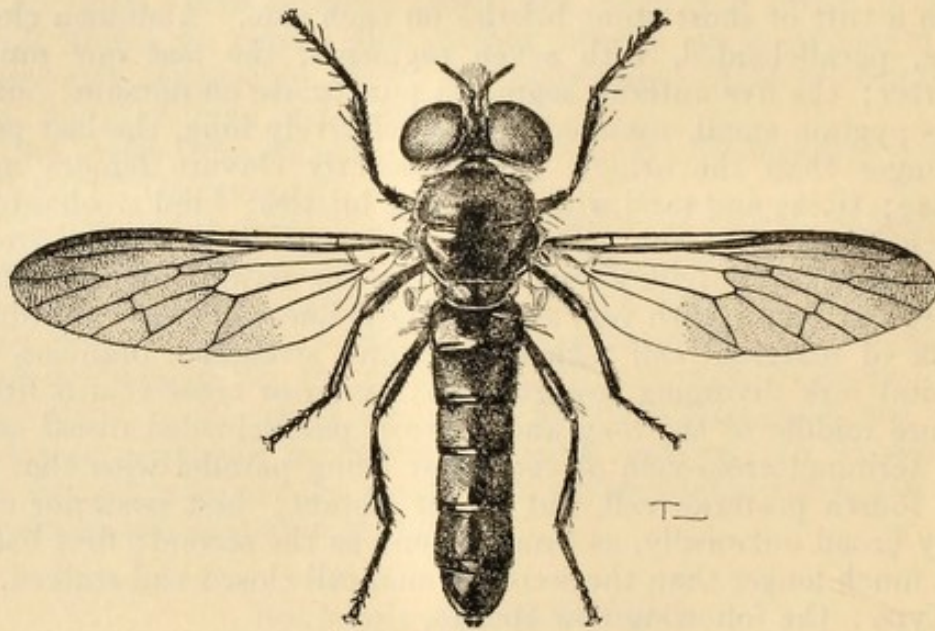


FIG. 14.—*Despotiscus simmondsi*, sp. n. ♂. × 13.

very shining, with short, whitish, soft pubescence. Legs entirely shining black; long pubescence golden in male, white in female; long bristles on tibiae and tarsi partly golden on first and second pairs in male, black on all pairs in female; claws black, pulvilli dirty blackish. Wings iridescent, whitish-hyaline on basal third, strongly infuscated elsewhere, more intensely in male than in female. All veins black, extreme bases only narrowly yellowish in male alone.

Genus **MAIRA**, Schin.

The specimens of this genus included in the collection before me belong to two species, both apparently undescribed; they are distinguishable as follows:

- 1 (2). Mesonotum opaque black, clothed with long pubescence and margined laterally and in front of scutellum with shining white dust; wings with more than terminal half blackish, and with upper branch of cubital fork simple.....*limbidorsum*, sp. n.
- 2 (1). Mesonotum shining metallic blue, almost bare in middle and not margined behind; upper branch of cubital fork with a small appendix at base, or at least with a rudiment thereof.....*appendiculata*, sp. n.

36. *Maira limbidorsum*, sp. n., ♂♀.

A species of rather large size, very readily distinguishable on account of the peculiar pattern on the mesonotum.

In *M. superba*, De Meijere 1915, of New Guinea, there is a similar thoracic pattern, but the abdomen is very different; *M. spectabilis*, Guér., and *M. wollastoni*, Austen 1915, seem also to be allied.

Type ♂ and ♀, Vunilagi, v.1921; Buca Bay, 27.xii.1921 (*H. W. Simmonds*).

♂♀. Length of body 14–19 mm.; of wing 12–15 mm.

Head black; occiput whitish-dusted and clothed with long hairs, which are black above and white below; bristles of occipital row black, not longer than hairs. Frons deep, whitish-dusted, bare, with black bristles on eye-borders and with black ocellar tubercle, which bears two long, strong bristles, with several minor ones. Eyes in both sexes with greatly enlarged inner middle facets. Face greyish-dusted, darker on tubercle, which is large and occupies whole lower part of face; hairs white at sides, and black below antennae; mystax formed of numerous black bristles, extending to middle of face. Antennae entirely black; first segment twice as long as second, with long black hairs, and with some strong black bristles below; third segment elongate, oval, as long as first two segments together, whitish tomentose on inside at end. Palpi black, with long black hairs; proboscis shining black, compressed, longer than antennae. Thorax dullish black on dorsum, and clothed even in centre of latter with long, erect, black hairs; edging of white shining dust, broad, extending evenly from humeri to postalar calli, and continued in front of scutellum; two oblique stripes of similar dust extending from humeri to inner edges of transverse suture; pleurae entirely light grey-dusted, and clothed with long, soft, white hairs. Prae-sutural and supra-alar bristles black and strong; upper posterior angle of mesopleura in front of root of wing with three or four strong black bristles; fan-like row of metapleura formed by long, wavy, black and white hairs. Scutellum deep black, black-haired, with eight or ten black bristles on hind border. Mesophragma white-dusted, with a tuft of five or six black bristles on each side, rather short and bent above. Halteres dirty yellowish, with darkened stalks. Abdomen cylindrical, elongate, shining metallic blue, with short black pubescence on dorsum, and with long, soft, white hairs on sides, chiefly at base; first four segments with strong black bristles on sides, four on first, two on second, one on third and fourth segments; small, whitish streaks on sides of hind borders of segments. Venter shining blue, clothed with long white hairs; hypopygium large, shining black, black-haired and with long thin black bristles. Coxae black, densely whitish-dusted, with long soft white hairs; legs otherwise shining dark blue, with femora, especially those of hind pair, swollen, and

with curved hind tibiae; very long hairs on femora and tibiae mostly white, with several black ones intermingled; bristles black, middle femora at tips with one anteriorly and two posteriorly, hind femora with three bristles anteriorly and a row posteriorly; middle and hind tibiae with long and strong bristles; tips of hind tibiae with a short, dense tuft of hairs below; tarsi with stout bristles and long hairs; claws black, pulvilli blackish. Wings with hyaline bases, and more than distal halves blackish; all veins black. Stalk of marginal cell long and straight; first posterior cell narrowed at end, fourth with short stalk; anterior cross-vein situate on first third of narrow discal cell; anal cell closed and stalked.

37. *Maira appendiculata*, sp. n., ♂♀.

A metallic blue species, distinguished by the wings being but little infuscated, and usually having a well-developed appendix at base of upper branch of cubital fork. Allied to *M. aenea*, Fabr.

Type ♂♀, Ovalau, 22.x.1921; v.1922; Levuka, v.1921 (*H. W. Simmonds*).

♂♀. Length of body 10–14 mm.; of wing 8–11 mm.

Head, its appendages, eyes, hairs and bristles as in preceding species; mystax formed of fewer black bristles, but with more abundant white hairs. Mesonotum shining metallic blue, almost bare in middle, with sparse black hairs at sides, and with black bristles; humeri, and a stripe along notopleural line, dilated inwards at suture, clothed with shining white dust. Pleurae black, whitish-dusted and white-haired, with only one bristle on upper hind border of mesopleura; metapleural tuft white, with only from two to four black bristles above; scutellum shining blue, with sparse black hairs, and with from four to six black bristles on hind border; mesophragma whitish-dusted, with a tuft of black bristles on each side. Halteres whitish, with dark stalks. Abdomen shining blue, with long white hairs on sides, and with strong lateral black bristles; hypopygium shining blue, with black hairs and bristles. Legs as in preceding species, but more metallic blue, and with less numerous and shorter hairs. Wings hyaline, with a faint and ill-defined terminal infuscation, limited to last third; venation as in *M. limbidorsum*, but upper branch of cubital fork with a basal appendix, or at least with a distinct rudiment thereof.

Subfamily *ASILINAE*.

Genus *PROMACHUS*, Lw.

38. *Promachus triumphans*, sp. n., ♂♀.

A robust species near *P. grandis*, Macq., and *P. tasmaniensis*, Macq., with entirely black legs, or rarely with testaceous tibiae.

Type ♂♀, Buca Bay, 28.xii.1921, Tamavua, 17.vii.1922 (*H. W. Simmonds*).

♂♀. Length of body 25–28 mm.; of wing 17–18 mm.

Occiput black, grey-dusted, with black bristles and a few black hairs above, and with long, soft, dense, pale yellowish hairs in middle and below; postocular row formed by stout black bristles. Frons black, somewhat shining, with dense black hairs on each side; ocellar tubercle with black bristly hairs, but without or with feeble ocellar bristles. Antennae entirely black; first segment rather thick, much longer than second and even longer than third, shining at tip, with bristly black hairs, which are very dense and rather long below; second segment small, with some black bristly hairs; third segment small, narrower than first, elongate, with strong style, which is about as long as whole antenna, and in both sexes distinctly dilated at tip, especially in female. Face widening gradually below, densely clothed with opaque yellowish dust, with a narrow whitish line near eyes above, bare at sides, but just below antennae with rather long black hairs; tubercle well developed, occupying more than lower half of face; mystax is formed of black bristles, with a number of pale yellowish ones below or on upper mouth-border, which is fringed with a row of black bristles; beard dense, soft, and white. Eyes with middle internal facets equally enlarged in both sexes. Palpi black, with long, strong, black bristles; proboscis as long as vertical diameter of head, shining black, with white hairs below at base. Collar black, dark grey dusted, pale yellowish haired, with an irregular row of black bristles. Mesonotum black, opaque, with grey-dusted humeri and sides; pattern (not much developed) consisting of three very broad, deep black stripes, separated by very narrow grey lines, lateral ones narrowly interrupted at suture; scattered erect pubescence black, long whitish hairs only in front of scutellum; all bristles black, three or four very strong praesaturals, four anterior supra-alars and three posterior supra-alars, four or five strong dorsocentrals, anterior ones smaller and hair-like. Pleurae densely dusted, opaque grey, without bristles, but with long white hairs and a few black ones on upper part of mesopleura; dense, fan-like metapleural tuft pale yellowish, with only a few black bristles on upper part. Scutellum black, dark grey dusted with a few long whitish hairs, and with two parallel rows of erect black bristles, those of exterior row being more numerous. Mesophragma dark grey dusted, quite bare, even on sides. Halteres reddish brown, with paler stalks. Abdomen black, densely clothed with opaque greyish or yellowish dust, each segment with a broad subquadrate deep black spot, which occupies almost entire tergite; short hairs on dorsum black, those of hind borders at sides yellowish or whitish, very long at base; lateral extremities of basal segments also with yellowish bristles, which are sometimes partly black. Hypopygium elongate, as long as last three

abdominal segments and but very little broader, shining black, with black bristly hairs at tip, and very short black hairs at base; ovipositor shining black, longer than last abdominal segment, but shorter than the last two segments together, clothed with long rigid black hairs and with a few yellowish ones below. Venter uniformly greyish or yellowish dusted, with long, soft, whitish hairs at base, and very short black pubescence at tip. Legs entirely black (tibiae in one female broadly reddish); coxae densely grey-dusted, with whitish hairs, and with black bristles below; femora with black pubescence above, yellowish pubescence below, and strong black bristles on anterior, superior and posterior sides; tibiae, at least in female, with yellowish pubescence exteriorly, four anterior tibiae in male with long black hairs interiorly and strong black bristles exteriorly; tarsi with strong black bristles; pulvilli black or dark brownish, a little shorter than strong black claws. Wings relatively narrow and short, metallic iridescent, with a faint uniform yellowish tinge; dark-haired, elongate spot in first submarginal cell rather broad, elongate-oval. Veins blackish; first posterior cell broadly open at tip; anterior cross-vein on middle of very narrow discal cell; fourth posterior cell closed and stalked, its stalk longer than that of anal cell.

Genus **OMMATINUS**, Becker.

Two species, distinguishable as follows:

- 1 (2). Larger species, with entirely black femora; antennal style with numerous hairs; fore border of wing in male strongly dilated.
curvimargo, sp. n.
- 2 (1). Smaller species, with yellowish, black-striped femora; style with but few hairs; fore border of wing in male not dilated, but in both sexes with a black stripe formed by coalescence of costa with first vein.
strigicosta, sp. n.

39. **Ommatinus curvimargo**, sp. n., ♂♀.

A relatively large species, allied to *O. angustiventris*, Macq., *O. dilatipennis*, v. d. Wulp, etc., but distinguished by the strong bristles on the outer side of the front tibiae; from the first of these species, which is Australian, it differs in its smaller size, very differently coloured mesonotum and very different mystax.

Type ♂ and ♀, Cuvu, 22.vi.1915 and viii.1919, Natova, iv.1918 (*R. Veitch*).

♂♀. Length of body 14–16 mm., of wing 10–13 mm.

Head black, viewed from in front broader than high. Occiput flat, densely grey-dusted, with a row of thin black bristles on upper eye-borders, and with dense, soft, whitish hairs below. Frons narrow, short, very deep, grey-dusted, with dark median stripe and short dark hairs; ocellar tubercle black, with two long bristles. Antennae inserted above middle of eyes, quite black, very short, all three segments being of about same length, but

third the smallest; first segment grey-dusted, with yellowish hairs below and black ones above; second segment black-haired; third segment rounded, with style more than twice as long as whole antenna, fringed below with very numerous, equally long hairs, disposed in two irregular rows. Face very narrow above, widening gradually below, being at mouth-border twice as broad as at antennae, almost wholly occupied by not very prominent tubercle, and densely clothed with opaque, yellowish-grey dust; mystax reaching nearly to antennae, and formed of about twelve long, scattered, black bristles, and below of numerous pale yellowish hairs, which are half as long as bristles; three or four very strong, straight spines just above mouth-border. Eyes narrow in profile, with middle interior facets enlarged. Beard dense, long and white; palpi short, blackish, with yellowish bristles; proboscis shining black, with whitish hairs below. Collar grey-dusted, whitish-haired, without bristles. Thorax black, on dorsum with three very broad, confluent, opaque stripes,

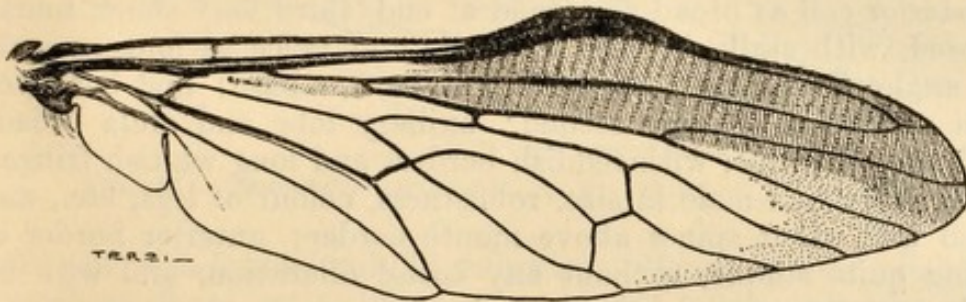


FIG. 15.—*Ommatinus curvimargo*, sp. n. Wing of ♂. $\times 6\frac{1}{2}$.

middle one abbreviated behind, lateral ones abbreviated in front and divided into two spots by a greyish line along suture; humeri and sides broadly greyish, grey posterior part with, just in front of scutellum, a triangular spot, which is whitish or blackish; dorsum practically bare, with only a few scattered black hairs on sides, in front and behind; bristles black, one praesutural, two rather distant anterior and two posterior supra-alars, anterior one much smaller; about five or six dorsocentrals, becoming smaller anteriorly and ending much before suture. Pleura entirely clothed with opaque grey dust, and with whitish hairs, without bristles; metapleural tuft formed of a single row of entirely whitish bristly hairs. Scutellum grey-dusted, with long erect whitish hairs, and with two black erect bristles on hind border; mesophragma strongly developed, convex, grey-dusted, bare at sides. Halteres dirty reddish. Abdomen black, elongate, cylindrical, much narrower than thorax, clothed with yellowish dust on sides and on hind border of each segment; pubescence yellowish, longer and more whitish at sides, chiefly at base; no bristles; venter uniformly grey, with whitish hairs. Hypopygium reddish, blackened above, short, rather complicated.

Coxae grey, with whitish hairs; femora thick and short, entirely black, with greyish pubescence and strong black bristles on last two pairs; all tibiae reddish, blackened at tips, with yellowish pubescence, whitish hairs and black bristles, even those of front pair having a strong bristle on inner side beyond middle; all tarsi black, but with reddish pubescence and strong black bristles; pulvilli reddish, claws black. Wings hyaline, faintly infuscated along fore border down to third vein, except bases of marginal and costal cells, but ends of first and second posterior cells also infuscated; centre of marginal cell and base of first submarginal cell exhibiting from sixteen to twenty perpendicular parallel furrows, thus forming a small fold; just beyond middle of fore border a rounded elevation, and costa, subcosta and first vein coalescent there, forming a thick margin; all veins black; terminal stalk of marginal cell straight; cubital fork narrow and long, with straight and gradually diverging branches, its stalk being half as long as fork; anterior cross-vein situate before middle of discal cell, lower border of which is concave; first posterior cell as broad as second at end, third very short, fourth closed, with stalk directed forwards and twice as long as stalk of anal cell; fourth posterior cell stalked at base; first basal cell not much longer than second; axillary lobe and alula broad; calypters hyaline, with reddish borders and long whitish fringes.

♀. Very like male in size, robustness, colour of legs, etc., and also with stout spines above mouth-border; anterior border of wing quite simple, without any costal dilatation, and with no fold in marginal and submarginal cells.

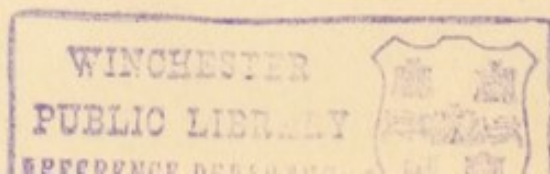
40. *Ommatinus strigicosta*, sp. n., ♂♀.

A small species, allied to *O. lucifer*, Walk., and *O. vitticrus*, Bigot, but distinguished by the thickened, straight, black, costal stripe.

Type ♂♀, Taviuni, iii.1922 (*H. W. Simmonds*); Lautoka Mountains, iv.1920 (*W. Greenwood*); Cuvu, vi.1915, and Nausori, x.1920 (*R. Veitch*).

♂♀. Length of body 8.9 mm.; of wing 7-8 mm.

Head as in preceding species, but hairs on lower part of occiput less abundant; no distinct ocellar bristles; face narrower, without distinct tubercle, mystax consisting of five or six black bristles only, and white hairs less numerous; antennal style with only from ten to fourteen hairs below. Thorax as in *O. curvimargo*, but dorsum almost entirely clothed with opaque dark grey dust, stripes being confluent and only border paler, black triangular spot in front of scutellum being less developed; dorsum devoid of hair, bristles black, only one dorsocentral and only one posterior supra-alar; pleurae shining whitish, bare, with only yellowish, fan-like row of hairs on metapleura. Scutellum like scutum, with only two whitish bristles on hind border. Mesophragma shining white, bare; halteres dirty yellowish. Abdomen black;



cylindrical and narrow, with greyish hind borders to all segments; pubescence on sides long and whitish; male genitalia shining reddish, more or less blackened above, with a styliform appendage below, fringed at tip with a tuft of long, golden-yellow, rigid hairs, and two pairs of forficulate appendages, upper one shorter; ovipositor broad, short, shining black, with black bristly hairs. Legs, including coxae, pale yellowish; coxae grey-dusted, posterior ones partly blackish, all clothed with whitish hairs; femora with blackish stripes above, more distinct on first and second pairs, front pair with whitish hairs below, two posterior pairs with scattered black bristles; (in the specimen from Lautoka Mountains the femora are entirely black, with yellowish bases, broader on hind pair); hind tibiae broadly blackened at tips, front tibiae with black bristles towards middle; tarsi black,

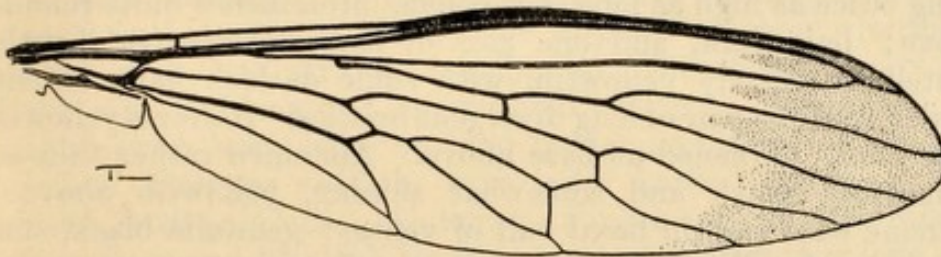


FIG. 16.—*Ommatinus strigicosta*, sp. n. Wing of ♂. × 10.

with yellowish bases; pulvilli yellowish. Wings hyaline, slightly greyish at distal extremities; veins black; costa, subcosta and first vein coalescent towards middle of fore border so as to form a thick black stripe, but less distinctly in female; cubital fork three times as long as its stalk; anterior cross-vein beyond middle of discal cell; basal stalk of fourth posterior cell as long as terminal one, and not longer than that of anal cell. Alula small; calypters with short fringes; first basal cell much longer than second.

Family EMPIDIDAE.

Subfamily HYBOTINAE.

Genus SYNECHES, Walk.

Three species of the genus *Syneches*, distinguishable as follows :

- 1 (4). Wings with dark stigmatic spot, and with third and fourth veins parallel or slightly divergent at tips.
- 2 (3). Pterostigma elongate, twice or more as long as broad; third and fourth veins parallel; mesonotum very gibbous but not spinose; hind tibiae black, distinctly thickened and clavate. . . *oedinemus*, sp. n.
- 3 (2). Pterostigma rounded, about as long as broad; third and fourth veins slightly divergent; mesonotum very gibbous and with a spine-like tubercle above; hind tibiae yellow and simple. . . *spinidorsum*, sp. n.
- 4 (1). Wings quite unspotted, and with third and fourth veins slightly convergent at tips; more slender species, with mesonotum less gibbous and rounded above. *pullus*, sp. n.

41. *Syneches (Syneches) oedienemus*, sp. n., ♂.

Allied to *S. stigma*, Walk., of New Guinea, but differing from it and from the other species on account of the thickened and club-shaped hind tibiae, and the short praetarsi of the hind legs.

Type ♂, a single specimen from Lautoka Mts., 11.iv.1920 (*W. Greenwood*).

♂. Length of body 3 mm.; of wing 2.6 mm.

Occiput flat, black; eyes united for a long distance, with upper facets greatly enlarged; antennae short, entirely blackish, with the third segment rounded and only a little longer than second, with a long bristle above towards middle, and with a long subapical arista, which is bare and hair-like; proboscis shining yellowish, with black base. Thorax entirely black, not very shining on account of its dark dust, very gibbous dorsally, being twice as high as long, but conical prominence quite rounded above; hair dark, and one pair of long dorsocentral bristles. Scutellum entirely yellowish, with some darkish hairs on hind border, and one pair of long divergent bristles. Halteres yellowish, with knobs darkened at base above. Abdomen rather thin and cylindrical, black and somewhat shining, yellowish above at extreme base and on basal half of venter; genitalia black, small and pointed. First two pairs of legs yellowish, their coxae dark reddish brown; middle tibiae with two long bristles near base, one on outer and one on inner side; hairs rather long, dark yellowish. Hind legs with reddish-brown coxae and trochanters; femora slightly thickened, long and yellowish, with terminal third black, with three or four black bristles below, and rather long hairs; tibiae entirely black, considerably shorter than femora, thick and distinctly clavate at tips, with rather long pilosity and some longer bristly hairs on hind borders; tarsi distinctly shorter than tibiae, with black praetarsi, rather short and swollen, four following segments yellowish, first and second segments each with a longer bristly hair at tip. Wings greyish-hyaline, iridescent, distinctly infuscated at end of marginal, submarginal and first posterior cells; stigma blackish, elongate, more than twice as long as broad; veins black, yellowish towards base; last portion of third and fourth veins quite straight and parallel; terminal cross-vein of discal cell shorter than portion of fifth vein beyond it; anal cell not longer than second basal cell.

42. *Syneches (Syneches) spinidorsum*, sp. n., ♂.

A very distinct species, chiefly owing to the singular shape and coloration of the mesonotum, recalling the cephalothorax of some spiders.

Type ♂ and an additional specimen of the same sex from Labasa, xii.1921 (*R. Veitch*).

♂. Length of body about 5 mm.; of wing 4.5 mm.

Occiput black, densely clothed with opaque, dark grey dust.

Eyes greatly developed, united for a long distance, with upper facets much enlarged and sharply separated from smaller lower ones; on vertex only ocellar tubercle, which bears two thin, erect, darkish bristles; antennae with pale yellowish basal segments, and infuscated third segment, which is shortly oval, and not longer than first two segments together; thin, long, hair-like arista placed at end of upper border, which bears a single hair towards middle. Face not visible, eyes being united even below antennae; proboscis shining reddish, strong, straight and pointed, as long as vertical diameter of head. Thorax entirely dark reddish; mesonotum exceedingly gibbous and elevated, thorax being higher than long, not rounded above in middle, but bearing a distinct, short, obtuse spine; scutum with scattered, thin, pale hairs, and one praesutural, one supra-alar, and one dorsocentral bristle, which are darker yellowish; pleurae quite bare and destitute of bristles. Pattern hard to describe; viewed from in front, mesonotum appears to show alternating whitish and dark stripes, varying in different lights; pleurae dark, almost blackish, but without pattern. Scutellum pale reddish, with some hairs on hind border and with four blackish bristles. Halteres reddish, with paler knobs; calypters dirty whitish, with pale cilia. Abdomen cylindro-conical, with reddish-yellow base and blackish tip, and clothed with rather long, pale pubescence, and with darkish bristly hairs on hind borders of segments; genitalia black, very slightly shining; venter like dorsum. Legs, including coxae and tarsi, pale yellowish; hind femora reddish brown, but little incrassated, with four or five simple black bristles below; middle tibiae with three rows of bristles, but only one long bristle on inner side and two or three on outer surface, only basal one being long, and one long bristle on posterior surface; all these bristles black. Wings yellowish-hyaline, with a rounded blackish stigmal spot, extending from costa to second vein; a distinct but faint costal infuscation at tip of wing, chiefly in end of submarginal cell. Veins yellowish, somewhat darkened at end; first vein ending beyond middle of wing; second vein short, slightly curved above at apex, ending mid-way between apices of first and third veins; third vein straight but slightly diverging from fourth at end; last portion of fourth vein quite straight; small cross-vein very short, situate just below bifurcation of second and third veins, and very near base of discal cell, which is elongate-rectangular, with its terminal cross-vein quite straight and not very oblique, a little shorter than portion of fifth vein beyond it; anal cell not longer than first and second basal cells, which are of about same length; seventh vein less chitinised than remainder, almost vestigial towards its middle, but reaching hind border of wing. No trace of axillary vein; axillary lobe broad and very prominent; alula narrow, linear, with long pale fringe.

43. *Syneches (Epiceia) pullus*, sp. n., ♂♀.

A small species with non-infuscated pterostigma, and allied to *S. hyalopterus* and *S. minor*, Bezzi, of New Guinea, but distinguished by the almost entirely black thorax and black hind femora.

Type ♂ and ♀, Buca Bay, 27.xii.1921 (*H. W. Simmonds*).

♂♀. Length of body and wing 4 mm.

Head black; occiput flat, grey-dusted, with very short thin hairs on eye-borders; ocellar tubercle black, very prominent,

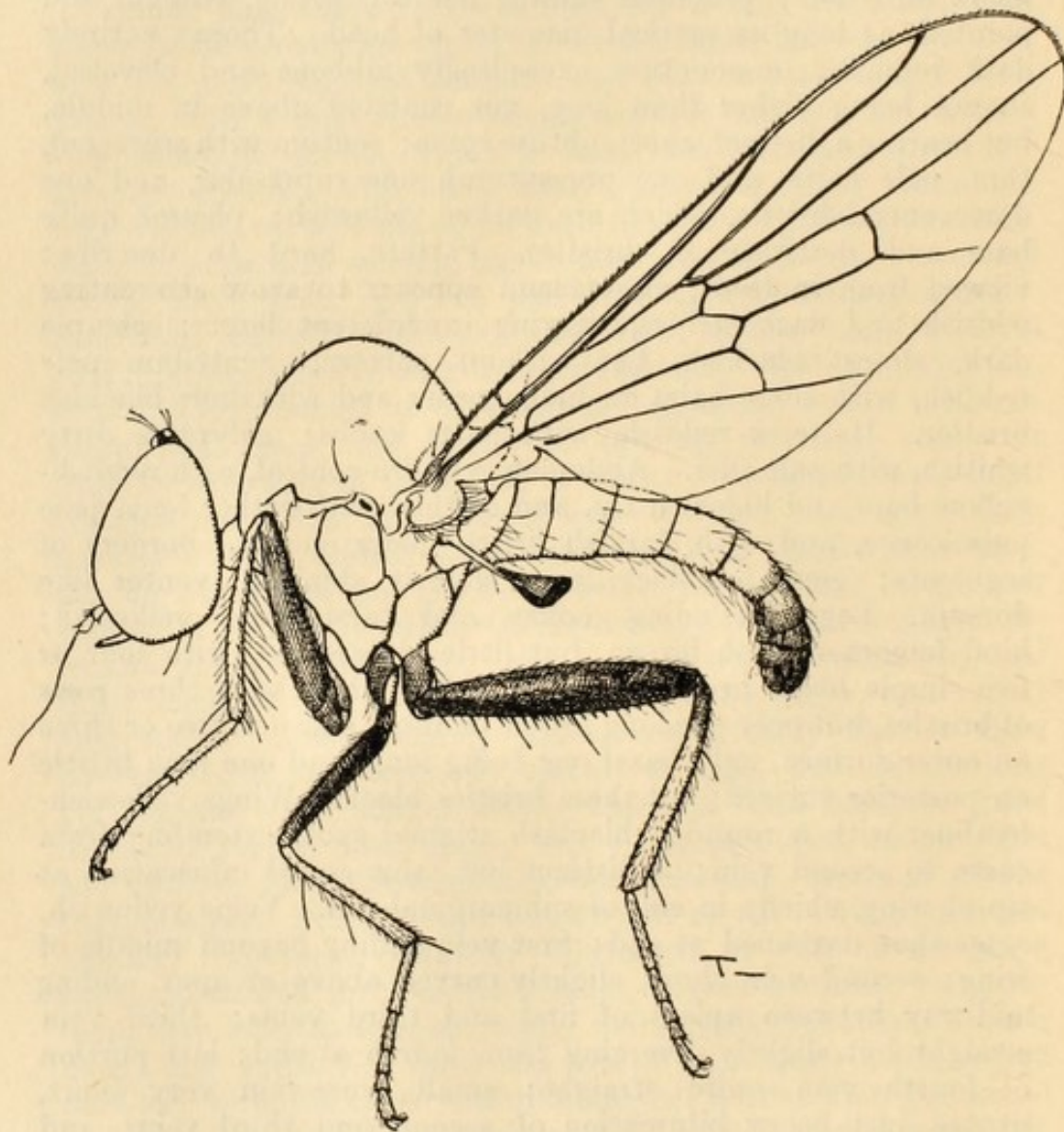


FIG. 17.—*Syneches (Epiceia) pullus*, sp. n. ♂ in profile. $\times 18$.

N.B.—Shading of head and thorax omitted (see description).

with two thin and rather long bristles; eyes strongly developed, flattened above, with upper facets much enlarged, united for a long distance; face very small, black, grey-dusted. Antennae small and short, entirely pale yellowish or whitish; third segment not longer than preceding one, oval, with a long hair on upper side, and with very long, thin, bare arista. Proboscis shining reddish, acute, as long as head. Thorax very girthy, entirely

black, slightly shining, with reddish humeri and sparse dark dust, quite bare, with black bristles, one praesutural, one anterior and one posterior supra-alar, and one long dorso-central. Pleurae dark reddish above, shining black below, quite bare; scutellum black like scutum, with thin dark hairs and with two longer bristles on hind border; mesophragma black, grey-dusted. Halteres black, with pale yellowish stalks. Abdomen shining reddish-yellow, blackened at end, with long whitish hairs on sides chiefly at base; hypopygium shining black. Coxae black; femora black, posterior pair entirely so, four anterior ones with yellowish tips; all tibiae pale yellowish, hind pair with black bases; tarsi entirely pale yellowish; hind femora of male much thickened, with black bristles below; middle tibiae with a long black bristle on outer side near base. Wings entirely hyaline, iridescent, with hardly visible stigma; veins yellowish, second slightly curved, third and fourth straight, very little but distinctly convergent towards apex; discal cell regular, rectangular; second basal cell only a little longer than first; anal cell as long as second basal cell, its terminal cross-vein curved; anal vein not reaching hind border of wing; axillary lobe very prominent; alula linear, with long pale fringe; calypters yellowish, with pale cilia.

Family DOLICHOPODIDAE.

Subfamily DOLICHOPODINAE.

Genus **PARACLIUS**, Lw.

This genus, which differs from *Pelastoneurus* in having the arista bare seems to be well represented in the Islands; the species are distinguishable as follows:

- 1 (4). Front coxae and all femora pale yellowish; wings mainly hyaline, with last portion of fourth vein suddenly curved upwards.
- 2 (3). Lower cilia on eye-borders white; third abdominal segment with white lateral spots, like remaining segments; lamellae of hypopygium narrow and blackish; scutellum shining green....*sexmaculatus*, sp. n.
- 3 (2). All cilia on eye-borders black; third abdominal segment destitute of white spots; hypopygial lamellae broad and shining black; scutellum velvety black.....*quadrimaculatus*, sp. n.
- 4 (1). Front coxae black; hind femora partly black; wings infuscated, with fourth vein gently curved; ocular cilia black..*subarcuatus*, sp. n.

44. **Paraclius sexmaculatus**, sp. n., ♂♀.

Very near *P. maculatus*, De Meij., of Java, but differing in the reduction of the deep black pattern in front of the scutellum, and the more rounded bend of the fourth vein. In these two characters the present species agrees with the Formosan form described by Becker (*Capita Zool.*, i, 4, p. 15, Taf. i, fig. 5, 1922).

Type ♂ and ♀, Cuvu, Sigatoka, 23.v.1915, another ♂ from Labasa, vii.1922 (*R. Veitch*).

♂♀. Length of body 5-5.5 mm.; of wing 4-4.5 mm.

Occiput densely grey-dusted, green only towards vertex; upper postocular cilia black, lower ones white; ocellar and

vertical bristles black, strong and long. Frons metallic green, with thin whitish dust; face shining white, very narrow, almost linear, only one-third as broad as third antennal segment. Eyes with white pubescence. Antennae reddish, with blackened third segment, which is short and somewhat triangular in shape; arista black, bare. Proboscis short, blackish. Thorax shining green on dorsum, with a deep black spot in front above humeri, and another at suture, space between them being clothed with shining white dust; no spot in front of scutellum, which is shining metallic green, with only a narrow black, basal line, broader in female. Pleurae mainly opaque, being clothed with dark grey dust, with several shining white patches; mesophragma shining green, white-dusted. Bristles black and strong, acrostichal ones placed in two rows, dorsocentrals 3 + 3; scutellum bare on disc like scutum, with six bristles on hind border, middle pair much longer than remainder and decussate, like small apical pair. Halteres pale yellowish; calypters whitish, with dense long black cilia. Abdomen metallic green, with thin whitish dust and short black pubescence; second, third and fourth segments each with an ovate shining white spot at sides, and with a black band, prolonged into a narrow stripe along middle line. Hypopygium black, white-dusted; lamellae narrow, with long cilia interiorly. Front coxae pale yellowish, white-dusted and with black bristles; four posterior coxae blackish, with yellowish tips; femora and tibiae pale yellowish, hind femora without black spot at tip; front tarsi yellowish, middle tarsi black with yellowish base; hind tarsi quite black; middle and hind femora with only one strong bristle on outer side before tips; all tibiae on outer side with two rows of strong bristles, hind tibiae inwardly shortly ciliated on inner margin; hind praetarsi without bristles above; claws regular, very short. Wings hyaline, with a faint but distinct costal infuscation above third vein and beyond end of first vein; fourth vein and hind cross-vein sometimes faintly margined with fuscous. First posterior cell broad, fourth vein being straight to beyond middle of its last portion, and suddenly curved upwards in a rounded bend, apical cross-vein being slightly concave outwardly; hind cross-vein straight, and slightly oblique, shorter than the portion of fifth vein beyond it.

45. *Paraclius quadrimaculatus*, sp. n., ♂.

Nearly allied to the preceding species but differing in very important characters, as well as in the absence of infuscation on the fore border of the wing.

Type ♂, a single specimen from Ovalau, "on wet rock," vi.1922 (*H. W. Simmonds*).

♂. Length of body 4.5 mm.; of wing 4 mm.

Head, its appendages and chaetotaxy, as in preceding species, but all postocular cilia black; third antennal segment smaller and almost entirely reddish, infuscated only at tip; frons is more

blue than green. Thorax as in preceding species, and with same pattern and chaetotaxy, but more blue than green; scutellum deep black, with same chaetotaxy. Calypters and halteres white, former with black cilia. Abdomen as in *P. sexmaculatus*, but with less developed black markings; only four white lateral spots, those of third segment entirely wanting. Hypopygium with much broader and shining black lamellae, bearing scattered rigid black hairs along anterior borders. Legs as in *P. sexmaculatus*, but hind femora with two strong inferior praeapical bristles, absent in *P. sexmaculatus*; hind praetarsi yellowish. Wings without distinct infuscation on fore border; venation as in *P. sexmaculatus*, but bend more broadly rounded; hind cross-vein nearer to hind border of wing, and a little longer than last portion of fifth vein.

46. *Paraclius subarcuatus*, sp. n., ♀.

Very different from the two preceding species in wing-coloration and venation, as well as the colour of the legs. Belonging possibly to *Metaparaclius*, Becker, the genotype of which was obtained in New Guinea.

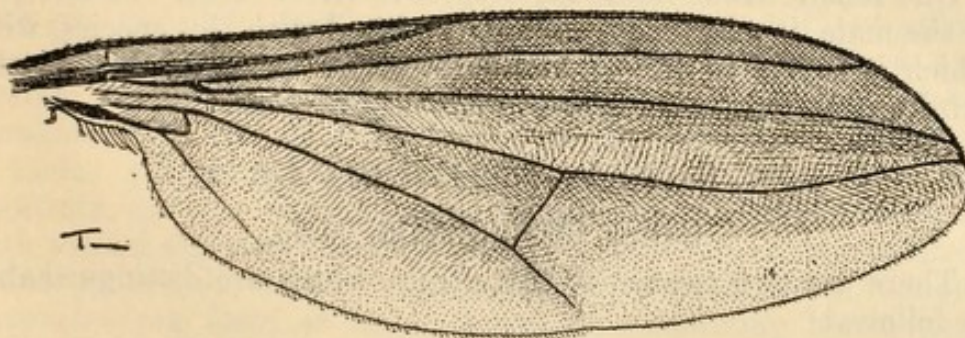


FIG. 18.—*Paraclius subarcuatus*, sp. n. Wing of ♀. × 20.

Type ♀, a single specimen from Ovalau "on wet rock," vi.1922 (*H. W. Simmonds*).

♀. Length of body 4.5 mm.; of wing 4 mm.

Occiput green above, shining white on sides, with entirely black postocular cilia. Frons metallic dark blue, narrowly shining white anteriorly; bristles black. Face broader than third antennal segment, dark metallic blue just below antennae, elsewhere deep black with shining white dust. Eyes very narrow in profile, with white pubescence. Antennae reddish, darkened along upper border; third segment rounded, as long as first two segments together, with bare, subapical arista. Mesonotum on anterior half metallic blue with copper reflections, metallic green on posterior half, including scutellum; deep black markings present only in front being interrupted by a shining white patch; pleurae with dark grey dust and shining white patches; chaetotaxy as in *P. quadrimaculatus*. Calypters dark, with black cilia

(halteres wanting in type). Abdomen metallic dark blue, with black pubescence, and with narrow black borders and shining white spots on lateral extremities of all tergites. All coxae black, white-dusted, anterior ones black-haired, posterior ones with a black bristle on outer side; four anterior femora reddish, posterior ones blackish with reddish bases and with only one subapical exterior bristle; four anterior tibiae yellowish, hind-most pair entirely black, like their tarsi. Wings infuscated, more intensely on anterior half; second and third veins straight and parallel; first posterior cell much narrower than in the two preceding species, fourth vein being gently curved, as in *P. pilosellus*, Becker (*Capita Zool.*, i, 4, Taf. i, fig. 3, 1922); posterior transverse vein straight, slightly oblique, near hind border, being longer than portion of fifth vein beyond it.

Subfamily *MEDETERINAE*.

Genus **MEDETERA**, Fisch.

47. *Medetera* ? *femoralis*, Becker, *Capita Zool.*, i, 4, p. 52, Taf. iv, fig. 41, 1922 (type from New Guinea).

One female from Lautoka, 3.vii.1919 (*R. Veitch*). In absence of the male, it may be provisionally placed with this species, with which it agrees in colour, chaetotaxy and venation, having the third and fourth veins very strongly convergent.

Subfamily *DIAPHORINAE*.

Genus **CHRYSOTUS**, Meig.

There are two species of this genus, which are distinguishable as follows:

- 1 (2). Halteres black; calypters with black cilia; legs black, with dark reddish front tibiae and praetarsi *javanensis*, De Meij.
2 (1). Halteres whitish; calypters with white cilia; all tibiae and tarsi pale reddish..... *sp. indet.*

48. *Chrysotus javanensis*, De Meijere, var.

Three males from Nausori, v.1921 (*R. Veitch*); a doubtful female from Taviuni, 20.xii.1922 (*H. W. Simmonds*).

Agreeing with Becker's description (*Capita Zool.*, i, 4, p. 86, 1922) of specimens from Formosa, and differing from those from Java described by De Meijere, in the front legs being partly reddish.

49. *Chrysotus*, *sp. indet.*, ♀.

Very near *C. adsiduus*, Becker (*Capita Zool.*, i, 4, p. 89, 1922), of Formosa, New Guinea and Australia, but differing in having white ciliated calypters; and similarly distinguished from *C. saxatilis*, Grimsh.

One female from Lautoka, ix.1919 (*R. Veitch*); too badly preserved for description.

Subfamily CAMPSICNEMINAE.

Genus SYMPYCNUM, Lw.

50. *Sympycnum puerulus*, sp. n., ♂♀.

A small pretty species distinguished by the coloration of the abdomen and the peculiar hind tarsi of the male.

Type ♂ and ♀, Nausori, v.1921, and an additional female, Cuvu, xi.1921 (*R. Veitch*).

♂♀. Length of body and wing 1.5-1.8 mm.

Eyes of male broadly separated above antennae, and united below them; eyes of female separated even below antennae; face in female very narrow, shining white; frons in both sexes shining blue, with more or less developed whitish dust anteriorly. Occiput black, dark grey dusted, with black postocular cilia. Antennae very short, entirely black; third segment small, acute, with long, subapical, microscopically pubescent arista. Proboscis with yellowish labella. Vertical and ocellar bristles black, long and strong. Thorax shining metallic blue on dorsum; pleurae blackish green and grey-dusted above, yellowish and grey-dusted below; scutellum shining green and bare like scutum, with two very long convergent black bristles, but without apical ones. Thoracic chaetotaxy well developed, bristles black and strong; four dorsocentrals; acrostichals in a single row. Mesophragma blackish, grey-dusted; halteres yellowish, darkened in male; calypters darkish, with black cilia. Abdomen of six segments, metallic shining green; in male narrow and cylindrical, with second segment narrowly yellow at base above, but entirely yellow on venter; third, fourth and fifth segments with narrow, purplish-black band at base; hypopygium shining black, with two black hooks below and a shining yellow terminal appendage; abdomen of female broader, with the second and third segments entirely yellow above and below, third sometimes green at base; fourth and fifth segments with a broad, deep black, basal band, emarginate behind, and sometimes but little developed. Hair black in both sexes; terminal cilia of male less distinct. Legs including coxae pale yellowish, tarsi darkened at tips; tibiae with scattered black bristles; tarsi thin, front pulvilli short; hind tarsi with first and second segments abbreviated, of about same length, first truncated and ciliated at tip, second with a peculiar appendage, curved at right angles at apex; remaining segments, especially third, thin and elongate; hind tarsi of female simple, but with first segment abbreviated, only half as long as following one; (middle tarsi wanting in male type). Wings greyish-hyaline, iridescent, with a faint yellowish tinge in female; costa ending at fourth vein; second vein straight, long, approximate to and parallel with third, which is somewhat curved downwards at tip, especially in male; fourth vein quite straight, parallel with third, ending at wing-tip; posterior cross-vein short,

straight, perpendicular, portion of fifth vein beyond it complete to end, and longer than cross-vein.

Subfamily *PSILOPODINAE*.

This subfamily is abundantly represented in the Islands by beautiful species, which exhibit very peculiar characters, and may be distinguished as follows :

- 1 (14). Third antennal segment elongate conical; arista quite terminal (*Chrysosoma*).
- 2 (11). Front coxae and all femora yellow; cilia of calypters white; halteres yellowish.
- 3 (4). Small species, with abdomen broadly yellow at base; arista of male simple; first longitudinal vein very short; hind cross-vein short and straight.....*Ch. greenwoodi*, sp. n.
- 4 (3). Larger species, with entirely metallic abdomen; first vein not so short; hind cross-vein long, S-shaped.
- 5 (6). Front tarsi of male ornamented, third and fourth segments with broad black ciliation above; antennae entirely reddish, arista in male simple at tip; hind tibiae of male without callosity.
Ch. cosmochirus, sp. n.
- 6 (5). Front tarsi of male quite simple; antennae entirely black, or reddish on underside above.
- 7 (10). Front coxae and all femora entirely yellow.
- 8 (9). Antennae reddish below; arista of male simple at tip; hind tibiae with no distinct basal callosity; middle tarsi black at tip.
Ch. melanochirus, sp. n.
- 9 (8). Antennae entirely black; arista of male dilated at tip; hind tibiae of male with basal callosity; middle tarsi of male white at tip.
Ch. leucochirus, sp. n.
- 10 (7). Front coxae and all femora black at base; hind femora black at tip; hind tibiae deep black, fourth longitudinal vein bent at right angles, and more curved beyond bend.....*Ch. macropus*, Thoms.*
- 11 (2). Front coxae entirely black; femora and halteres black.
- 12 (13). Cilia of calypters white; front coxae and front femora white-haired; arista of male with a small dilatation at tip; wings entirely hyaline, with second vein long in male, short in female.
Ch. patellifer, Thoms.
- 13 (12). Cilia of calypters black; front coxae and front femora black-haired; arista of male simple at tip; wing-veins bordered with fuscous.
Ch. nigrolimbatum, De Meij.
- 14 (1). Third antennal segment short, rounded, with dorsal or subapical arista.
- 15 (20). Cilia of calypters white and quite soft (*Psilopus*).
- 16 (19). Wings entirely hyaline, unspotted.
- 17 (18). All coxae yellow; legs long and thin, quite destitute of bristles or hairs, with hind tarsi entirely yellowish...*Ps. ?tenuitarsis*, De Meij.
- 18 (17). Only front coxae yellow; legs of usual shape, and with distinct bristles, with hind tarsi darkened...*Psil.* sp. near *pellucens*, De Meij.
- 19 (16). Wings with two black bands, which unite on fore border; legs stout and bristly with four posterior coxae black, and hind tarsi quite black.....*Ps. pachygina*, Macq.†
- 20 (15). Cilia of calypters black and rigid (*Condylostylus*).
- 21 (24). Halteres black; all coxae black; all femora black, with yellowish tips.

* Occurs in Rarotonga; not yet found in Fiji.

† Tahiti and Australia; not yet met with in Fiji.

- 22 (23). Front coxae of male with peculiar black ciliation; arista of male very long, and with a broad black lamella at tip; front tarsi of male with short pulvilli.....*C. nuptus*, sp. n., ♂♀.
- 23 (22). Front coxae of male with short, soft white hairs; arista short and simple; front tarsi with exceedingly elongate pulvilli.
C. pulvillatus, sp. n., ♂.
- 24 (21). Halteres yellowish; front coxae yellow, remainder black; femora entirely yellow.....*C. pulvillatus*, sp. n., ♀.

Genus **CHRYSOSOMA**, Guér.

51. **Chrysosoma greenwoodi**, sp. n., ♂.

A small, pretty species near *C. pallidicorne*, Grimsh., of Hawaii, but much smaller and distinguished by having a very different hypopygium and bare legs.

Type ♂ a single specimen from Lautoka Mountains, 11.iv.1920 (*W. Greenwood*), in whose honour the species is named.

♂. Length of body and wings 2.5 mm.

Head metallic green, dusted with white tomentum, denser on occiput; frons deeply excavated, with very prominent, blackish ocellar tubercle; lateral bristles black; ocellar bristles short, whitish. Face white-dusted, but green ground-colour always visible; proboscis yellowish; eyes with anterior facets enlarged. Antennae entirely pale yellow; third segment shortly conical, not longer than first two, segments together, with terminal, very long, simple arista. Thorax entirely metallic green, shining on disc, densely whitish-dusted on pleura; bristles black, three acrostichals and two dorsocentrals; scutellum shining green, with two bristles. Halteres whitish; calypters with white cilia. Abdomen with first segment dark brown, second entirely pale yellowish, third narrowly yellowish at base, metallic green elsewhere like following segments, white-dusted; hypopygium short, rounded, with coppery reflections, and with very short appendages. Legs, including front coxae, pale yellowish; four posterior coxae and tips of tarsi darker; legs almost bare, without bristles even on femora, only hind tibiae with very small spicules; all tarsi quite simple, four posterior ones much longer than their tibiae; front praetarsi rather thick; middle praetarsi very thin, about as long as their tibiae. Wings entirely hyaline, iridescent; veins yellowish, anterior ones darkened. First vein very short, second segment of costa being about two-and-a-half times as long as first; second vein very long, curved downwards at tip and parallel with last portion of fourth, which is likewise curved at end; upper branch of fourth vein forming a rather acute angle at its origin, and thus much curved inwards; lower branch straight and vestigial; posterior cross-vein oblique, straight and short, only a little longer than portion of fifth vein beyond it.

52. **Chrysosoma cosmochirus**, sp. n., ♂.

A large and beautiful species, readily distinguishable from all

the other Fijian ones by the peculiarly adorned front tarsi of the male. In Becker's key (*Capita Zool.*, i, 4, pp. 124-137, 1922) its place is between Nos. 53 and 55, but it is undoubtedly distinct.

Type ♂, and an additional specimen of the same sex from Cuvu, 10.x.1919 (*W. Greenwood*).

♂. Length of body and wing 7 mm.

Head metallic green; occiput clothed with thin whitish dust. Frons shining, sometimes with bluish reflections anteriorly; two ocellar bristles black, very thin and short orbitals pale yellowish. Antennae reddish and short; third segment as long as first two segments together, shortly conical; arista quite terminal, hair-like, not longer than thorax and quite simple at tip. Face green or blue on upper part, yellowish or greyish-dusted below. Proboscis yellowish; hair on underside of head whitish. Thorax, including scutellum entirely green, shining on dorsum, white-dusted on pleurae, without any dark pattern or stripes; all bristles black, scutellum with only two. Calypters yellowish, with soft white cilia; halteres yellowish. Abdomen in type green on basal part, coppery on more than terminal half, with narrow black bands; abdomen of paratype entirely green, without bands; hairs and bristles black, latter only on hind borders of segments. Hypopygium black on basal peduncle, reddish brown elsewhere, with two long pale yellowish terminal appendages, extending beyond middle of venter and clothed above with six or seven scattered, rigid, whitish cilia. Front coxae yellow, four posterior coxae black, former with short white hairs. Femora and tibiae yellow, latter longer than femora and more or less darkened at tips, those of front pair more broadly so. Front tarsi with first segment a little longer than tibiae, with black tip; second segment thin and white with black tip, much shorter than first and as long as all following segments together; third and fourth segments black, appearing dilated on account of black feathering of upper sides; fifth segment small, black and simple, with very short claws and pulvilli. Middle tarsi much longer than their tibiae; first segment a little shorter than tibia, entirely blackish; second and third segments of about equal length, whitish, with narrowly black tips; fourth and fifth black, simple and equally short, former with a few black, broad cilia above, but not feathered; all four distal segments together only a little longer than half first segment. Hind tarsi shorter than their tibiae, quite simple, entirely blackish, first segment dark yellowish at base, and distinctly longer than all following segments together. All legs almost destitute of bristles, hind tibiae only having very short black spicules. Wings yellowish-hyaline, unspotted, a little darker along fore border, down to third vein. Veins yellowish, darkened outwardly; first vein ending much before middle of fore border; second vein very long, curved downwards towards apex, and ending very near wing-tip; third vein curved downwards at tip, but diverging from

end of second, which is upturned at tip, submarginal cell being thus a little dilated at extreme end; bend of fourth vein at right angles, but portion of vein beyond bend regularly curved and long; first posterior cell narrowly open at end; appendix of bend short and vestigial; posterior cross-vein long, oblique and S-shaped, more than twice as long as portion of fifth vein beyond it; fifth vein not reaching hind border; anal cell small and rounded; alula small, rounded, with whitish ciliation. Costa with very short ciliation, more distinct on distal half.

53. *Chrysosoma melanochirus*, sp. n., ♂♀.

A medium-sized species, with yellow front coxae and yellow femora, with simple arista, and with the middle tarsi entirely black. In Becker's table (*loc. cit.*) it comes near to *C. undulatum*.

Types ♂, Taviuni, 19.iii.1922 (*H. W. Simmonds*); type ♀, Labasa, ix.1922 (*R. Veitch*).

♂♀. Length of body and wing 6-6.5 mm.

Head metallic green, with frons and upper part of face metallic blue, clothed with whitish dust, denser on sides of occiput and frons, and on face; occiput below with long white hairs; frons very shining in both sexes, with long white hairs on vertex and at sides; ocellar bristles black, long, strong and divergent. Eyes with small facets. Antennae black above, broadly reddish below; first segment entirely reddish, short, prolonged below and interiorly in both sexes; third segment shortly conical, as long as the first two segments together; arista terminal, long, very thin, and simple at tip. Proboscis thick, yellowish. Thorax metallic green, slightly shining on dorsum, whitish-dusted at sides, which have however broad green patches; in male anterior half of dorsum metallic blue; in female a brownish median stripe between acrostichals, narrowed in front and evanescent behind. Scutellum and mesophragma shining green, latter white-dusted on sides; postscutellum deep black. All bristles black; four pairs of long acrostichals; two to four pairs of dorsocentrals; two pairs of scutellars, but basal much shorter than apical ones. Calypters with white cilia; halteres with blackish knobs. Abdomen entirely metallic green, white-dusted at sides, and on hind borders of segments; first segment and a narrow band at base of following ones deep black; bristles black, long, disposed in two rows on each segment; venter with long, scattered, pale hairs. Hypopygium black, short, with short appendages, but upper ones with a single long bristle at end. Front coxae pale yellowish, with whitish hairs and two or three yellowish bristles at tips; four posterior coxae black, grey-dusted, hind pair with three or four yellowish bristles on outer side; front trochanters pale yellowish, four posterior ones black; all femora pale yellowish, hind pair with narrowly black knees, anterior ones at base below with two bristles, yellowish in male and black in female; four posterior femora with pale thin hairs below; all tibiae pale

yellowish, but hind pair distinctly darkened and black at tips, all with short black pubescence and with black bristles, three on the two anterior pairs and four or five on hind pair, all more developed in female; hind tibiae of male without basal callosity; all tarsi black, front pair with yellowish bases, all simple, four anterior ones longer than their tibiae, their praetarsi longer than remaining segments together; front praetarsi without bristles above; claws and pulvilli very small. Wings greyish-hyaline, iridescent, quite unspotted, in female with a very faint fuscous tinge; veins blackish, narrowly yellowish at extreme base; costa shortly ciliated on basal part; first vein not much abbreviated, second segment of costa being one-and-a-half times as long as first; second and third veins approximated and parallel, both slightly bent back towards tips; upper branch of fourth vein originating at a very obtuse angle, very long and gently curved in middle; lower branch curved upwards at end, its proximal half alone chitinized; posterior cross-vein very long, S-shaped, oblique, parallel to upper branch of fourth vein, two-and-a-half to three times as long as portion of fifth vein beyond it.

54. *Chrysosoma leucochirus*, sp. n., ♂.

Allied to the preceding species, but distinguished by the wholly black antennae, and in the male by other characters of great importance; in Becker's table it works out as *C. cinctitarse*, De Meij.

Type ♂, a single specimen from Taviuni, 19.iii.1922 (*H. W. Simmonds*).

♂. Length of body 8 mm.; of wing 7.5 mm.

Head, its appendages and vestiture, as in preceding species; but with frons and face green and very shining, latter with broad transverse band of whitish dust in middle; antennae entirely black, even first segment and its projections; long arista terminated by a small, ovate lamella, which is black with white tip. Thorax and scutellum as in *C. melanochirus*, but uniformly green above; chaetotaxy, calypters and halteres as *C. melanochirus*. Abdomen as in preceding species, but longer and with coppery tinge on all segments, and broader black bands on sutures; middle row of bristles on each segment much less developed than terminal row; hypopygium black, similarly shaped, but small upper appendages bearing thin whitish hairs, with no long black bristle. Legs as in *C. melanochirus*, but front femora with three yellowish bristles below; front tarsi entirely yellowish, praetarsi as long as tibiae, with two black bristles above; middle tarsi with pale yellowish praetarsi, a little shorter than tibiae, second and third segments black, fourth shining white, fifth darkened; hind tarsi entirely black, shorter than their tibiae; four posterior femora with long white hairs below; hind tibiae yellowish, with narrow black tips and broad blackish callosity near base. Wings precisely as in *C. melanochirus*.

55. *Chrysosoma patellifer*, Thomson.

A very distinct species, chiefly on account of the different length of the first longitudinal vein in the two sexes.

Very numerous specimens of both sexes from Labasa, vii.1922, Lautoka, 22.vii.1922, Cuvu, Sigatoka, 25.v.1925 (*R. Veitch*); Suva, 23.ix.1920, Sigatoka R., x.1922 (*H. W. Simmonds*).

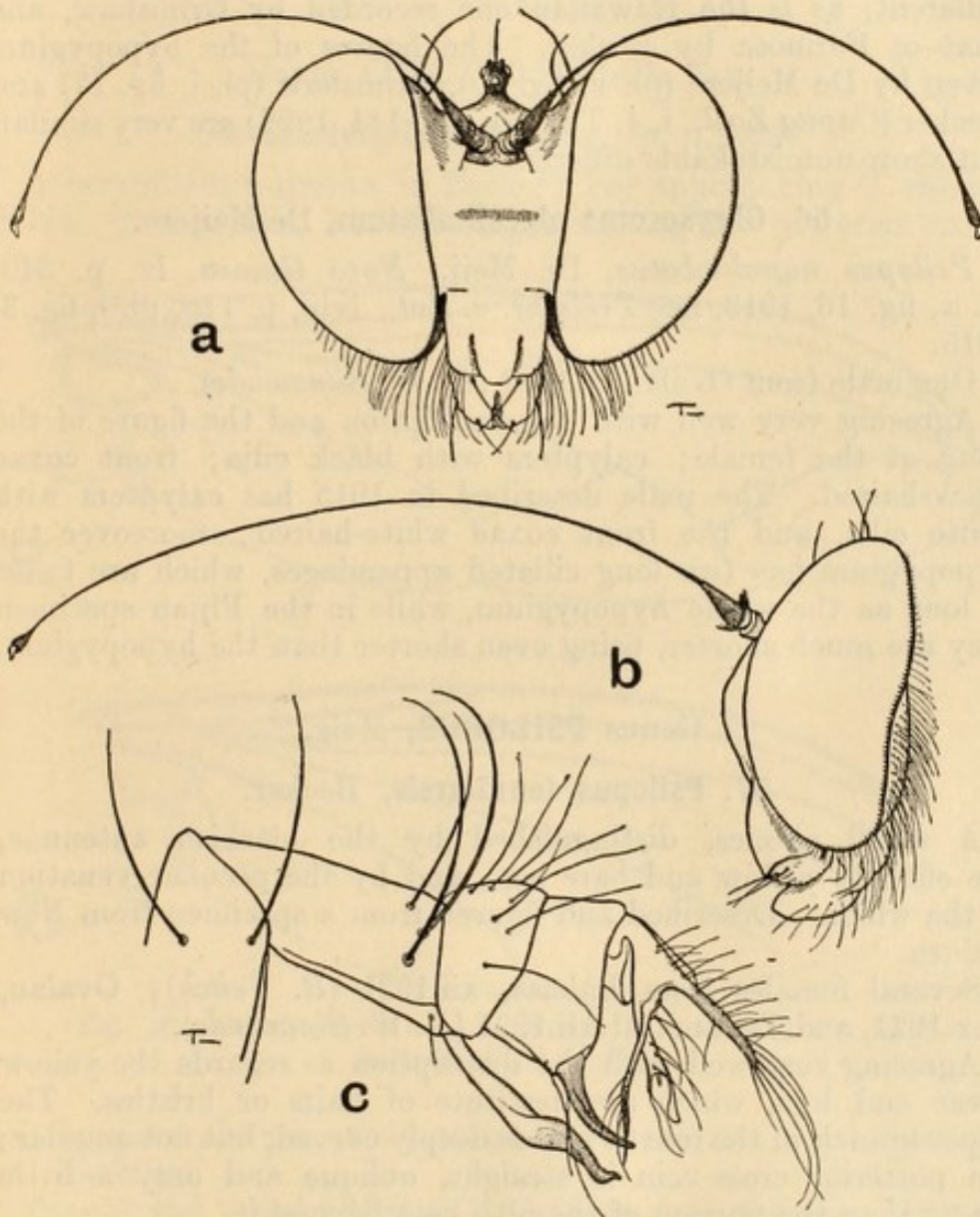


FIG. 19.—*Chrysosoma leucochirus*, sp. n.: a, head of ♂ viewed from in front. $\times 28$; b, head of ♂ in profile. $\times 28$; c, genitalia of ♂. $\times 60$.

This is the true species, agreeing with Thomson's minute and complete description of the insect as found in Guam Island. In the male the first vein is very long, the second segment of the costa (between humeral cross-vein and end of first vein) being equal to the third (between ends of first and second veins); but in the female the first vein is shorter, the second segment of the

costa being only a little longer than half the third. The basal callosity of the hind tibiae of the male is well developed but not very conspicuous, being coloured like the rest of the tibiae, and thus overlooked by Thomson. Hind cross-vein very sinuous and long.

It seems that the present species is confined to the Pacific Islands; the Javanese form described by Prof. De Meijere is different, as is the Hawaiian one recorded by Grimshaw, and that of Formosa by Becker. The figures of the hypopygium given by De Meijere (pl. v, fig. 20), Grimshaw (pl. i, fig. 17) and Becker (*Capita Zool.*, i, 4, Taf. xiv. fig. 144, 1922) are very similar, but show unmistakable differences.

56. *Chrysosoma nigrolimbatus*, De Meijere.

Psilopus nigrolimbatus, De Meij., *Nova Guinea*, ix, p. 340, pl. x, fig. 16, 1913, nec *Tijdschr. v. Ent.*, lviii, p. 118, pl. i, fig. 3, 1915.

One male from Ovalau, v.1922 (*H. W. Simmonds*).

Agreeing very well with the description and the figure of the wing of the female; calypters with black cilia; front coxae black-haired. The male described in 1915 has calypters with white cilia, and the front coxae white-haired; moreover the hypopygium has two long ciliated appendages, which are twice as long as the whole hypopygium, while in the Fijian specimen they are much shorter, being even shorter than the hypopygium.

Genus **PSILOPUS**, Meig.

57. *Psilopus tenuitarsis*, Becker.

A small species, distinguished by the blackish antennae, the entirely yellow and bare legs, and by the peculiar venation of the wings. Described and figured from a specimen from New Guinea.

Several females from Labasa, xii.1921 (*R. Veitch*); Ovalau, 22.x.1921, and Taviuni, 21.xii.1921 (*H. W. Simmonds*).

Agreeing very well with the description as regards the yellow coxae and legs, which are destitute of hairs or bristles. The upper branch of the fourth vein is deeply curved, but not angular; the posterior cross-vein is straight, oblique and only a little longer than the portion of the fifth vein beyond it.

In wing-venation and in size the present species recalls the above-described *Ch. greenwoodi*, but, even apart from the very different antennae, it differs in the abdomen being entirely metallic green.

58. *Psilopus* sp. near *P. pellucens*, De Meijere.

In Becker's key this insect works out as *P. pellucens*, described and figured in the female sex from a specimen from New Guinea, but it differs in having the hind coxae entirely black; moreover,

in comparison with De Meijere's figure of his species, the wings have the bend of the fourth vein more distant from the wing-border, the portion of the fourth vein beyond the bend more strongly curved inwards near the base, and the posterior cross-vein straighter, less oblique and further from the hind border of the wing.

One ♀ from Lautoka, 1.iii.1919 (*R. Veitch*).

Genus **CONDYLOSTYLUS**, Big.

59. **Condylostylus nuptus**, sp. n., ♂♀.

A very distinct species, in Becker's key approaching *C. viduus*, Schin., of Australia, but differing in having the posterior cross-

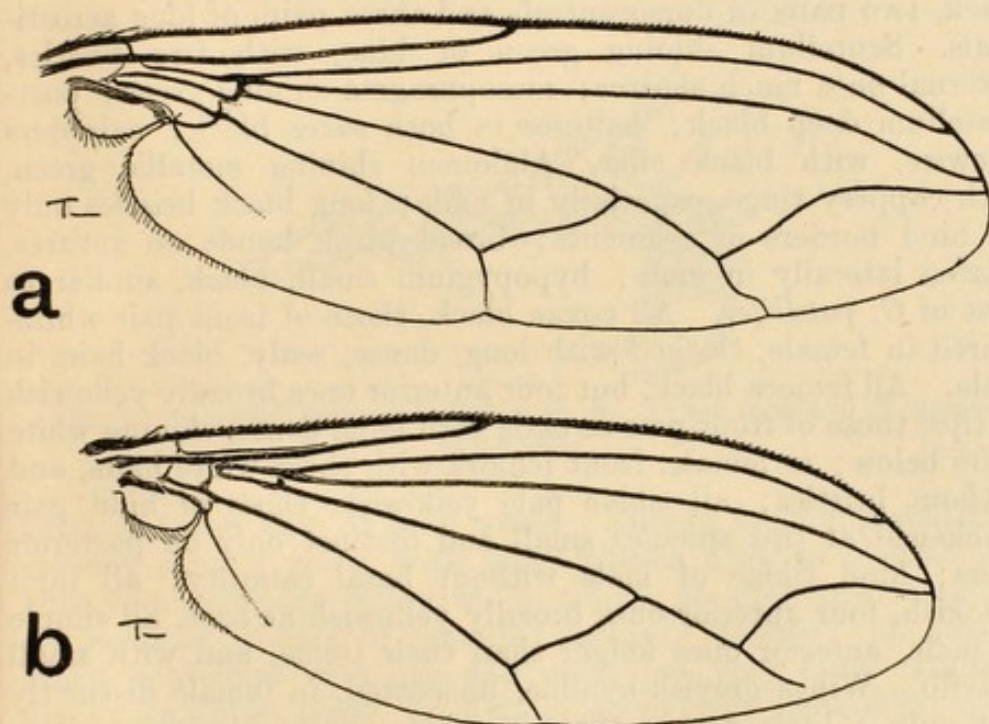


FIG. 20.—*Condylostylus nuptus*, sp. n.: a, wing of ♂. × 20;
b, wing of ♀. × 20.

vein long and oblique; the male moreover exhibits very important peculiarities

Type ♂ and ♀ and additional specimens from Suva, ix.-x.1920, and Sigatoka R., x.1922 (*H. W. Simmonds*); Lautoka Mountains, 21.i.1920 (*W. Greenwood*).

♂♀. Length of body and wing 4-4.5 mm.

Occiput deep black, dark grey-dusted in middle only; lower postocular cilia and hairs entirely black in male, whitish in female. Frons shining green or blue, broader in male than in female, being in latter as broad as one eye; sides clothed with pale hairs; ocellar tubercle with two strong divergent, black bristles. Face narrower in male than in female, in both shining

metallic green or blue, not dusted above, and only in female grey-dusted below. Proboscis and palpi blackish. Antennae very short, even more so in male than in female, and entirely black in both sexes; in male, first segment much inflated inwardly, and bare; second segment ring-shaped and bare; third much smaller than first, rounded, and provided with a subapical arista, which is as long as entire body, and has at tip a broad, ovate, entirely black lamella, truncated outwardly, style being narrowly white at base of lamella; in female, first segment only a little produced inwardly, second as long as first and with a black hair above, third longer, distinctly but obtusely conical, with arista simple, half as long as body. Thorax shining, metallic green with grey dust on pleurae, more distinct in female; anterior part of dorsum often blue in male and coppery in female; bristles black, two pairs of dorsocentrals and three pairs of long acrostichals. Scutellum shining green or blue, with two bristles, external ones much shorter; mesophragma shining green; post-scutellum deep black; halteres in both sexes black; calypters likewise, with black cilia. Abdomen shining metallic green, with coppery tinge, especially in male; long black bristles only on hind borders of segments; broad black bands on sutures, dilated laterally in male; hypopygium small, black, similar to that of *C. patellifer*. All coxae black, those of front pair white-haired in female, clothed with long, dense, scaly, black hairs in male. All femora black, but four anterior ones broadly yellowish at tips, those of front pair in male with long, dense, shining white hairs below; in female, front femora with short white hairs, and without bristles; all tibiae pale yellowish, those of hind pair blackened at tips spicules small and distinct only on posterior pairs; hind tibiae of male without basal callosity; all tarsi blackish, four anterior ones broadly yellowish at base, all simple in male, anterior ones longer than their tibiae, and with small pulvilli. Wings greyish-hyaline, unspotted, in female distinctly but only a little darker than in male. Veins blackish; costa not ciliated; first vein equally short in both sexes, second segment of costa one-and-a-half times as long as first; second and third veins equally curved towards tips; bend of fourth vein forming a very obtuse angle in male, a right, or even acute angle in female, upper branch being more curved in female than in male, lower branch in both sexes not reaching hind border, but straighter and more chitinized in female, posterior cross-vein long, gently S-shaped, more than twice as long as portion of vein beyond it, in female shorter, less curved and less oblique than in male (but never straight and perpendicular, as described for *C. viduus*).

60. *Condylostylus pulvillatus*, sp. n., ♂♀.

A small species, readily distinguishable owing to the great development of the front pulvilli in the male, and the different

coloration of the legs in the two sexes. Even the present species works out as *C. viduus* in Becker's key, but it is in reality very different.

Type ♂ and ♀, a single pair from Rarawai, 27.x.1915 (*R. Veitch*).

♂. Length of body 3.5 mm.; of wing 3 mm.

Head green; occiput clothed with thin whitish dust; frons shining green, not dusted, strong ocellar and thin orbital bristles black. Antennae short, entirely black; second segment with rather long black hairs, chiefly above; third segment rounded, very short, not longer than first, with arista inserted near base of its upper border, as long as thorax, black, bare, thickened for a short distance at base and quite simple at tip. Face shining green, white-dusted on lower part only; proboscis yellowish;

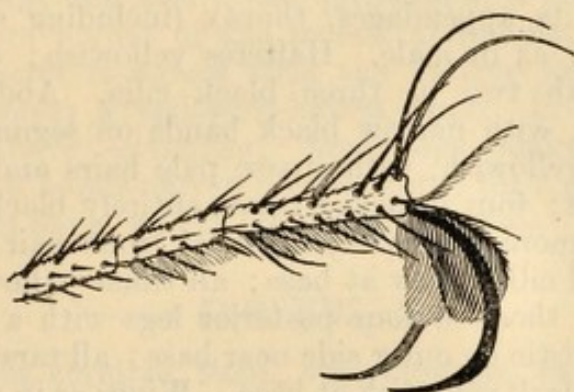


FIG. 21.—*Condylostylus pulvillatus*, sp. n. Front tarsus of ♂ (greatly enlarged).

hairs on lower part of head white. Thorax including scutellum entirely shining green, with faint whitish dust on pleurae, and with some coppery reflection at sides; an ill-defined cupreous stripe along middle of dorsum; sharply defined; all bristles black, scutellum with one pair only, but very long. Halteres black; calypters black, with six or seven rigid black cilia; post-scutellum and mesophragma shining bluish-green. Abdomen with two basal segments shining green, remainder coppery; narrow bluish-black on borders of all segments; hairs and bristles black, latter only on hind borders of segments. Hypopygium short, shorter than last two abdominal segments, its appendages very short and not prominent. All coxae black, front pair with thin white hairs. Four anterior femora with proximal halves thickened and black, distal halves yellowish; hind femora not thickened basally, but quite black; anterior femora below with thin whitish hairs, a longer rigid one near base, all tibiae yellowish, longer than their femora, those of hind pair with thin black spicules; all tarsi simple and entirely blackish, longer than their tibiae; terminal segment of front tarsi with one very long, curved, black claw, two or three long cilia above, and long yellowish pulvilli; basal segments of all tarsi longer than remaining

segments together. Wings greyish-hyaline, iridescent. Veins black; costa without any ciliation, apparently bare; first vein short, ending much before middle of wing; second vein very long, terminal portion curved downwards, ending very near wing-tips; third vein parallel with second, long and narrow sub-marginal cell being of about equal breadth throughout; bend of fourth vein forming a rather acute angle, portion of vein beyond it regularly curved, appendix vestigial and rather short; posterior cross-vein long, slightly S-shaped, situate obliquely to fourth vein, and twice as long as portion of fifth vein beyond it, but this portion abbreviated, not reaching hind border. Alula semi-circular, with pale ciliation; anal cell narrow and rounded; sixth vein short but distinct.

♀. Length of body 2.8 mm.; of wing 2.5 mm.

Head and its appendages, thorax (including scutellum) and its chaetotaxy as in male. Halteres yellowish; calypters dirty brownish, with two or three black cilia. Abdomen entirely shining green, with narrow black bands on segmental incisions. Front coxae yellowish, with sparse pale hairs and several white bristles at tips; four posterior coxae entirely black; trochanters black; all femora yellowish, those of front pair with three or four pale rigid cilia below at base; all tibiae yellowish, hind pair black at tips, those of four posterior legs with a rather strong, short black bristle on outer side near base; all tarsi blackish, four anterior ones dark yellowish at base. Wings as in male, but more hyaline; veins black and similar, but posterior cross-veins shorter and straighter, even though always situate obliquely to fourth vein; last portion of fifth vein reaching hind margin.

II. CYCLORRHAPHA ATHERICERA.

Family SYRPHIDAE.

Subfamily SYRPHINAE.

Genus MELANOSTOMA, Schin.

61. *Melanostoma univittatum*, Wiedemann, 1824

(*M. planifacies*, Macq., 1848).

Readily distinguishable in both sexes by the peculiar form of the face; recognisable also in the male sex by the coloration of the abdomen, and the greatly enlarged and distorted genitalia. Widely distributed throughout the Oriental and Australian faunas.

Nausori, v.-x.1921, Natova, v.1915 (*R. Veitch*); Taviuni, 19.iii.1922 (*H. W. Simmonds*).

Genus **ASARCINA**, Macq.62. *Asarcina ericetorum*, Fabr., var. **papuana**, Bezzi.

Distinguished by the yellowish-haired and unspotted frons, and by the second abdominal segment in both sexes being without a black spot on the anterior border, the first yellow band being thus uninterrupted. Described from a specimen from New Guinea, but widely distributed over the Oriental Region.

A couple of quite typical specimens from Levuka, v.1921 (*H. W. Simmonds*); Nausori, v.1922 (*R. Veitch*).

63. *Asarcina ericetorum*, Fabr., var. **oceanica**, var. n., ♂.

Differing from the preceding on account of the black-haired frons of the male, and also in the presence of a triangular black spot on the fore border of the second abdominal segment; in this last character it agrees with the variety *formosae*, Bezzi, which has however a yellowish-haired frons. Frons without a black spot above antennae; hind legs mainly yellowish; abdominal black bands narrow; eyes united for a short distance.

Type ♂, Savu Savu, v.1922 (*H. W. Simmonds*).

Genus **SYRPHUS**, Fabr.64. *Syrphus corollae*, Fabr., var. **vitiensis**, var. n., ♂♀.

An important discovery from a zoogeographical standpoint, as well as from a biological one.

Type ♂ and ♀, Vunilagi, v.1921, Suva, 8.v.1921 (*H. W. Simmonds*); Cuvu, 1.vi.1915, Natova, 25.vii.1916, Lautoka, 30.x. and 1.xi.1921, "feeding on Aphid on *Hibiscus rosa-sinensis*" (*R. Veitch*).

Head, antennae and abdomen precisely as in *S. latifasciatus*, Macq., but legs as in typical *S. corollae*; male genitalia as greatly developed as in typical *S. corollae* (while in *S. latifasciatus* they are much smaller); yellow abdominal bands reaching side-margins. Mesonotum on each side with a short yellowish stripe, interrupted before scutellum (as in *Ischiodon scutellaris*); this stripe in male much less distinct, but in female strongly developed, sometimes as evident as in *I. scutellaris*. Dark middle band of frons in female always reaching base of antennae, which never occurs either in typical *S. corollae*, or in typical *S. latifasciatus*. Female very like that of *I. scutellaris*, but distinguishable by body being broader and shorter, all femora having black bases, and by position of node of vena spuria.

♂♀. Size and shape as in *S. corollae* or *S. latifasciatus*. Face entirely yellowish, though central knob or mouth-border sometimes blackened; antennae reddish, with third segment elongate oval (more than in *X. javanum* but less than in *I. scutellaris*); frontal black stripe of female reaching antennae. Mesonotum

shining black, with a yellow or yellowish stripe on each side, extending from humeri to beyond suture; pleurae as in *I. scutellaris*, but yellowish stripe less distinct. Scutellum yellow, darkened towards middle, and with yellow hair. Abdomen with first segment black; second with two yellow spots, usually separated; third, fourth and fifth with broad yellow bands reaching side margins. Genitalia strongly developed, as in *S. corollae*. Coxae black; all femora broadly black at base, rest yellowish, hind tibiae without dark ring; tarsi blackish. Wings as in *S. corollae*, i.e. costa ending before wing-tip; node of vena spuria beyond origin of third vein.

Genus **ISCHIODON**, Sack.

65. **Ischiodon scutellaris**, Fabricius (syn. *S. grandicornis*, Macquart).

Numerous specimens of both sexes of this remarkable form, which is widely distributed over the Orient and Australia, and apparently also in the Pacific Islands.

Natova, x.1918, Lautoka, 10.vii.1922, "larvae feeding on colonies of *Aphis gossypii*," Labasa, x.1922 (*R. Veitch*); Lautoka, 28.i.1922, "feeding on Aphids on *Asclepias curassavica*, L." (*W. Greenwood*); Macuata, ix.1922, Suva, 12.vi.1922, "on *Aphis* on orange," Ovalau, v.1922, Savu Savu, ii.1922, Vunilagi, v.1921 (*H. W. Simmonds*).

This very important species has been misunderstood and described under different names. In 1912 I separated the African form on very important characters, under the name of *aegyptius*, Wied., with the synonyms *brachypterus*, *felix*, *fuscotibialis*, *longicornis*, *natalensis* and *senegalensis*.

The Oriental and Australian *I. scutellaris* has been worked out by De Meijere and Brunetti; its synonyms are: *coromandelensis*, *splendens*, *erythropterus*, *novae-guineae* and *trochanterica*. Now that the presence of the species has been recognised in Australia and the Pacific Islands, the following new synonyms may be added: *grandicornis*, Macquart; *nodalis*, Thomson (the form with the abdomen broadly red at the tip); *ruficauda*, Bigot; and *melanurus*, Bigot.

Since *I. scutellaris* is found living promiscuously with the following species (*X. javanum*), and both have been frequently confused together (beginning with Wiedemann, Kertész and De Meijere), I give below a careful comparison of the two species.

I. scutellaris.

Length of body 7-10 mm.
Occiput in middle, just above neck, with two contiguous spots of whitish dust.
Posterior border of eyes less sinuous.

X. javanum.

Length of body 7-8 mm.
No such spots.
Posterior border of eyes more deeply sinuous.

I. scutellaris.

Eyes with anterior facets not enlarged.

Third antennal segment elongate.

No black tubercle in centre of lunula.

Face without black median stripe.

Lateral yellow stripes on mesonotum interrupted before reaching scutellum.

Pleurae with a single yellowish stripe across the mesopleura to upper part of sternopleura.

Scutellum clothed with yellow hairs, and with dark transverse band.

Calypters whitish.

First abdominal segment black, with small yellow spots at sides.

Paired yellow spots on second segment well separated and of oval shape.

Yellow bands on third and fourth segments contiguous to fore borders or nearly so.

Fifth segment in female yellow, with transverse black band.

Male genitalia reddish, greatly developed and visible from above.

All coxae black.

Hind trochanters in male with prominent tubercle.

Hind femora often with black ring before tip.

Hind tibiae yellow, with more or less distinct black ring in middle.

Anterior tarsi blackened at tips.

Wings with costa ending much before tip, third vein curved strongly upwards towards end; first posterior cell thus much broader at end than at base.

Node of vena spuria just below origin of third vein.

Terminal stalk of anal cell straight.

Puparium spinulose above.

X. javanum.

Eyes with anterior facets enlarged.

Third antennal segment rounded.

A black tubercle in centre of lunula, forming a black spot even in male.

Face sometimes with a black median stripe.

Lateral yellow stripes continued from the humeri to sides of scutellum.

Pleurae, besides stripe, with yellow spots on proptero- and hypopleura.

Scutellum black-haired, without dark transverse band.

Calypters darkish.

First abdominal segment yellow, with black median spot.

Paired spots usually fused together to form a band of uniform depth.

Yellow bands on third and fourth segments rather distant from anterior borders.

Fifth segment in female black, with yellow spot on each side.

Male genitalia shining black, small and not visible from above.

All coxae pale yellowish.

Hind trochanters quite simple in both sexes.

Hind femora with distal extremities narrowly black.

Hind tibiae black, with more or less developed yellow ring in middle.

Tips of anterior tarsi entirely yellowish.

Costa ending precisely at wing-tip, third vein nearly straight; first posterior cell not so broad at end.

Node of vena spuria considerably beyond origin of third vein.

Terminal stalk of anal cell distinctly curved.

Puparium quite smooth above.

Genus **XANTHOGRAMMA**, Schin.66. *Xanthogramma javanum*, Wied., var. *distinctum*, Kertész.

The present species seems to be as widely distributed over the Oriental and Australian Regions as the preceding one, and to be even more variable. The typical form, as described by Wiede-

mann, De Meijere and Brunetti, shows a black median stripe on the face, always present in the female, but sometimes wanting in the male. But in the New Guinea form, described under the name *distincta* by Kertész, the antennae are yellow and the face has no black stripe in either sex; all the Fijian specimens belong to this form.

Very numerous specimens from Natova, iv.-xii.1916-18 (*R. Veitch*); Cuvu, 10.x.1919 (*W. Greenwood*); Suva, 14.ix.1920 (*H. W. Simmonds*).

The African form, which I redescribed in 1912 as *pfeifferi*, is perhaps the same as *distinctum*; it would therefore seem that the correct name may be *nasutum*, Macquart, 1842. The three species *Syrphus relictus*, *Ischiodon scutellaris* and *Xanthogramma distinctum* in the larval stage all feed on Aphids; if the first is of European origin, it is noteworthy that the adults have developed yellow mesonotal stripes like the two others, perhaps by convergence. *X. distinctum* is not unlike some American species of the genus *Allograpta*, for example *A. obliqua*, in which however the yellow mesonotal stripes stop at the suture, and the end of the abdomen has a very peculiar pattern.

There is a puparium of *X. distinctum*, collected by R. Veitch. It is of the usual pyriform shape, measuring 6 mm. in length, 2.5 mm. in width and 2 mm. in height. Colour of empty puparium dirty whitish, slightly shining above, very shining at the sides; breathing tubes at posterior end reddish brown; a narrow reddish line along the middle of the back on the last three segments. The skin is smooth; the posterior spiracles are short and thick, coalescent at the base.

Through Mr. Swezey, I have received a puparium of *I. scutellaris* from Honolulu. It is very similar in colour to that just described; the shape is more cylindrical, being less attenuated behind; tail more obtuse, the breathing tubes much less prominent. Each segment has in the middle a transverse row of four to six short yellowish spines, standing on small tubercles and restricted to the back; the sides are quite smooth, except that near the tail there is a row of small spines on each side.

67. *Xanthogramma amphoterum*, sp. n., ♂♀.

A curious species, which in size, black-banded scutellum and black coxae, resembles *I. scutellaris*; while in all other characters it agrees with *X. javanum distinctum*, having moreover a broad black facial stripe, mainly black hairs on the head, thorax and abdomen, and infuscated wings.

Type ♂, a well-preserved specimen from Rarotonga, 1920; another male from Fiji, Movua, xi.1920 (*H. W. Simmonds*); type ♀ from Lautoka, viii.1919 (*R. Veitch*).

♂♀. Length of body 9 mm.; of wing 8 mm.

Occiput black, without any grey spot above neck, but with broadly grey-dusted sides below; posterior eye-borders shallowly

sinuous, with argenteous scaly hairs, and with black hairs above on vertex. Vertical triangle very narrow, black and black-haired; eyes united for a distance equal to vertical triangle, with upper interior facets very little enlarged; supra-antennal triangle prominent, black-haired, yellow, with broad shining black spot just above base of antennae, and with shining black tubercle in middle of lunula. Face yellow, with whitish sides clothed with darkish hairs; a broad black median stripe, running from base of antennae to tubercle, and below this much more narrowly to mouth-border; peristomialia yellow, very narrow; proboscis dirty yellowish. Antennae reddish, with third segment rounded and broadly black on upper border; arista black, bare, rather thick, longer than antenna. Thorax shining black dorsally, with complete yellow stripe on each side, extending from humeri to scutellum; pleurae deep black, with same yellow spots as in *X. javanum distinctum*; posterior stigma whitish; hairs rather long, black on dorsum, pale on pleurae. Scutellum yellow, black-haired, with broad black band across middle, mesophragma shining black; calypters blackish, with lower squama whitish towards middle, with black border and black fringe; halteres yellowish. Abdomen of same elongate form as in *I. scutellaris*, clothed with long, pale yellowish hairs at sides of base, and with shorter black or blackish hairs elsewhere; first segment yellow, with broad, rounded black spot in middle; second segment deep black, narrowly shining on hind border, with yellow band, narrowly interrupted in middle; third and fourth segments deep black, narrowly shining on anterior and posterior borders, with entire yellow bands, which reach sides and are slightly emarginate on hind border; fifth segment shining black, with yellow band on fore border, deeply emarginate behind; genitalia shining black and black-haired; ventral membrane translucent, so that dorsal pattern shows through. Coxae and trochanters deep black in type, partly yellowish in Fijian specimen; four anterior legs entirely yellowish with terminal segments of tarsi blackened; distal halves of hind femora black; hind tibiae black, with yellowish ring in middle; hind tarsi black, with yellowish base; hairs on hind legs black; claws yellowish, with black tips, those of front pair quite regular. Wings evenly infuscated in type, but less deeply in Fijian specimen; stigma blackish; veins black, disposed as in *X. javanum*, that is, with costa ending at wing-tip, third vein almost straight and first posterior cell of regular shape; node of vena spuria beyond origin of third vein.

♀. A little smaller than male, body measuring only 8 mm. and wing 7 mm. long.

Frons with broad shining black stripe, extending from vertex to lunula and gradually broadened in front; facial stripe as in male; sides of face yellow, with white hairs. Thorax, scutellum and abdomen as in male; velvety black bands on abdomen narrower,

shining parts thus being wider. Legs exactly as in male, with all coxae black. Wings a little less infuscated than in male.

Genus **BACCHA**, Fabr.

68. **Baccha praefica**, sp. n., ♀.

Differing from all other species of the same genus occurring in the Region in having the body, legs and wings for the most part black, without any pale markings; recalling *B. purpuricola*, Walk., of New Guinea, as redescribed by De Meijere in 1910, and *B. refulgens*, Austen, but much darker than either.

Type ♀, Ovalau, v.1922, and Levuka, v.1921 (*H. W. Simmonds*); Cuvu, xi.1921 (*R. Veitch*).

♀. Length of body about 10 mm., of wing 9 mm.

Occiput opaque black, dark grey-dusted, shining whitish on eye-borders, especially at well-developed sinuosity, and there provided with whitish cilia. Frons very narrow, as broad as ocellar tubercles at vertex, but gradually widening in front, being at base of antennae four times as broad as at vertex; frons shining, black, with a little whitish dust at sides in front, clothed with short, erect, dark hairs; in profile, frons prominent only in front, forming an antenniferous tubercle. Eyes bare, reniform in profile. Antennae inserted above middle of eyes, with two basal segments very small and blackish, but second provided with a reddish obtuse projection on inner side of third segment, as in *Plecticus*; third segment strongly developed, rounded outwardly, reddish, with upper border broadly blackened; arista basal, black, very short (not longer than antennae), thin and bare. Face gradually narrowed below, in profile with well-developed rounded knob; face rather dark yellowish, whitish-dusted at sides, black in middle and across tubercle, with short, darkish hairs at sides; peristomialia narrow, black; proboscis black, with yellowish labella. Thorax entirely black, destitute of yellowish markings, even on humeri; dorsum shining bluish, with faint grey dust in front of suture nearly bare, except anterior fringe of erect, rather long, whitish hairs, which form a collar; pleurae shining black, with vertical stripe of shining white dust across mesopleura and upper part of sternopleura; pleurae practically bare, with only short white hairs on above-named stripe; root of wing dirty reddish; metastigma white. Scutellum shining black, with faint dark grey dust, bare on border; mesophragma shining black; halteres black, with pale stalks. Calypters white, with short white fringes. Abdomen distinctly stalked at base, second segment being narrow and narrowed in middle, but not very thin; dorsum entirely shining dark bluish, without any pale markings, and with very short black pubescence; venter shining black, with purplish reflections, and with short black pubescence. Legs, including coxae, entirely black and bare, only front femora and front tibiae somewhat reddish on inner surface; middle

femora with row of white hairs posteriorly; hind praetarsi somewhat thickened. Wings uniformly infuscated from base to apex, with purplish reflections; veins black, normal; third vein straight, ending at wing-tip; node of vena spuria beyond origin of third vein. Axillary lobe and alula well developed, latter less infuscated than rest of wing, like extreme bases of second basal and second costal cell.

Subfamily VOLUCCELLINAE.

There are no specimens from Fiji, but two males of *Volucella obesa*, Fabr., from Tahiti, x.1920 (*H. W. Simmonds*). The species seems to be widely distributed, even in the Pacific Islands.

Subfamily ERISTALINAE.

Genus **DISSOPTERA**, Edwards.

69. *Dissoptera unicolor*, sp. n., ♂♀.

Very different from the known species of the genus owing to its entirely black abdomen and legs, and, in the male, the presence of a central knob on the face; characteristic also are the elongate proboscis and the atrophied palpi.

The genus *Dissoptera*, Edwards, 1915, is a very peculiar one, having the small cross-vein situate as in the *Syrphinae* or *Volucellinae*, while the marginal cell is closed and stalked, and the arista is bare; the dip in the third vein is very faint, not *Eristalis*-like. The bare, dichoptic eyes are very characteristic, as well as the peculiar vestiture of the body, formed by special scales, below the ordinary hairs.

Type ♂, Savu Savu, v.1922 (*H. W. Simmonds*); type ♀, Lautoka, 30.ii.1920, and another ♀ with puparium, 24.i.1921 (*W. Greenwood*); Cuvu, 19.viii.1919 (*R. Veitch*).

♂♀. Length of body 7-8 mm.; of wing 5.5-6 mm.

Head entirely black; occiput opaque, clothed with faint grey dust towards middle and along sides, with complete, broad crown of short, dense yellowish hairs, which towards middle become scaly, while below they are a little longer and whitish. Frons equally broad in both sexes, very slightly prominent in profile, with almost parallel sides, being only a little broadened anteriorly; ocelli placed at same distance from vertex, on a very slightly prominent tubercle, in an equilateral triangle; entire frons opaque and clothed with rather long, erect black hairs, which at ocelli form a deep black band, in contact with yellow postocular crown; on sides, below black hairs, peculiar, yellow, scaly tomentum forming a narrow band near eyes, extending down face to mouth-border; thus a black middle frontal band, sharply defined in female, but in male less distinct, being mingled with scattered yellow scales; lunula small, with upper border

shining brown. Eyes bare, unicolorous, rather narrow in profile and considerably narrower below, their vertical diameter being more than twice as long as horizontal one; posterior border not sinuous; facets equally small in both sexes. Antennae short, situate on a very small and not very prominent tubercle above middle of eyes, two basal segments very short, dark reddish and nearly bare; small third segment quite rounded, reddish, with upper border darkened; arista basal, bare, about twice as long as antenna. Face parallel-sided, shining black in middle, opaque at sides and there with above-described band of yellow scaly hairs; in profile rather prominent below, especially in female, in which lower prolongation is more prominent than antennae; in female no distinct central

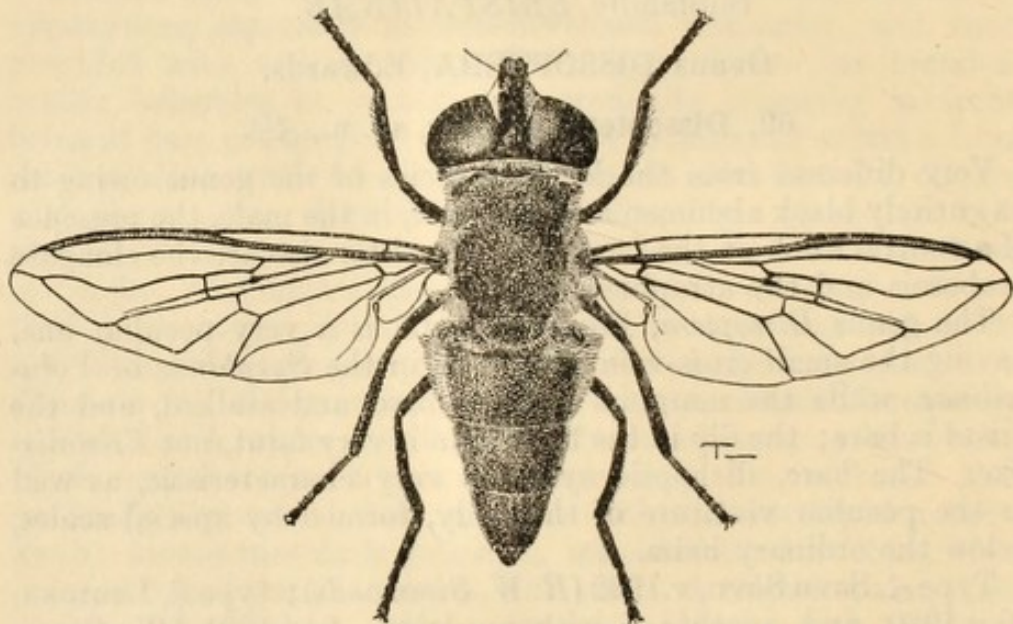


FIG. 22.—*Dissoptera unicolor*, sp. n. ♀. × 6.

knob, in male a small one a little below middle; in male middle of face opaque above tubercle. Peristoma shining black, bare, broadened anteriorly, but linear below narrowed lower corner of eyes. Proboscis, black, rigid and elongate, as long as head and thorax together; palpi atrophied, not visible. Thorax velvety black, rather flat above, clothed on dorsum with dark erect hairs, longer and denser in male, and below them with yellowish scaly tomentum; at sides, even long hairs yellowish and dense, forming a notopleural stripe; anterior border quite bare, with collar of hairs; pleurae with dense, tuft-like yellowish hairs on meso- and sterno-pleura, forming broad vertical stripe; pleura bare in front of and behind this stripe. Scutellum rounded, flat, on level with scutum and similarly coloured and clothed; mesophragma not much developed, black, grey-dusted, bilobate, being divided by a median vertical furrow. Halteres whitish;

calypters translucent, with blackish borders and dark fringes; plumula whitish; posterior stigma with white border. Abdomen conical, quite black, clothed with erect dark hairs and with yellowish scaly tomentum, without differentiated pattern; at sides of base hairs dense and long, yellowish, forming two considerable tufts; male genitalia rounded, black, yellowish-haired, not visible from above; venter black, shining on basal half, with greyish hairs. Legs, including coxae, entirely shining black and with blackish hairs; hind femora simple, not thickened; hind tibiae distinctly curved towards middle. Wings quite hyaline, shining and iridescent; stigma elongated, yellowish fuscous, in female even whole subcostal cell infuscated to end. Veins black; stalk of marginal cell short; costa ending before wing-tip; dip in third vein broad and not very deep, first posterior cell thus not properly pediform; vena spuria not reaching end of discal cell, with node beyond origin of third vein; anterior transverse vein near base of discal cell; lower external angle of discal cell with or without stump; sixth vein strongly curved, terminal portion of anal cell being very acute.

Puparium. Pupal period not less than sixteen days, Lautoka, 24.i.1921 (*W. Greenwood*).

Length 8 mm.; tail 6.5 mm.; breadth 3 mm.; height in middle 2.5 mm. Of typical *Eristalis* shape, systematic position of genus being thus confirmed. Ventrally flat and dorsally rounded; colour opaque whitish, with four longitudinal dark stripes, two narrower and less dark from stigmal horns to a little before apex, two broader and darker ones along sides. Stigmal horns 0.5 mm. long, cylindrical, and not much attenuated, dark reddish, with blackish bases; surface covered with small, not very prominent tubercles. Dorsal segmentation very distinct, each segment having moreover two or three transverse, parallel, linear furrows; surface apparently smooth. Venter flat, and apparently without any trace of parapads. Anteriorly, near dehiscence line, two reddish horns, curved outwards and about as long as stigmal ones. Tail shorter than whole puparium, arising a little above ventral ridge; thicker basal segment whitish on basal half, pale yellowish on terminal half; thinner terminal segment pale yellowish, rather shining, with broad black tip; basal and terminal segments of about same length.

Genus **LATHYROPHTHALMUS**, Mik.

70. **Lathyrophthalmus nitidus**, Van der Wulp.

A beautiful species, redescribed by Prof. De Meijere in 1908 and 1911, and figured by Hervé Bazin (*Ann. Sci. Nat., Zool.*, 10, 6, p. 152, fig. 25, 1923); known to occur in Sumatra, Java, Borneo, and China.

One ♀, Ovalau, 25.x.1921 (*H. W. Simmonds*); one ♂, Natova, 1917 (*R. Veitch*).

The second abdominal segment in the female has a black band on the anterior border, narrowly interrupted in the middle; the black bands on the third and fourth segments are broader, less oblique and narrowly interrupted in the middle (instead of being prolonged into a point). In the male the third antennal segment is blackened along the upper border; on the thorax there is a fringe of bright golden hairs at the base of the wings; there is also a tuft of golden hairs in the depression in front of the postalar calli; a velvety black notopleural stripe on each side, from humeral callus to base of wing; the pterostigma has only the basal black spot, the terminal one being completely wanting.

Genus **ERISTALIS**, Latr.

71. **Eristalis rhynchops**, sp. n., ♀.

A species of the group *resolutus*, *inscriptus*, etc., distinguished by the very prominent and tuberculate face, and by the node of the vena spuria being united with the third vein near its origin, to form a supernumerary cross-vein.

Type ♀, and other specimens of same sex, Taviuni, 19.xii.1921, Savu Savu, v.1922; Buca B., 27.xii.1921, Vunilagi, v.1921 (*H. W. Simmonds*); Natova, iv.1916 (*R. Veitch*).

♀. Length of body 9-10.5 mm.; of wing of 8-9 mm.

Occiput black, grey-dusted, shining metallic blue near vertex, white-dusted on eye-borders and below, with short black hairs above and longer white ones below. Frons narrow, at vertex only one-third as broad as one eye, at antennae about twice as broad, with very prominent antennal tubercle and with narrow median furrow; frons shining aeneous in middle, blue at ocelli and purplish above antennae, clothed with dense, erect, black hairs, with shining white dust at sides anteriorly and whitish hairs at sides of antennal tubercle, ocelli placed in an equilateral triangle on a rather flat tubercle; lunula narrow, deeply excavated, with reddish border. Eyes quite bare, unicolorous, twice as high as broad, with entire hind border and small facets. Antennae inserted above middle of eyes; basal segments small, black, nearly bare; third segment black, with reddish lower border, and rather broad, rounded outwardly, with straight inner border; arista bare, black at base, twice as long as third antennal segment. Face in profile very concave below extremely prominent antennal tubercle, and produced into a sort of snout, as long as breadth of one eye, and as prominent as antennae, with well-developed knob at base; middle of face shining aeneous, sides densely whitish-dusted, forming a stripe extending in a point to mouth-border; sides of snout and peristomialia shining black and bare like middle, sides clothed with white hairs on dusted stripe, linear peristomialia white dusted just below lower corners of eyes, like surrounding parts of occiput. Proboscis black, rather long;

palpi black at base, yellowish at tip. Thorax broad, subquadrate; dorsum dullish blue, with greyish dust on anterior half before suture, with deep black stripe, divided in middle and abbreviated behind, and with four deep black spots, two on each side, a rounded one above humeri, and another broader and subtriangular one just behind suture; humeri are deep black, like postalar calli; short pubescence on dorsum yellowish in front and at sides, black in middle and behind. Pleurae dullish black, with broad grey stripe on meso- and sternopleura, and with rather long, soft and somewhat tuft-like, pale yellowish pubescence. Scutellum semicircular, margined, deep black at base, shining dark blue on posterior part, with pubescence black above, and yellowish at sides and behind. Postscutellum and mesophragma black, grey-dusted. Calypters whitish at base, translucent on remaining part, with blackish borders and fringes; plumula white; halteres whitish; posterior stigma black. Abdomen broad, short, not longer than thorax, entirely metallic shining aeneous, without any trace of yellow markings, but with velvety black pattern; first segment entirely aeneous; second segment with deep black band before hind border, not reaching sides and prolonged in middle to anterior border and there dilated at both sides, forming an abbreviated band; third segment with deep black band only in middle, not extending to sides, and with rounded middle prolongation to fore border; fourth segment with central isolated rounded spot and an oblique spot on each side; fifth segment shining coppery; pubescence long and whitish at sides, chiefly at base, short on back, whitish on aeneous parts and black on black parts; venter shining metallic coppery in middle, with membrane dirty blackish; ovipositor of four segments, dirty blackish, with last segment longer and narrower than basal one, ending in two blackish lamellae, clothed with long yellowish hairs. Legs shining black or bluish; extreme tips of front femora and extreme bases of four anterior tibiae reddish; tarsi black, with terminal segment reddish; hind femora noticeably thickened, their tibiae curved and considerably shorter. Wings hyaline, iridescent, with only small black stigmatic spot just before end of subcosta. Veins strong and black; costa ending a little before wing-tip, and slightly prolonged beyond end of third vein; stalk of marginal cell short; dip of third vein deep but rounded; vena spuria strongly chitinized, and prolonged beyond small cross-vein, its node united with base of third vein by a strongly chitinized cross-vein; stump of lower external angle of discal cell strongly developed; stalk of anal cell curved at end; anterior transverse vein on middle of discal cell, angularly broken in correspondence with vena spuria. Microscopical pubescence in middle of cells distinct, appearing like a greyish shade.

71a. *Eristalis tenax*, L.

Although this species probably occurs in the Islands, in the collection before me there are specimens only from New Zealand and Sydney, N.S.W.

Subfamily *MILESIINAE*.Genus *SYRITTA*, St. Farg. & Serv.72. *Syritta oceanica*, Macquart.

Not seen by me, but determined by the Imperial Bureau; the species is known to occur in Tahiti, Hawaii, etc.

Genus *EUMERUS*, Meig.73. *Eumerus hemipterus*, sp. n., ♀.

Near *E. speculifer*, Sharp, 1900, of New Britain and *E. marginatus*, Grimshaw, 1907, of Hawaii, but distinguished by its short and dimidiate wings, and narrow, shining bluish, trilunulate abdomen.

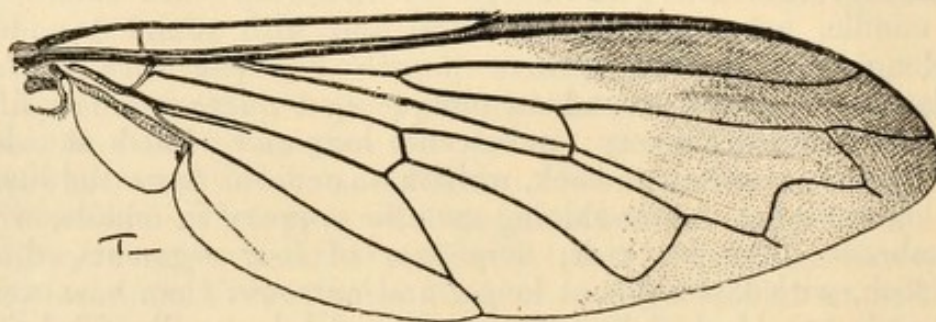


FIG. 23.—*Eumerus hemipterus*, sp. n. Wing of ♀. × 14.

Type ♀, a solitary specimen from Vunilagi, v.1921 (*H. W. Simmonds*).

♀. Length of body 8 mm.; of wing 6 mm.

Occiput black, dark grey-dusted, with short fringe of whitish hairs on eye-borders, becoming blackish near vertex. Frons long, narrow, only one-fourth as broad as one eye, parallel-sided, but gradually widening slightly towards antennae; frons smooth, shining bluish, clothed with erect black hairs, with shining white stripe on eye-borders in anterior half; not at all prominent in profile, at base of antennae; ocelli far from vertex, anterior ocellus more distant from others. Eyes greatly developed, bare, rounded in profile, only a little higher than broad, with small facets. Antennae inserted a little below middle of eyes; first segment small and black; second reddish, short and broad; third strongly developed, rounded outwardly, straight below, entirely reddish; arista short and bare, inserted before middle

of upper border of third segment. Face somewhat broader below, entirely flat or greatly convex, not at all prominent in profile even at mouth-border, entirely shining bluish and clothed with thin, short, dark hairs; peristomialia linear, black, with short pale hairs; proboscis short and thick, black, with dirty-reddish labella. Thorax distinctly narrower than head, short, subquadrate, not very convex above; dorsum shining black, finely punctate, with short dark pubescence; pleurae smooth, more shining clothed with sparse, scattered, pale hairs. Scutellum greatly developed, subquadrate, shining black, sparsely pubescent; kind margin sharply produced, minutely serrate. Mesophragma shining black. Calypters dirty whitish, with sparse white hairs on borders; halteres whitish. Abdomen elongate, three times as long as thorax, as broad as latter at base, but very acute behind, entirely shining blue, nearly bare, except pale pubescence on sides, which is very long at base; white paired lunules on second, third and fourth segments, those of each pair placed obliquely in middle of its segment, and broadly separated; these three segments very long and of equal length; fifth segment very short and small, shining black. Ovipositor with broad basal segment opaque black, and third segment narrow, elongate and dirty reddish, like terminal lamellae. Venter shining black, with dirty reddish membrane. Legs, including coxae, black, but all femora with reddish tips, broader on two anterior pairs; tibiae reddish, with broad black ring in middle, broader on hind pair; hind femora rather thick, with two or three short, stout, black bristles below near end; hind tibiae distinctly clavate, their distal halves abruptly truncated; hind praetarsi thick and elongate. Wings short and broad, iridescent, basal half hyaline, distal half infuscated, but division not sharp; stigma long, blackish. Veins black; costa, together with straight third vein, ending a little above wing-tip; anterior transverse vein oblique and long, on middle of discal cell; vena spuria chitinized and long, its node just below origin of third vein; two bends in marginal vein of first posterior cell deep, both with long stumps; lower external angle of discal cell rounded and without a stump.

Subfamily *MICRODONTINAE*.

There are no specimens of this subfamily in the collection before me; but it may be mentioned that, in 1920, Dr. Wm. M. Mann described the genus *Bardistopus*, from material from the Solomon Islands.

Family PIPUNCULIDAE.

Genus **PIPUNCULUS**, Latr.

74. **Pipunculus vitiensis**, Muir.

This endemic species is not represented in the collection before me.

Family PHORIDAE.

Genus **DOHRNIPHORA**, Dahl.

75. **Dohrniphora cleghorni**, Bigot, 1890 (syn. *D. chlorogastra*, Becker, 1901).

One male specimen, bred from onions imported from Australia, 7.i.1922 (*H. W. Simmonds*).

A cosmopolitan species in tropical and subtropical countries; *D. dohrni*, Dahl, seems to be nearly allied.

Genus **APHIOCHAETA**, Brues.

76. **Aphiochaeta xanthina**, Speiser, 1908.

One female specimen, bred from diseased pineapple suckers from Hawaii, 19.ii.1922 (*H. W. Simmonds*).

Likewise cosmopolitan.

Genus **PULICIPHORA**, Dahl.

77. **Puliciphora lucifera**, Dahl.

Recorded from Fiji by Prof. C. T. Brues (*Psyche*, xxvi, p. 49, 1919): one winged male and many females reared from dead snails, by Dr. Wm. M. Mann. No specimens in the present collection.

Genus **CHONOCEPHALUS**, Wand.

78. **Chonocephalus dorsalis**, Wandolleck.

Recorded by Brues (*loc. cit.*—wingless females only), with the preceding species. Brues states that "they breed in decaying animal and plant matter of various kinds, in common with some other Phorids, and have great opportunities to be distributed on shipboard."

MYIODARIA.

MYIODARIA INFERIORA.

Family SCIOMYZIDAE.

Genus **SEPEDON**, Latr.

79. **Sepedon costalis**, Walker, var. *latus*, var. nov., ♂♀.

In its typical form, this species is readily distinguishable owing to the presence of two velvety black spots at the sides of the frons, and by the dark colour of the wings, which have a yellowish stripe along the fore border; the present new variety is distinguished by the absence of the two black facial spots.

Some specimens of both sexes from Natova, Nadi, ix.1914, and viii.1916 (*R. Veitch*).

The occurrence of this variety in Fiji has already been mentioned by Prof. Hendel in his paper on the species of *Sepedon* (*Ann. Mus. Nat. Hung.*, ix, p. 267 and 269, 1911); the typical form as found in Aru and New Guinea, has the black spots near the mouth-border well developed as described by Kertész in 1899, and by De Meijere in 1908.

Dr. Kertész, in the description of the New Guinea specimens (*Termész. Füzet.*, xxii, p. 180, 1899), accepted by De Meijere (1908) and by Hendel (1911), says nothing of the broad deep black notopleural band, extending from the humeri, above the root of the wings, to the base of the halteres; moreover the two broad grey stripes on the mesonotum are separated by a broad, brown, complete median stripe, extending from the neck to the scutellum, broadened behind and there as broad as the base of the scutellum. Kertész writes of "a narrow middle line not reaching suture"; and Walker, in his original description of the Aru specimens (*Proc. Linn. Soc. Lond.*, iii, p. 110, 1859) says, "thorax with four slender indistinct darker lines."

It follows that what is here treated as a variety is more probably a distinct, endemic species.*

Genus **SCIOMYZA**, Fall.

80. **Sciomyza dives**, sp. n., ♂♀.

Distinguished by the marked pattern on the body and wings.

Type ♀, Lautoka, 18.viii.1922; type ♂ and an additional female specimen from Cuvu, vi.1915 (*R. Veitch*).

♂♀. Length of body 5.5–6 mm.; of wing 4.5–5 mm.

Head distinctly broader than thorax; occiput densely grey-dusted, with broad postvertical black spot, adorned with two vertical stripes of shining white dust. Frons flat, as broad as long, opaque, only anterior part shining and forming darker transverse band, with narrow yellowish border in front; median stripe reddish, with broad, elongate, shining black ocellar triangle; parafrothalia yellowish grey; face and peristomialia shining white, parafacialia yellowish grey, with broad, deep black spot on each side of base of antennae; mouth-border more yellowish. Eyes transverse. Antennae reddish, with two basal segments infuscated above; third segment densely pubescent, rounded at tip; arista basal, longer than antennae, plumose, plumosity distinctly broader than third antennal segment. Palpi and proboscis reddish. All bristles and hairs black; diverging pvt. and oc. strong; two pairs of strong or.; inner and outer vt. of about same length; a double row of occipital setulae, united to form a single row towards middle of eye-borders; peristomialia behind with two or three strong bristles on each side. Mesonotum

* This supposition is unquestionably correct.—E. E. Austen, 2.viii.1927.

opaque yellowish-grey, with numerous small black dots, on which are inserted setulae; along middle two parallel black stripes, convergent behind and united just in front of scutellum, continuing on latter in shape of a median black patch; sides with a black stripe; above notopleural suture yellowish-grey stripe not dotted with black; pleurae yellowish grey, not black-dotted, with brown stripe along upper border of mesopleura to root of wings, and another much smaller one on upper part of sternopleura, and moreover with isolated dark spot on lower part of mesopleura; sides of scutellum yellowish grey, not dotted with black; postscutellum and mesophragma grey. All bristles black; only one pair of dc. and one of acr., just in front of scutellum; pleurae bare, with only two pt.; scutellum with four bristles, and with small setulae only on black portion. Halteres yellowish, with the knobs infuscated outwardly. Abdomen shining black, each segment with yellowish-grey sides and with narrow yellowish-grey hind border, interrupted in middle, all

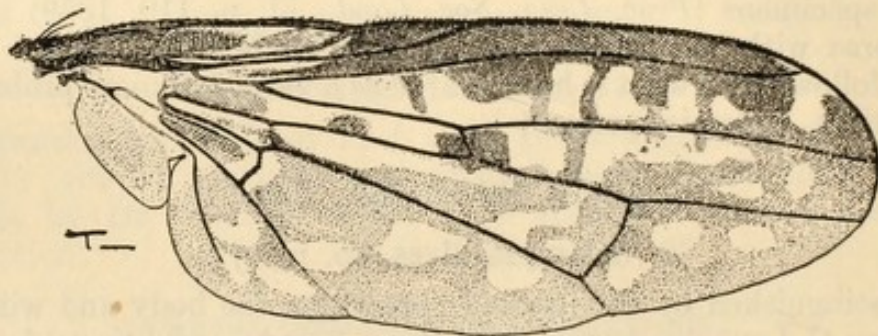


FIG. 24.—*Sciomyza dives*, sp. n. Wing of ♀. × 16.

these parts dotted with black; venter grey; all hairs black. Male genitalia rounded, reddish, black pilose. Coxae and legs reddish; all femora and tibiae with black tips, hind tibiae narrower with narrow black ring near base; front tarsi quite black, other tarsi with black terminal segments. Wings with normal venation; anterior transverse vein a little beyond middle of discal cell; apical portions of third and fourth veins parallel or very slightly convergent distally; sixth vein reaching hind border as a thin continuation; hind posterior transverse vein oblique, but rather straight. Costal, subcostal and marginal cells blackish, unspotted, forming black border; submarginal cell with three round dark spots, alternating with three dark stripes, and moreover with dark apex, before which is a whitish-hyaline spot; anterior transverse vein broadly margined with fuscous; first posterior cell with several fuscous spots or streaks, and with whitish hyaline spot before tip; first basal cell with blackish rounded spot in middle; remainder of wing with some diffused and indistinct greyish spots. Costa with very short ciliation; all veins bare.

Family CLUSIIDAE (Heteroneuridae).

Genus **HETEROMERINGIA**, Czerny.81. **Heteromeringia veitchi**, sp. n., ♂.

Very distinct from all the known species on account of the peculiar coloration of the body.

An important discovery, being the first species of the genus to be found in the Australian Region, judging by the recent monograph by Melander & Argo (*Proc. U.S. Nat. Mus.*, Vol. 64, Art. 11, pp. 1-54, Pls. 1-4, 1924).

Type ♂, a solitary specimen from Lautoka, 4.vii.1922 (*R. Veitch*).

♂. Length of body 2.5 mm., of wing 2 mm.

Occiput shining black, bare, narrowly reddish yellow below, near mouth. Frons very long, not broader than one eye, shining black, deeply excavated in middle, with rather elevated ocellar triangle; diverging pvt. and two pairs of vt. black, inner vt. being much longer than outer ones; three pairs of black, equidistant or., two basal pairs very strong and directed backwards, anterior pair on front edge weaker and directed forwards; ocellar and cruciate bristles wanting. Eyes quite bare, ovate, with vertical diameter about twice as long as horizontal. Antennae inserted very low down, near lower corner of eyes, short and entirely pale yellowish, almost whitish, even third segment, which is rounded and rather swollen; basal segments very small; arista long, shortly plumose. Face very short, whitish, like linear peristomialia; vibrissae long and black; a row of four short blackish bristles on peristomialia. Mouth-opening broad and rounded; proboscis short, pale yellowish. Thorax rather elongate and noticeably convex in front, entirely reddish; dorsum slightly shining, with broad shining black patch on anterior gibbosity, prolonged behind towards scutellum as broad darkish median stripe, evanescent behind middle; pleurae more shining, unspotted, becoming paler towards pectus. Scutellum shining reddish. Bristles blackish with yellowish tips, 1 hm., 2 npl., 1 a.sa. and 1 very long p.sa., 2 dc., anterior one in middle of dorsum; scutellum with long terminal pairs, and just before this a very short additional pair; pleurae with only sternopleural even prothoracic one being entirely wanting. Short dorsal pubescence pale yellowish; pleurae quite bare. Post-scutellum and mesophragma shining reddish. Abdomen shining black above and below, with narrowly reddish base; short hairs blackish; genitalia rounded, small, shining brownish. Legs, including coxae, pale yellowish, coxae and base of femora almost whitish; front femora with small blackish spot on inside at tip; front tibiae blackened on inner side; front tarsi black, rather broad, with two terminal segments white. No bristles on legs, only a few pale hairs on front femora; no praeapicals on tibiae;

pulvilli small, but distinct. Wings greyish-hyaline, with faint infuscation at extreme tip. Veins thick and blackened outwardly; first very short, ending much before anterior transverse vein, on anterior fourth of wing, second segment of costa being twice as long as first and a little longer than third, which is twice as long as fourth; second vein straight; third and fourth perfectly parallel; cross-veins approximated, straight and parallel, distance between them being only a little longer than length of posterior transverse vein; last portion of fourth vein at least six times as long as preceding one (namely, that between the two cross-veins).

Family MICROPEZIDAE.

Genus **TELOSTYLINUS**, Enderl.

82. **Telostylinus lineolatus**, Wiedemann.

Some specimens of both sexes from Natova, 20.xi.1916, Nausori, v.1921 (*R. Veitch*); Suva, 1921, "bred from cotton boll," Taviuni, v.1922 (*H. W. Simmonds*).

These specimens are very like those from North Queensland in my collection, and answer very well to Wiedemann's original descriptions. The antennae are darker, the third segment in the female being blackish, sometimes reddish only in the middle; but in the male it is entirely bright red. Coloration of body somewhat variable, the light stripes on the mesonotum and abdomen being sometimes indistinct. Legs usually blacker, the pale rings on the hind femora not always distinct, but sometimes in the female the femora are dark reddish; front coxae in the male with the row of stout spine-like bristles, and front femora in same sex below with a complete row of short spinules; in the female the coxae and femora are destitute of these spines.

I have not seen Javanese specimens, but assume that in the typical *T. lineolatus* the front coxae are spinose, because Enderlein (1922) says that it answers to the description of *T. mocsaryi*, Kertész, 1899, in which the coxae are said to be spinose. *T. obscuratus*, *T. luridus* and *T. dahli*, Enderlein, are all differently coloured.

Family ORTALIDAE.

Subfamily ULIDIINAE.

Genus **EUXESTA**, Lw.

83. **Euxesta quadrivittata**, Macquart, 1835.

Euxesta annonae, Loew (*nec* Fabricius), Grimshaw, Hendel; see Knab, *Bull. Brooklyn Ent. Soc.*, xi, p. 44, 1916.

This neotropical species has been reported from Hawaii.

1 ♂, Rarawai, 6.xii.1915 (*R. Veitch*).

The specimen before me differs from typical South American ones in having the second dark band on the wing much narrower, being only half as broad as the following hyaline band; the third band is quite straight.

Genus **ACROSTICTA**, Lw.

84. **Acrosticta pallipes**, Grimshaw.

One ♀ from Rarawai, 25.x.1915 (*R. Veitch*). The species was originally described from material from Hawaii, and subsequently recorded from South America (Bolivia, Peru) by Hendel, in 1909.

Subfamily **PLATYSTOMINAE**.

Genus **PLAGIOSTENOPTERINA**, Hend.

85. **Plagiostenopterina (Meringomeria) neurostigma**, sp. n., ♀.

Near *P. hebes*, Hendel, of Singapore, but distinct from it, as well from any other known species, on account of the very peculiar wing-pattern.

Type ♀ and an additional specimen of the same sex from Cuvu, 19.viii.1919 (*R. Veitch*).

♀. Length of body 8 mm.; of wing 7 mm.

Occiput yellowish; blackish above near eyes, but densely clothed with grey dust; vertical spot yellow, margined with black; pubescence dark above and in middle, whitish and longer below; in middle of sides, near eye-borders, a strong isolated black bristle; remaining bristles on head likewise black, two pairs of rather distant vt. placed exactly on vertical keel, and one rather strong genal. Frons as broad as one eye, somewhat broader in front, flat, smooth, reddish brown, clothed with short dense dark pubescence, shining white near eyes and there with whitish pubescence. Eyes bare, oval, twice as high as broad. Antennae inserted at middle of eyes, shorter than face; first segment very small, second globular and shining reddish, with sparse black hairs; third segment linear, four times as long as two basal segments together, blackish, narrowly reddish at base below; arista longer than antennae, shortly plumose on basal third, otherwise bare. Parafacialia narrow, shining white like frontal orbits and in continuation with them; face bare, with yellowish-grey dust, broadened below, with diverging antennal furrows, which do not reach lower corners of eyes; peristomialia broader than third antennal segment, yellowish grey; praelabrum circular, strongly developed, yellowish grey; palpi broad, yellow, with black bristles; proboscis thick, dirty brownish. Lower occipital swellings somewhat prominent, clothed with long whitish hairs. Thorax rather elongate, convex above with suture broadly interrupted in middle, metallic dark blue, with faint grey dust and short dark pubescence, larger on pleurae, chiefly on meso-

pleura; bristles black, 1 hm., 2 npl., 1 a.sa., 2 p.sa., 1 dc. very near scutellum, 1 mpl.; scutellum coloured like scutum, with four bristles. Mesophragma shining black. Calypters well developed, lower longer than upper, both dirty translucent, upper one with dark border, lower with white border and short white fringe. Halteres whitish. Abdomen entirely metallic blue, with rather long white pubescence on sides of first segment; ovipositor black. Front coxae reddish, white-dusted; four posterior coxae dark reddish brown; front legs with bluish femora, which have a row of black bristles above and one below; tibiae and tarsi black; middle legs with reddish femora and tibiae, and black tarsi; hind legs reddish brown, with femora blue on inner side, and black tarsi. Wings with oblique humeral cross-vein, and with costa there curved outwards, costal cell being correspondingly somewhat dilated; first vein long, ending

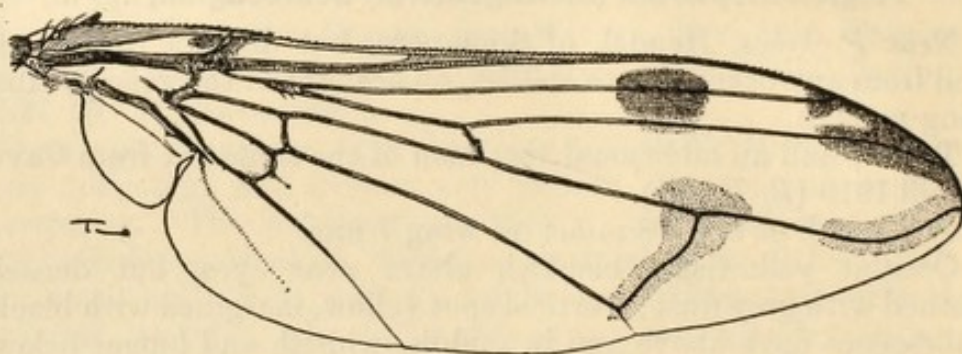


FIG. 25.—*Plagiostenoptera* (*Meringomeria*) *neurostigma*, sp. n.
Wing of ♀. × 12.

opposite posterior transverse vein, with very narrow, long stigmal spot; second vein straight, end of third vein curved downwards, that of fourth vein even more curved upwards, first posterior cell being thus very narrow at apex, anterior transverse vein oblique, its lower end a little beyond middle of discal cell; posterior transverse vein oblique, gently S-shaped, its lower end very near wing-border; anal cross-vein curved outwards; sixth vein reaching hind border. Wings greyish-hyaline, distinctly yellowish near base of second and third veins, where veins are also yellowish, while elsewhere they are blackish. Dark pattern much reduced, consisting only in a small spot at humeral cross-vein, an ovate spot on second cross-vein extending into marginal and submarginal cells, and situate above posterior transverse vein; a terminal spot at end of submarginal cell extending to a little below third vein and including an elongate subhyaline spot just below end of second vein. Moreover posterior transverse vein broadly, but very faintly margined with a dark shade; a similar spot at end of fourth vein, on its curved portion.

Genus **DUOMYIA**, Walk.86. **Duomyia fidschiensis**, Enderlein, 1924.

Near the Australian *D. maculipennis*, Hendel, 1914, and recently described by Enderlein, from a specimen from Fiji. Not represented in the present collection.

Genus **RIVELLIA**, Rob.-Desv.87. **Rivellia connata**, Thomson.

An easily distinguished Australian species.

Some specimens of both sexes from Natova, 10.i.1917 (*R. Veitch*); Maranaira, "ex diseased cotton boll," 13.vi.1924 (*H. W. Simmonds*); Lautoka, 26.iii.1920 (*W. Greenwood*).

88. **Rivellia basilaris**, Wied., var. **perspicillaris**, var. n., ♂♀.

This form is transitional to *R. fusca*, Thoms.

Type ♂ and ♀, and additional specimens from Rarawai, x.-xi.1915, and Cuvu, 1916 (*R. Veitch*).

Colour of thorax much darker than in type form, being sometimes quite shining black on middle of mesopleura and on entire whole sternopleura; of mesonotum much darkened, and sometimes quite shining black, red scutellum being thus very striking. All tibiae deep black. On wings, small dark band below base of stigma not quite separated from black basal stripe of first basal cell, but broadly united with it along fourth vein, thus forming a sharply defined, oval hyaline spot just below origin of third vein, and in contact with it.

In *R. basilaris* and *R. fusca* the black stripe in the first basal cell ends abruptly at the basal cross-vein of the discal cell, while in var. *perspicillaris* it is prolonged much beyond this cross-vein, along the fourth vein.

Genus **LAMPROGASTER**, Macq.89. **Lamprogaster flavipennis**, Macquart.

This Australian species has been recorded from Fiji by Enderlein (*Mitt. Zool. Mus. Berlin*, 10, p. 127, 1924). Not represented in the collection before me.

Genus **SCHOLASTES**, Loew.90. **Scholastes cinctus**, Guérin-Méneville.

This widely spread, Indo-Australian species is recorded from Fiji by Enderlein (*t. cit.*, p. 120, 1924). I have seen one female specimen from the New Hebrides, Santo, 30.xi.1923 (*H. W. Simmonds*).

91. *Scholastes bimaculatus*, Hendel.

Recorded from Fiji and Samoa by Hendel, and also by Enderlein (*l. cit.*, p. 121, 1924). I have seen one male from the New Hebrides, Santo, 30.xi.1923 (*H. W. Simmonds*).

92. *Scholastes lonchiferus*, Hendel.

Described from a specimen from the Cook Islands: two examples from Fiji determined by the Imperial Bureau. Not seen by me.

Genus *PSEUDORICHARDIA*, Hend.93. *Pseudorichardia flavitarsis*, Macquart, Hendel (syn. *P. angulata*, Thomson).

This very characteristic species, which is known to occur in Marquesas, Tahiti and Samoa, is not rare in Fiji: Cuvu, 14.ix.1920 (*W. Greenwood*); Natova, ix.1914 (*R. Veitch*); Rarotonga, 26.v.1921, "bred from oranges" (*H. W. Simmonds*).

The distinctive dark central spot on the wing differs in the case of the Rarotonga specimen from that figured by Macquart, and by Hendel, in having the hyaline indentation between the third and fourth veins not rounded, but terminating abruptly along the third vein. This seems to be the case with *P. angulata*, of which Thomson writes: "*plaga media angulata fusca.*" But even in the Fiji specimens of *P. flavitarsis* the fuscous spot is not really typical.

94. *Pseudorichardia flavitarsis*, Macq., var. *interrupta*, var. n., ♀.

Differing from the typical form in being of larger size, and in having the central black spot on the wing interrupted.

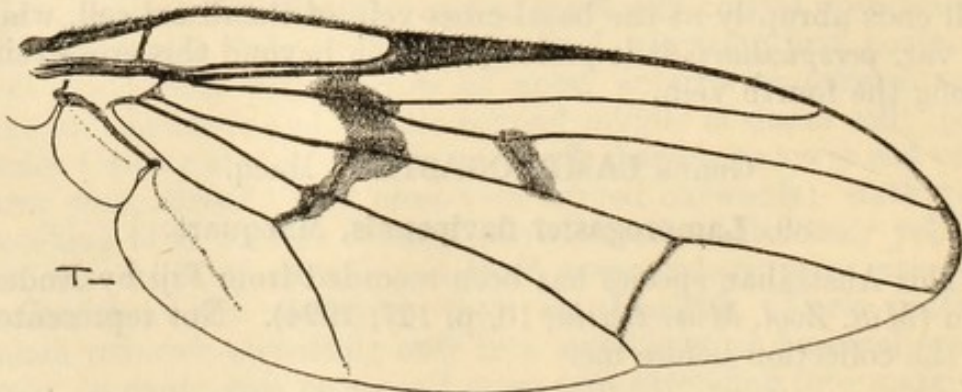


FIG. 26.—*Pseudorichardia flavitarsis*, Macq., var. *interrupta*, var. n. Wing of ♀. × 14.

Type ♀ from Loloti, 18.ix.1921, Lautoka Mts., 26.vi.1921 (*W. Greenwood*).

♀. Length of body and wing 6 mm.

Black patch on wing divided into two parts; one forming an arcuate band from before stigma, across bifurcation of second

and third veins, and terminal cross-vein of second basal cell, to anal cross-vein; second part reduced to a broad infuscation of oblique anterior transverse vein. Bases of marginal and sub-marginal cells, instead of being broadly infuscated to anterior transverse vein, quite hyaline, except very narrow part comprised in arched basal band.

The present form is perhaps only the female of the preceding species.

95. *Pseudorichardia aristalis*, sp. n., ♂.

The discovery of a second species of this genus is very important; the present species shows all the generic characters of *P. flavitarsis*, but has entirely reddish legs and quite unspotted wings; moreover the male has the arista dilated at the tip.

Type ♂, Natova, iv.1918; another male, Nausori, x.1920 (*R. Veitch*).

♂. Length of body 5 mm.; of wing 4.5 mm.

Head distinctly broader than thorax, and viewed from in front about as high as broad. Occiput flat, excavated above neck, shining black, with borders of eyes dusted inferiorly; lower swellings not distinct; occiput bare, with rather long black cilia on upper eye-borders, and with small bristle towards middle of postocular border. Frons parallel-sided, narrower than one eye, about twice as long as broad, flattened, or even slightly concave, and not at all prominent, even in front; frons entirely black, very little shining, without white orbits, clothed with short, dense yellowish pubescence; two pairs of black or. of about equal length, situate on vertical keel; no oc., but one pair of very short and weak or. near vertex. Lunula broad, conspicuous. Eyes bare, oval, with vertical twice as long as horizontal diameter. Antennae approximated at base, inserted towards middle of eyes, entirely reddish, with third segment twice as long as basal ones, and rounded at tip; arista basal, longer than antennae, quite bare, terminating in a small, ovate, black dilatation, white at extreme tip. Face broader below, being at mouth-border twice as broad as at antennae, concave in middle, distinctly prominent at mouth-border, shining reddish brown, like narrow peristomialia; antennal furrows narrow, contiguous to eye-borders, not reaching mouth; genal bristle very thin and short; praelabrum shining reddish-brown; palpi and proboscis dirty blackish, with pale hairs. Thorax somewhat longer than broad, not very convex on dorsum, with transverse suture narrowly interrupted in middle; thorax entirely shining greenish-blue, punctulate on dorsum, smooth on pleurae; short dorsal pubescence pale yellowish, that of pleurae longer and white; bristles black, 1 hm., 2 npl.; 1 a.sa. and 2 p.sa. Scutellum rounded, coloured like scutum, quite bare, with six bristles, but two basal pairs much smaller than terminal one. Mesophragma convex, shining bluish-black. Calypters atrophied, much smaller than in *P. flavitarsis*, and

blackish; halteres black, with pale stalks. Abdomen very narrow (sides curved downwards), entirely shining black, with slight bluish tinge and clothed with whitish pubescence, rather long at base and sides; genitalia small, rounded, shining black, not visible from above. Legs, including coxae, entirely reddish yellow, even to tips of tarsi; front femora with a row of thin yellowish bristles below; middle femora simple, but with two rows of short spinules below at tips; hind femora greatly thickened, under surface with two rows of spinules, complete except at base; hind tibiae curved. Wings greyish-hyaline, quite unspotted, with blackish stigma, and with narrow blackish border

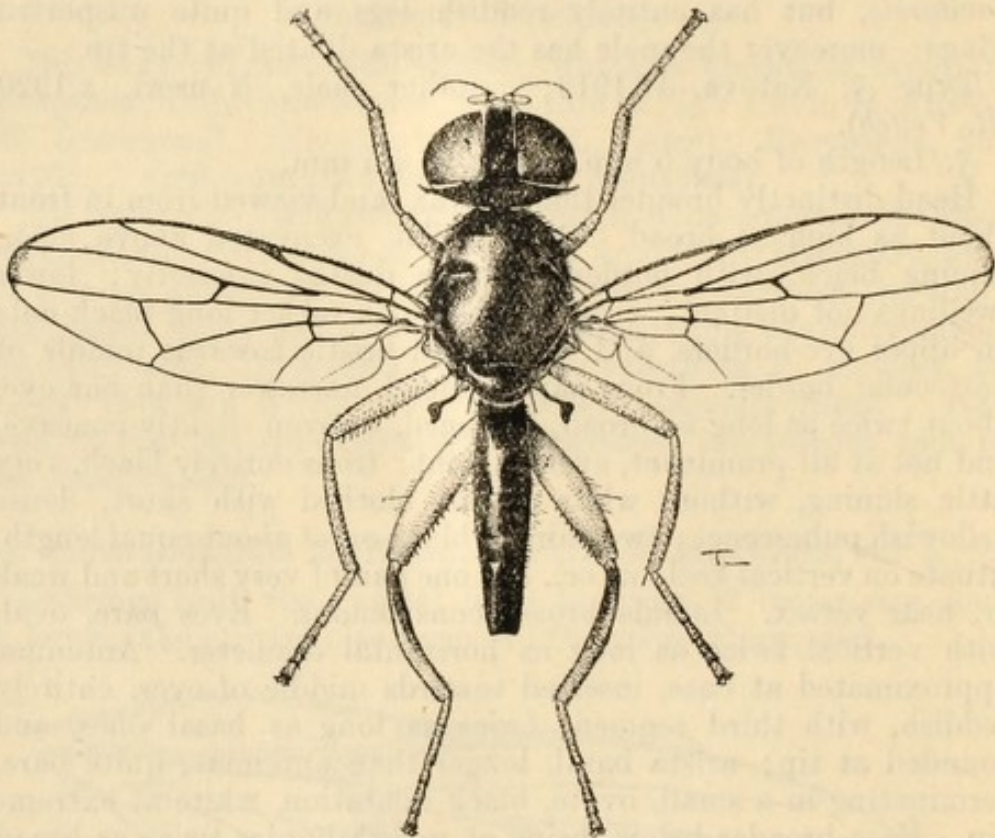


FIG. 27.—*Pseudorichardia aristalis*, sp. n. ♂. × 10.

at end of submarginal and first posterior cells. Veins black, with yellowish bases. Costa convex at base, straight elsewhere, not interrupted at end of auxiliary vein; first vein ciliated throughout, ending about opposite anterior transverse vein, with auxiliary vein close to it, and with tip normal; second vein straight; third vein ciliated to anterior transverse vein, with last portion quite straight and parallel to last portion of fourth vein; anterior transverse vein oblique, but less so than in *P. flavitarsis*, its lower end being situate beyond middle of discal cell; posterior transverse vein straight and less oblique; anal cell closed by a straight, oblique vein; sixth vein reaching hind border. Axillary lobe and alula broad, rounded.

Genus **NAUPODA**, Ost. Sack.96. **Naupoda simmondsi**, sp. n., ♀.

Very distinct from the known species of this genus on account of its long plumose arista, and the presence of a very long spur on the middle tibiae. There are two pairs of or. as in *N. strigifera*, De Meij., 1919, of Sumatra, in which the arista is shortly plumose.

Type ♀, a solitary specimen from Tamavua, 17.vii.1922 (*H. W. Simmonds*). Named in honour of the collector.

♀. Length of body about 3 mm.; of wing 2.8 mm.

Occiput shining black above and in middle, with broad yellowish border below near eyes; convex above neck, and with very slightly developed lower swellings; bare, even at border; two

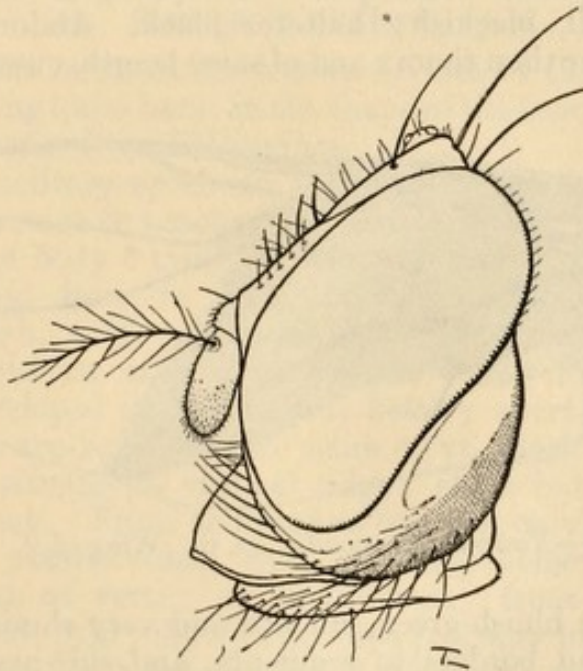


FIG. 28.—*Naupoda simmondsi*, sp. n. Head of ♀ in profile. × 60.

pairs of vt., exactly on vertical keel, black, thin, small, distant, and of about same length. Frons subquadrate, slightly, broader than long, as broad as one eye, flat, not at all prominent even in front, clothed with short scattered dark hairs, and with two pairs of black upper or., bent backwards; median stripe opaque reddish-brown; very small, not broader than orbit, and including ocellar tubercle; latter very small, and without bristles; orbits broad, transversely rugulose and metallic green on vertical plates, reddish, whitish-dusted and punctulate elsewhere. Lunula small, concealed. Eyes bare, ovate. Antennae inserted at middle of eyes, approximate at base, entirely dark reddish; second segment prominent, globular, shining; third segment extending to middle of face, rounded at tip; arista basal, longer than antenna, with long scattered plumosity (very like that of certain *Drosophilidae*), with five or six hairs above and three

or four below. Face short and broad, not longer than frons, concave in middle and prominent at mouth-border, reddish just below antennae, shining metallic blue elsewhere; narrow peristomialia reddish, whitish-dusted, with several hairs, but without distinct genal bristles; praelabrum not prominent, black; palpi and proboscis retracted, blackish. Thorax short, broader than head and broader than long, with widely interrupted suture; thorax shining metallic green, finely punctulate dorsally, shining black and smooth on pleurae, even humeri being black; short, scattered dorsal pubescence black; bristles black, thin, short, 1 hm., 2 npl., 1 a.sa., 2 p.sa., 1 prsct. just in front of scutellum, but no dc., 1 short mpl. Scutellum like scutum, but bare and smooth, convex, rounded, with six bristles, two basal pairs much shorter than third pair. Mesophragma shining black; calypters small, blackish; halteres black. Abdomen rounded, convex, broader than thorax and of same length, curved downward

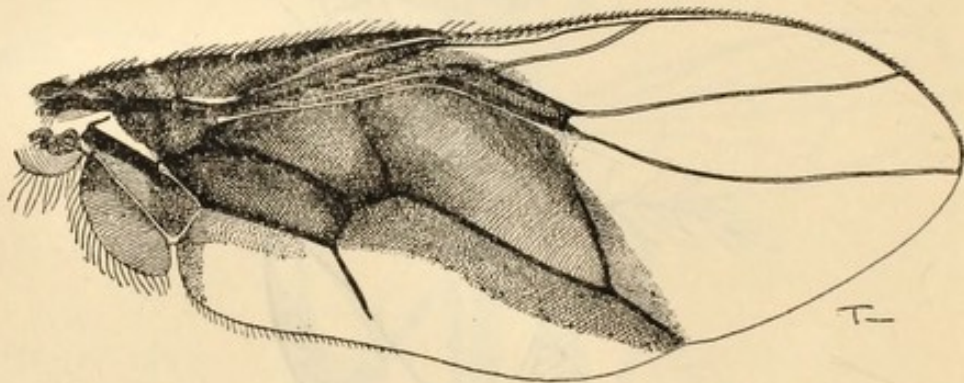


FIG. 29.—*Naupoda simmondsi*, sp. n. Wing of ♀. × 30.

at tip, metallic bluish-green, smooth and very shining, with purplish-black hind borders to segments, and side-margins; quite bare, even at base; venter black; ovipositors black, broadly triangular, flat, half as long as abdomen. Legs short and stout, with all coxae black; femora and tibiae brownish, bases of tibiae yellowish; all tarsi whitish; front femora with row of long thin bristles below; middle tibiae with very long black spur, about half as long as tibia; hind legs simple. Wings folded in middle and twisted, greyish hyaline, with broad, brown basal patch, extending from costa to lower border of anal cell and beyond fifth vein, and outwardly to a little beyond posterior transverse vein and ending there acutely just at end of fifth vein. Costa rather straight at base and with long ciliation; first vein short, with auxiliary vein close to it, ending before middle of wing; second vein very close to costa, short, ending opposite posterior transverse vein; third vein very close to fourth before short, small anterior transverse vein; last portions of third and fourth veins gradually diverging, but parallel towards apex, fourth ending a little below wing-tip; posterior transverse vein long

and very oblique, lower external angle of discal cell being therefore acute and produced; second basal cell very broad at end, cross-vein dividing it from discal cell being long and oblique; anal cell broad, but regularly rectangular, its terminal cross-vein being straight and almost perpendicular, lower external angle of anal cell therefore a right angle; sixth vein stout, but not reaching hind border. Axillary lobe broad and short, almost rectangular; alula rounded.

Genus **PTEROGENIA**, Big.

Of this genus there are no specimens from Fiji in the collection before me; but the following very peculiar form is represented by an example from another Pacific Island.

96A. **Pterogenia nudiseta**, sp. n., ♀.

Very different from all the known species of the genus owing to its arista being quite bare; in the shape of the head it approaches *P. laticeps*, Bezzi, of the Philippines.

Type ♀, a solitary specimen from Lord Howe Is., 3.xi.1923, "said to do damage to peaches and bananas" (*H. W. Simmonds*).

♀. Length of body 6 mm.; of wing 5.8 mm.

Head viewed from in front broader than high. Occiput entirely whitish, with transverse dark band in middle above neck, prolonged on each side towards eyes; lower swellings somewhat developed and prominent below; short hairs whitish, even those on eye-borders; two pairs of vt. black and of about same length, situate on vertical ridge; short but strong genal bristle also black. Frons as broad as one eye, only a little longer than broad, parallel-sided, but distinctly somewhat broader in middle than at vertex, or at antennae; frons flat and not at all prominent, pale yellowish and opaque, only broad but short vertical plates being dark reddish and shining; very small ocellar spot blackish, without bristles; frons clothed with dense, short, dark yellowish hairs; lunula broad, whitish, free. Eyes bare, subquadrate in front view, very narrow in profile, their vertical diameter about two and a half times as long as horizontal one. Antennae inserted below middle of eyes, separated at base (distance between them equal to length of second segment), short, not extending below middle of face, and entirely reddish, with second segment globular, and third not quite twice as long as second, rounded at tip more yellowish, densely pubescent, darkened on upper border, which is slightly concave; arista basal, erect, twice as long as whole antenna, quite bare, very little incrassate at base. Face broad and short, shorter than frons, very concave in middle, portion just below base of antennae projecting in shape of a rounded tubercle, and mouth-border being distinctly prominent; antennal furrows broad and short, very close to eyes, parafacialia being linear; face bare, entirely pale yellowish, opaque, without any dark pattern. Peristomialia

narrow for a *Pterogenia*, measuring only one-fourth of vertical diameters of eye, pale yellowish, unspotted, with dark hairs near eyes; praelabrum rounded, not very prominent, pale yellowish; palpi broad, yellowish, blackish on margin; proboscis short and thick, dirty blackish. Thorax short, broader than long and broader than head; transverse suture broadly interrupted in middle; dorsum shining black, with faint bluish reflections, clothed with short, yellow pubescence, disposed in regular rows; humeri, and small stripe thence on each side to root of wing yellowish but not conspicuous, and notopleural line black; an indistinct, very narrow, supra-alar, postsutural yellowish stripe; pleurae clothed with rather long whitish hairs, and with broad whitish stripe including lower part of humeri and almost entire meso- and pteropleura; propleura, sternopleura, pectus, hypopleura and mesophragma shining black. Scutellum strongly developed, rounded behind, coloured, punctulate and pubescent like scutum, with four black bristles on hind border. Bristles of thorax black, short, 1 hm., 2 npl., 1 a. and 2 p.sa., 1 prsct. just in front of scutellum, 1 mpl. at extreme upper posterior angle of mesopleura. Calypters dirty translucent, lower one rather broad, with brown border; halteres short, pale yellowish. Visible part of abdomen formed of three tergites only, and as long as thorax, very convex, and carinate, forming prominent point just behind hind border of scutellum; abdomen shining metallic blue, with short pale hairs at sides; first and second segments concealed below large scutellum, but sides of second segment broadly visible, shining blue, with rather long whitish hairs; behind these three segments a yellow membrane above black, flat, triangular, pointed ovipositor. Sternites black, very small, venter consisting mainly of dirty yellowish membrane. Front coxae shining black outwardly, yellowish behind, remaining coxae black; trochanters yellowish; femora and tibiae yellowish but with blackish patches on outer side, hind pair almost entirely black; tibiae somewhat curved, with yellowish bases and row of dense black hairs posteriorly; hind femora not thickened, front femora with row of thin bristles below; all tarsi with two basal segments whitish, and three terminal ones blackish. Wings with neuration like that figured by Hendel (*Platyst.*, pl. iii, fig. 49), but discal cell much shorter than in all species illustrated, being almost rectangular, its basal cross-vein not much shorter than terminal one; anterior transverse vein on middle of discal cell; sixth vein thick and reaching hind border; first basal cell very narrow; second basal cell very long and dilated at end. Dark pattern very like that of *P. hologaster*, Hendel (pl. iii, fig. 48), but basal portion less spotted, almost uniformly infuscated, with dark spot only in middle of second basal cell. Stigmal band dilated below anterior transverse vein, and including almost entire discal cell; poststigmal band united with dark discal patch in front of anterior transverse vein.

Praeapical band much broader above, completely filling end of marginal cell (while in *P. hologaster* its end is hyaline, with isolated fuscous spot below second vein).

Family LONCHAEIDAE.

Genus LONCHAEA, Fall.

97. *Lonchaea (Lamprolonchaea) aurea*, Macquart.

A well known, widely distributed species, recorded usually under the name of *L. splendida*, Loew.

Lautoka, iii.-viii. (*W. Greenwood*).

Of the subgenus *Carpolonchaea* there are examples of three species, all of which have white or pale yellowish and white-fringed calypters, and all the tarsi entirely black; they may be distinguished as follows:

- a (d)*. Sixth longitudinal vein prolonged to hind margin, even if largely vestigial in middle; body shining black or slightly aeneous; scutellum quite bare, or nearly so.
- b (c)*. Larger species, with long plumose arista, plumosity a little broader than third antennal segment; last abdominal segment of male much longer than preceding one; scutellum pollinose.....*filifera*, Bezzi.
- c (b)*. Smaller species, with plumosity of arista short, and narrower than third antennal segment; last abdominal segment of male as long as preceding one; scutellum not pollinose.....*calva*, Bezzi.
- d (a)*. Sixth vein reduced to a short stump; body shining blue; sides of scutellum pubescent; plumosity of arista narrower than third antennal segment.....*cyaneonitens*, Kertész.

98. *Lonchaea (Carpolonchaea) filifera*, Bezzi, 1913 and 1920.

Described from a specimen from the Philippines, but possibly identical with *L. pollinosa*, Kertész, of New Guinea.

Numerous specimens of both sexes, Lautoka, 25.iii.1920 (*W. Greenwood*); Natova, 10.i.1917, Labasa, xi.1914 (*R. Veitch*).

99. *Lonchaea (Carpolonchaea) calva*, Bezzi.

Another Philippine species.

Both sexes from Savu Savu, iii.1922, Taviuni, 20.xii.1921 (*H. W. Simmonds*).

The as yet undescribed male is very like the female; it has the frons only half as broad, velvety black, with shining black vertical plates; abdomen black pubescent, with last segment not longer than preceding one; thorax and scutellum shining black, destitute of pollinosity; plumosity of arista narrower than third antennal segment, which ends a little above mouth-border.

100. *Lonchaea (Carpolonchaea) cyaneonitens*, Kertész.

Described from material from New Guinea, and very distinct from all the remaining species on account of the shining blue colour of the whole body.

One female specimen, 26.xii.1921 (*H. W. Simmonds*).

Frons narrow for a female, being narrower than one eye; third antennal segment very long, extending below mouth-border; plumosity of arista narrower than third antennal segment; scutellum pubescent on sides; ovipositor shining black; wings with sixth vein reduced to a basal stump, its vestigial continuation being less distinct, and at any rate the darker portion near the wing-margin being quite wanting.

Family TRYPETIDAE.

Subfamily DACINAE.

No fewer than five species of this subfamily are recorded in economic literature as occurring in the Fiji Islands, or as bred from imported fruits; three other species are recorded from the Tonga Islands. All of these appear to be widely distributed through the Pacific Islands or in Australia, but they are quite unknown in the Oriental and Ethiopian Regions; they therefore seem to be peculiar to the Australian Region. All belong to the genus *Chaetodacus*, having 3 supra-alar and praescutellar bristles (except *C. cucumis*), and a distinct praeaxillary lobe on the wings in the male (except *C. cucumis*). The Philippine species were worked out by me in 1919, but of these only *B. umbrosus*, *Ch. ferrugineus*, *Ch. caudatus* and *Ch. cucurbitae* appear to be found in the Pacific Islands or in Australia.

I give below a synoptic table for all the species known to occur in the Pacific Islands or Australia, with the remark that only one species is recorded (without a name, but possibly *Ch. caudatus*) as having been found in New Guinea, and that no species are known to exist in New Zealand, though two have been bred there from fruits imported from Fiji. Most of the following species seem to be spread by commerce; but it is noteworthy that, with the exception of the four mentioned above, they are all endemic.

- 1 (2). Antennae much longer than face, with first segment as long as second; abdomen stalked; no prsct.; wings with very broad brown costal border, extending evenly from anterior margin to fourth vein; second basal cell narrow and elongate.....*Mellesis aequalis*, Coq.
- 2 (1). Antennae not, or only slightly longer than face, with first segment not longer, or even shorter than second; abdomen not stalked; second basal cell short and broad.
- 3 (8). Wings banded, that is, with fuscous transverse bands in middle, besides costal border and anal band, if present (*Bactrocera*).
- 4 (7). Wings with two fuscous bands across middle, and with fuscous costal border.
- 5 (6). Two fuscous middle bands broad, especially that including both transverse veins, and quite separate on hind border of wing; scutellum entirely yellow.....*B. umbrosus*, Fabr. (*frenchi*, Frogg.).
- 6 (5). Two fuscous middle bands narrower and confluent towards hind border of wing; posterior transverse vein not included in dark bands; scutellum with black spot above.....*B. longicornis*, Guér.

- 7 (4). Wings with but one fuscous band in middle, and with no costal border; scutellum with black middle stripe, dilated behind.
B. frauenfeldi, Schin.
- 8 (3). Wings without transverse bands across middle, but either with more or less developed costal border and anal band, or with rounded spot at end of third vein, or with broadly infuscated transverse veins, or entirely infuscated (*Chaetodacus*).
- 9 (10). Wings entirely infuscated, with only some hyaline streaks in basal, first posterior and anal cells; face black-spotted; 2 set.; frons clothed with short black bristles on blackish blotch just above antennae.
Ch. pepisalae, Frogg.
- 10 (9). Wings hyaline, with more or less extensive fuscous markings; no such bristly blotch on frons above antennae.
- 11 (20). Dark costal border of wing broad, extending throughout to third vein, often dilated at end to form distinct broad spot, or passing broadly beyond third vein along tip of wing.
- 12 (15). Posterior transverse vein broadly infuscated; costal border ending in broad spot at tip of third vein; face black-spotted; 3 i.or.
- 13 (14). Scutellum with two bristles only; terminal fuscous spot on wing not reaching fourth vein below.....*Ch. cucurbitae*, Coq.
- 14 (13). Scutellum with four bristles; terminal spot extending below beyond fourth vein.....*Ch. chrysotoxus*, Hend.
- 15 (12). Posterior transverse vein not infuscated.
- 16 (17). Only two scutellar bristles; face not black-spotted; anterior transverse vein broadly margined with fuscous; dark costal border not dilated to form spot at end of third vein....*Ch. curvipennis*, Frogg.
- 17 (16). Scutellum with four bristles; face black-spotted; anterior transverse vein not infuscated.
- 18 (19). Three i.or.; coxae yellowish; costal border dilated into rounded spot at end of third vein; thorax more or less reddish, at least reddish on dorsum in front of suture, and with yellow postsutural median stripe.....*Ch. caudatus*, Fabr.
- 19 (18). Two i.or.; coxae blackish; costal border not dilated at end; thorax intensely black on dorsum and pleurae, and without yellow postsutural median stripe.....*Ch. quadrisetosus*, sp. n.
- 20 (11). Dark costal border narrow, not reaching third vein in middle and never dilated at end, or even no costal border at all beyond stigma.
- 21 (36). A distinct (even if narrow) dark costal border beyond stigma to end of third vein or a little beyond.*
- 22 (23). No prset., but four set.; no praeaxillary lobe to wing in male; face black-spotted; mesonotum with yellow postsutural median stripe.
Ch. cucumis, French.
- 23 (22). Prset. well developed and only two set.; male with praeaxillary lobe to wings.
- 24 (31). Face with two black spots.
- 25 (30). Two yellow hypopleural spots; two facial black spots broad, extending to end of antennal furrows; scutellum of usual shape.
- 26 (27). Mesonotum reddish, without black pattern; pleurae reddish; bristles on head and thorax yellowish....*Ch. ferrugineus tryoni*, Frogg.
- 27 (26). Mesonotum and pleurae mainly black, as with black pattern; bristles black or blackish.
- 28 (29). Anterior part of mesonotum with black median stripe, and black transverse band; yellow postsutural supra-alar stripes curved inwards along transverse suture.....*Ch. ornatissimus*, Frogg.
- 29 (28). Mesonotum in front entirely, with only humeral spots yellow; supra-alar stripes straight and abruptly truncated at suture.
Ch. froggatti, Bezzi (*zonatus*, Frogg.).
- 30 (25). Only one yellow hypopleural spot; facial black spots small,

* This character being sometimes doubtful, several species are repeated below (see no. 36).

- restricted to prominent mouth-border; scutellum conspicuously emarginate behind.....*Ch. xanthodes*, Broun.
- 31 (24). Face destitute of black spots, or rarely only with infuscated antennal furrows in female; mesonotum black.
- 32 (33). No yellow humeral spots; scutellum entirely yellow; mesonotum with two white-tomentose admedian stripes.....*Ch. passiflorae*, Frogg.
- 33 (32). Yellow humeral spots present; scutellum black-spotted or entirely black; no such stripes on mesonotum, or only very indistinct ones.
- 34 (35). Scutellum yellow, with black median stripe; notopleural callus yellow; dark costal border continuous from stigma to beyond end of third vein.....*Ch. facialis*, Coq.
- 35 (34). Scutellum entirely black; notopleural callus black; dark costal border interrupted between ends of first and second veins.
Ch. melanotus, Coq. (*rarotongae*, Frogg.).
- 36 (21). No dark costal border beyond stigma, or only very indistinct one; anal brown stripe well developed.
- 37 (40). Anterior transverse vein distinctly margined with fuscous; only two scutellar bristles; two yellow hypopleural spots.
- 38 (39). Scutellum black, with yellow sides; mesonotum with whitish median stripe.....*Ch. psidii*, Frogg.
- 39 (38). Scutellum entirely black; no such stripe on mesonotum.
Ch. melanotus, Coq.
- 40 (37). Anterior transverse vein not clouded.
- 41 (46). Face with two black spots.
- 42 (43). Only one yellow hypopleural spot; facial black spots small, limited to mouth-border; scutellum long, flat, emarginate behind.
Ch. xanthodes, Broun.
- 43 (42). Two yellow hypopleural spots; facial black spots broad; scutellum of usual shape.
- 44 (45). Scutellum with four bristles, black, with narrow yellow margin and yellow underside.....*Ch. kirki*, Frogg.
- 45 (44). Scutellum with two bristles only, and entirely yellow.
Ch. tongensis, Frogg.
- 46 (41). Face unspotted, or only with infuscated antennal furrows in female; scutellum entirely yellow, with two bristles only; two yellow hypopleural spots.
- 47 (48). A bright yellow humeral spot.....*Ch. virgatus*, Coq.
- 48 (47). No yellow humeral spot.....*Ch. passiflorae*, Frogg.

Genus **CHAETODACUS**, Bezzi.

101. **Chaetodacus curvipennis**, Froggatt, 1909.

Reported by Froggatt as bred in Sydney, from larvae taken from bananas in shipments of fruit from Suva, Fiji; reported also by Fawcett, 1913.

Readily recognisable owing to its wing-pattern; not represented in the present collection.

101A. **Chaetodacus quadrisetosus**, sp. n., ♂.

A robust, black, yellow-spotted species with black-spotted face, four scutellar bristles, black coxae, a rather broad complete dark costal border on the wings, and a very broad fuscous anal stripe.

Type ♂, a single specimen from New Hebrides, Santo, 30.xi.1923 (*H. W. Simmonds*).

In general aspect and pattern very like *Ch. froggatti*, Bezzi

(*Ch. zonatus*, Frogg.), but distinguished, besides the presence of four set., by its much darker coloration. Among the species with four set. it is very near *Ch. maculipennis*, Dol., of India and the Sunda Islands, and *Ch. tetrachaetus*, Bezzi, of the Philippines, both of which have however a postsutural yellow stripe on the mesonotum; in *Ch. hageni*, De Meij. (India and the Sunda Islands), the dark costal border is moreover dilated into a spot at end of the third vein, as in *Ch. caudatus*, F. In *Ch. kirki*, Frogg., which occurs in the Pacific Islands, the scutellum is black above, and the wings are described as being destitute of pattern. The remaining species (*Ch. bipustulatus*, Bezzi, *Ch. garciniae*, Bezzi, *Ch. duplicatus*, Bezzi, *Ch. scutellaris*, Bezzi, *Ch. mundus*, Bezzi, *Ch. scutellinus*, Bezzi, *Ch. pubescens*, Bezzi, *Ch. scutellatus*, Hendel, *Ch. bezzii*, Miyake, and *Ch. chrysotoxus*, Hendel) are all very different.

♂. Length of body 8 mm.; of wing 7 mm.

Occiput shining reddish, blackish in middle above neck, yellowish at sides and below, and there clothed with whitish hairs. Frons short and broad, only one and a half times as long as broad, opaque yellowish, with black ocellar dot, three black spots on each side and darkish patches in middle; lunula shining dark brown. Only two i.or.; all bristles black, except yellowish genal one; small and short ocp. likewise black. Basal segments of antennae reddish, second longer than first; (third wanting in type). Face reddish, with two broad, rounded black spots, extending from mouth-border to middle of antennal furrows; peristomialia reddish, with dark subocular spot. Palpi yellowish; proboscis dirty reddish. Thorax entirely black, opaque, dorsally with short whitish pubescence; no reddish parts, but striking yellow markings as follows: humeri entirely, praesutural calli, straight supra-alar stripe on each side, beginning at suture and ending acutely some distance before scutellum, a not very broad mesopleural stripe continued below into small sternopleural spot, two broad hypopleural spots. Mesophragma entirely shining black. Bristles dark yellowish or blackish; middle sep., a.sa. and prset. well developed. Scutellum of usual shape, with four bristles, basal pair only a little smaller; scutellum bright yellow, with narrow black base, punctulate and pubescent like scutum. Halteres whitish. Abdomen entirely opaque black, punctulate and pubescent like mesonotum, second segment with broad, uniform, reddish band on hind border; third segment with row of long black cilia on each side; last segment with deep black oval patches, area between them and hind border dark-reddish; genitalia reddish; venter reddish, with black sternites. All coxae black; femora blackish brown with yellowish bases, broader in case of hind pair; four anterior tibiae yellowish, hind tibiae black on inside, dark reddish on outer surface; all tarsi whitish at base, blackish at tips, front pair with only praetarsi whitish. Wings hyaline, shining, iridescent, with rather broad, complete, blackish

costal border, extending below to third vein (costal cells and most of basal part of submarginal cell more yellowish, stigma and marginal and end of submarginal cells blacker), and beyond end of latter, but not dilated into a spot. Anal blackish stripe very broad, as broad as blackish fore border, with greyish spot in outer corner of axillary lobe. Portion of first basal cell above dilated second basal cell quite blackish. Veins blackish; last portion of fourth vein almost straight, only slightly curved at base. Praeaxillary lobe distinct, but not very prominent.

102. *Chaetodacus facialis*, Coquillett, 1910.

Distinguished by the unspotted face, peculiarly coloured scutellum and narrow but complete dark costal border on the wings.

Bred at Sacramento, California, from guavas shipped from Tonga Island. One ♀ from Tonga, v.1922 (*C. E. Wood*).

To Coquillett's original description may be added:—Antennal furrows in female not always black; frons twice as long as broad, without lateral dark spots; all cephalic bristles black; only two i.or. Humeri entirely yellow, like notopleural calli; two yellow hypopleural spots; scutellum of usual shape, with only one pair of bristles; all bristles black, middle sep., a.sa. and prsct. well developed; mesophragma shining black. Halteres pale yellowish. Hind femora sometimes narrowly black at tips; hind tibiae sometimes blackish, but broadly yellowish across middle.

103. *Chaetodacus melanotus*, Coquillett, 1910 (*Ch. rarotongae*, Froggatt, 1911).

Distinguishable at once by its entirely black scutellum. Bred at Sacramento, California, from oranges shipped from Cook Island, and in New Zealand, from mangos imported from Rarotonga (Cook Island); recorded from Fiji by Simmonds (1920), from guavas, wild fruits and oranges; and by Wright (1923), as *Ch. rarotongensis*, from many kinds of fruits.

One ♀ from Rarotonga, bred from orange, 1921 (*H. W. Simmonds*).

A robust and very dark species, of relatively large size; mesonotum elongate; scutellum flat above, shaped as in *Ch. xanthodes*, but not emarginate behind. Frons twice as long as broad, clothed with shining white dust, without dark lateral spots; face unspotted; only two i.or.; antennae much longer than face, blackened at base. Dorsum of thorax, including scutellum, entirely black, rather shining, punctulate, clothed with rather long pale yellowish pubescence; humeri entirely yellow, but praesutural calli quite black; yellow mesopleural stripe broad; two yellow hypopleural spots; mesophragma black, reddish yellow in middle; bristles black, sep., a.sa. and prsct. well

developed. Halteres whitish. Scutellum with only terminal pair of bristles. Abdomen entirely black, shining, punctulate and pubescent like mesonotum; venter with yellow membrane, and black sternites; ovipositor black, flat. Coxae yellow; all tarsi quite blackish. Wings with dark stigma, and with distinctly clouded anterior transverse vein; no distinct, or only very faintly indicated, anal stripe. Dark costal border very peculiar, being interrupted beyond stigma, and distinct only from end of second vein to beyond end of third, but faintly developed and not dilated at end.

104. *Chaetodacus psidii*, Froggatt, 1899 and 1909.

Distinguished by the whitish median stripe on the mesonotum, and the wing-pattern. Froggatt, writing in 1909, says: "bred from larvae obtained from infested guavas condemned in a shipment of fruit from Noumea, New Caledonia; specimens were afterwards obtained from granadillas that came in a similar condition from Fiji." Not represented in the collection before me.

105. *Chaetodacus tongensis*, Froggatt, 1911.

Recognisable by its hyaline, unspotted wings. Bred in New Zealand from mangos imported from Tonga. Not seen. No specimens in present collection.

106. *Chaetodacus xanthodes*, Broun, 1904.

Easily recognisable by its single hypopleural spot, and by the unique shape of the scutellum.

Bred in New Zealand, from larvae obtained from various fruits brought from Suva, Fiji, and from Rarotonga.

Some specimens from Nadi, 22.vi.1915, and Cuvu, xi.1921 (*R. Veitch*).

Entirely shining reddish, without black markings, its elongate mesonotum and peculiar scutellum are unique among the species at present known. Occiput shining yellowish, without any black marking; frons twice as long as broad, opaque dark reddish unspotted, with very narrow, shining yellowish orbits; bristles black, three i.or., very strong vt., thin, short, yellowish ocp. Antennae entirely pale yellowish, longer than face, with third segment shining white; arista reddish. Face shining yellowish; antennal furrows unspotted; two very small rounded black spots (overlooked by Broun and by Froggatt) on prominent mouth-border. Palpi reddish; proboscis dirty brown. Thorax parallel-sided, much more elongate than in any other species, entirely shining reddish, finely punctulate, with sparse pale pubescence; on mesonotum a median stripe of shining white dust; an extremely characteristic yellow stripe on each side of mesonotum, beginning at yellow humeri and running straight and complete to sides of

scutellum; praesutural calli reddish; pleurae shining reddish, with only small yellow spot in middle of mesopleura, and with but one hypopleural spot. Bristles black, rather strong; scp., a.sa. and prset. well developed. Mesophragma shining reddish, darker across middle; halteres reddish. Scutellum flat, long, shining reddish and punctulate like scutum, with yellow sides and indistinct yellowish median stripe; hind border, between single pair of rather thin bristles, peculiarly emarginate and distinctly concave. Abdomen entirely shining reddish, punctulate and pubescent like mesonotum, without any black or yellow marking; ovipositor shining reddish. Coxae and legs entirely reddish, pale pubescent, only terminal segments of tarsi slightly infuscated. Wings very shining, iridescent, with faint, suffused, yellowish tinge; stigma, portion of first basal cell just above dilated second basal cell, and anal cell yellowish, but no distinct anal stripe; dark costal border narrow, not extending below beyond second vein and running along margin to beyond end of third vein. Last portion of fourth vein straight, but gently curved upwards.

107. *Chaetodacus virgatus*, Coquillett, 1910.

Distinguished by the unspotted face, the yellow humeral spots and the wings not being bordered with fuscous beyond the stigma.

Bred at Sacramento, California, from a guava imported from Tonga Island. Not represented in the collection before me.

108. *Chaetodacus passiflorae*, Froggatt, 1911.

Distinguished from all the other species by the absence of the yellow humeral spots.

Bred in Sydney from granadilla fruits imported from Fiji, and also in New Zealand from fruits from Fiji; reported many times from Fiji, or bred from various fruits, by Jepson (1917) and by Simmonds (1921-23).

Several specimens of both sexes from Lautoka Mts., 10.i.1921, "bred from fruits of *Eugenia malaccensis*" (W. Greenwood); Lautoka, 1919, Nadi, 1914 (R. Veitch); Fiji (H. W. Simmonds).

Froggatt gives the length as 9 mm., but all the specimens examined by me are not more than 5 mm. Occiput pale yellowish, broadly shining black above, but always yellowish on eye-borders. Frons narrow, two and a half times as long as broad, unspotted, shining white, with only two i.or.; face entirely pale yellowish, shining in middle, white-dusted at sides, quite unspotted; antennae and palpi reddish; all bristles black. Mesonotum shining black, finely punctate, with pale pubescence and with two parallel admedian stripes of white dust; humeri entirely shining black, praesutural calli yellow. Pleura and mesophragma shining black, broad mesopleural patch and both hypopleural spots yellow. All bristles black; middle scp., a.sa., and prset.

well developed. Scutellum of usual shape, entirely yellow, with narrow black base and with only terminal pair of bristles. Halteres whitish. Abdomen entirely shining black, finely punctate and with rather long whitish pubescence; only terminal segment sometimes reddish on oval patches or entirely so, especially in female; third segment in male ciliated; ovipositor black, flat, short; venter with reddish membrane and black sternites. Basal segments of all tarsi whitish. Wings entirely hyaline, shining, iridescent; praeaxillary lobe in male well developed; stigma yellowish; a narrow, not always distinct, fuscous border, not extending beyond second vein, and ending beyond end of third vein; no distinct anal stripe, but in male a fuscous spot at end of sixth vein. Last portion of fourth vein only slightly S-shaped.

Subfamily *CERATITINAE*.

Genus **OCNEROS**, Costa.

109. **Ocneros punctilabris**, sp. n., ♂.

A true *Ocneros*, that is, with the dc. inserted near the line of a.sa., but differing from all its known congeners in the want of prst. It is allied to the widely spread Oriental *O. praestans*, Bezzi, but distinguished by the black facial spot being situate on the prominent mouth-border, and by the broader black front band on the wings.

Type ♂, Ovalau, 7.xii.1921, another specimen Taviuni, 24.xii.1921 (*H. W. Simmonds*); Natova, 1914 (*R. Veitch*).

♂. Length of body 5-5.5 mm.; of wing 5 mm.

Head entirely yellowish. Occiput very shining above, with less developed lower swellings paler, and with shining black, subtriangular spot on each side above, extending from neck to upper corner of eyes; in centre, just above neck, a tuft of short black bristles; ocp. all black, thin, acute. Frons as broad as one eye, parallel-sided, slightly less than twice as long as broad, entirely shining, distinctly concave in middle, and there with long shining black stripe from ocellar spot to beyond middle, but not reaching lunula, which is narrow and yellowish; frons quite bare, except for some scattered dark hairs in front; all bristles black, two vt., inner pair twice as long as outer, one small pvt., no oc., one upper and three i.or. Eyes rounded, bare, with purplish or greenish transverse bands. Antennae at middle of eyes, entirely yellowish; third segment twice as long as basal ones together, gradually attenuated but rounded at tip, somewhat concave on upper border; arista basal, moderately plumose, feathering only a little broader than third antennal segment. Face shorter than frons, concave with very prominent mouth-border, shining yellowish, with broad rounded shining black spot just above mouth-border; parafacialia linear; peristomialia

as broad as tip of third antennal segment, unspotted; genal bristle strong, black, beneath it several scattered dark hairs, another bristle near hind margin of mouth; short proboscis and palpi pale yellowish. Thorax elongate, with broadly interrupted transverse suture, shining reddish dorsally, darker behind and on scutellum, paler on pleurae; two broad but ill-defined dorsal dark stripes, and between them a yellowish stripe, which becomes broader and more distinct behind, especially on scutellum; just below notopleural suture a whitish yellow stripe, extending from humeri to root of wings, and gradually broadening posteriorly; pleurae unspotted; mesophragma shining black, with yellowish sides. Short dorsal pubescence black, like scattered longer hairs on pleurae; all bristles black; chaetotaxy complete, except prst., which is wanting; dc. only a little behind line of a.sa.; four sct. of about same length. Calypters pale yellowish,

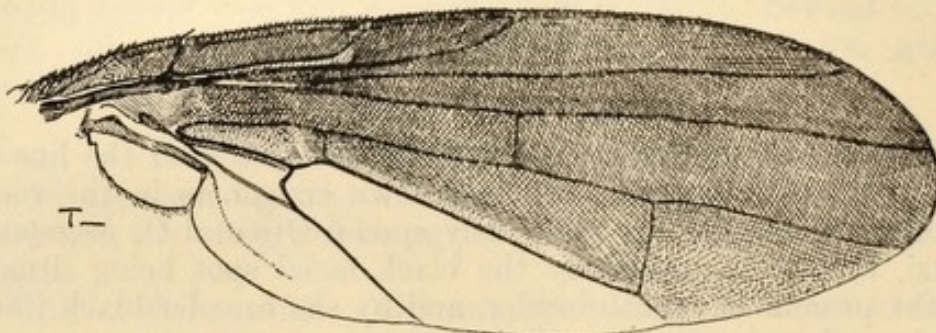


FIG. 30—*Ocneros punctilabris*, sp. n. Wing of ♂. × 18.

with black borders; halteres yellowish. Abdomen shining black, with sides of tergites and with venter reddish; short hairs and bristles black; genitalia rounded, shining reddish, with black spot below. Legs, including coxae, entirely reddish to end of tarsi; coxae and base of femora paler; front femora with row of black bristles below; middle tibiae with two black spurs; hind tibiae with four or five black bristles on outer side in middle. First vein ending a little beyond middle of wing, but always before small anterior transverse vein; stigma broad; second, third and fourth veins straight and gradually diverging towards tips, third bristly to anterior transverse vein; latter beyond middle of long discal cell; posterior transverse vein straight, near hind margin of wing and parallel with small one; lower angle of anal cell acute and produced. Whole wing as far as fifth vein blackish, shining, but portion just below fifth vein, and second basal cell and extreme base distinctly yellowish; only third posterior, axillary and anal cells hyaline.

Genus **EUPHRANTA**, Lw.110. **Euphranta rivulosa**, sp. n., ♂.

A large species, very like *E. (Trypeta) lemniscata*, Enderl., and *E. jucunda*, Hendel, of Formosa, but differing from both in the abdominal pattern, as well as in minor details of the wing-pattern.

Type ♂, a solitary specimen from Suva, 7.ix.1924 (*H. W. Simmonds*).

♂. Length of body 8 mm.; of wing 7.5 mm.

Head yellowish; occiput very shining above, lower swellings not much developed, and clothed with thin whitish dust. Frons opaque, with shining vertical plates and narrow orbits, with dark reddish but not well-defined spot in front, lunular border being yellowish. Eyes rounded. Face concave, shining only at sides, with mouth-border considerably prominent; narrow parafacialia white-dusted; peristomialia as broad as third

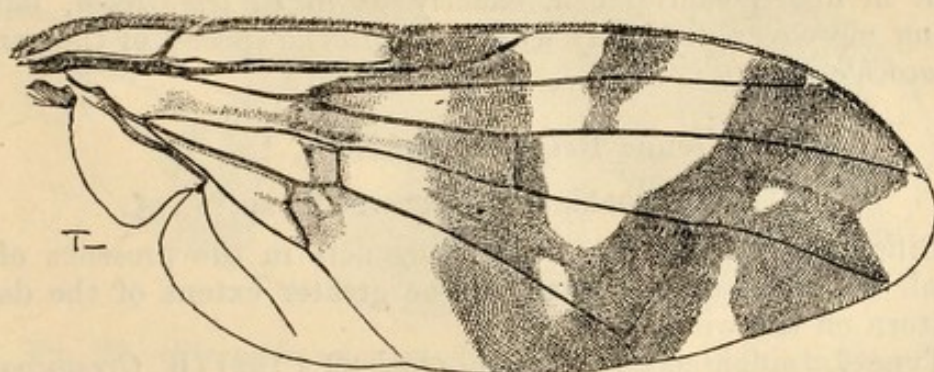


FIG. 31.—*Euphranta rivulosa*, sp. n. Wing of ♂. × 12.

antennal segment, and unspotted. Antennae entirely yellowish, inserted at middle of eyes and reaching practically to mouth-border; third segment parallel-sided, about thrice as long as broad; arista moderately plumose, feathering not broader than third antennal segment. Palpi and proboscis yellowish. All bristles black; i.vt. much shorter than outer ones; no.oc., one s. and three i.or.; genal bristles strong; all hairs black. Thorax dark reddish, dorsum darker and clothed with whitish dust in front and with very short and dense, yellowish pubescence; across middle two very ill-defined darker bands, but no dark or light pattern on sides or on pleurae; scutellum like scutum, but more yellowish; mesophragma shining reddish. Bristles black and strong, no prst., one dc. very far back, one prsct.; two mpl., one st., one pt.; mesopleura with rather long black hairs in middle four sct. Halteres whitish. Abdomen yellowish, with thin whitish dust; second, third and fourth segments with an abbreviated band on each side on fore border; last segment as long as the two preceding ones together, shining reddish, with rounded

black spot on each side at base, and with row of strong black bristles on hind border; short hairs all black, longer and bristly on sides of tergites. Genitalia small, rounded, concealed, but with prominent reddish corneous appendage, and below this another soft and whitish one. Legs, including coxae, entirely yellowish; front femora with complete row of long black bristles; middle tibiae with black spurs at tips; hind tibiae with well-developed posterior row. Wing-venation as in Enderlein's figure (*Zool. Jahrb., Abt. f. Syst., Geogr. u. Biol. der Tiere*, 31. Bd., 3 Heft, p. 426, fig. G, 1911); wing-pattern also very similar, but stigma without hyaline spot; middle dark band, from stigma across anterior transverse vein to hind border, broader and with parallel sides; hyaline indentation into end of discal cell extending beyond fifth vein into third posterior cell, but interrupted by narrow fuscous band in middle; fuscous abbreviated band on fore border in marginal cell including rudiment of a supernumerary transverse vein, of which there is no trace in the allied species. Middle hyaline dot, and terminal spot in first posterior cell, exactly as in *E. lemniscata*, latter being moreover distinctly whitish, as in the species of the genus *Rhacochlaena*.

Genus **RHACOCHLAENA**, Lw.

111. **Rhacochlaena greenwoodi**, sp. n., ♂.

Differing from all its known congeners in the presence of a small but distinct prst., and in the greater extent of the dark pattern on the wings.

Type ♂, a single specimen from Loloti, 29.v.1921 (*W. Greenwood*), in whose honour the species is named; another ♂ from Nausori, v.1921 (*R. Veitch*).

♂. Length of body and wing 4.5 mm.

Head whitish; occiput with blackish transverse band above, between eyes, and just below this band a prominent tubercle, clothed with tuft of short, thick black bristles; lower swellings distinct, but not very prominent; sep. very short, thin, acute, black. Frons parallel-sided, distinctly narrower than one eye, twice as long as broad, flat, with complete blackish median stripe, divided by thin pale line, and with pale yellowish sides; frons bare, with only few dark hairs in front; bristles black, only one upper and one i.or. Eyes oval, bare, apparently unbanded. Antennae inserted a little below middle of eyes, short, not extending beyond middle of face, blackish, with second segment pale; third segment broad and short, half as long again as two basal segments together, rounded at tip; arista with long plumosity feathering broader than length of whole antenna. Face flat, distinctly shorter than frons, with no prominent mouth-border, but with distant and parallel antennal furrows, separated by small keel; face entirely whitish, like linear parafacialia and

unspotted peristomialia, latter narrower than third antennal segment; genal bristles dark yellowish; a few pale hairs on lower part of occiput. Palpi and proboscis whitish, latter thick and short. Thorax pale yellowish, whitish on pleurae, very little shining; dorsum two blackish stripes along dorsocentral lines, uniting into single spot in front of scutellum, which is blackish with pale yellowish margin; pleurae unspotted, but postscutellum and mesophragma with blackish stripe on each side, in continuation of those on mesonotum; short pubescence pale yellowish; bristles black, thin and short; chaetotaxy complete, even a small prst. present; dc. very near to prsct.; four set., terminal pair very short and decussate. Abdomen shining black, with pale yellowish base, broader on venter; hairs and bristles black; genitalia small, rounded, black. Legs, including coxae, pale yellowish, with femora at tips, tibiae and tarsi slightly darker; front femora with usual row of bristles below; middle tibiae

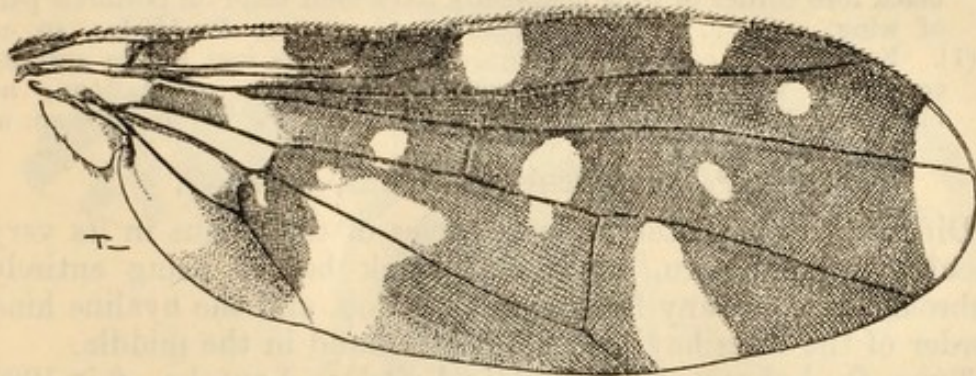


FIG. 32.—*Rhacochlaena greenwoodi*, sp. n. Wing of ♂. $\times 24$.

with black spur; hind tibiae not ciliated behind. First vein ending before middle of wing, and before anterior transverse vein; second, third and fourth veins straight and gradually diverging outwardly, third bristly throughout; anterior transverse vein a little beyond middle of discal cell, posterior transverse vein straight and parallel with it; lower angle of anal cell acute and produced. Entire wing blackish, with whitish-hyaline spots and indentations, and with peculiar white terminal spot of *Rhacochlaena*, extending above beyond third vein but not reaching below fourth vein, portion of third vein included in it white, other veins are all black at tips. Stigma black, unspotted; before stigma two hyaline indentations into costal cells, separated by broad black band just beyond humeral cross-vein; two rounded indentations into marginal cell, one just beyond stigma and enclosing its upper terminal angle, other smaller, situate before end of cell, neither passing below second vein; submarginal cell with only small rounded spot near second vein, and a little before its end; first basal cell with two rounded hyaline spots, one near base and another smaller one before anterior transverse

vein; first posterior cell with two hyaline rounded spots, a larger one near base in contact with fourth vein, and a second smaller one at same distance from third and fourth veins; discal cell with small hyaline spot before its upper external angle, in contact with larger spot at base of first posterior cell; second posterior cell with single, broad hyaline indentation near base, its tip extending to fourth vein; third posterior cell likewise with single broad indentation at extreme base, extending into base of discal cell, and there dilated into a spot, but not reaching above fourth vein; axillary lobe brown, narrowly hyaline at end, more broadly so at base; second basal and anal cells hyaline, with blackish tips.

Genus **PSEUDOSPHEINISCUS**, Hend.

The two species of *Pseudospheniscus* described below may be distinguished as follows:

- 1 (2). Fourth vein perfectly straight before anterior transverse vein; black fore border of wing complete; dark bifid band on posterior part of wing.....*Ps. bifidus*, sp. n.
- 2 (1). Fourth vein considerably curved downwards just before anterior transverse vein; fore border with usual hyaline indentations; no bifid dark band on hind border.....*Ps. curvinervis*, sp. n.

112. **Pseudospheniscus bifidus**, sp. n., ♀.

Differing from all the known species of this genus in its very peculiar wing-pattern, the costal black border being entirely unbroken without any hyaline indentation, and the hyaline hind border of the wing having a bifid dark band in the middle.

Type ♀, Labasa, xii.1921 (*R. Veitch*); Lautoka, 6.ix.1920 (*W. Greenwood*).

♀. Length of body 3.5 mm.; of wing 3.8 mm.

Occiput flat, somewhat concave on upper half, very slightly prominent below, without lower swellings, opaque yellowish, darker above, lighter below, narrowly shining on eye-borders. Frons narrow and long, only half as broad as one eye, more than twice as long as broad, opaque reddish, with small black ocellar dot, and with paler orbits; lunula small, reddish. Antennae inserted at middle of eyes, entirely reddish, with third segment shorter than face, parallel-sided, rounded at tip; arista with very short and scattered pubescence. Face a little shorter than frons, broader below, entirely yellowish; parafacialia linear, whitish; peristomialia narrow, half as broad as third antennal segment, whitish and unspotted. Palpi and proboscis yellowish, former with short dark hairs. Bristles black, ocp. very thin and short; i.vt. much longer and stouter than external ones; oc. well developed, distant at base; os. long and strong, two upper and three lower ones, former bent backwards, latter bent inwards and decussate at tips; genal bristle short surrounded by several other bristly hairs. Thorax entirely shining black, with narrowly reddish humeri; dorsum

not dusted, with very short black pubescence, disposed in regular rows; scutellum shining black, flat, bare, triangular, with sharp lateral keels; mesophragma shining black. Bristles black; chaetotaxy complete; sep. well developed; dc. on line of a.sa., four set., apical ones slightly smaller and diverging; two mpl.; pt. strong; black hairs on pleura rather long. Halteres black. Abdomen entirely shining black, with short black pubescence and with black bristles at tip; venter brownish; ovipositor short and broad, shining black, shorter than last two abdominal segments together. Front legs, including coxae, entirely yellowish, femora with row of black bristles below; four posterior legs with brownish coxae and femora, and yellowish tibiae and tarsi.

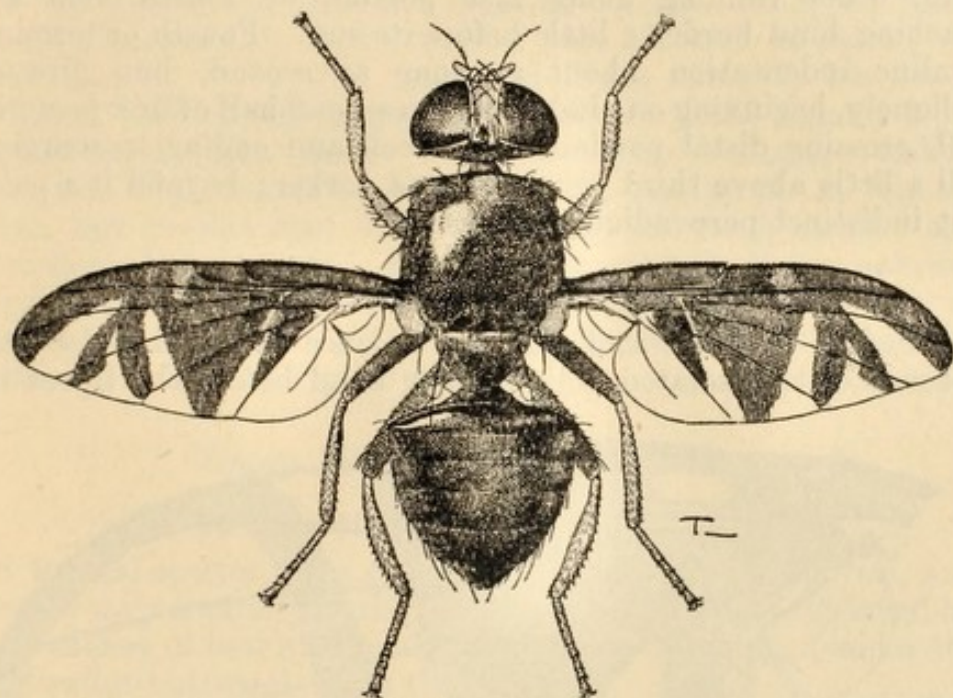


FIG. 33.—*Pseudospheniscus bifidus*, sp. n. ♀. × 12.

Wings without distinct costal bristle; first vein ending before middle of wing; stigma short and broad, one and a half times as long as high; second vein straight, rather distant from costa, marginal cell being broader than submarginal one; third vein with six or seven rather long bristles from base to anterior transverse vein, its last portion curved in middle and bent downwards, ending before tip of wing; anterior transverse vein straight and perpendicular, a little beyond middle of discal cell; posterior transverse vein straight, perpendicular, parallel with anterior one and about as long as its distance from latter; lower angle of discal cell a right angle, situate near the wing-border, fifth vein distinct beyond it; sixth vein complete; lower angle of anal cell with long narrow prolongation, about as long as anal cell itself, but not prolonged beyond second basal cell; all veins black to extreme base. Entire wing blackish to extreme base, with no hyaline indentations on fore border, and no hyaline

discal spots, but with four long hyaline indentations on hind border, and moreover with axillary cell entirely hyaline; between this cell and basal hyaline indentation is an acute blackish streak, proceeding from anal cell along sixth vein, and ending at about middle of its last portion. Second hyaline indentation elongate-triangular, directed perpendicularly, beginning on hind border on distal half of third posterior cell, crossing end of discal cell and base of first posterior cell, and ending at third vein, just beyond anterior transverse vein. Third indentation shortest of all, extending into second posterior cell from hind border to before fourth vein, perfectly triangular, and dividing middle dark band into two branches, one across posterior transverse vein, other running along last portion of fourth vein and reaching hind border a little before its end. Fourth or terminal hyaline indentation about as long as second, but directed obliquely, beginning on hind border in second half of first posterior cell, crossing distal portion of this cell and ending in marginal cell a little above third vein. Stigma darker; beyond it a paler, but indistinct perpendicular streak.

113. *Pseudospheniscus curvinervis*, sp. n., ♀.

Allied to *P. fossatus*, Fabr., but at once distinguished by the absence of the isolated oblique dark band before the tip of the

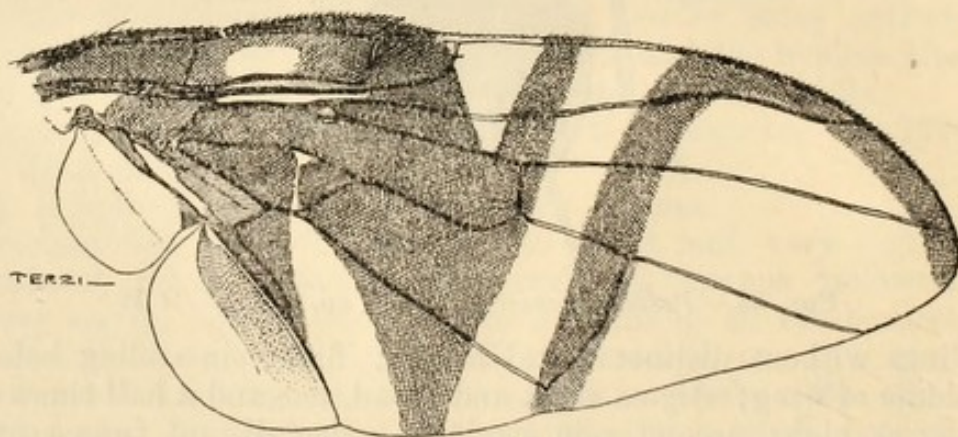


FIG. 34.—*Pseudospheniscus curvinervis*, sp. n. Wing of ♀. × 20.

first posterior cell, as in *P. alboscuteclatus*, v.d. Wulp, from which it differs in having the humeri, scutellum and hind femora black; moreover it is distinguishable from both species by the curvature of the fourth vein just before the anterior transverse vein.

Type ♀, a single specimen from Rarawai, 22.x.1915 (*R. Veitch*).
♀. Length of body and wing about 4 mm.

Head entirely yellowish; occiput rather shining chiefly on eye-borders. Frons very narrow, two and a half times as long as broad, parallel-sided, entirely opaque reddish, with paler orbits and shining vertical plates. Eyes narrow in profile; antennae inserted below middle of eyes, about as long as face,

entirely reddish; third segment about three times as long as broad, rounded at tip; arista bare, its basal third alone thickened. Face much shorter than frons, opaque yellowish, with whitish dust; mouth-border not prominent; peristomialia narrow, unspotted; palpi and proboscis yellowish. Bristles black; two upper and three lower or., latter of equal size; oc. short and hair-like. Thorax entirely shining black, even on humeri and pleurae; short dorsal pubescence dark yellowish; chaetotaxy complete, normal; bristles black. Scutellum entirely black, even on hind border, with four bristles; halteres black. Abdomen entirely shining black, even on venter; short pubescence dark yellowish; bristles black. Ovipositor shining black, as long as last two abdominal segments together. Coxae blackish; front femora dark reddish, four posterior ones blackish or black; all tibiae and tarsi yellowish, but hind tibiae narrowly blackened at base; bristles and hairs black; row on front femora long, that on hind tibiae short. Wing-pattern as in Bezzi, "Indian Fruit-flies" (*Mem. Ind. Mus.*, vol. iii, no. 3, pl. x, fig. 49, 1913), but hyaline spot in second costal cell much smaller and more distant from costa. Portion of fourth vein before anterior transverse vein curved downwards into discal cell, as deeply as in genus *Rivellia* among ORTALIDAE; in *P. alboscuteclatus* this portion of fourth vein quite straight.

Genus **SPHENISCOMYIA**, Bezzi.

114. **Spheniscomyia binoculata**, sp. n., ♂♀.

A typical species, near *S. sexmaculata* and *S. quadrincisa*, and possibly only a variety of the former, but at once distinguished by the presence of two hyaline discal spots on the wing, besides the five hyaline indentations on the border.

Type ♂ and ♀ with several additional specimens from Yasawa, 4.x.1921, Cuvu, 10.x.1919 (*H. W. Simmonds*).

♂♀. Length of body and wing 2.5-3 mm.

Occiput flat, without lower swellings, entirely shining black, with black, short, dense ocp. Frons at vertex as broad as one eye but gradually narrowed towards antennae, one and a half times as long as broad above, flat, reddish yellow, opaque, with blackish grey-dusted ocellar spot and vertical plates; frons bare, with black bristles, oc. well developed, two s., two i.or. Eyes bare, unicolorous, rather narrow in profile, their vertical diameter twice as long as horizontal one. Antennae inserted at middle of eyes, shorter than face, entirely reddish; third segment broad, one and a half times as long as two preceding segments together, rounded at tip, but with acute upper angle; arista basal, microscopically pubescent, thickened at base. Face shorter than frons, flat, reddish yellow, darkened in middle, mouth-border very slightly prominent; parafacialia and peristomialia linear, white-dusted; genal bristle black, like hairs on lower

part of head. Palpi and proboscis yellowish, latter short and thick. Thorax and scutellum entirely shining black, destitute of dust even on dorsum; chaetotaxy complete, bristles long and black, four set., apical pair as long as basal one, decussate. Calypters whitish; halteres pale yellowish. Abdomen broad, rounded, entirely shining black, with short black hairs; ovipositor shining black, flat, triangular, half as long as abdomen. Coxae and femora black; tips of four anterior femora, tibiae and tarsi entirely yellowish; front femora with row of black bristles; hind tibiae scarcely ciliated on outer side. Wings with strong costal bristles; venation as in *S. sexmaculata*. Wings black, with broad whitish hyaline base, five hyaline indentations and two hyaline spots; single indentation on fore border as in *S.*

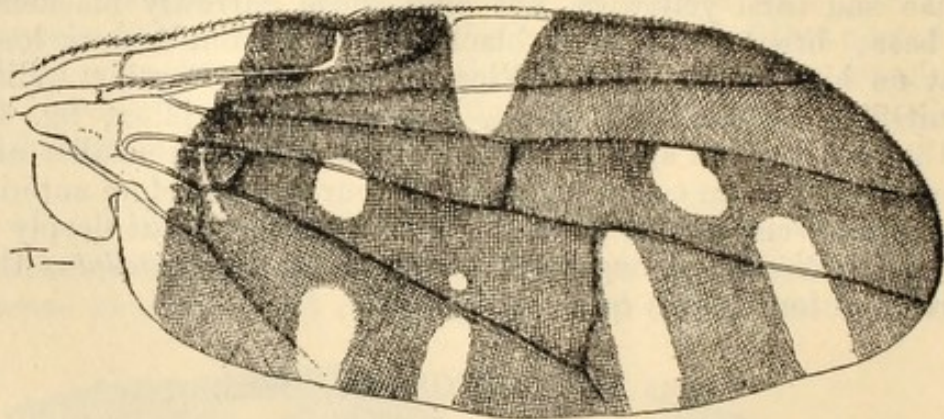


FIG. 35.—*Spheniscomyia binocolata*, sp. n. Wing of ♂. × 30.

sexmaculata; of four indentations on hind border, basal and terminal ones much shorter than in *S. sexmaculata*; two rounded hyaline spots situate one near base of discal cell, extending from fourth to fifth vein, other in middle of first posterior cell, in contact with third vein; latter spot sometimes fused with terminal indentation, which then assumes same shape as in *S. sexmaculata*.

Subfamily TRYPETINAE.

Genus SPATHULINA, Rond.

115. *Spathulina acroleuca*, Schiner, var. *parca*, Bezzi, 1913.

This form is widely spread over the Ethiopian, Oriental and Australian Regions.

Several specimens of both sexes from Cuvu, 12.vi.1915, Labasa, vii.1922, Nausori, x.1920 (*R. Veitch*); Ovalau, v.1921 (*H. W. Simmonds*); Lautoka, 16.v.1919 (*W. Greenwood*).

I have already advanced the supposition that *S. parca*, Bezzi, is only a variety of *S. parceguttata*, Becker 1903, of Egypt; and I now think that both are only forms of *Tephritis acroleuca*, Schiner (*Reise Novara, Diptera*, p. 268, 1868), described from

a specimen from Sydney; this latter seems to differ only in lacking the fuscous spot at the end of the third vein in the hyaline apical patch. The three forms may be distinguished as follows:

- a (b)*. No fuscous spot at end of third vein in terminal hyaline part of wing.
acroleuca, Schin.
- b (a)*. A fuscous spot at end of third vein.
- c (d)*. First posterior cell with a second hyaline spot in middle.
parceguttata, Beck.
- d (c)*. First posterior cell with only basal hyaline spot.....*parca*, Bezzi.

Genus **ENSINA**, Rob.-Desv.

116. **Ensina sororecula**, Wiedemann.

A species widely spread over the Ethiopian and Oriental Regions.

Labasa, viii.-ix.1922, Lattoka, 25.x.1920, "bred from *Cosmos caudatus*" (*W. Greenwood*); Cuvu, 6.vii.1915, Lautoka, 29.x.1919 (*R. Veitch*).

Genus **EURIBIA**, Rob.-Desv.

117. **Euribia pentagonella**, sp. n., ♂♀.

Very near *E. formosella*, Hendel (*Ann. Mus. Hung.*, xiii, pl. ix, fig. 20, 1915), of Formosa, but distinguished by the somewhat different wing-pattern; belonging to the *Oxya* group in the old sense, near *O. producta*.

Type ♂, Kaviti, 13.x.1921 (*H. W. Simmonds*); type ♀, Natova, 1916 (*R. Veitch*).

♂♀. Length of body and wing 2.3-2.5 mm.

Occiput black, densely clothed with grey dust, yellowish below and with narrow whitish eye-borders; ocp. long, whitish thick, obtuse. Frons gradually narrowed in front, only a little longer than its breadth at vertex, flat and bare; broad median stripe orange, divided by a paler middle line; narrow orbits whitish; outer vt. and pvt. short and whitish; i.vt. long and black, like oc. and 1+2 or. Eyes rounded, bare, unicolorous. Antennae inserted at middle of eyes, a little shorter than face, pale yellowish; third segment broad, rounded at tip, twice as long as second; arista bare, thickened at base. Face narrow, short, slightly concave, entirely whitish like linear parafacialia; peristomialia a little broader than third antennal segment, whitish, unspotted; genal bristle whitish, like hairs on lower part of head. Palpi and proboscis pale yellowish, latter with reflexed labella, half as long as basal portion. Thorax black, densely grey-dusted, with three narrow blackish stripes along middle of dorsum; pleurae with blackish stripe on upper border of mesopleura, and pale stripe just above this; pubescence pale yellowish; bristles long and black; chaetotaxy complete and normal. Scutellum blackish at base, reddish at tip, with four black bristles, basal ones a little longer than apical, latter

decussate at end; mesophragma black, grey-dusted. Calypters and halteres whitish. Abdomen grey-dusted, each segment with two broad blackish spots, forming two rows; pubescence pale yellowish; ovipositor shining black, broad, flat, as long as half abdomen. Coxae and femora black, grey-dusted; tips of all femora, tibiae and tarsi yellowish; front femora below with row of black bristles. Wings with distinct costal bristle; first vein short, ending before anterior transverse vein, which is considerably beyond middle of discal cell; posterior transverse vein straight, perpendicular, as long as its distance from anterior one; last portions of third and fourth veins parallel; third vein bare. Stigma broad and rather short, quite black, unspotted. Wings blackish, with narrowly hyaline bases and following hyaline spots: one, rather broad, at end of second costal cell, just before stigma; a smaller one in marginal cell just at end

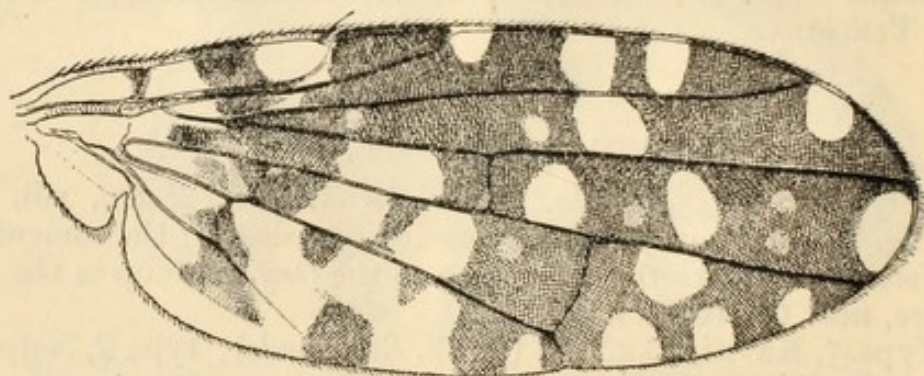


FIG. 36.—*Euribia pentagonella*, sp. n. Wing of ♀. × 40.

of stigma, in contact with costa and very distant from second vein, followed by two larger spots extending from costa to second vein, first of which is larger than second; submarginal cell with large spot in middle, in contact with second spot in marginal cell and extending below to third vein, and moreover with much smaller spot above at end, just below tip of second vein; first basal cell with large rectangular spot before anterior transverse vein; first posterior cell with small spot at base just above upper end of posterior transverse vein, and with larger one at end; between these two spots five others disposed in a square; discal cell with two large subquadrate spots in basal half, extending to fifth vein; second posterior cell with three spots along hind border of wing, and with another in contact with the fourth vein; third posterior cell with small spot at tip, just below lower end of posterior transverse vein, and with two or three larger spots fused together.

Family SEPSIDAE.

Curiously enough there are no specimens of this family in the collection from Fiji, but there are several examples of *Sepsis*

plebeja, De Meijere, 1906, from Lord Howe Isl., 3.xi.1923 (*H. W. Simmonds*).

Family PIOPHILIDAE.

Genus **PIOPHILA**, Fall.

118. ***Piophila casei***, Linne, Duda, 1924.

Some specimens of this cosmopolitan species from Lautoka, iii.1919, "bred from maggots feeding on cheese" (*R. Veitch*); Lautoka, ii.1920 (*W. Greenwood*).

119. ***Piophila (Protopiophila) conlecta***, Walker, 1860.

Very near *P. latipes*, Meig., as differentiated by Collin in 1910, but distinguished by its narrower frons. The type was obtained at Makassar, in Celebes, but the species seems to be widely spread, as I have seen specimens of it also from the Philippines; and Dr. Duda (1924) records it from various localities.

The following are the data with reference to the specimens in the collection before me: Suva, ix.-x.1920, Taviuni, xii.1921 (*H. W. Simmonds*); Lautoka, ii.-iii.1920, Cuvu, vii.1920 (*W. Greenwood*).

A complete description of these specimens is appended.

♂♀. Length of body 2.5-3 mm.; of wing 2.2-2.5 mm.

Head distinctly broader than thorax, entirely black; occiput flat, slightly concave on upper half, rather opaque, being clothed with a faint dark grey dust. Frons entirely shining black, a little narrower than one eye (in *P. latipes* broader than one eye), not at all prominent in profile, but distinctly convex above lunula, gradually narrowed in front, being only half as broad at antennae as at vertex. Eyes rounded. Antennae inserted a little below middle of eyes, entirely reddish, two basal segments very small, third rounded, bearing at base a thin, hair-like, bare arista. Face entirely black, distinctly shorter than frons; peristomialia shining black, distinctly broader than third antennal segment. Palpi broad, nearly bare, pale yellowish, somewhat darkened at tips, proboscis blackish. Bristles black, vt. of about same length; oc. long, approximate at base and divergent; one strong, long s.or.; one pair of long, strong vibrissae. Thorax entirely shining black, smooth, clothed on dorsum with short uniform, dark pubescence; bristles black, one hm., one prst., two npl., three sa., propleural bristle long, one rather strong st.; mesopleura bare; scutellum convex, smooth, polished, with four bristles. Calypters dusky; halteres whitish. Abdomen parallel-sided, truncate at tip, entirely shining black, smooth, with black pubescence and black bristles. Legs stout; front pair with coxae entirely yellow, femora black and thickened, yellow at base and tip, tibiae and tarsi entirely deep black, latter compressed and dilated, serrate and somewhat ciliated above. Wings hyaline, with dark yellowish or blackish veins; portion of costa

between end of first and that of second vein noticeably thickened; costa ending at tip of fourth vein; first vein short; second long and straight, perfectly parallel with third which ends at wing-tip; last portion of fourth vein straight and parallel with third distinctly thinner than latter; first posterior cell distinctly (even if little) narrower than submarginal cell; anterior transverse vein short, situate a little beyond middle of discal cell; posterior transverse vein perfectly straight, slightly oblique, shorter than its distance from anterior transverse vein, but somewhat longer than portion of fifth vein beyond it, which does not reach hind margin; sixth vein rather thick and long, but ending at some distance from hind margin of wing.

Family LAUXANIIDAE.

This family is represented by specimens of a number of species, which seem to be all endemic; most of them belong to the genus *Sapromyza* in its widest sense, but there are also representatives of several other genera, as is to be seen from the following key, in which is likewise included the species of *Sciomyza* already described, on account of its deceptive resemblance to the other forms.

- 1 (2). Postvertical bristles diverging; sixth vein reaching hind margin of wing.....*Sciomyza dives*, sp. n.
- 2 (1). Postvertical bristles decussate; sixth vein not reaching hind margin.
- 3 (4). Anterior orbital bristle very near front margin of frons; peristomialia with row of strong bristles; eyes transverse, their horizontal diameter as long as or longer than vertical one.....*Prochaetops*, g. n.
- 4 (3). Anterior orbital bristle rather distant from antennae; peristomialia destitute of bristles; eyes not transverse, their vertical diameter much longer than horizontal one.
- 5 (8). Fourth longitudinal vein curved upwards at end, forming an apical cross-vein and meeting third vein at tip, first posterior cell thus being closed or nearly so; costa reaching only to third vein, or but little beyond it.
- 6 (7). Anterior orbital bristle directed inwards; third antennal segment elongate, linear; frons parallel-sided.....*Eucyclosis*, g. n.
- 7 (6). Anterior orbital bristle directed backwards; third antennal segment short and rounded, or oval; frons narrowed and curved downwards anteriorly.....*Griphoneura*, Schin.
- 8 (5). Fourth vein quite straight at end, or only a little up-curved; both orbital bristles curved backwards, third antennal segment short and rounded.....*Sapromyza*, (s. l.).

PROCHAETOPS, gen. nov.

This new genus is evidently allied to *Trigonometopus*, even if its face is very little receding, as in some other species of the same group; but it cannot be included in that genus on account of the presence of a strong praesutural bristle, and of the anterior or. being situate on the anterior margin of the frons. In the genus *Diplochasma*, Knab, there is only one pair of or.; *Panurgopsis*, Kertész, 1915, has the anterior or. directed inwards and the prst. very weak. It is possible that *Trig. setosus*, Knab,

of Guam Island, may belong to the present genus, as it has been stated by Malloch (*Proc. Ent. Soc. Washington*, xxv., p. 48, 1913), that the type has a strong prst.

Head a little broader than thorax, and viewed from in front considerably broader than high. Occiput distinctly concave above, near vertex. Frons broad and flat, forming a not very acute angle with face, and but very little prominent in front of eyes; face flat, with no prominent mouth-border; peristomialia broad, with row of long bristly hairs. Eyes slightly transverse, with vertical diameter a little shorter than horizontal one. Antennae inserted about on level with middle of eyes; second segment with a long bristly hair above; third segment oval, rounded at tip, with basal, densely pubescent or shortly plumose arista. Proboscis short and thick. A row of short, pointed, postocular bristles; pvt. decussate; i.vt. thin, longer than outer ones; oc. small and thin; two pairs of strong and long or., both directed backwards, anterior pair near front margin of frons, other near middle. Mesonotum longer than broad, with broadly interrupted transverse suture; three pairs of strong, equidistant dc., anterior pair in front of suture; only one pair of praescutellar acrostichals; acrostichal hairs in four rows; one hm., two npl., one strong prst., one a. and two p.sa., one mpl. and one st.; propleural well developed. Scutellum strongly developed, long subquadrate, flat, bare, with two pairs of lateral bristles, apical ones diverging, basal situate further from margin. Abdomen oval, about as broad as, but not longer than mesonotum; male genitalia considerably developed. Legs normal; front femora with a row of long bristles below; tibial spurs long. Wings normal, but rather short and broad; all veins bare, even at base; no stumps on fourth vein; anterior transverse vein a little before middle of discal cell.

Type: the following new species.

120. *Prochaetops nigriseta*, sp. n., ♂♀.

A whitish, black-spotted species, with bluish pruinescent mesonotum, black arista and unspotted wings.

Type ♂, Nausori, v.1921 (*R. Veitch*); type ♀, Mt. Evans, Lautoka, 11.v.1919 (*W. Greenwood*).

♂♀. Length of body 2.6-3 mm.; of wing 2.5-2.8 mm.

Head entirely whitish; occiput with bluish pruinescent patch on each side near eyes; a deep black ocellar dot, deep black spot on each side of base of antennae, and a subquadrate black spot above mouth-border in middle of inferior part of face. Antennae pale yellowish slightly infuscated above; arista black, greatly thickened at base, with dark pubescence. Palpi and proboscis whitish, latter with yellowish labella. All bristles black; six or seven peristomial bristles. Mesonotum opaque, bluish pruinescent, with yellowish median stripe between central rows of acrostichal hairs; pleurae whitish or pale yellowish, with black

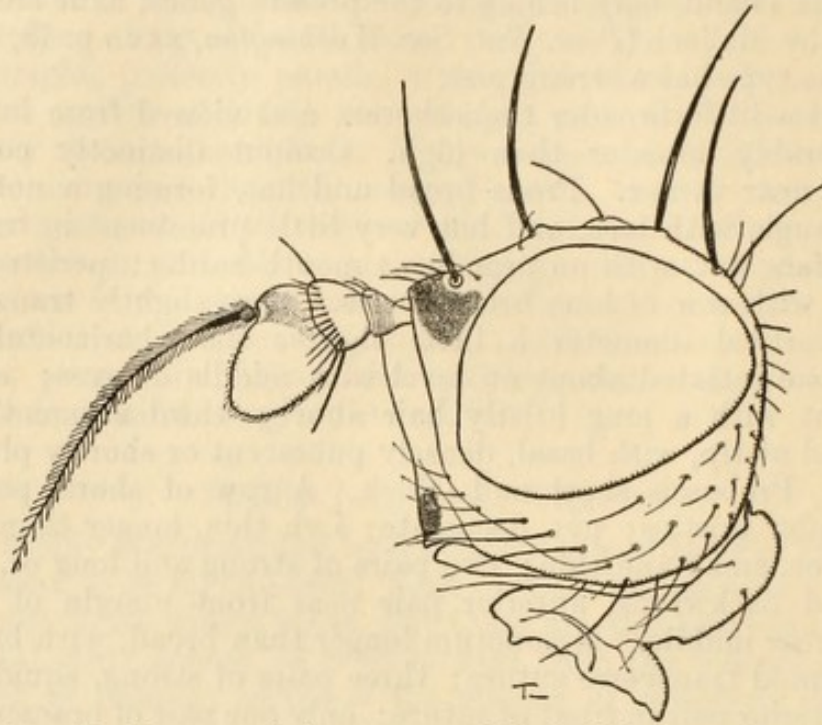


FIG. 37.—*Prochaetops nigriseta*, sp. n. Head of ♀ in profile. × 50.

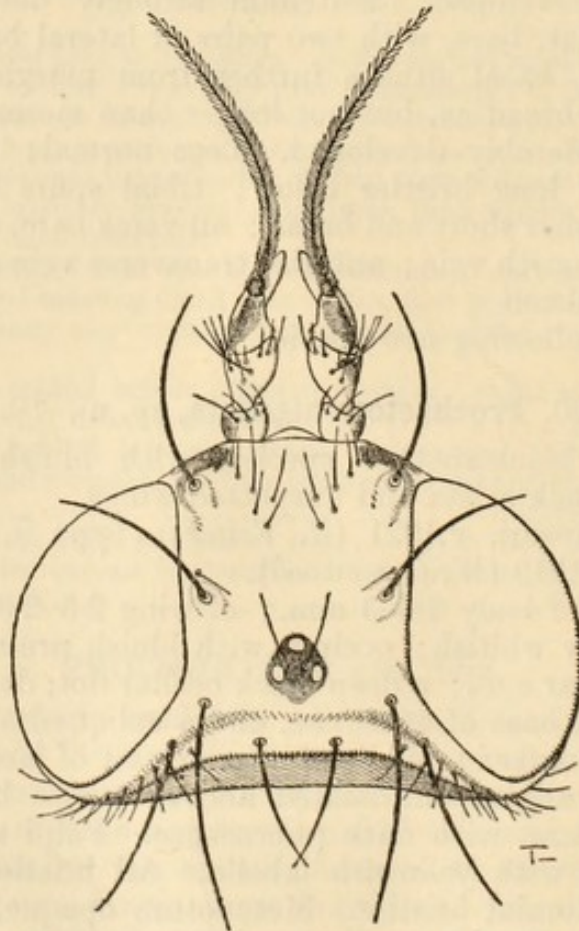


FIG. 38.—*Prochaetops nigriseta*, sp. n. Head of ♀ from above. × 50.

ovate spot on upper border of sternopleura. Scutellum like scutum, unspotted; postscutellum and mesophragma pale yellowish, latter with faint bluish pruinescence and slightly shining below. All bristles black; acrostichal hairs in two rows on each side, but inner row alone complete and regular. Halteres whitish. Abdomen pale yellowish, segments darkened in middle and there with bluish pruinescence; hypopygium whitish, narrow, rather prominent below; hairs and bristles black. Legs, including coxae, whitish or pale yellowish, but front pair with tips of femora and entire tibiae and tarsi darkened, or even deep black in male; four strong bristles on front femora black, like tibial spurs. Wings slightly yellowish-hyaline, iridescent; veins pale yellowish; first vein short; second, third and fourth veins straight; second a little divergent towards apex, third ending precisely at wing-tip; posterior transverse vein straight distinctly longer than portion of fifth vein beyond it; penultimate section of fourth vein much shorter than terminal one; sixth vein very short. Costa prolonged to end of fourth vein, but dark setulae ending a little beyond tip of third vein.

EUCYCLOSIS, gen. nov.

A very peculiar genus, related to *Poecilohetaerus*, Hendel, or *Chaetolauxania*, Kertész, but readily distinguishable owing to its antennae and venation; recalling also *Steganopsis*, but very different from this also.

Head as broad as thorax, viewed from in front about as broad as high. Occiput slightly concave above. Frons flat, not at all prominent even at base of antennae, face continuous with it, and thus forming an angle of 180° . Eyes with vertical diameter much longer than horizontal one, narrowed below. Face somewhat concave in middle, with prominent mouth-border; peristomialia narrow; proboscis short. Antennae porrect, inserted on level with middle of eyes; second segment with long bristles below; third segment elongate, linear, truncate at tip with basal, plumose arista. Postocular row present; two vt., inner ones much longer; pvt. decussate; oc. thin; two pairs of or., anterior pair directed inwards, shorter and distant from anterior margin of frons. Mesonotum convex, about as broad as long; chaetotaxy complete, with well-developed prst. and with three dc., none of which are before suture; acrostichals in a few rows, long, with another pair before prst.; one mpl.; only one strong st., but before it a bristly hair. Scutellum broad and short, bare, with four bristles, apical pair decussate. Abdomen broadly ovate. Legs normal. Wings broad and short, folded near base as in *Stegana*. First vein short; second vein curved as in *Steganopsis*; third vein quite bare, straight, ending before wing-tip, costa ending with it; fourth vein straight, but a little before wing-margin suddenly curved upwards in a rounded angle,

running parallel with hind margin, and meeting costa just at end of third vein, first posterior cell therefore closed at tip, anterior transverse vein rather long, straight and perpendicular, situate beyond middle of discal cell; posterior transverse vein straight, parallel with anterior one; sixth vein short; second basal and anal cells very small.

Type: *Eucyclosis variegata*, sp. n.

The two species described below may be distinguished as follows:

- 1 (2). Mesonotum opaque, variegated with small dark dots on grey ground; wings fuscous, with some hyaline streaks. . . . *variegata*, sp. n.
 2 (1). Mesonotum shining black, quite unspotted; wings with proximal half fuscous and distal part hyaline, with oblique dark band.
splendida, sp. n.

121. *Eucyclosis variegata*, sp. n., ♀.

A curious fly, at once distinguishable on account of its variegated thorax and wings.

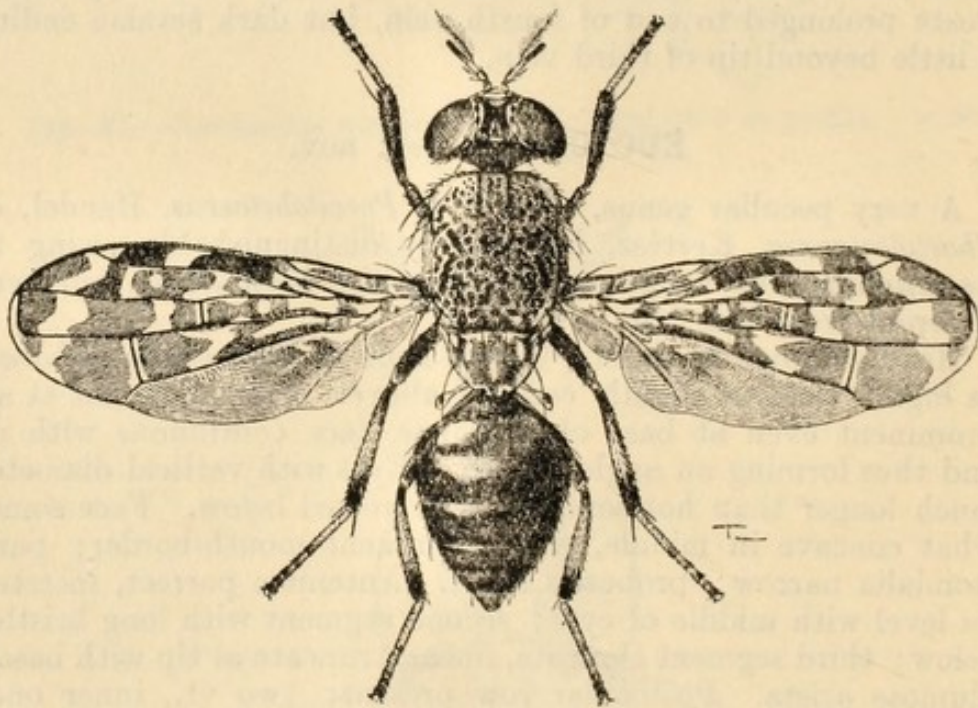


FIG. 39.—*Eucyclosis variegata*, sp. n. ♀. × 14.

Type ♀, Nausori, v.1921; Labasa, vii.1921 (*R. Veitch*).

♀. Length of body 3 mm.; of wing 2.5 mm.

Head black; occiput concave, grey-dusted, with quadrate, deep black, postocellar spot above and deep black patch on each side, eye-borders being narrowly shining white, with small dark dots. Frons subquadrate, broader than one eye; median stripe metallic greenish, but not shining; ocellar spot greyish like parafrontalia, each of which is half as broad as median stripe and bears large black spots at insertion of bristles; anterior margin narrowly reddish. Eyes narrow in profile and rather acute below. Face yellowish grey-dusted, median tubercle shining black. Antennae entirely reddish, with terminal

half of third segment black, second segment with long black bristly hairs below; third segment linear, twice as long as first two segments together; arista as long as whole antenna, dark, with plumosity very long above, shorter below. Praelabrum shining black; proboscis blackish. All cephalic bristles black, even rather strong and acute ones of postocular row. Thorax entirely black, opaque, but densely clothed with grey dust, variegated dorsally with numerous black dots and short stripes at insertion of bristles and setulae, which are all black; pleurae almost entirely black and rather shining with whitish transverse stripe at meso-sternopleural suture, mesopleura being variegated with longitudinal stripes. Scutellum greatly developed, opaque blackish above, with greyish border, interrupted by black spots at insertion of bristles, and with abbreviated greyish median stripe; scutellum bare above except for four marginal bristles, middle pair decussate. Postscutellum densely grey-dusted; mesophragma thinly dusted. Halteres whitish. Abdomen entirely black, rather shining, without pattern, black setulose. Legs reddish, with all coxae black and femora more or less blackened at tips; tibiae, especially front pair, with broad black tips; tarsi whitish, with terminal segments black. Wings entirely infuscated, more intensely in costal and marginal cells; whitish pattern formed by a spot at end of second costal cell prolonged below to second vein, a spot in middle of marginal cell, a praeapical angulate band running from end of marginal cell to upper end of second posterior cell, two vertical or oblique stripes in submarginal cell, three or four spots in first basal cell, and a vertical stripe in first posterior cell; discal cell with longitudinal stripe at base, an S-shaped band in middle and an external edging to posterior transverse vein; third posterior cell with two arcuate spots at extreme base. Veins black, second vein long and sinuous, third and fourth veins parallel in their last sections, terminal cross-vein being very near wing-margin; posterior transverse vein quite straight, directed vertically and parallel to rather long anterior transverse vein; sixth vein very short, alula rounded, but transverse.

122. *Eucyclosis splendida*, sp. n., ♀.

Distinguishable at once from the preceding species owing to having the body shining black, and the legs and wings very differently coloured.

Type ♀, a single specimen from Loloti, 29.v.1921 (*W. Greenwood*).
♀. Length of body 3 mm.; of wing 2.5 mm.

Head entirely shining red, even on occiput; frons subquadrate, with narrow, deep black band on each side near eyes, and with very small black postocellar dot; frons in middle very shining, and adorned with metallic reflections. Eyes as in *E. variegata*; face quite unspotted, with very prominent mouth-border. Antennae with two basal segments red and shaped as in *E. variegata*; third segment entirely black, narrow, linear, more than twice as

long as two basal joints together; arista as in *E. variegata*, but with plumosity a little shorter. Proboscis black, with pale yellowish labella; palpi whitish. All cephalic bristles black; postocular row less developed than in *E. variegata*. Thorax entirely shining black, mesonotum very brilliant, pteropleural and hypopleural regions reddish brown; hairs and bristles black. Scutellum like scutum, without any pattern and bare, except for four marginal bristles. Halteres blackish. Abdomen shining black, without pattern and black-haired. Anterior coxae yellow, remainder black; front legs with black trochanters, yellow femora with black tips, entirely deep black tibiae and praetarsi, and four terminal segments of tarsi white; two posterior pairs of legs with shining black femora, and entirely yellowish tibiae

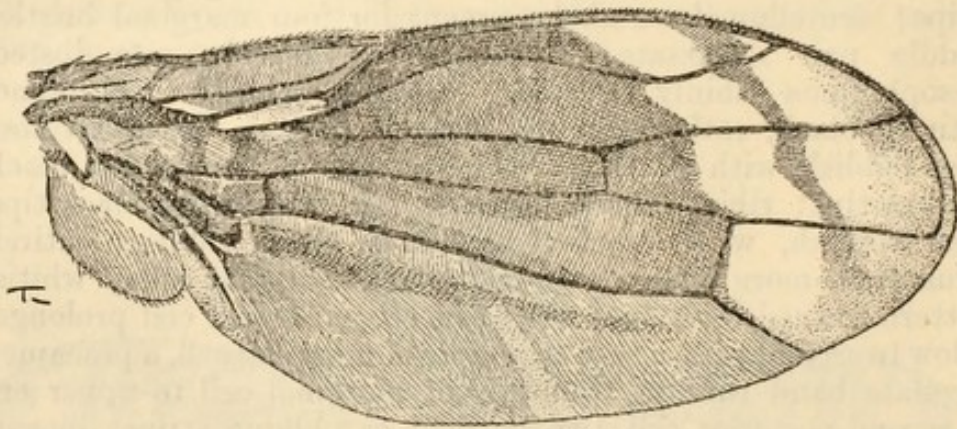


FIG. 40.—*Eucyclosis splendida*, sp. n. Wing of ♀. × 30.

and tarsi. Wings with more than proximal half, as far as posterior transverse vein and as tip of second posterior cell, blackish; terminal part hyaline, slightly yellowish, with narrow, arcuate, preapical blackish band extending from costa a little before end of marginal cell to a little beyond fourth vein, without reaching hind margin. Veins black in dark parts of wing, yellowish in hyaline parts; venation as in *E. variegata*, but second vein more sinuous, and last portions of third and fourth veins distinctly divergent outwards; posterior transverse vein shorter, broken towards middle to permit folding of wing.

Genus **GRIPHONEURA**, Kert.

123. *Griphoneura insignis*, sp. n., ♀.

Allied to the Oriental species of the genus, but distinct from all on account of its black body and different wing-pattern.

Type ♀, a single specimen from Lautoka Mts., 11.xii.1921 (*W. Greenwood*).

♀. Length of body and wing about 4 mm.

Head entirely pale yellowish; occiput white-dusted above and on sides, quite unspotted. Frons at vertex more than twice

as broad as at antennae, flat but curved downwards at anterior or., whitish-dusted, with small black ocellar dot, and deep black spot at sides of or. near eyes; face flat, very long, unspotted, with mouth-border not prominent; peristomialia with black spot below eyes. Eyes almost triangular, but with horizontal diameter about as long as vertical one. Antennae inserted on level with middle of eyes, short; two basal segments black and very short; third segment oval, rounded at tip, entirely yellowish, pubescent; arista blackish, longer than antenna, with long but scattered plumosity, longer on upper side. Palpi and short proboscis whitish. All bristles black; i.vt. strong; oc. well developed, postocular row less so; two or. situate at curvature of frons, both directed backwards. Thorax entirely black, opaque,

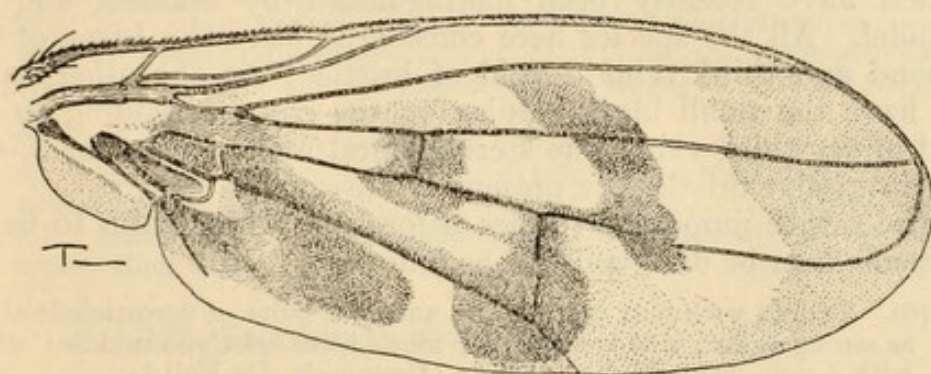


FIG. 41.—*Griphoneura insignis*, sp. n. Wing of ♀. × 24.

dark grey-dusted, along notopleural suture with yellowish line; dorsum without any pattern; bristles black; three pairs of dc., one of which is before suture; no i.a.; only one st.; very short hairs black. Scutellum greatly developed, flat above, coloured like scutum, bare, with four marginal bristles. Postscutellum black, not dusted; mesophragma shining reddish; halteres whitish. Abdomen entirely black, opaque, black-haired; ovipositor whitish. Legs, including coxae, pale yellowish, tips of all femora blackened, those of two anterior pairs more broadly, chiefly below; extreme bases of all tibiae narrowly black; front femora with black bristly hairs above and outwardly. Wings relatively long and narrow; all veins bare above; second vein very long and straight; last portions of third and fourth veins straight and parallel, fourth curved upward at tip forming a cross-vein which reaches third vein at its end, closing first posterior cell, costa ending there; anterior transverse vein situate above middle of discal cell; posterior transverse vein straight and perpendicular; sixth vein short; alula narrow, but rounded. Wings entirely hyaline, whitish across middle, somewhat yellowish towards base, with fuscous pattern formed by following spots: one broad and rounded spot at anterior transverse vein, extending below into discal cell; one in shape of an abbreviated oblique band,

extending from second vein to a little below fourth vein across middle of first posterior cell, and surrounded by whitish tinge; a large rounded spot with its centre at lower external angle of discal cell, including posterior transverse vein and reaching hind border of wing; an elongate fuscous patch in middle of third posterior cell, with its upper border along fifth vein. Moreover tip of wing very faintly but broadly infuscated, from end of second to fourth vein before bend. Veins blackish (pale yellowish on external whitish band).

Genus **SAPROMYZA**, Fallén.

This extensive genus is treated here in its widest sense, and doubtless includes species belonging to several genera, some of which have recently been distinguished by Malloch and by Hendel. All the species here considered have the bases of the second and third veins devoid of bristles; on the other hand, all have the small black setulae on the costa extending to the end of the third vein; the sternopleural bristles are 1 or 2, and the intra-alar bristles are present or absent.

The rather numerous species before me, which seem to be all endemic, can be distinguished as follows:

- 1 (6). Thorax with four pairs of dc. and four pairs of acrostichals about as strong as dc.; no i.a.; two st.; mesopleura bristly in middle; wings with a rich, *Tephritis*-like pattern (*Drosomyia*, De Meij.).
- 2 (5). Arista with long plumosity; face with two dark bands; abdomen without white spots.
- 3 (4). Marginal and submarginal cells black, with a few hyaline streaks; mesonotum not black-spotted; abdomen mainly black, with white parts reduced; male with very long hairs on upper border of genitalia.
cirrhicauda, sp. n.
- 4 (3). Above-named cells hyaline, with some black spots; mesonotum with black spots; abdomen mainly white; no such long hairs on male genitalia. *caniventris*, sp. n.
- 5 (2). Arista pubescent only; face not banded; abdomen adorned with several rows of white spots; wings black, with moderately numerous, rounded hyaline spots. *leucosticta*, sp. n.
- 6 (1). No more than three dc. and only one prsct.; no strong acr., or only a few irregular ones between setulae, which are arranged in more than two rows (from six to twelve rows).
- 7 (8). Fourth vein distinctly, even though but slightly, curved upwards at extreme tip; wings half yellow, half blackish; species of very large size. *acrotoxa*, sp. n.
- 8 (7). Fourth vein quite straight at tip; wings hyaline; species of smaller size.
- 9 (14). Only one st. and no i.a.; anterior dc. as strong as remainder, and situate before suture; acrostichal setulae disposed in from six to eight rows; arista with long plumosity; mesonotum metallic.
- 10 (13). Sides of thorax and pleurae black; scutellum metallic like scutum; face blackish; femora blackish.
- 11 (12). Mesonotum bluish; abdomen black. *sertulata*, sp. n.
- 12 (11). Mesonotum greenish; abdomen yellowish, with black spots or bands. *hemixantha*, sp. n.
- 13 (10). Sides of thorax and pleurae pale yellowish; scutellum yellowish, with blackish spot on each side; face argenteous; femora pale yellowish.
argyrocephala, sp. n.

- 14 (9). Two st.; i.a. present; no praesutural dc.; mesonotum entirely yellowish (*Minettia*, R.D.).
- 15 (20). Arista with long plumosity; acrostichal setulae disposed in from ten to twelve rows.
- 16 (19). Abdomen with distinct black pattern.
- 17 (18). Mesonotum very shining; abdominal black bands broad and interrupted in middle; wings not infuscated at tips...*discontinua*, sp. n.
- 18 (17). Mesonotum less shining; abdominal black bands very narrow and continuous; wings with distinct infuscation at tips...*vertebrata*, sp. n.
- 19 (16). Abdomen without black pattern; wings with distinct infuscation at tips.....*invertebrata*, sp. n.
- 20 (15). Arista pubescent only, feathering being never broader than breadth of third antennal segment; acrostichal setulae usually disposed in from six to eight rows, rarely more than eight.
- 21 (24). Acrostichal setulae all equally small, only praescutellar pair more developed.
- 22 (23). Mesonotum less shining, with distinct whitish stripes; arista with rather long pubescence.....*tephrotaenia*, sp. n.
- 23 (22). Mesonotum very shining and destitute of whitish stripes; arista with very short pubescence.....*lissonota*, sp. n.
- 24 (21). Two or three pairs of longer bristles among acrostichal setulae.
- 25 (28). Arista with very short pubescence.
- 26 (27). Abdomen entirely blackish in both sexes.....*reptans*, sp. n.
- 27 (26). Abdomen yellowish, with broad, interrupted black bands; female with knife-like ovipositor.....*ensifera*, sp. n.
- 28 (25). Arista with rather long pubescence; abdomen with broad, interrupted black bands.....*volitans*, sp. n.

124. *Sapromyza cirrhicauda*, sp. n., ♂♀.

Among the species of *Drosomyia* with long plumosity on the arista, the present one is distinguished by the blacker wing-pattern, and moreover in the male by the peculiar long hair on the genitalia.

Type ♂, Labasa, type ♀, Nausori, v.-xii.1921 (*R. Veitch*); additional specimens of both sexes Buca Bay, 29.xii.1921, Savu Savu, v.1922 (*H. W. Simmonds*); Mt. Evans, Lautoka, 10.v.1919 (*W. Greenwood*).

♂♀. Length of body 4-4.5 mm.; of wing 3.5-4 mm.

Head rather depressed, distinctly broader than thorax; occiput dark grey-dusted, yellowish on eye-borders and behind vertex. Frons quite flat, somewhat prominent anteriorly, slightly longer than broad, with broad whitish stripe on each side, bearing or.; median stripe as broad as one of parafrontalia, blackish, but divided by a broad greyish middle line; deep black spot in front, on each side of base of antennae. Antennae entirely reddish; basal segments with black bristly hairs; third segment rounded at tip; arista about thrice as long as entire antenna, with long plumosity, which is broader than third antennal segment. Eyes rounded but rather transverse, their horizontal diameter longer than vertical one. Face broad and short, half as long as frons, nearly flat, whitish-dusted, with two blackish bands, narrower one across middle and broader one at mouth-border; praelabrum and peristomialia narrow and whitish; palpi and proboscis whitish. Cephalic bristles black, strong, normal;

oc. as strong as decussate pvt.; two or., directed backwards like i.vt. Mesonotum opaque with same pattern as frons, with two broad whitish stripes along dc. lines, and with dark median stripe, which is reduced to two narrow lines by broad greyish middle stripe; sides above notopleural suture broadly reddish brown; pleurae reddish brown, but clothed with thin whitish dust. Four pairs of strong acr. disposed in two rows, one before suture; four pairs of dc., one likewise before suture; two st.; mesopleura with several scattered bristles; all these bristles black. Scutellum broad, flat and rounded, blackish in middle, whitish on sides, yellowish on hind border, bare on disc like scutum, with four strong bristles, apical ones decussate. Mesophragma, dark yellowish, grey-dusted, slightly shining; halteres whitish, with dark knobs. Abdomen opaque blackish, dark-dusted, more or less yellowish at base; second and following segments each with an irregular band of whitish-grey tomentum

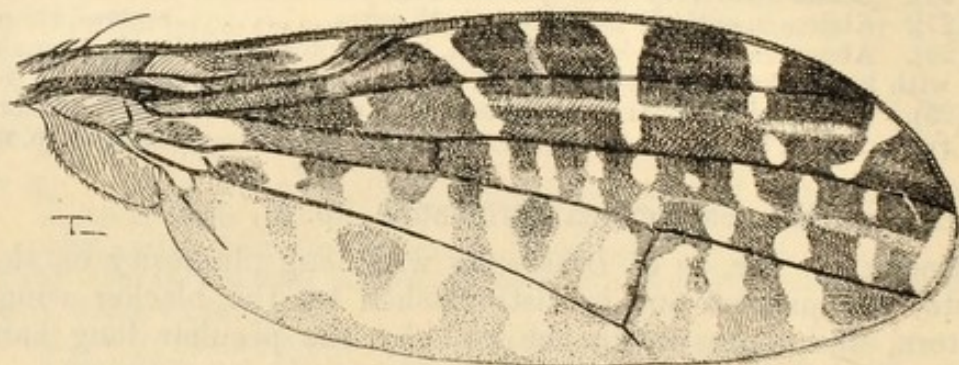


FIG. 42.—*Sapromyza cirrhicauda*, sp. n. Wing of ♂. × 25.

on hind border, formed by triangular spots at insertion of bristles. Latter strong, long and black, arranged in regular rows on hind border of each segment, except first. Male genitalia greatly developed, yellowish, clothed with whitish dust, with shining corneous tubercle below, provided above at base with five to seven very long, undulated hairs, forming a sort of tail. Legs, including coxae, pale yellowish, four posterior femora each with conspicuous black spot below before tip, more developed in case of hind pair, and sometimes less developed in female. Wings with second, third and fourth veins straight and gradually diverging towards tips; anterior transverse vein situate above middle of discal cell; posterior transverse vein straight and nearly thrice as long as portion of fifth vein beyond it. Anterior half of wing to fourth vein practically black, with hyaline spots, one at tip of second costal cell, three elongate spots at equal distances in marginal cell and prolonged below second vein into corresponding streaks in submarginal cell; two rows, with six or seven spots in each row, in first posterior cell. Remainder of wing greyish hyaline, with rounded dark spots, about four or five in

discoidal, five or six in second posterior, and two or three, in third posterior cell.

125. *Sapromyza caniventris*, sp. n., ♂♀.

Allied to the preceding species but abundantly distinguished by the different body and wing-pattern, the colour of the front legs and by the male genitalia.

Type ♂ and ♀, and other specimens, Natova, ix.-xi (*R. Veitch*); Waialailai, 12.x.1921, Taviuni, 21.xii.1921, Newiti, 13.x.1921, Suva, ix.1921 (*H. W. Simmonds*).

♂♀. Length of body 3.5-4 mm.; of wing 3.2-3.8 mm.

Head, its appendages and chaetotaxy as in *S. cirrhicauda*; frons evenly clothed with whitish-grey dust, without distinct pattern; third antennal segment sometimes darkened, and feathering of arista distinctly a little narrower; dark bands on

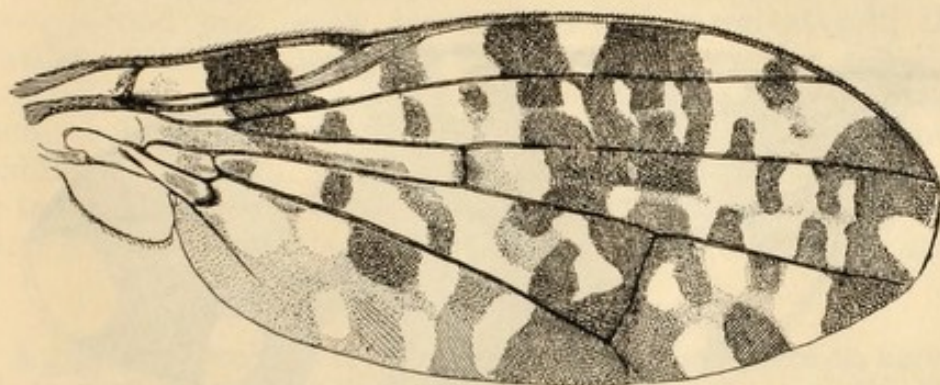


FIG. 43.—*Sapromyza caniventris*, sp. n. Wing of ♀. × 24.

face much broader; being separated by two narrow white bands, one in middle and one at mouth-border, continued on very narrow, unspotted peristomialia. Thorax, including scutellum, with same chaetotaxy as in *S. cirrhicauda*, but with very different pattern; mesonotum densely clothed with opaque greyish dust, with four rows of dark brown spots at insertions of acr. and dc. bristles, and moreover a row of three larger spots on each side; on pleurae, dark spots on meso-, hypo- and sternopleura; scutellum grey, with yellowish margin and four dark spots at insertion of bristles. Halteres with whitish stalks and blackish knobs. Abdomen as in *S. cirrhicauda*; but whitish parts more extensive than brown ones; male genitalia larger, grey, black-haired with lower part bare and shining black; male genitalia quite destitute of long tail-like hairs. Legs darker than in *S. cirrhicauda*; coxae blackish; four anterior femora each with black spot below before apex; front femora very strikingly coloured, blackish on basal two-thirds, white-dusted outwardly on terminal third. Wings with same venation as in *S. cirrhicauda*, but with very different pattern; wings hyaline with brown spots, these latter partly

fused to form two dark bands, one in middle and one at end; marginal cell black in middle of terminal part, including one or two hyaline spots; tip of first posterior cell dark, with median hyaline spot on wing-margin; hyaline parts distinctly whitish.

126. *Sapromyza leucosticta*, sp. n., ♂♀.

A species with the same thoracic chaetotaxy as the two preceding species, but distinguished by its much smaller size, the very short pubescence on the arista, and the different colour of the body and wings.

The three *Javanese* species described by Prof. De Meijere under the names of *S. pulchripennis* (1908—*nec* Kertész, 1900), *S. bicincta* (1910), and *S. fenestrata* (1910), are very similar in chaetotaxy and wing-pattern, but all have the abdomen shining black and entirely unspotted.

Type ♂ Savu Savu, v.1922 (*H. W. Simmonds*); type ♀, Cuvu,

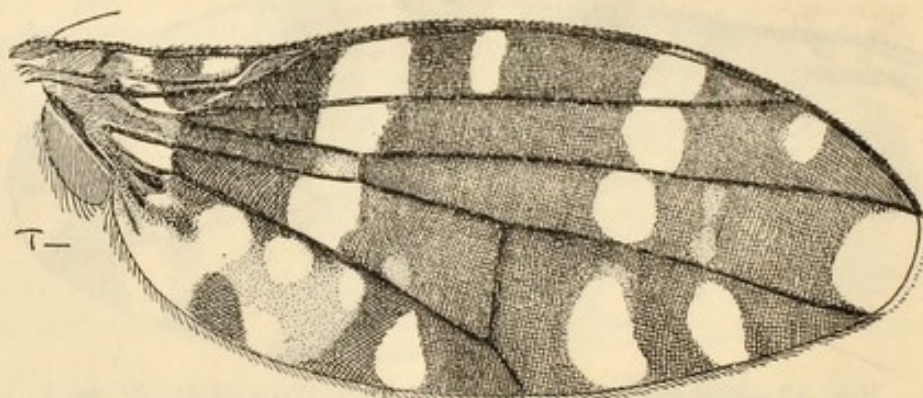


FIG. 44.—*Sapromyza leucosticta* sp. n. Wing of ♀. × 36.

14.ix.1920 (*W. Greenwood*); additional specimens from Nausori, v.1921, and Labasa, xii.1921 (*R. Veitch*).

♂♀. Length of body 1.8–2 mm.; of wing 2–2.2 mm.

Head less depressed than in last two species, eyes more rounded and face about as long as frons. Occiput opaque black in middle, whitish grey at sides. Frons subquadrate, or a little broader than long, blackish in middle, with greyish medium line and narrow whitish borders; frons in female less dark than in male. Antennae blackish in male, more or less reddish in female; third segment rounded at tip; arista with very short pubescence, only half as broad as third antennal segment. Face whitish, without distinct bands, or with a very narrow one just above mouth-border. Palpi blackish; proboscis dirty yellowish. Cephalic chaetotaxy as in two preceding species; bristles strong, black. Thorax whitish-dusted on dorsum, with characteristic dark pattern formed by dots at insertions of *acr.* and *dc.* bristles, and by two stripes between *acr.* and *dc.*, fused behind to form single spot in front of scutellum; pleurae blackish, with several

whitish spots. Scutellum blackish brown, with two whitish spots at sides and one at apex. Thoracic and scutellar chaetotaxy as in two preceding species. Halteres black. Abdomen entirely opaque blackish brown, with complete rows of bristles on hind borders of segments; each segment, except first, with two rounded white spots on each side on hind border, and one middle spot on fore border. Male genitalia black, simple, destitute of special hairs, and relatively small. Legs with dark coxae and bases of femora more or less broadly infuscated; tibiae and tarsi pale yellowish; tips of tarsi, and narrow ring before base of hind tibiae blackish. Wings proportionately longer and narrower than in two preceding species; venation similar, but posterior transverse vein further from wing-margin. Wings entirely blackish, with following rounded whitish-hyaline spots: two or three very small spots in costal cells; three in marginal cell, first just beyond stigma, subquadrate and larger than remainder; three in submarginal, first just below above-named subquadrate spot, second just below terminal one of marginal cell, third smaller, near wing-margin; two in first posterior cell, both rounded, one in middle and one (larger) at tip, between them a more or less developed vertical stripe; one quadrate spot in middle of discal cell, and beyond it a smaller irregular one, more or less developed; two elongate spots in second posterior cell; three or four more or less fused together, in third posterior cell.

127. *Sapromyza acrotoxa*, sp. n., ♀.

A gigantic species, very distinct from all the others on account of its particoloured yellow and black wings, the broadly black vittate mesonotum and the upturned end of the fourth vein. *Sciomyza brunnipennis*, Macquart, of New Guinea, seems to have similarly patterned wings, but is otherwise very different.

Type ♀, a single specimen from Walau, v.1922 (*H.W. Simmonds*).

♀. Length of body and wing about 7 mm. or rather more.

Occiput densely clothed with yellowish grey dust, unspotted. Frons flat, subquadrate, not prominent even at base of antennae, opaque blackish, with narrow reddish median stripe. Antennae reaching middle of face, dark yellowish with third segment rather elongate, rounded at tip; arista with very long plumosity, feathering being as broad as length of whole antenna. Eyes rather oblique, vertical diameter longer than horizontal. Face as long as or slightly longer than frons, flat, very little convex below, entirely blackish, dark reddish above just below antennae; parafacialia rather broad, ciliated at border inferiorly; praelabrum shining yellow; palpi and proboscis dark yellowish. Cephalic bristles all black and strong; oc. and pvt. much developed; two equally strong or. directed backwards; superior ocp. very long. Mesonotum broad and very convex, opaque, densely clothed with yellowish dust, with two broad black stripes extending from in front to behind and prolonged on sides of scutellum, which is

yellowish-dusted in middle like scutum; mesonotum may therefore be called black with three broad yellowish stripes, a median one, and a lateral one on each side above notopleural line. Pleurae blackish, with reddish sutures and pteropleura; mesophragma reddish, somewhat shining. Bristles and setulae black, latter disposed in not very regular rows, eight or ten being acrostichal, including six or eight on yellow and one on black part; 1 prsct.; 2 dc.; 2 i.a.; 1 mpl., 2 st., 1 pp. Calypters yellowish, with golden fringes; halteres dark yellowish; scutellum bare on disc, with four bristles, apical ones decussate. Abdomen entirely reddish, unspotted, blackened at sides basally and there rather shining; setulae and bristles black, latter forming complete rows on hind borders of all segments, except first and middle

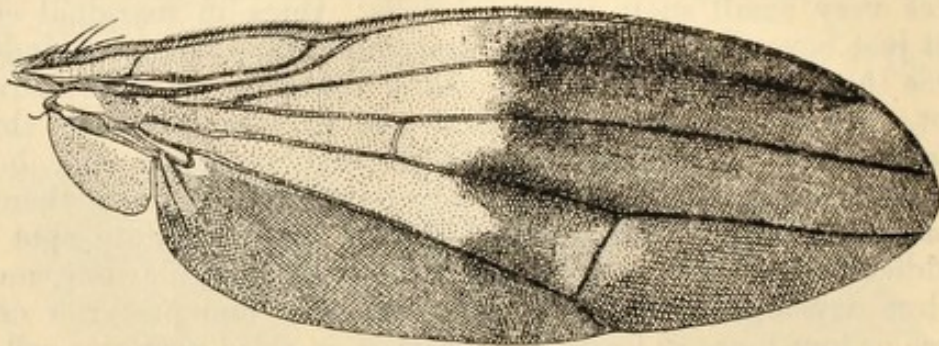


FIG. 45.—*Sapromyza acrotoxa* sp. n. Wing of ♀. × 12.

portion of second; ovipositor with two narrow, yellowish lamellae. Legs yellowish to end of tarsi and quite unspotted, coxae blackish; hairs and bristles black; front femora with row of four or five bristles below; middle tibiae with five strong black spurs at tips. Wings long and relatively narrow; second vein very long and in its last portion parallel with third; fourth vein distinctly and broadly upturned at end; anterior transverse vein a little before middle of discal cell; posterior transverse vein straight, twice as long as portion of fifth vein beyond it. Wings yellow from base to a little beyond anterior transverse vein, and from costa to fifth vein; wings elsewhere infuscated and even blackish in middle. Veins yellow in yellow area, blackish in that which is infuscated.

128. *Sapromyza sertulata*, sp. n., ♂♀.

A small species with entirely hyaline wings and a strong praesutural dc.; distinguished by its metallic-blue mesonotum. It seems to be allied to *S. metallica*, Walker, of New South Wales, which however is described as having a pubescent arista, while in the present species the arista is very long plumose.

Type ♂, Labasa, xii.1921 (*R. Veitch*); type ♀, Lautoka Mts., 25.x.1921 (*W. Greenwood*); Nadi, 1914 (*D. S. North*).

♂♀. Length of body 2-2.5 mm.; of wing 2.2-3 mm.

Head black; occiput dark grey-dusted in middle; frons opaque blackish, with greyish orbits and ocellar stripes, and with yellow band in front just above antennae; face as long as frons, flat, shining blackish, with distinct median keel. Antennae inserted above middle of eyes, entirely yellowish; third segment rounded at tip; arista with very long plumosity, especially on upper side. Proboscis and palpi dark yellowish or blackish. Bristles black; oc. strong; two or., anterior one only half so long as posterior both curved backwards. Mesonotum shining metallic blue, on sides, pleurae blackish; three strong dc., one before suture; no. i.a.; only one st.; acrostichal setulae very small, disposed in about eight rows. Scutellum flat, rounded, opaque blackish, only at base narrowly blue and shining, with four bristles, apical ones decussate. Mesophragma shining; halteres white. Abdomen shining blackish, without pattern sometimes yellowish at extreme base. Legs with blackish coxae and femora yellowish tibiae and tarsi; middle tibiae with three black spurs at tips. Wings long and narrow, entirely hyaline, with blackish veins; last portions of third and fourth veins quite straight and parallel; anterior transverse vein on middle of discal cell; posterior transverse vein straight, about as long as portion of fifth vein beyond it.

129. *Sapromyza hemixantha*, sp. n., ♂♀.

Closely allied to the preceding species, but distinguished by the mesonotum being more green than blue, and by the abdomen being yellowish, with three rows of subquadrate black spots, and moreover by having shorter wings.

Type ♂ and ♀, a couple of specimens *in coitú* from Labasa, ix.1922, Cuvu, xi.1921, Natova, 22.xi.1918 (*R. Veitch*); Lautoka, vi.1919 (*W. Greenwood*); Buca Bay, 27.xii.1921 (*H. W. Simmonds*).

♂♀. Length of body 2.5-3 mm., of wing 2.2-2.5 mm.

Head, its appendages and chaetotaxy as in *S. sertulata*; frons more broadly reddish, but with similar anterior yellowish band. Thorax and its chaetotaxy precisely as in *S. sertulata* except that mesonotum is metallic green. Halteres white. Abdomen, entirely opaque yellowish, with the first segment black at base, and remaining segments each with three shining black spots, one in middle, one on each side; these spots rather large and subquadrate, but reaching either anterior or posterior borders of segments; hairs and bristles black. Legs and wings as in *S. sertulata*, but latter distinctly shorter and with faint dark tinge.

130. *Sapromyza argyrocephala*, sp. n., ♀.

Closely allied to the two preceding species, but at once distinguishable by the much paler coloration of the body and legs.

Type ♀, Tamuona, 30.vi.1922 (*H. W. Simmonds*); Labasa, xii.1921 (*R. Veitch*); Mt. Evans, Lautoka, 4.iv.1920 (*W. Greenwood*).

♀. Length of body about 3 mm.; of wing about 3.2 mm.

Head, antennae and cephalic chaetotaxy exactly as in the two preceding species, except that head is entirely yellowish, with occiput rather shining and infuscated above; frons unicolorous, without yellow anterior band, with blackish ocellar dot, and shining orbital plates; entire face clothed with dense, argenteous dust. Thorax shining yellowish, paler and less shining on pleurae, whitish on breast, only dorsum metallic shining blue; scutellum entirely pale yellowish, with elongate blackish spot on each side; mesophragma pale yellowish. Chaetotaxy as in the two preceding species, but with second small st. in front of larger one. Halteres pale yellowish. Abdomen pale yellowish, with terminal segments blackish on middle line, and with large black spots at sides; abdomen sometimes black, shining, with two narrow, yellowish admedian stripes, including black median spots. Coxae and legs entirely pale yellowish, or whitish. Wings as in *S. sertulata*, but with faint yellowish tinge.

131. *Sapromyza discontinua*, sp. n., ♂♀.

Among the entirely reddish species, with quite hyaline wings and plumose arista, the present one is distinguished by its shining mesonotum, and broad interrupted black bands on the abdomen. In *S. gibbosa*, Thoms., of Tahiti, the thorax is less shining and the abdomen is differently coloured; in *S. taitensis*, Frauent., also found in Tahiti, the wings are infuscated on the terminal half, and the abdomen is entirely yellowish.

Type ♂ and ♀, a couple of specimens from Loloti, 19.ix.1921 (*W. Greenwood*).

♂♀. Length of body 3.2–3.7 mm.; of wing 3.5–4 mm.

Head entirely yellowish, opaque, somewhat shining only on vertical ridges. Frons flat, not at all prominent even anteriorly, distinctly and gradually narrowed from vertex to antennae, quite unspotted, narrow orbital stripes somewhat greyish. Eyes with vertical diameter slightly longer than horizontal one. Antennae inserted on level with middle of eyes, entirely yellowish with third segment rounded at tip; arista with long plumosity (longer than whole antenna). Face about as long as frons, entirely yellowish, flat or even slightly concave above; peristomialia broad, unspotted, ciliated below; palpi and proboscis yellowish. Bristles black, strong; two equally strong or. directed backwards; oc. well developed; upper pvt. rather long. Thorax entirely shining yellow, darker on dorsum; 1 prst.; 3 dc. all behind the suture; 1 i.a.; acr. setulae disposed in about ten rows; 1 mpl.; 2 equally strong st.; mesopleura hairy. Scutellum greatly developed, and like scutum in coloration, with four long bristles, apical ones decussate. Halteres yellowish; mesophragma shining reddish. Abdomen reddish, with yellowish base, second, third and fourth segments each with broad shining black band on hind border, interrupted in middle; genitalia

yellowish, greatly developed, but not prominent; hairs and bristles black. Legs and coxae entirely yellowish, unspotted; bristles black, like three terminal spurs on middle tibiae. Wings yellowish hyaline, unspotted, more intensely yellowish at base and on fore borders; veins darkish; last portions of second, third and fourth veins quite straight and parallel; anterior transverse vein considerably before middle of discal cell, but always a little beyond end of first vein; posterior transverse vein straight, not much longer than portion of fifth vein beyond it.

132. *Sapromyza vertebrata*, sp. n., ♀.

Closely allied to the preceding species, but distinguished by its opaque thorax, very differently coloured abdomen, and wings faintly infuscated distally. The wings of the present species are as in Frauenfeld's figure of *S. taitensis*, and as in Kertész's description of *S. birói*, of New Guinea; but the acr. are disposed in more numerous rows (twelve instead of eight), and the thorax, including the scutellum, is unspotted.

Type ♀, Labasa, vii.1922; another female Natova, iv.1918 (*R. Veitch*).

♀. Length of body 5-5.6 mm.; of wing 6 mm.

Head, its appendages and chaetotaxy as in *S. discontinua*; frons and face darker; arista with longer plumosity; hairs on lower part of occiput longer and more numerous. Thorax entirely subopaque reddish, shining on sides and pleurae; chaetotaxy as in *S. discontinua*, but acr. setulae disposed in about twelve rows. Scutellum and halteres as in *S. discontinua*. Abdomen subopaque reddish, with faint grey dust; all segments with narrow, complete, shining black hind borders. Legs as in *S. discontinua*; middle femora with row of seven or eight strong black bristles on outer surface of terminal half, as in *S. discontinua* but stronger. Wings as in *S. discontinua*, but ends of second, third and fourth veins, and posterior transverse vein with more or less distinct infuscation.

133. *Sapromyza invertebrata*, sp. n., ♀.

Differing from the two preceding species in lacking any abdominal pattern, and thus probably identical with *S. taitensis*.

Type ♀, Labasa, xii.1921 (*R. Veitch*); another female Lautoka Mts. 11.iv.1920 (*W. Greenwood*).

♀. Length of body 5 mm.; of wing 5.5 mm.

Head as in *S. vertebrata*; third antennal segment twice as long as broad; arista with very long plumosity; frons and face rather dark, clothed with faint greyish dust. Thorax, including scutellum, as in *S. vertebrata*; acr. in 10-12 rows. Abdomen entirely yellowish, without black hind borders to segments. Legs and wings as in *S. vertebrata*.

134. *Sapromyza tephrotaenia*, sp. n., ♂♀.

Among the reddish species with entirely hyaline wings, and with shortly pubescent arista, *S. tephrotaenia* is distinguished by the presence of three broad whitish stripes on the mesonotum.

Type ♂ and ♀, a couple of specimens *in coitú*, Lautoka, 30.i.1920 (*W. Greenwood*); an additional male from Natova, 22.xi.1918 (*R. Veitch*).

♂♀. Length of body and wings about 3 mm.

Head entirely yellowish opaque, occiput whitish dusted, shining only near vertex. Frons flat, not prominent, narrow, considerably longer than broad, with greyish lateral stripes. Eyes rounded, but their vertical diameter slightly longer than horizontal one. Antennae inserted on level with middle of eyes, short, third segment nearly circular; arista with pubescence rather long, but shorter than breadth of third antennal segment. Face somewhat shorter than frons, entirely whitish-dusted; parafacialia and peristomialia narrow, whitish, unspotted; palpi and proboscis yellowish. Bristles black; two or. of equal length, both directed backwards; oc. and pvt. well developed. Thorax yellowish, more dark reddish and opaque in middle of mesonotum, slightly shining on each side, with three whitish stripes more distinguishable in lateral view, middle one broader, occupying half space between dc., and evanescent behind; lateral ones narrow, complete, situate just beyond dorsocentral lines; hairs and bristles black, 1 prsct.; 3 dc., all behind suture; 1 i.a.; 1 mpl., 2 st.; acr. setulae all equally small, disposed in 10-12 rows. Scutellum reddish, with pale median stripe, pale sides and hind border, with four bristles. Mesophragma shining reddish; halteres pale yellowish. Abdomen reddish, somewhat shining, last two segments each with pair of large rounded black spots, less differentiated or wanting on penultimate segment; hairs and bristles black; male genitalia small. Legs rather short and stout, entirely pale yellowish, even on coxae; bristles black, middle femora with short but strong external row, middle tibiae with three stout spurs. Wings hyaline, unspotted, with faint yellowish tinge; veins dark yellowish; last portions of second, third and fourth veins quite straight, parallel, equidistant one from another; anterior transverse vein slightly before middle of discal cell; posterior transverse vein short, straight, only a little longer than portion of fifth vein beyond it.

135. *Sapromyza lissonota*, sp. n., ♂♀.

Allied to the preceding species, but distinguished by its larger size, shining and unstriped mesonotum and the shorter pubescence on the arista.

Type ♂ and ♀, Lautoka, 12.ii.1919 (*W. Greenwood*); Savu Savu, iii.1922 (*H. W. Simmonds*); Cuvu, 19.viii.1919 (*R. Veitch*).

♂♀. Length of body and wing 3.5-4 mm.

Head, its appendages and chaetotaxy as in *S. tephrotaenia*; occiput likewise with darkish subquadrate spot just above neck; third antennal segment more elongate, one and a half times as long as broad; arista with much shorter pubescence. Mesonotum very shining, destitute of whitish stripes; chaetotaxy as in *S. tephrotaenia*; acr. all equally small, in about ten rows; scutellum shining, not striped with four bristles, terminal ones decussate. Halteres yellowish. Abdomen shining reddish; fourth and fifth segments each with three shining black rounded spots, one in middle and one on each side. Male genitalia greatly developed, bent along venter and reaching nearly to its base, with shining reddish corneous median appendage; ovipositor elongate, whitish, with two black lamellae at tip. Legs and wings as in *S. tephrotaenia*; anterior transverse vein before middle of discal cell; posterior transverse vein much longer than distance from hind margin along the fifth vein.

136. *Sapromyza reptans*, sp. n., ♂♀.

Distinguished from the two preceding species in having fewer acr. setulae, in the middle row with two or three pairs of longer ones in front of the prset.

Type ♂ and ♀, and other specimens from Nausori, v.1921 (*R. Veitch*); Savu Savu, v.1921 (*H. W. Simmonds*).

♂♀. Length of body and wing 3.5-4 mm.

Head as in *S. lissonota*; frons slightly narrower; third antennal segment elongate, nearly twice as long as broad, and rather infuscated, arista with very short pubescence. Thorax entirely reddish yellow, opaque, only a little shining on sides and pleurae, not striped; chaetotaxy as in *S. lissonota*, but with very different acr.; latter in 8-20 rows, but middle row separated to some extent by broad bare space, and formed of longer, bristly setulae, with two or three longer pairs in front of prset. Scutellum opaque reddish, with four bristles, middle ones decussate. Halteres yellowish. Abdomen entirely blackish brown in both sexes, very little shining; male genitalia small. Legs as in *S. lissonota*, but tarsi distinctly infuscated at tips. Wings as in *S. lissonota*; posterior transverse, vein slightly longer than its distance from hind margins.

137. *Sapromyza ensifera*, sp. n., ♂♀.

Allied to *S. reptans*, but distinguished by having mesonotum more shining and the abdomen differently coloured.

Type ♂, Nausori, v.1921, Labasa, ix.1922 (*R. Veitch*); type ♀, Lautoka Mts, 23.x.1921 (*W. Greenwood*).

♂♀. Length of body and wing 3.5-4 mm.

Head, its chaetotaxy and antennae as in *S. reptans*, but with third antennal segment not infuscated. Mesonotum more shining; two pairs of strong acr. before prset. Abdomen shining reddish, second to fourth segments each with broad shining black band

on hind border, interrupted in middle line; male genitalia rather small; ovipositor with curved, acute, shining yellowish, corneous point. Legs and wings as in *S. reptans*, but wings with deeper yellowish tinge.

138. *Sapromyza volitans*, sp. n., ♂♀.

Nearly allied to *S. ensifera*, even in its abdominal pattern, but distinguished by the larger pubescence on the arista. Apparently allied to *S. insularis*, Schiner, of Tahiti, which has however a different pattern on the abdomen.

Type ♂, Savu Savu, v.1921 (*H. W. Simmonds*); type ♀, Loloti, 18.ix.1920 (*W. Greenwood*); Nausori, v.1921 (*R. Veitch*).

♂♀. Length of body and wing 3-3.5 mm.

Head as in *S. ensifera*, but arista with longer pubescence, about as long as in *S. tephrotaenia*; third antennal segment elongate, about twice as long as broad. Thorax, scutellum and abdomen as in *S. ensifera*, but male genitalia larger, with corneous prominence below, and ovipositor quite simple. Legs and wings as in *S. ensifera*, but wings sometimes faintly infuscated at tips of second, third and fourth veins, and on posterior transverse vein.

Family CHIROMYIDAE.

Genus RHICNOËSSA, Lw.

139. *Rhinoëssa sexseriata*, Hendel, 1913 (*Rh. ferruginea*, Lamb, 1914).

Agreeing very well with the description of this species, the type of which was obtained in Formosa, and characterised by its narrow peristomialia, six rows of acr., and general ferruginous coloration. Sea-shore Diptera being widely distributed, it is probable that Lamb's species, of which the type was taken in the Seychelles, is identical with that of Hendel.

One ♂, Lautoka, 14.viii.1921 (*R. Veitch*).

Family CHLOROPIDAE.

This extensive family is represented by numerous species, but curiously enough they are almost exclusively Osciniinae; and, contrary to what is observed in the Sapromyzidae, which are all endemic, there are several widely distributed species.

Subfamily CHLOROPINAE.

Genus ELLIPONEURA, Lw.

140. *Elliponeura recta*, n. sp., ♀.

Nearly allied to the nearctic *E. debilis*, Loew, but at once distinguished by having very shining black stripes on the mesonotum, and a rather straight third longitudinal vein.

Type ♀, a single specimen without a head from Nausori, v.1921 (*R. Veitch*).

A very important discovery, being the first species of the present genus found elsewhere than in America.

♀. Length of body 1.5 mm.; of wing 1.2 mm.

Thorax entirely yellowish, much paler on pleurae; dorsum with three broad, very shining black stripes of equal width, but middle one abbreviated behind; yellow interstices narrow and distinctly canaliculate; a shining black spot on lower part of mesopleura, and a smaller one on hypopleura; one pair of rather long, black dc., and some shorter black bristles at sides. Scutellum rounded, convex, entirely pale yellowish, shining, unspotted with two long black bristles on hind margin, considerably longer than scutellum itself; postscutellum pale yellowish; mesophragma shining black. Halteres whitish. Abdomen yellowish, each tergite with broad black band at base, venter entirely unspotted. Legs, including coxae, yellowish, unspotted, only terminal segments of tarsi blackish. Wings hyaline; costa and first three veins black and strong, other veins very thin and colourless, fourth almost entirely vestigial; costa extending a little beyond end of third vein; second vein straight, ending about mid-way between first and third veins; third vein straight, but ending considerably before tip of wing; fourth diverging from third, ending symmetrically with it below tip of wing; anterior transverse vein very near base of wing and a little before end of first vein, posterior transverse vein entirely absent.

Subfamily *OSCININAE*.

Genus *RHODESIELLA*, Adams.

There are two species of *Rhodesiella* (*Meroscinis*), which may be distinguished as follows:—

- 1 (2). Legs black, with whitish tarsi; frontal triangle shining blue.
nitidifrons, Beck.
- 2 (1). Legs entirely pale yellowish; frontal triangle shining black.
orthoneura, sp. n.

141. *Rhodesiella nitidifrons*, Becker.

A couple of specimens *in coitû* from Lautoka, 30.i.1920 (*W. Greenwood*).

Very near *R. tarsalis* (*R. scutellata*) but distinguished by its smaller size, by the tibiae being yellow at base and tip, the tarsi not so black at the tips, and by the fourth vein being much less curved at its extreme base. While *R. tarsalis* is known as occurring in Africa, and the whole Oriental Region to the Philippines and Formosa, the present species is known to be found only in Assam, Formosa and the Philippines. In future it will probably be considered as merely a form of *R. tarsalis*; in the present

specimens, as in those from the Philippines, the frontal triangle is blue, while Becker describes it as shining black.

142. *Rhodesiella orthoneura*, sp. n., ♂♀.

Allied to *R. nitidifrons*, but distinguished by the entirely yellow legs and the even straighter fourth longitudinal vein; distinguished from *R. recta*, Beck., by the very shining and not punctate mesonotum.

Type ♂, Lautoka Mts., 11.iv.1920 (*W. Greenwood*); type ♀, Cuvu, 19.viii.1919 (*R. Veitch*).

♂♀. Length of body and wings less than 2 mm.

Head entirely black; frons opaque, broader than one eye, but gradually narrowed towards antennae, almost entirely occupied by shining black, convex triangle, which reaches eyes

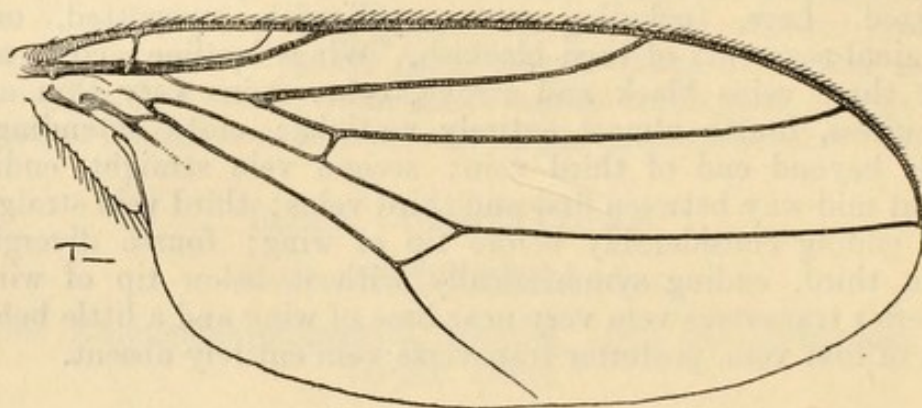


FIG. 46.—*Rhodesiella orthoneura* sp. n. Wing of ♂. × 54.

laterally at base and extends to antennae; eyes bare; antennae reddish, third segment small and rounded; arista thin, microscopically pubescent; face small, narrow, dark brownish, opaque; proboscis yellowish; peristomialia linear; four or five blackish, erect, orbital hairs. Thorax entirely shining black, not punctate on dorsum; hairs and bristles blackish. Scutellum half as long as scutum, rather narrow and convex, less shining than scutum, being punctulate; scutellum with two tubercles at tip bearing long bristles, and one pair of much smaller lateral tubercles, with shorter bristles. Halteres whitish. Abdomen shining black. Coxae and legs, including coxae, entirely pale yellowish, unspotted, even tarsi not darkened at tips. Wings hyaline, with dark veins; second vein long; third and fourth veins practically parallel at end, last portion of fourth quite straight from base to end, form of first posterior cell being therefore quite regular, while in *R. tarsalis* it is very irregular, fourth vein being curved just beyond posterior transverse vein; in *R. nitidifrons* fourth vein is much straighter than in *R. tarsalis*, but not so straight as in present species and in *R. recta*.

Genus **GAURAX**, Lw.

Synoptic Table.

- 1 (4). Head compressed, very narrow in profile, eyes very acute below; antennae and front coxae pale yellowish, legs mainly yellow; third longitudinal vein distinctly upcurved at extreme tip.
- 2 (3). Wings with dark fore border extending from end of first to end of fourth vein; hind femora broadly black at base. . . . *platycephalus*, sp. n.
- 3 (2). Wings with only a terminal dark spot, marginal cell being quite hyaline; hind femora only a little darker at base. . . . *stigmatellus*, var. n.
- 4 (1). Head less compressed, with more rounded eyes; antennae and front coxae black, legs mainly black; third longitudinal vein quite straight at tip. . . . *pubicollis*, Beck.

143. *Gaurax platycephalus*, sp. n., ♂.

Very distinct owing to the form of the head, and the complete dark fore border of the wings. Allied to *G. pallidior*, Beck., of

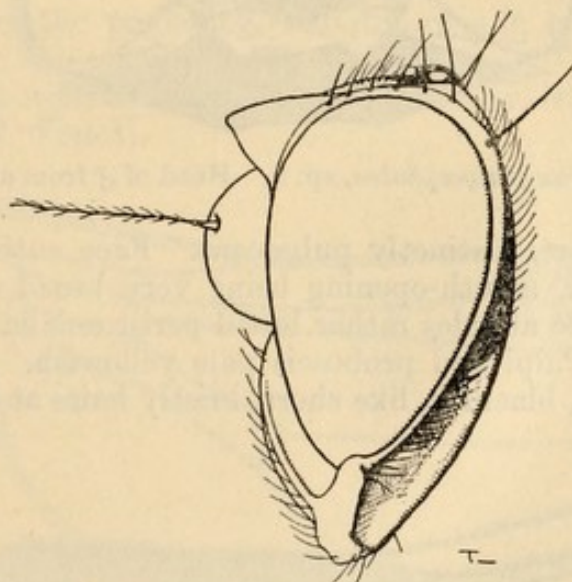


FIG. 47.—*Gaurax platycephalus*, sp. n. Head of ♂ in profile. × 55.

Java, but differing in the coloration of the legs and wings. The form of the head recalls that of the genus *Cestoplectus*, Lamb, 1918, but is also like that found in *Gaurax brachycephalus*, Frey, 1923, of the Philippines.

Type ♂, and other specimens of same sex from Natova, 10.i.1917; Lautoka, i.1922 (*R. Veitch*); Lautoka, 6.iv.1919 (*W. Greenwood*).

♂. Length of body 2–2.5 mm.; of wing 2 mm.

Head very compressed, viewed from side about three times as high as broad, viewed from in front a little broader than high. Occiput on upper half black, dark grey-dusted, narrowly yellowish near eyes and at vertex, entirely pale yellowish on lower half. Frons parallel-sided, broader than one eye and distinctly broader than long, entirely opaque yellow, with very small, shining black triangle; lunula narrow, yellow, prominent at base of antennae.

Eyes narrow, very acute in lower half, clothed with dense, rather long, white pubescence. Antennae inserted on level with middle of eyes; third segment greatly developed, rounded, but distinctly higher than broad; arista inserted on its upper border, thin

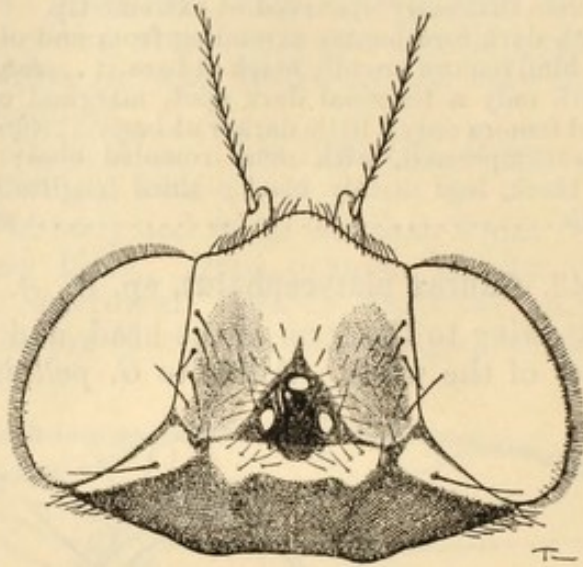


FIG. 48.—*Gaurax platycephalus*, sp. n. Head of ♂ from above. × 55.

and rather short, distinctly pubescent. Face entirely yellowish and very short, mouth-opening being very broad and extended anteriorly, while at sides rather broad peristomialia are produced downwards. Palpi and proboscis pale yellowish. Vt. and pvt. well developed, blackish, like short, bristly hairs at sides of frons.

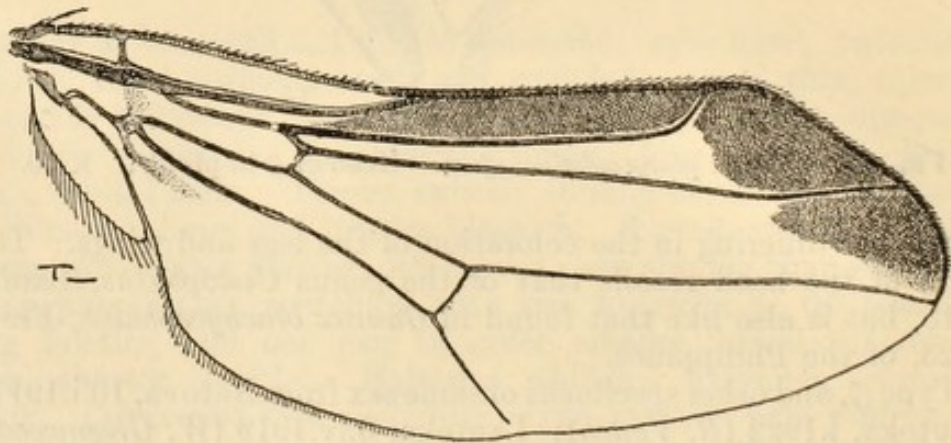


FIG. 49.—*Gaurax platycephalus*, sp. n. Wing of ♂. × 35.

Thorax opaque black, grey-dusted on dorsum and clothed with short whitish pubescence; pleurae reddish in front and below; bristles black and short. Scutellum like scutum with a pair of long black bristles on hind margin; mesophragma shining black; halteres yellowish. Abdomen entirely black, grey-dusted and clothed with rather long, white pubescence. Legs pale yellowish,

hind coxae infuscated; front legs with tibiae more or less blackened anteriorly and praetarsi black; middle femora very narrowly infuscated basally; hind femora broadly black at base. Wings hyaline, with rather broad dark fore border, but without dark edgings to bases of fourth and fifth veins; dark fore border exactly filling marginal cell (except extreme base to anterior transverse vein), and not extending beyond second vein; dark fore border somewhat dilated at end, forming spot which reaches end of fourth vein and has its broadest portion along third vein. Veins blackish; second vein rather long, distance between ends of first and second veins being greater than that between ends of second and third veins; third and fourth veins straight, but distinctly divergent at end, tip of third vein being distinctly upcurved; alula narrow, long and acute, with rather long ciliation.

144. *Gaurax platycephalus*, var. *stigmatellus*, var. n., ♂.

Exactly like the preceding, but differing in lacking the dark fore border in the marginal cell.

Type ♂ and other specimens from Natova, iv.-v.1918, Lautoka, 11.vii.1919 (*R. Veitch*).

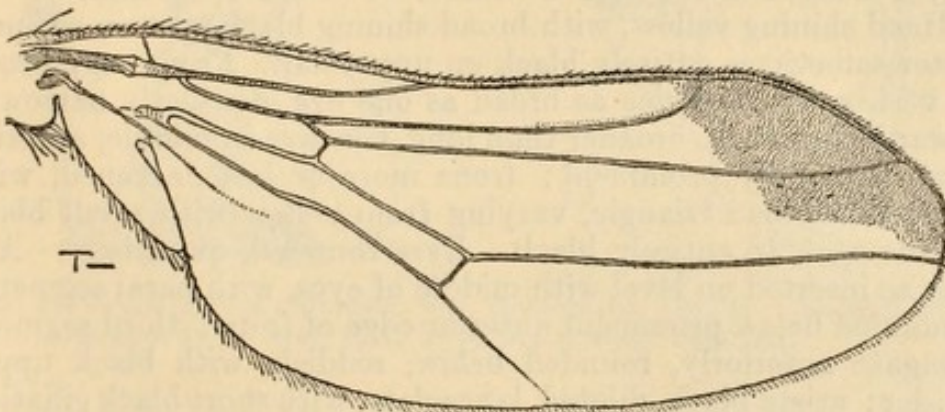


FIG. 50.—*Gaurax platycephalus*, var. *stigmatellus*, var. n. Wing of ♂. × 38.

♂. Like typical form, but infuscation of hind femora less developed, and wing-pattern reduced to terminal spot, infuscation of fore border in marginal cell being entirely wanting, perhaps only owing to immaturity.

145. *Gaurax pubicollis*, Becker, 1911.

Differing from both of the foregoing in the black coloration of the antennae and legs, in the form of the head and in the venation.

Numerous specimens, all females, from Nausori, x.1920 (*R. Veitch*); Natova, iv.1926, Lautoka, 25.iii.1920 (*W. Greenwood*).

This cannot be the female of *G. platycephalus* on account of the very different venation; Becker describes *G. pubicollis*, of New Guinea, as having in the male a yellow and in the female a

black third antennal segment, though the legs in both sexes are black. Form of head as usual in *Gaurax*, but mouth-opening broader and eyes slightly narrower. Legs black, only terminal segment of tarsi yellowish. Wings with second vein distinctly somewhat shorter, distance between tips of first and second veins being equal to that between those of second and third; third vein quite straight at end and parallel with fourth. In fully coloured specimens, basal half of wing infuscated to middle of marginal cell and to end of discal cell, but submarginal cell always hyaline to extreme base, and infuscation in base of first posterior cell and in terminal half of discal cell often very faintly indicated or even indistinct.

Genus **GAMPSOCERA**, Schin.

146. **Gampsocera decussata**, sp. n., ♂♀.

A small species, distinguished by its dilated antennal aristae, which are always decussate, by the shining black mesonotum and by the quite unspotted wings.

Type ♂ and ♀, a couple *in coitû* from Lautoka, 17.iii.1920 (*W. Greenwood*); Labasa, xxi.1911, Lautoka, x.1922 (*R. Veitch*).

♂♀. Length of body 1.5–1.8 mm.; of wing 1.2–1.5 mm.

Head shining yellow, with broad shining black spot on occiput, latter sometimes entirely black on upper half. Frons very broad at vertex, about thrice as broad as one eye, distinctly narrowed towards antennae, broader than long, concave in middle, anterior part noticeably prominent; frons more or less darkened, with short and broad triangle, varying from yellow with small black ocellar spot, to entirely black. Eyes rounded, quite bare. Antennae inserted on level with middle of eyes, with basal segments concealed below prominent anterior edge of frons; third segment elongate anteriorly, rounded below, reddish, with black upper border; arista black, dilated, lanceolate, with short black ciliation on sides, twice as long as third antennal segment with basal segment elongate; aristae usually decussate. Face short, retreating, concave, pale yellowish, with parafacialia shining white; peristomialia rather narrow, shining white, unspotted; palpi and proboscis reddish. Bristles black, vt. and oc. rather long; 2 shorter or. Thorax shining reddish, paler on pleurae, shining black in middle of dorsum, perhaps owing to fusion of three broad stripes, middle one of which is abbreviated behind, so that in front of scutellum there is a reddish patch; pleurae unspotted; bristles black, rather long and strong, especially unique dc. pair, npl. and sa. Scutellum triangular, rounded behind, flat above, shining yellowish, with two long, distant, parallel black bristles at tip, a shorter one on each side, and one or two smaller hairs. Mesophragma shining black; halteres pale yellowish or whitish. Abdomen shining reddish, more or less blackened dorsally, with short, pale pubescence. Legs, including coxae, reddish yellow unspotted, only last two tarsal

segments infuscated. Wings hyaline, quite unspotted, with yellowish veins, latter darkened outwardly; second vein straight, long, distance between ends of first and second veins longer than that between second and third; last portions of third and fourth veins straight but gradually diverging outwards, especially in male, while in female they are longer and more parallel; transverse veins approximated, distance between them being less than twice length of posterior transverse vein, which is inwardly oblique.

147. *Gampsocera decussata*, var. *lissoxantha*, var. n., ♂♀.

Differing from preceding only in having the mesonotum entirely shining reddish, without any trace of black longitudinal stripes, or with only an indistinct, median dark reddish one.

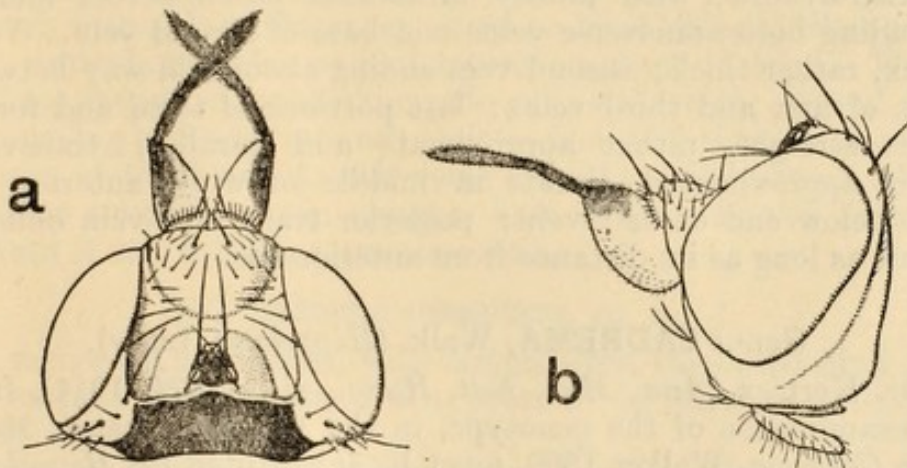


FIG. 51.—*Gampsocera decussata*, var. *lissoxantha*, var. n.: a, head of ♀, from above; b, head of ♀, in profile (greatly enlarged).

Some specimens from Suva, 8.x.1922, "ripe cotton bolls" (*H. W. Simmonds*); Lautoka, ii.-vi.1919 (*W. Greenwood*), one male caught *in coitú* with an entirely black female of the typical form.

Genus **SCOLIOPHTHALMUS**, Beck.

148. *Scoliophthalmus centralis*, sp. n., ♂.

Allied to *S. occultus*, Beck., of New Guinea and Java, but differing in having the frontal triangle shining black, as also in the coloration of the legs, and in the presence of a median infuscation on the wings.

Type ♂, a single specimen from Natova, 1916 (*R. Veitch*).

♂. Length of body and wing about 1.5 mm.

Head flat, in profile much longer than high, viewed from in front much broader than high. Occiput concave, black, shining brown at vertex and at eye-borders. Frons twice as broad as one eye, concave towards middle, not prominent in front,

shining brown, with small, shining black triangle, not extending beyond middle of frons, and rather distant from eyes at sides; a narrow, whitish band just above antennae. Eyes bare, transverse, their horizontal diameter about twice as long as vertical one. Antennae entirely black, third segment very small, circular, with black arista. Face very short and narrow, less than half length of frons; peristomialia very narrow, narrower than third antennal segment, white and unspotted. Bristles black and short; vt. and pvt. well developed; oc. not distinct; only 1 or. on each side. Thorax entirely shining black; mesonotum flat, elongate, with rather long black pubescence; bristles black and strong but short; scutellum like scutum, with four bristles, terminal ones longer and parallel; halteres whitish. Abdomen, entirely shining black, with short black pubescence. Legs, including coxae, black, first three segments of tarsi white. Wings whitish-hyaline, with faintly infuscated patch across middle, including both transverse veins and base of second vein. Veins black, rather thick; second vein ending about mid-way between ends of first and third veins; last portions of third and fourth veins straight, rather approximate and parallel; transverse veins approximated, situate in middle of wing, anterior one just below end of first vein; posterior transverse vein oblique, about as long as its distance from anterior one.

Genus **CADREMA**, Walk. (*Hippelates*, Loew).

Dr. Kertész (*Ann. Mus. Nat. Hung.*, xii, p. 674, 1914), from an examination of the genotype, in the British Museum, states that *Cadrema*, Walker 1860, must be substituted for *Hippelates*, Loew 1863. In the Fiji Islands the following three species occur.

- 1 (2). Peristomialia as broad as third antennal segment, which is entirely black.....*latigena*, sp. n.
- 2 (1). Peristomialia much narrower than third antennal segment, which is quite reddish.
- 3 (4). Scutum and scutellum entirely shining black; hind legs mainly black.....*subsultans*, sp. n.
- 4 (3). Scutum and scutellum shining reddish, former with two black stripes; hind legs entirely yellowish.....*bilineata*, De Meij.

149. **Cadrema latigena**, sp. n., ♀

Recalling *C. mixta*, Beck., of New Guinea, but with black antennae and differently coloured thorax.

Type ♀, a single specimen from Loloti, 19.xii.1920 (*W. Greenwood*).

♀. Length of body and wing about 1.5 mm.

Head entirely yellowish, with occiput unspotted and shining above. Frons flat, at vertex twice as broad as one eye, narrowed towards antennae, broader than long, opaque yellow; triangle shining reddish, rather narrow, not reaching antennae and distant

from eyes basally; ocellar dot small, black; all bristles and hairs yellowish, 2 or. on each side. Eyes quite round and bare. Antennae inserted on level with middle of eyes, entirely black; third segment rounded; arista thin, short, dark, about as long as antenna, distinctly pubescent. Face short, opaque yellowish, like narrow parafacialia; peristomialia about as broad as third antennal segment, whitish, unspotted. Proboscis long and geniculate, pale yellowish. Thorax yellowish, but mesonotum shining black owing to confluence of three broad black stripes, humeri and sides being yellowish; dorsal pubescence pale yellowish; bristles blackish; pleurae unspotted. Scutellum pale yellowish, shining, flat, long, with two long, black divergent bristles at tip and before them one or two smaller ones; mesophragma shining black; halteres pale yellowish. Abdomen entirely shining black, pale yellowish only at base of venter; pubescence pale yellowish. Legs, including coxae, entirely pale yellowish to end of tarsi, with pale pubescence; spurs on hind tibiae black, apical, long, curved, reaching end of second segment of tarsi. Wings hyaline, unspotted, with thin, pale yellowish veins; second vein long, ending mid-way between ends of first and third veins; last portions of third and fourth veins straight and quite parallel; posterior transverse vein oblique, half as long as the distance between it and anterior transverse vein.

150. *Cadrema subsultans*, sp. n., ♂.

A rather robust species, with hirsute eyes, thickened hind legs and entirely black thorax; it appears to be allied to *C. major*, Beck., of New Guinea.

Type ♂, a solitary specimen from Lautoka Mts., 26.vi.1921 (*W. Greenwood*).

♂. Length of body about 3 mm.; of wing 2.8 mm.

Occiput entirely black, very shining near vertex. Frons rather narrow, longer than broad, about as broad as one eye, flat, parallel-sided, opaque blackish, with large, shining, greenish-black, smooth triangle, which reaches eyes at sides and is rounded in front, ending a little before antennae; bristles and hairs black; a complete row of 5-6 or. Eyes rounded, but their vertical diameter longer than horizontal one, clothed with long whitish pubescence. Antennae inserted on level with middle of eyes; third segment rounded, bright reddish; arista black, long, rather thick, with rather long, dark pubescence. Face narrow, shorter than frons, brownish; peristomialia much narrower than third antennal segment, whitish, unspotted; proboscis short, pale yellowish. Thorax shining black on dorsum, only notopleural depression somewhat reddish brown; pleurae smooth, shining black on upper half, pale yellowish on lower half as is also pectus, dividing line being a little above meso-sternopleural suture; scutum deeply punctulate, with yellowish pubescence and strong black bristles; 1 dc. Scutellum like scutum, with two long,

parallel black bristles at tip and a smaller one before them. Abdomen shining black, with pale yellowish venter; hind borders of segments each with narrow whitish line. All coxae and remainder of first two pairs of legs entirely pale yellowish to end of tarsi; hind legs very robust, with thickened femora and thick, straight tibiae; femora pale yellowish on basal half, black on terminal half, but with tips dark yellowish; tibiae with more than basal halves black, remainder yellowish like whole tarsi; spurs black, strong, curved, apical, about as long as praetarsi. Wings greyish-hyaline, unspotted; veins black, paler at end; second vein long, its distance from first greater than that from third; last portions of third and fourth veins straight and parallel; posterior transverse vein oblique.

151. *Cadrema bilineata*, De Meij.

Considered by Becker as only a variety of *C. nigricornis*, Thoms., it is well distinguished by the reddish thorax, which has the pleurae unspotted, but is adorned with two distant black stripes on the mesonotum. This species is widely spread throughout the Oriental Region, from Java to New Guinea, Formosa and the Philippines.

Several specimens of both sexes, Lautoka, 12.ii.1919 (*W. Greenwood*); Natova, xii.1918, Saweni, 29.xii.1920 (*R. Veitch*); Lautoka, "from rotten cotton bolls," 16.vii.1924 (*H. W. Simmonds*); one specimen also from Victoria, Australia, "bred from grass-roots" (*H. W. Simmonds*).

Genus *OSCINIS*, Latr.

(*Oscinella*, *Oscinosoma*, *Botanobia*.)

The rather numerous species can be distinguished as follows :

- 1 (4). Thorax, including scutellum, shining reddish, with more or less developed black spots.
- 2 (3). Frontal triangle shining reddish; legs entirely pale yellowish.
xanthomelas, sp. n.
- 3 (2). Frontal triangle shining black; legs with black tibiae and tarsi.
bipustulata, sp. n.
- 4 (1). Thorax, including scutellum, entirely shining black or opaque grey.
- 5 (8). Thorax, including scutellum, and abdomen shining black, without distinct pattern.
- 6 (7). Wings with fuscous terminal patch.....*nubecula*, sp. n.
- 7 (6). Wings quite unspotted.....*subpilosa*, Beck.
- 8 (5). Thorax including scutellum, opaque grey, former with three dark stripes; abdomen whitish, with deep black bands...*poecilogaster*, Beck.

152. *Oscinis xanthomelas*, sp. n., ♀.

A shining reddish, black-spotted species, with entirely pale yellowish legs, not unlike some species of *Cadrema*; it seems to be allied to *O. semimaculata*, Beck., of Ceylon, Formosa, the Philippines and New Guinea, but is very different in its thoracic pattern.

Type ♀, a solitary specimen from Labasa, ix.1921 (*R. Veitch*).

♀. Length of body and wing about 2 mm.

Head reddish yellow; occiput with rounded black spot in middle just above neck, shining at border. Frons about twice as broad as one eye, flat, somewhat narrowed towards antennae, opaque yellow, but reddish triangle shining, short and broad, not extending beyond middle of frons and nearly reaching eyes at sides; a small black ocellar spot; bristles black, well developed; a complete row of 5-6 or. Eyes round, bare. Antennae inserted on level with middle of eyes, with third segment greatly developed, rounded, but distinctly higher than long, upper half deep black, lower half reddish; arista black, thin, long, with rather well-developed, scattered pubescence. Face and peristomialia reddish, unspotted, latter very narrow, only half as broad as third antennal segment. Proboscis short, yellowish. Thorax elongate, smooth, shining reddish on dorsum, pale yellowish on pleurae; a small shining black subquadrate spot in front, just above neck; a broad rounded shining black patch extending between dc. bristles from suture to scutellum; a rather broad, shining black spot on lower part of mesopleura; short pubescence pale in front and black behind; bristles black; only 1 dc. Scutellum very slightly convex, shining pale yellowish, with black spot on each side, distinctly punctate, with long black pubescence and with two long divergent black bristles at tip. Mesophragma shining yellowish; halteres whitish. Abdomen shining reddish, with broad black band on hind border of each segment, first one interrupted in middle; last segment entirely shining black; venter yellowish. Legs entirely pale yellowish, unspotted; hind legs rather thick as in *Cadrema*, but without tibial spurs. Wings hyaline, quite unspotted; veins yellowish, darkened at tips; second vein long, distance between ends of first and second veins considerably greater than that between ends of second and third; last portions of third and fourth veins quite straight and parallel; posterior transverse vein short, oblique, half as long as its distance from anterior transverse vein.

153. *Oscinis bipustulata*, sp. n., ♂.

Near *O. xanthomelas*, but with differently coloured head, thorax and legs; *O. mesopleuralis*, Beck., of Queensland, seems to be allied, but has an unspotted scutellum and entirely pale yellowish legs.

Type ♂, a single specimen from Labasa, vii.1922 (*R. Veitch*).

Although here regarded as a distinct species, it is possible that *O. bipustulata* is the male of *O. xanthomelas*.

♂. Length of body and wing about 1.8 mm.

Form of head and eyes as in *O. xanthomelas*, but frons distinctly narrower, and third antennal segment considerably smaller. Occiput shining black, with small reddish spot above on each side of vertex near eyes. Frons opaque yellowish, with broad,

long, shining black, smooth triangle; chaetotaxy as in *O. xanthomelas*, as also face, peristomialia and proboscis. Third antennal segment nearly half as large as in *O. xanthomelas*, almost circular, black above, reddish below, with black, shortly pubescent arista. Thorax and its chaetotaxy as in *O. xanthomelas*, but dorsum with broad shining black stripe, extending from neck to scutellum, and resulting from fusion of three usual stripes; stripe narrowed just in front of suture, while at some distance before scutellum it is dilated to dc. lines; humeri yellowish, sides reddish, pleurae pale yellowish, shining, with very small black spot at lower border of mesopleura. Scutellum as in *O. xanthomelas*, with same lateral black spots; mesophragma shining yellowish; halteres whitish. Abdomen apparently entirely black. Coxae and femora pale yellowish as in *O. xanthomelas*, but all tibiae and tarsi entirely black; hind legs strong and thickened, without tibial spurs. Wings as in *O. xanthomelas*, but somewhat darker, and with veins more blackish.

154. *Oscinis nubecula*, sp. n., ♂.

A small, shining black species of usual shape, but with a broad fuscous patch at end of third vein, recalling that of *Gampsocera latipennis*, Becker (*Ann. Hist. Nat. Mus. Nat. Hung.*, 9, pl. ii, fig. 10, 1911), of Formosa, which has likewise a slender arista, but is mainly reddish in colour.

Type ♂, a solitary specimen from Lautoka Mts., 11.iv.1920 (*W. Greenwood*).

♂. Length of body and wing less than 1.5 mm.

Head shining black, with only sides of frons opaque blackish, and very narrow shining white peristomialia. Frontal triangle greatly developed, reaching eyes laterally and base of antennae anteriorly; frontal chaetotaxy normal, with short, black bristles. Eyes rounded, bare; antennae inserted on level with middle of eyes, with third segment small, circular and entirely reddish yellow, with dark, thin, microscopically pubescent arista; face short and narrow; proboscis short, dark yellowish. Thorax entirely shining black, even on humeri, pleurae and mesophragma; dorsum rather convex, quite smooth, with dark pubescence and black bristles; 1 dc.; scutellum like scutum and half as long, convex, with two long, divergent erect bristles at tip, and before them a much smaller pair. Halteres pale yellowish. Abdomen entirely shining black. Legs, including coxae, pale yellowish; front femora with rather broad blackish ring at extreme tip. Wings hyaline, with rather dark yellowish veins, which are blackish at base; fuscous terminal patch not very dark, irregularly rounded, symmetrically disposed on both sides of end of third vein, extending along wing-border from mid-way between ends of second and third veins to middle of first posterior cell; fourth vein also infuscated for some distance before its end. Distance between ends of first and second veins longer than that between

ends of second and third; terminal portion of third vein a little upturned at end and thus distinctly diverging from fourth, which is quite straight to its extremity.

155. *Oscinis subpilosa*, Becker.

A small, shining black species, distinguished by the presence of a yellowish frontal band just above the base of the antennae. It was described from a specimen from New South Wales and is not unlike the cosmopolitan *O. frit*, Linn. The specimens before me have the hind tibiae entirely yellowish, without the blackish ring mentioned by Becker; the wings are greyish-hyaline with yellowish veins; distance between ends of first and second veins but little longer than that between ends of second and third; last portions of third and fourth veins quite straight and parallel; posterior transverse vein oblique, a little longer than half its distance from the anterior transverse vein.

Very numerous specimens of both sexes from Lautoka, ii.-iv. 1920, Mt. Evans, 23.ii.1919 (*W. Greenwood*); Natova, i.1919 (*R. Veitch*).

156. *Oscinis poecilogaster*, Becker.

A very elegant species, distinguished by the grey, dark-striped thorax (recalling the genus *Tricimba*, though there are no furrows), and by the striking coloration of the abdomen.

A single male specimen from Lautoka, 25.iii.1920 (*W. Greenwood*).

Described from a specimen from Formosa, and recorded by Frey from the Philippines. The black spots on the abdomen being usually fused together to form a complete cross-band, it is very difficult to differentiate the present species from *O. inaequalis*, Becker, which likewise occurs in Formosa.

It is to be remarked that in the present species the end of the first longitudinal vein, a considerable distance before its junction with the costa, is distinctly thickened and more intensely black, forming a sort of stigmal spot.

Genus **SIPHUNCULINA**, Rond.

157. *Siphunculina signata*, Wollaston.

Very distinct from all the Oscininae recorded here, on account of its very short second longitudinal vein, rather long bicubitate proboscis and very peculiarly ornamented frons.

A couple of specimens from Lautoka, iii.1919 (*W. Greenwood*).

The species is almost cosmopolitan, having also been recorded from Madeira, Arabia, Formosa and Cuba.

Family EPHYDRIDAE.

Genus **PARALIMNA**, Lw.158. **Paralimna lineata**, De Meijere.

A very small species as compared with its congeners, distinguished by the thoracic pattern and by having entirely black legs. Described from a specimen from Java.

Some examples of both sexes from Lautoka, 13-28.ii.1919 (*R. Veitch*).

Genus **DISCOMYZA**, Meig.159. **Discomyza maculipennis**, Wiedemann.

Readily distinguishable owing to its relatively large size, peculiarly sculptured face and spotted wings.

One male from Nausori, x.1920 (*R. Veitch*).

This species is widely spread throughout the whole Oriental Region, and is common in the Philippines, as well as in the Mascarene Islands.

Genus **TRIMEROGASTRA**, Hend.160. **Trimerogastra longivena**, sp. n., ♂♀.

Allied to the genotype *T. cincta*, Hendel 1914, of Formosa, but distinguished by the much longer second longitudinal vein, and by the greatly developed male genitalia.

Type ♂ and ♀, a couple of specimens, Java, 23.ix.1920 (*H. W. Simmonds*).

♂♀. Length of body and wing less than 1.5 mm.

Head entirely shining black; occiput concave. Frons glistening bluish, a little broader at vertex than at antennae, broader than one eye, as long as broad at vertex; bristles black, vt. and oc. strong, 2 or. in middle of sides, one bent backwards, one forwards, closely approximated at base. Face shorter than frons, gently convex, not prominent at mouth-border, rather narrow, glistening bluish-black, smooth, with only one bristle at sides below; peristomialia narrow, shining black, as broad as third antennal segment; praelabrum prominent, shining black; palpi black, small; proboscis black, thick, long, about as long as in *Rhynchopsilopa*. Eyes quite rounded, bare. Antennae inserted distinctly above middle of eyes, short and small, entirely black, with second segment prominent above and there with well-developed bristle; third segment rounded, small, bare; arista thin, curved, with four or five rays. Thorax short and broad, very convex dorsally, entirely shining black, smooth and glistening; short hairs and bristles black; acrostichal setulae disposed in four equidistant and very regular rows; 1 prsc. and 1 dc. on same line just before scutellum; latter rounded, convex,

coloured like scutum, bare, with only four bristles, which are of about same strength, apical ones parallel, basal ones very near base. Halteres whitish, with a large knob. Abdomen longer than thorax, but not so flat as in *Trimerina*, rather convex above, smooth and very shining black, hind borders of first and second segments each with very narrow, whitish edging; only three segments visible dorsally, all of about same length, last one acute behind; below this segment a very short fourth one; short pubescence is black. Male genitalia greatly developed, biarticulate, with basal segment opaque grey, terminal segment shining black; before genitalia second sternite in middle of hind border with very stout and long black spine. Legs shining black; all tarsi whitish, with last two segments black. Wings greyish-hyaline, unspotted; costa reaching to end of fourth vein; no costal spine. Second vein straight, rather close to costa, very long, distance between ends of first and second veins twice and more as long as that between ends of second and third; third and fourth veins quite parallel, former ending at wing-tip; fifth vein ending before reaching hind margin of wing, but very near it, its last portion longer than posterior transverse vein.

Genus **PSILOPA**, Fall.

161. **Psilopa polita**, Macquart.

Some specimens of both sexes from Lautoka, iii.1919 (*W. Greenwood*); same locality ii. (*R. Veitch*).

I cannot discover any difference from European specimens; the colour varies from entirely shining black to entirely shining green, with a bluish frons. It would seem that even the other Oriental species of this genus are very like the European ones; thus *P. singaporensis*, Kert., is hardly distinguishable from *P. obscuripes*, Loew.

Family DROSOPHILIDAE.

Genus **LEUCOPHENGA**, Mik.

162. **Leucophenga guttiventris**, De Meijere, 1908; Duda, *Arch. für Natg.*, xc, Abt. A, Hft. 3, p. 188, pl. ii, fig. 27, 1924.

This species is chiefly characterised by its greatly developed palpi, which are shortly pilose, and by the subacute, quite unspotted wings, which have the second segment of the costa distinctly thickened and black; the abdominal pattern is also characteristic, but not always easily visible after drying.

Described from specimens from Java and Formosa; some examples from Lautoka, i.-vi., Cuvu, 14.ix.1920 (*W. Greenwood*); Labasa, xii.1921 (*R. Veitch*).

163. *Leucophenga subacutipennis*, Duda, 1924.

Distinct from the preceding on account of the smaller and more setulose palpi and the very different abdominal pattern.

Described from a specimen from Formosa; Labasa, xii.1921 (*R. Veitch*).

Genus *MYCROSOPHILA*, Oldenb.164. *Mycrosophila gratiosa*, De Meijere, 1911; Duda, *Arch. für Natg.*, xc, Abt. A, Hft. 3, pp. 192-193, 1924.

Readily recognisable owing to the striking coloration of the body, recalling that of the European *M. poecilogaster*, Loew; corresponding perfectly with the description of this species as found in Java; the black abdominal bands are not interrupted in the middle, even in the case of the anterior ones, or very doubtfully so. Also occurs in South Africa.

Lautoka 23.vi.1922, "feeding in fungus" (*W. Greenwood*); same locality, vii.1922 (*R. Veitch*).

Already reared from *Polyporus* by Prof. De Meijere; the two recently described Australian species (*M. mycetophaga* and *M. polypori*, Malloch, 1924), also bred from *Polyporus*, are different in having 2 dc. and the wings clouded at the tips.

Genus *DROSOPHILA*, Fall.

Only five species are represented in the collection, and some of these have apparently been introduced by man. All the species are entirely reddish, with a white margined frons in the male, and seem to belong to a peculiar endemic group. They are as follows:

- 1 (2). One pair of well-developed prset.; body and wings much narrower than usual; thorax with dark stripes on dorsum and pleurae; third antennal segment blackish.....*zebrina*, sp. n.
- 2 (1). No longer prset.; body and wings of usual shape; thorax, including pleurae, entirely yellowish or reddish; antennae reddish.
- 3 (6). Smaller species; praetarsi of front legs short, not longer than two following segments together; mesonotum shining; abdomen with dark or blackish markings; frons of male without argenteous margin.
- 4 (5). Second vein rather long, second segment of costa twice as long as third; abdomen with shining black bands or entirely black at tip; front praetarsi of male with black callus.....*ampelophila*, Loew.
- 5 (4). Second vein short, second segment of costa about as long as third; abdomen yellowish, with narrow, less infuscated bands; front praetarsi of male with no callus.....*ananassae*, Dol.
- 6 (3). Rather larger species; front praetarsi longer than the two following segments together; mesonotum quite opaque, abdomen without dark markings; frons of male with broad argenteous margin.
- 7 (8). Smaller species, with darker wing-veins; last portion of fourth vein much longer than preceding one; frons of male margined with argenteous at sides and in front.....*trilimbata*, sp. n.
- 8 (7). Distinctly larger species, with pale veins; last portion of fourth vein not much longer than preceding one; frons of male with white margins only at sides.....*bilimbata*, sp. n.

165. *Drosophila zebrina*, sp. n., ♀.

A species with narrow, elongate body and narrow wings, differing from all the others here recorded in the peculiar ornamentation of the mesonotum. It seems to be allied to *D. obscuricornis*, De Meij., of Java, but differs in having only two dark stripes on the mesonotum. The Javanese *D. lineolata*, De Meij., also seems to be allied, but has an unstriped thorax and very different wings. The recently described *D. lativittata*, Malloch (1923), of New South Wales (Sydney), likewise differs considerably in the pattern of the mesonotum.

Type ♀ and another specimen from Nausori, v.1921 (*R. Veitch*).

♀. Length of body and wing 2 mm.; breadth of wing 0.8 mm.

Head opaque reddish; occiput concave and darkened in middle. Frons flat, longer than broad, distinctly narrowed towards antennae and there as broad as one eye; opaque yellowish, with somewhat greyish lateral stripes; bristles dark reddish, oc. about as strong as vt.; 3 or., reclinate superior one as strong as proclinate inferior. Eyes rounded, with short but distinct pubescence. Antennae inserted on level with middle of eyes; basal segments reddish; third segment elongate, longer than broad, rounded at tip, entirely blackish; arista with five hairs above, three below. Face reddish, pale dusted, with narrow and only slightly prominent tubercle; parafacialia linear; peristomialia very narrow; only one long vibrissa, followed by one or two much smaller, bristly hairs; palpi and proboscis yellowish, small. Mesonotum dull, dark reddish, slightly lighter at sides; two parallel, closely approximated, admedian darker stripes, included between dorsocentral lines and abbreviated behind at some distance before reaching scutellum; pleurae reddish, white-dusted, with three broad parallel dark stripes, a narrower one on notopleural line, one across middle of mesopleura and one on sternopleura, these latter of equal breadth. Hairs yellowish; bristles dark reddish; 1 prsct., 2 dc.; lateral bristles normal, 1 hm., 2 st.; acr. in 8 rows. Scutellum greatly developed, flat, subquadrate, bare, dull yellowish, with four long, blackish bristles. Mesophragma reddish yellow, very shining above. Halteres reddish. Abdomen narrow and elongate, as broad as thorax but twice as long, acute at tip, dull dark reddish, all segments with broad blackish bands on hind borders, darkest on last two segments, and with interrupted narrow yellowish bands on extreme fore borders; ovipositor compressed, shining black. Legs entirely pale yellowish to end of tarsi. Wings narrow and long, subacute at tips, greyish-hyaline, distinctly, though only slightly, darker along fore borders as far as third vein. Veins dark; costa ending at fourth vein; no conspicuous split at end of first vein; second vein long, straight, diverging from third, second segment of costa being two and a half times as long as third; third and fourth veins quite straight and parallel, third ending at wing-tip; last portion of fourth vein twice as long as

penultimate; posterior transverse vein straight and perpendicular, considerably shorter than portion of fifth vein beyond it, which reaches the hind margin.

166. *Drosophila ampelophila*, Loew, Duda, 1924.

This cosmopolitan species is recorded, under the name *D. melanogaster*, Meigen, from Fiji in economic literature by Jepson, Sturtevant, and other authors; but I have not seen it.

167. *Drosophila ananassae* (Doleschall), De Meijere; Duda, *Arch. für Natg.*, xc, Abt. A, Hft. 3, p. 214, 1924.

A small species, liable to be confused with *D. ampelophila*, from which however it is at once distinguished by the much shorter second longitudinal vein, and by the very much lighter colouring of the abdomen, which is almost entirely reddish, the dark cross-bands being much less distinct. Described from a specimen from Java, but probably widely distributed in the tropics of the Indo-Australian Region.

Lautoka, 30.i.1920, "bred from mango" and "in dozens on rotten granadilla" (*W. Greenwood*). *Puparium*. Shining yellowish, a little more than 2 mm. in length, and less than 1 mm. broad. Similar in form and shape to that of *D. ampelophila* (see Martelli, *Boll. Lab. Zool. Portici*, iv, p. 167, fig. iv, 1910), but considerably smaller. The anterior horns are short and straight; the posterior end has four spines (two on each side) instead of only two (not counting the terminal stigmal projections); it lacks the two central spines figured by Howard (*Proc. Wash. Acad. Sci.*, ii, pl. xxxi, fig. 2, e., 1900).

168. *Drosophila trilimbata*, sp. n., ♂♀.

An entirely dull reddish species with unspotted wings, very distinct in the male owing to the frons being margined with argenteous laterally and anteriorly.

Type ♂ and ♀ and additional females from Waidau, 16.xi.1921 (*H. W. Simmonds*).

♂♀. Length of body about 2 mm.; of wing less than 2 mm.

Occiput slightly grey-dusted in middle, near neck. Frons entirely opaque, unspotted, anteriorly as broad as one eye and narrower than long, broader at vertex; in female sides only a little paler, in male frons margined by a broad argenteous stripe on each side, and moreover with an equally broad band above antennae, more easily visible from in front; bristles black, normal; oc. strong; 3 or., second directed backwards, and much smaller than first. Eyes rounded, but with vertical diameter distinctly longer, clothed with short but dense, pale pubescence. Antennae inserted above middle of eyes, entirely reddish, with third segment longer than broad; arista with five hairs above, three below, and with short terminal fork. Face opaque, pale-

dusted, about as long as frons, with greatly swollen and prominent tubercle; parafacialia linear; breadth of peristomialia half that of third antennal segment, grey-dusted; second vibrissa as strong and as long as first, beyond vibrissae a row of shorter bristly hairs along whole border of peristomialia. Palpi reddish, with black bristly hairs; proboscis reddish, short but rather thick. Thorax entirely dull, darker on dorsum and paler on pleurae, without any pattern; bristles and setular black or blackish; 1 hm., 2 dc., no prset., acr. in 6 rows; 2 st., posterior one longer. Scutellum like scutum in colour, flat, rounded behind, bare, with four thin bristles. Mesophragma opaque reddish, unspotted; halteres reddish. Abdomen about as long as thorax, entirely opaque reddish, with rather abundant black hairs; each segment on hind border with indistinct, dark reddish, narrow, uninterrupted band; male genitalia rounded, not prominent, with basal segment yellow; ovipositor with corneous, acute, pale yellowish lamellae. Legs entirely pale yellowish; front praetarsi as long as or longer than two following segments together; front femora of male without peculiar spinulae or setae. Wings broadly rounded at tips, greyish-hyaline, unspotted, with dark or blackish veins; second vein straight and long, diverging but little from third, second segment of costa nearly three times longer than third; third and fourth veins straight and parallel; last portion of fourth vein half as long again as preceding one; posterior transverse vein straight, shorter than portion of fifth vein beyond it.

169. *Drosophila bilimbata*, sp. n., ♂♀.

Closely allied to the preceding species, but distinguished by the characters in the key; also apparently allied to *D. xanthogaster*, Duda, of Formosa, and bearing a superficial resemblance to the cosmopolitan *D. immigrans*, Sturtevant.

Type ♂ and ♀, and additional specimens from Lautoka Mts., 11.iv.1920, and same locality, 27.xii.1920, "bred from fruits of Kawika, *Eugenia malaccensis*," Loloti, 20.v.1921, "in thousands on decaying pomelos, *Citrus decumana*, and on decaying fruits of *Spondias dulcis*" (W. Greenwood).

♂♀. Length of body and wing 2.2-2.8 mm.

Head, its appendages and chaetotaxy as in *D. trilimbata*; frons broader, anteriorly as broad as long; arista with more numerous hairs, five to seven above, three or four below; proboscis thicker and longer, especially in female, in which it is very bulky; praelabrum more developed, shining reddish. Argenteous margination of frons in male present only at sides, anterior band being quite wanting. Thorax, scutellum and halteres as in *D. trilimbata*; chaetotaxy likewise, but acr. forming eight regular rows. Abdomen as in *D. trilimbata*, but segments with no trace of darker hind borders; segments; male genitalia without yellow basal ring. Legs and wings as in *D. trilimbata*,

veins paler yellowish; transverse veins further apart, last portion of fourth vein not quite one and a quarter times as long as preceding one.

Family ASTIIDAE.

Genus **ASTEIA**, Meig.

170. **Asteia nigriceps**, n. sp., ♂.

Very like the European *A. amoena*, Meig., but differing in the frons and face being entirely black, and the halteres blackish. In *A. nigra*, Lamb, the scutellum is entirely black; in *A. hawaiiensis* and *A. apicalis*, Grimshaw, the scutellum is black with yellow spots.

Type ♂, Loloti, 18.ix.1921; an additional specimen from Lautoka Mts., 1.ix.1921 (*W. Greenwood*).

♂. Length of body and wing about 1.5 mm.

Occiput and frons entirely shining black; face black, but clothed with opaque greyish dust, and with narrow whitish band just above mouth-border (antennae wanting in type); peristomialia pale yellowish; palpi whitish; proboscis large, yellowish. Mesonotum shining black, somewhat reddish brown at sides; pleurae and breast entirely pale yellowish, unspotted; scutellum entirely whitish yellow, with two long, distant, divergent, black bristles; postscutellum whitish; mesophragma yellowish; halteres with whitish stalks and large blackish knobs. Abdomen opaque black, with yellowish base; male genitalia yellowish. Legs entirely pale yellowish, unspotted. Wings considerably shorter and broader than in *A. amoena*, therefore first two veins shorter, and anterior transverse vein nearer wing-base; wings entirely hyaline, with darkish veins. Second vein very short and very close to first; third vein very long and straight, ending a little before wing-tip; fourth vein ending at wing-tip, slightly curved upwards beyond middle, and thus converging towards third; costa ending at fourth vein; anterior transverse vein very near wing-base, posterior transverse vein wanting; fifth vein short, ending at considerable distance from hind margin (in *A. amoena* much longer, ending close to hind margin).

Family BORBORIDAE.

Genus **LEPTOCERA**, Oliv.

171. **Leptocera (Scotophilella) puerula**, Rondani, Duda,
Arch. für Natg., xc, Abt. A, Hft. 11, p. 185, 1924.

A very small species, distinguished by its bare scutellum, straight third vein, yellow, anterior part of frons and face, and yellow antennae and legs.

Very common on manure in Europe; there are two male specimens from Suva, i.1922, "from stable manure" (*H. W. Simmonds*).

172. **Leptocera (Coprophila) ferruginata**, Stenhammar, Duda, *Arch. für Naturg.*, xc, Abt. A, Hft. 11, p. 205, 1924.

Easily distinguishable owing to having the mesonotum ferruginous, the scutellum setulose across the middle, the middle praetarsi with a long and strong bristle below at the base, and the wings dark, with the third vein curved.

The commonest species on stable manure in Europe; several specimens of both sexes from Suva, i.1922, "from stable manure" (*H. W. Simmonds*).

173. **Leptocera (Poecilosomella) punctipennis**, Wiedemann.

Readily distinguishable owing to the white spotted frons, thorax and scutellum, white-banded abdomen, reddish black-banded legs, and the presence of two small dark dots on the fore borders of the wings.

Widely spread over the Ethiopian and Oriental regions, and even in tropical America.

One ♀ specimen from Natova, 1918 (*R. Veitch*).

Family MILICHIIDAE.

Genus MILICHIA, Meig.

174. **Milichia angustifrons**, sp. n., ♂♀.

An inconspicuous little species, very like *M. posticata*, Becker, of Java, but distinguished by the presence of 2 dc., the equally narrow frons in the two sexes, the shining white head of the male and the somewhat different abdomen.

Type ♂ and ♀, Lautoka, x.1921 (*W. Greenwood*).

♂♀. Length of body and wing about 2.5 mm.

Head entirely black; occiput concave, dark grey-dusted, bare. Frons of equal breadth in both sexes, about half as broad as one eye, rather depressed anteriorly, at antennae distinctly below level of eyes; frons clothed with whitish dust, rather shining in male, but not argenteous; bristles black; oc. as strong as i.vt.; only 2 or., situate near vertex, superior one curved backwards, anterior curved forwards; rest of frons bare. Eyes bare, narrow, their vertical diameter twice as long as horizontal one. Antennae inserted on level of middle of eyes, short, deep black; third segment small, rounded, somewhat grey-dusted; arista thin, black, bare, thickened at base. Face as broad as frons but shorter, clothed with shining white dust; only two pairs of long vibrissae, followed by row of bristly hairs; palpi and proboscis deep black, former not dilated, latter short and small; peristomialia indistinct. Thorax entirely dull black, dark grey-dusted; hairs and bristles black; 2 dc.; 3 st., in same line along upper border of sternopleura. Scutellum flat, bare, coloured like scutum, with four bristles. Mesophragma black, grey-

dusted; calypters blackish; halteres black. Abdomen rather flat, margined, with second and fifth segments each twice as long as third or fourth, two latter of same length; abdomen entirely black, densely clothed with opaque, dark grey dust; in male, second, third and fourth segments each with broad darker band, interrupted in middle line by whitish-grey triangular spot; last segment uniformly grey; in female whole abdomen uniformly grey; hairs and short bristles black. Legs entirely black, grey-dusted and black pilose. Wings greyish-hyaline, iridescent; costa bare, except some black bristles at base on first segment; all veins yellowish, tip of first vein slightly darker; second costal cell rather broad; second vein quite straight and very long, ending near wing-tip; last portions of third and fourth veins distinctly convergent, space between their tips considerably narrower than that between those of second and third veins; costa ending at fourth vein; posterior transverse vein straight and perpendicular, longer than portion of fifth vein beyond it; last portion of fourth vein one and a half times as long as preceding one; third posterior cell and axillary lobe broad, latter rounded; sixth vein not reaching hind margin.

Genus **MILICHIELLA**, Meig.

175. **Milichiella lacteipennis**, Loew.

Recognisable at once owing to the deep incision at the hind border of the eyes, the shining black mesonotum, the milky wings, which have white veins, and the convergent ends of the third and fourth veins.

Widely distributed in America and the Old World; recorded also from Australia, Hawaii, the Seychelles and elsewhere.

Numerous specimens of both sexes from Lautoka, ii.-iii. (*W. Greenwood*); Lautoka, ii.1919, "bred from manure heap" (*R. Veitch*); Suva, ii., "from stable manure" and "breeding in rotten cow-pea seed" (*H. W. Simmonds*).

Genus **DESMOMETOPA**, Lw.

176. **Desmometopa palpalis**, De Meijere.

Readily distinguishable on account of its enormously developed, whitish palpi; the typical specimens were obtained in Sumatra and Java.

Two examples, Fiji, 1922, "from onions imported from Australia" (*H. W. Simmonds*).

177. **Desmometopa tarsalis**, Loew.

Distinguished by its entirely black palpi and reddish tarsi. Extensively distributed in America and throughout the Oriental Region.

Numerous specimens from Lautoka, ix.-x.1921, "breeding in rotten cow-pea seed" (*W. Greenwood*); one female with the preceding species "from onions imported from Australia" (*H. W. Simmonds*).

178. *Desmometopa M-nigrum*, Zetterstedt.

Distinguished by the whitish base of the palpi, which are broadly black at the tips, and by the entirely black tarsi.

This common European species is known to occur in North America, the Ethiopian Region, the Seychelles, Australia, and elsewhere, and is probably cosmopolitan. Some specimens from Lautoka, ix.1922, "bred from larvae feeding on rotten cow-pea seed" (*W. Greenwood*):

Family AGROMYZIDAE.

This family also appears to include a number of widely distributed species, one of which (*Ophiomyia lantanae*) was introduced for economic purposes. It is curious to note that most of the Fijian species have black halteres, while in all those found in New Zealand (Ward) the halteres are yellow.

The species in the collection before me may be distinguished as follows:

- 1 (14). Costa extending to end of fourth vein; posterior transverse vein beyond anterior one.
- 2 (11). Auxiliary vein ending in first vein before reaching costa; entirely black or metallic species, with antennae, halteres and legs wholly black.
- 3 (6). Antennae separated by prominent median keel on face; anterior angle of peristomialia bearing what appears to be a strong upcurved vibrissa, formed by a pencil of bristles.
- 4 (5). Calypters dark and with dark cilia.....*O. lantanae*, Frogg.
- 5 (4). Calypters whitish and with pale cilia.....*O. leucolepis*, sp. n.
- 6 (3). Antennae approximate at base, without distinct keel between; no strong upcurved vibrissae at mouth-edge.
- 7 (8). Calypters dark and with dark cilia; transverse veins approximate, interval between them less than length of posterior transverse vein; entirely black species.....*M. alysicarpi*, sp. n.
- 8 (7). Calypters whitish and with pale cilia; metallic species, at least on abdomen.
- 9 (10). Transverse veins approximate interval between them about equal to length of posterior transverse vein; anterior transverse vein beyond middle of discal cell.....*M. phaseoli*, Coq.
- 10 (9). Transverse veins further apart, posterior transverse vein shorter than its distance from anterior one; latter above middle of discal cell.
M. leguminum, sp. n.
- 11 (2). Auxiliary entirely separate from first vein, ending separately in costa; species with yellow-spotted body and whitish halteres.
- 12 (13). Scutellum, pleurae and legs entirely yellow.....*L. pusilla*, Meig.
- 13 (12). Scutellum, pleurae and legs black; only a yellow stripe on sides of mesonotum.....*D. bellidis*, Kalt.
- 14 (1). Costa reaching only to end of third vein; posterior transverse vein just below anterior one.....*P. atra*, Meig.

Genus **OPHIOMYIA**, Brashn.179. **Ophiomyia lantanae**, Froggatt.

Agromyza lantanae, Frogg., *Agric. Gaz., N.S.W.*, xxx, pp. 665-668, 1919; Aldrich, *Proc. Hawaii. Ent. Soc.*, v, p. 262, 1923.

The well-known "Lantana seed-fly," a beneficial insect introduced from Mexico into Hawaii, and thence into the Fiji Islands. It is very like the European *A. curvipalpis*, Zett., the genotype of *Ophiomyia*.

Two specimens bred from Lantana seeds, Buca, 13.ix.1922 (*H. W. Simmonds*).

180. **Ophiomyia leucolepis**, sp. n., ♂.

Very like the preceding species and also resembling *O. pinguis*, Fallen, but differing from both on account of the calypters being white, and fringed with pale ciliation.

Type ♂, a single specimen from Cagalai, 2.xii.1922 (*H. W. Simmonds*).

♂. Length of body and wing less than 2 mm.

Head entirely black; occiput shining above at eye-borders. Frons parallel-sided, narrower than one eye, opaque, with elongate shining triangle, of which anterior angle extends only a little beyond middle; bristles black, oc. well developed; 3 or., small hairs near them directed backwards; lunula small. Eyes rounded, practically bare. Antennae inserted distinctly below level of middle of eyes, short, entirely black, separated at base by a distinct, prominent, obtuse keel; third segment rounded, distant from mouth-border; arista bare, thickened at base. Face narrow, concave; peristomialia rather broad, one-fourth of eye in width, slightly broader than third antennal segment, black, clothed with opaque dark dust; vibrissal angle rather prominent, with what seems to be a strong upcurved vibrissa, formed of a pencil of two or three bristles; palpi and proboscis black and short. Mesonotum entirely shining black, with dorsum rather convex, clothed with short black hairs and black bristles; only 2 dc., anterior pair slightly shorter than posterior one, about six rows of acr. and no distinct prset.; 1 long mpl. and 2 st. Scutellum shining black, convex, bare, with four subequal black bristles. Calypters whitish-hyaline in middle, with broad white borders and white fringes; halteres black. Abdomen at base broader than thorax, entirely shining black; hairs and bristles black; genitalia small. Legs entirely black and rather bare, front femora with short black bristles. Wings greyish-hyaline, with yellowish veins; costa very little thickened beyond end of first vein; second vein long and straight, section of costa between ends of first and second veins thrice as long as that between ends of second and third; third vein straight, ending a little before wing-tip; fourth vein distinctly curved downwards at end, and therefore diverging from third; anterior transverse vein

beyond end of first vein, situate on last fourth of discal cell, anterior and posterior transverse veins being closely approximated, and interval between them considerably shorter than posterior transverse vein; latter straight, somewhat oblique inwards, dividing fifth vein into two subequal portions. All veins bare, except costa; latter shortly ciliated and ending at fourth vein.

Genus **MELANAGROMYZA**, Hend.

181. *Melanagromyza alysicarpi*, sp. n., ♂.

A very small, entirely shining black species, closely allied to the preceding one, but distinguishable, apart from the generic characters, by its dark and dark-ciliated calypters.

Type ♂ and some additional specimens from Lautoka, i.1922, "mining in leaves of *Alysicarpus vaginalis*, D.C." (*W. Greenwood*).

♂. Length of body and wing less than 1.5 mm.

Head entirely black; occiput opaque. Frons narrower than one eye, gradually narrowed anteriorly, almost entirely opaque, triangle rather indistinct and shining only near ocelli; bristles black; 4 or., anterior pair much smaller than remainder; no orbital hairs. Eyes rounded, bare. Antennae inserted below level of middle of eyes, not separated at base, short, entirely black; third segment rounded; arista microscopically pubescent. Face short and narrow; peristomialia narrower than third antennal segment, opaque black; vibrissal angle not prominent, with single vibrissa; proboscis and palpi small and black. Mesonotum entirely black, only moderately shining, clothed with slight greyish pollinosity; hairs and bristles black; only 2 dc., no prset., 6 rows of acr. Scutellum rather flat, black, greyish pollinose, bare, with four black bristles. Calypters blackish brown, with dark fringes; halteres black. Abdomen entirely shining black, with black bristles and hairs, not broader than thorax; hypopygium small. Legs entirely black and nearly bare. Wings relatively short and broad, greyish-hyaline; veins blackish, disposed as in *O. leucolepis*, costa more distinctly thickened beyond end of first vein; section segment between ends of second and third veins equal in length to that between ends of third and fourth; transverse veins somewhat further apart, distance between them about equal to length of posterior transverse vein.

182. *Melanagromyza phaseoli*, Coquillett, 1899.

Agromyza phaseoli, Froggatt, *Agric. Gaz. N.S.W.*, vol. xxii, pp. 151-154, and plates 1-4, 1911.

The so-called "French Bean Fly," distinguishable by its relatively large size, shining bluish or greenish body, white calypters and rather approximated transverse veins. Widely distributed throughout Australia and the Oriental Region.

Lautoka, 9.ix.1920, "bred from leaves of *Phaseolus calcaratus*" (*W. Greenwood*); Cuvu, 21.i.1915, Natova, 10.i.1917 (*R. Veitch*).

This species has 4 very strong or. on each side of the frons, all curved backwards, but lacks the small orbital hairs; the peristomialia are about as broad as the third antennal segment.

183. *Melanagromyza leguminum*, sp. n., ♂♀.

Closely allied to the *M. phaseoli*, but differing in its smaller size, much narrower peristomialia and more distant transverse veins; in the coloration of the body it is very like the widely distributed *M. aeneiventris*, Fall., but is much smaller and has no orbital hairs.

Type ♂ and ♀, and numerous additional specimens from Lautoka, v.-vi. 1919, "from pods of No. 51 C.T.W." (*W. Greenwood*); Lautoka, 7.i.1922 (*R. Veitch*); Taviumi, 10.xii.1921 (*H. W. Simmonds*).

♂♀. Length of body and wing not over 1.5 mm.

Head entirely black, with opaque occiput. Frons flat, not at all prominent, narrower than one eye, gradually narrowed anteriorly, opaque, with shining greenish triangle, latter acute and extending distinctly beyond middle; orbits very narrow and likewise shining; bristles black, 4 or. all directed backwards, but two anterior ones much shorter; no hairs near them. Eyes bare, rounded. Antennae approximated, short, black, inserted below level of middle of eyes; second segment with rigid bristle on upper border; third segment rounded; arista microscopically pubescent. Face short, narrow, deep; peristomialia linear; no prominent vibrissal edge, vibrissa simple and short; palpi and proboscis short and black. Thorax entirely black and shining, especially on dorsum, latter with more or less distinct greenish or bluish reflections; hairs and bristles black, only 2 dc., anterior one shorter; no prsct.; acr. in 6 rows. Scutellum like scutum, bare, with four bristles, apical ones decussate at tips. Calypters translucent across middle, with broad white borders and white cilia; halteres black. Abdomen near base slightly broader than thorax, entirely shining metallic green, with black hairs and bristles; hypopygium small; ovipositor elongate, metallic. Legs entirely black, nearly bare. Wings greyish-hyaline, relatively short and broad; veins blackish; costa but little thickened beyond end of first vein; second vein straight, diverging from third; section of costa between ends of first and second veins only a little more than twice as long as that between ends of second and third; third and fourth veins gradually diverging towards tips, section of costa between ends of second and third veins distinctly a little longer than that between ends of third and fourth; anterior transverse vein approximately on middle of discal cell, interval between transverse veins slightly longer than posterior transverse vein; last portion of fifth vein distinctly shorter than preceding one.

Genus **LIRIOMYZA**, Mik.184. **Liriomyza pusilla**, Meigen.

Apart from the generic characters, this species is very distinct from all the others here recorded owing to the pleurae, scutellum and legs being entirely yellow.

Besides being widely distributed in Europe, *L. pusilla* is known to occur in Formosa and elsewhere, and is also common in North America.

Numerous specimens (with their puparia) from Lautoka, vi.1921, "bred from leaves of *Sinapsis*" (*W. Greenwood*).

Genus **DIZYGOMYZA**, Hend.185. **Dizygomyza bellidis**, Kaltenbach.

Closely allied to the preceding species, but differing in having black pleurae, scutellum and legs.

Some specimens of both sexes from Lautoka, iii.1922, "mining in leaves of *Erigeron*" (*W. Greenwood*).

The present species is found in Europe and North America (*D. coronata*, Loew), mining in *Bellis* and *Aster*, and pupating in the mine.

Genus **PSEUDONAPOMYZA**, Hend.186. **Pseudonapomyza atra**, Meigen.

A small, entirely black species, distinguishable from all the others by the costa ending at the third vein, and by the strongly receding posterior transverse vein, as well as by the form of the third antennal segment. The larva is known as mining chiefly in Gramineae.

Lautoka, 15.xii.1921, "feeding in lamina at tip of young sugarcane leaf"; Labasa, 19.ix.1922, "mining in leaves of corn" (*W. Greenwood*).

These specimens agree very well with the description of *Phytomyza spicata*, Malloch, of Formosa, but have a venation like that of *Napomyza atrata*, Malloch (*Ann. Hist. Nat. Mus. Nat. Hung.*, xii, pl. ix, fig. 10, 1914).

MYIODARIA MEDIA.

Family MUSCIDAE (Anthomyiidae).

The present family also contains a number of generally distributed, evidently imported forms; but the endemic species are very characteristic.

Subfamily *COENOSIINAE*.Genus *COENOSIA*, Meig.187. *Coenosia microlepis*, sp. n., ♂♀.

Allied to *C. parvisquama*, Stein, of New Guinea, but distinguishable by the different coloration of the frons, mesonotum and abdomen.

Type ♂ and ♀, with some additional specimens from Taviuni, 21.xii.1921 (*H. W. Simmonds*); Cuvu, 9.viii.1919 (*R. Veitch*).

♂♀. Length of body 2.5-3.5 mm.; of wing 2.4-3 mm.

Head entirely black; occiput densely clothed with opaque grey dust. Frons narrower than one eye, about twice as long as broad, gradually widening anteriorly; narrow orbits grey, median stripe deep black, but divided by narrow elongate grey triangle, which reaches base of antennae; bristles black, 2 anterior or. curved inwards and decussate. Eyes ovate, bare. Antennae inserted near middle of eyes, rather short, third segment about twice length of second and not reaching mouth-border; second segment black, with shining white spot anteriorly; third segment rounded at tip, but with upper external angle somewhat prominent, yellowish at base, blackened distally; arista black, thickened at base, with long, rather scattered plumosity, as broad as length of third antennal segment. Face slightly concave, entirely grey; parafacialia linear, peristomialia very narrow, both shining white. Palpi black, sometimes yellowish at base; proboscis shining black. Thorax entirely black, densely clothed with opaque grey, somewhat bluish dust, even on humeri; dorsum with three narrow, sometimes indistinct, darkish stripes; pleurae unspotted. Bristles black; dc. 1 + 3; all acr. equally short, disposed in two rows; no praealar; 3 st., in an equilateral triangle; pteropleura bare. Scutellum like scutum, unspotted, with four bristles, basal ones much smaller, and with some scattered bristly hairs; mesophragma grey-dusted; calypters small, whitish and white-fringed, lower shorter than upper one; halteres whitish. Abdomen entirely yellowish in both sexes, in male slightly transparent at base; second, third and fourth segments each with rounded black spot on each side, larger and more regular in female; second and third segments also with third black spot in middle, sometimes indistinct; male genitalia small; hairs and bristles black. Legs yellowish, with only last one or two segments of tarsi blackened; front tibiae without bristle in middle and with only two bristles at tip; middle tibiae with one bristle in middle of outer side; hind tibiae in middle with two long bristles, and with two shorter ones near base; femora somewhat thickened, middle pair in female below with short even ciliation on terminal half. Wings greyish-hyaline, with slight yellowish tinge on fore border; veins yellowish; second vein quite straight and long, distance between ends of second and third veins longer than that between third and fourth,

third and fourth veins parallel at end; anterior transverse vein at, or a little before middle of discal cell; posterior transverse vein straight, shorter than portion of fifth vein beyond it. No costal bristle, but costa finely serrulate.

188. *Coenosia dolichocera*, sp. n., ♂.

Closely allied to the preceding species, but differing in its broader frons, longer third antennal segment, more shortly feathered arista, and larger male genitalia.

Type ♂, a single specimen from Lautoka Mts., 11.iv.1920 (*W. Greenwood*).

♂. Length of body 2.5 mm.; of wing 2 mm.

Frons as broad as one eye, one and a half times as long as its width at antennae, coloured as in *C. microlepis*, with long and narrow triangle; anterior or. not decussate. Eyes more rounded. Antennae inserted noticeably above middle of eyes, with third segment longer, three times as long as second and reaching mouth-border; third segment broad, truncate at tip, with acute upper angle, pubescent, blackish, with only extreme base yellowish; feathering of arista only a little broader than breadth of third antennal segment. Thorax, scutellum, their chaetotaxy, calypters and halteres exactly as in *C. microlepis*, but scutellum bare, apart from its four bristles. Abdomen more truncate at tip, yellowish, black pilose and black setose; rounded black spots only on third and fourth segments; male genitalia greatly developed, with two yellow spines curved downwards at end of basal segment, and with prominence on last sternite. Legs and wings as in *C. microlepis*, but latter distinctly shorter and broader, and quite hyaline even along fore borders.

Genus **PYGOPHORA**, Schin.

189. *Pygophora ctenophora*, sp. n., ♂♀.

Working out as *P. parvipuncta*, Stein, in Malloch's key of 1922 (p. 380), and answering to the description of this West African species, but distinguishable by its greater size, different abdominal pattern and wing venation. *Coenosia caledonica*, Bigot 1884, of New Caledonia seems to be very closely allied, if not the same species.

Type ♂, Natova, v.1918, Lautoka, 23.iii.1910 (*R. Veitch*); type ♀, Cuvu, 10.x.1919 (*W. Greenwood*); Nasese, 31.vii.1921, Ovalau, vi.1921 (*H. W. Simmonds*).

♂♀. Length of body 6-6.5 mm.; of wing 5.5-6 mm.

Head yellow; occiput convex, densely clothed with opaque grey dust, with two rows of short black bristles near eyes, three rows below and several more long ones in middle above neck. Frons narrow and long, half as broad as one eye, gradually broadened anteriorly, more than twice as long as broad, with yellowish grey orbits, yellowish median stripe, and narrow, short

ocellar triangle; bristles black, or. showing typical disposition for genus. Eyes bare, narrow, their vertical diameter twice as long as horizontal one. Antennae inserted above middle of eyes, long, entirely reddish yellow; third segment narrow, rounded at tip, only a little shorter than face; arista yellowish, with very long plumosity at base, bare on terminal half. Face golden, like, narrow parafacialia; peristomialia as broad as third antennal segment, golden-grey; occipital lower swellings well developed, whitish-grey; vibrissae very strong, decussate, near them some smaller bristles; palpi whitish in male, yellowish in female; proboscis shining black. Thorax entirely black, densely clothed with opaque grey dust, more yellowish on dorsum, more bluish on pleurae, without pattern; dc. 1 + 3; acr. small, disposed in two rows, with prsct. pair slightly longer; no praealar; 3 st., in equilateral triangle. Scutellum like scutum, with four bristles of equal length, some bristly hairs on disc and one pair of small discal bristles. Mesophragma grey-dusted. Calypters pellucid, with white borders fringes, greatly developed, lower one much larger than upper, and twice as long. Halteres whitish. Abdomen of typical shape for genus, yellowish, with four segments and hypopygium in male and last two segments in female blackish and grey-dusted; base yellowish-translucent in male; hind border of each segment whitish yellow; third and fourth segments in male each with three black spots, those on fourth broader than those on third; in female second and third segments each with three spots, fourth segment entirely black, except yellow hind border. Hairs and bristles black; fourth segment of male clothed at sides with dense short black pubescence, clothed below with long black bristles. Hypopygium black, greatly developed and prominent, clothed with opaque grey dust, yellowish below with two deep black appendages; sternites broad, leaf-like, translucent yellow. Legs entirely yellowish to end of tarsi, latter sometimes darkened at tips; hairs and bristles black; front tibiae with two bristles; middle femora of male with well-developed, subapical, comb-like row of short black bristles; hind tibiae with two very long bristles in middle, but destitute of apical process. Wings hyaline; third and fourth veins considerably divergent at end; anterior transverse vein slightly beyond middle of discal cell; posterior transverse vein distinctly, even if slightly, S-shaped.

Genus **ORCHISIA**, Rond.

190. **Orchisia costata**, Meigen.

A widely spread species, readily distinguishable owing to the wing-pattern and to the scutellum bearing only the terminal pair of bristles.

One ♀ from Nausori, x.1920 (*R. Veitch*).

The species is known to occur in the Mediterranean sub-region,

as also in the Ethiopian and Oriental Regions as far as Formosa and the Philippines; I possess specimens also from Australia (North Queensland, Gordonvale).

Genus **ATHERIGONA**, Rond.

The species represented in the collection may be distinguished as follows :

- 1 (6). Parafrontalia dusted; sternopleura setulose; thorax and scutellum clothed with opaque grey dust, with or without dark stripes; abdomen with several pairs of black spots, and in male shortly conical, with small genitalia; front femora of male with distinct praeapical excision above; mesonotum with at least fourteen rows of setulae.
- 2 (5). Frontal stripe more or less reddish, at least near antennae; hind tibiae not bicoloured; at least middle tarsi yellowish; mesonotum with less numerous setulae, acrostichals separated by bare spaces from laterals.
- 3 (4). Frontal stripe entirely reddish; mesonotum quite opaque, without distinct blackish stripes.....*excisa*, Thoms.
- 4 (3). Frontal stripe reddish only in front (sometimes very narrowly), black elsewhere; mesonotum somewhat shining, with three distinct black stripes.....*trilineata*, Stein.
- 5 (2). Frontal stripes quite black; hind tibiae white and black; all tarsi black; mesonotum evenly clothed with more numerous setulae.
poecilopoda, sp. n.
- 6 (1). Parafrontalia shining; sternopleura bare; dorsum of thorax, including scutellum, entirely shining black, with setulae forming only ten rows; abdomen with more or less distinct black median stripe; male with cylindrical, elongate abdomen, and greatly developed genitalia; front femora destitute of praeapical excision.
splendens, sp. n.

191. **Atherigona excisa**, Thoms. (syn. *A. orientalis*, Schin.,
A. magnipalpis, Stein).

This is the typical form with quite opaque, indistinctly striped mesonotum, and entirely reddish frontal stripe. It occurs throughout the tropics of the Old and New World, and has also been reported from Australia. Already recorded from Fiji by Aldrich (*Ins. Insec. Menstr.*, p. 94, 1921) as *A. pulvinata*.

A couple of specimens from Lautoka, 2.vii.1924, "from diseased or rotting cotton bolls" (*H. W. Simmonds*).

192. **Atherigona excisa**, Thoms. var. **trilineata**, Stein 1900 (*A. pulvinata*, Grimshaw 1901; ? *A. triseriata*, Walker, 1861).

Differing from *A. excisa* in having a dark-striped, slightly shining mesonotum, and a black frontal stripe, which is red only anteriorly; Malloch (*Ann. and Mag. N.H.* (9) xii, p. 185, 1923, and (9) xiii, p. 413, 1924), has not separated these two forms.

Numerous specimens of both sexes from Suva, 13.xii.1924, "bred from rotting banana containing larvae of *Nacoleia octasema*" (*H. W. Simmonds*); Nausori, x.1920 (*R. Veitch*); Nadi, 1.vi.1916, "bred from orange" (*J. F. Illingworth*).

193. *Atherigona poecilopoda*, sp. n., ♂♀.

Allied to *A. excisa*, but distinguishable by its slightly larger size, entirely black frontal stripe, differently disposed setulae on the mesonotum, and peculiarly coloured hind tibiae.

Type ♂ and ♀, and additional specimens from Suva, 28.xii.1922, "from rotting *ivi*" (*H. W. Simmonds*).

Apparently allied to *A. longipalpis*, Malloch 1923 (p. 182), of Guam Island.

♂♀. Length of body 4-4.5 mm.; of wing 3-3.5 mm.

Occiput opaque black in middle, broadly grey at sides, with two regular, parallel, complete rows of short black bristles, those of internal row shorter and closer together. Frons as broad as one eye, parallel-sided, half as long again as broad; parafrontalia whitish-dusted; median stripe entirely black or very dark brown, opaque, thrice as broad as one frontal margin; bristles black, six or seven or. Eyes bare, twice as high as their width in middle. Antennae long, inserted at upper border of eyes, entirely black; third segment reaching epistome, four times as long as second; arista dark yellowish, bare, its basal third incrassated, with distinct basal segment. Parafacialia linear, white; face yellowish grey; peristomialia linear, yellowish grey; vibrissae strong, with two or three minor bristles near them. Palpi dark yellowish in male, in female very long, dilated at tips and black; proboscis shining black. Mesonotum black, dark grey-dusted but considerably shining, with three rather broad, parallel, complete, opaque blackish stripes; humeri broadly yellowish; pleurae grey- or yellowish-dusted, opaque, unspotted; hairs and bristles black; 2 presutural dc. hardly visible, 3 or 4 postsutural ones, but only two posterior pairs strong; acrostichal setulae forming numerous rows even in front (from 5 to 7, while in *A. excisa* there are from only 3 to 5), and therefore not distinctly separated by bare spaces from lateral setulae; 4 or 5 mpl. in one row along posterior border of mesopleura; 3 st.; sternopleurae and posterior half of mesopleurae with short setulae. Scutellum blackish, rather shining in middle, broadly yellowish grey at sides and at tip, black setulose on disc, with three pairs of lateral bristles and one pair of small discal ones. Mesophragma opaque grey, with shining black band below. Calypters hyaline, with narrow, almost bare whitish borders; hind pair much larger than superior one. Halteres whitish. Abdomen in both sexes as in *A. excisa*, var. *trilineata*. Legs of male with front femora as in *A. excisa*; all femora yellowish; front tibiae and front tarsi deep black; middle legs with tibiae black on terminal half and tarsi entirely black; hind legs with tibiae whitish on basal half and deep black on terminal half, like tarsi. In female, front femora black, with yellowish tips; rest of legs coloured as in male, but basal halves of tibiae more yellowish than whitish. Single bristle in middle

of posterior side of hind tibiae noticeably strong. Wings very short and broad, quite hyaline, without dark terminal cloud seen in *A. hendersoni*, Malloch; venation as in *A. excisa*.

194. *Atherigona splendens*, sp. n., ♂♀.

Very distinct from all the known species on account of the coloration of the thorax (including scutellum) and abdomen.

Type ♂ and ♀, and some additional specimens from Suva, 17.ix.1920 (*H. W. Simmonds*).

♂♀. Length of body 3-4 mm.; of wing 2.5-3.5 mm.

Head entirely black; occiput very shining near eyes, deep black in middle, with usual two rows of bristles, latter however thinner and longer than in all preceding species. Frons narrower than one eye, but gradually broadening anteriorly; short ocellar triangle and narrow parafrontalia very shining, not at all dusted; median stripe deep black, whitish only at sides on prominent part at antennae; face black, grey-dusted; linear parafacialia white; peristomialia linear, yellowish grey; vibrissae strong, decussate, without minor bristles near them. Eyes bare, of usual shape for genus. Antennae long, inserted at upper border of eyes and reaching epistoma, quite black; arista black, bare, rather thick, with distinct basal segment. Palpi in male thin and yellowish; in female, broad, long and quite black; proboscis shining black. Mesonotum, scutellum and mesophragma entirely shining black, without any dust; humeri and pleurae entirely reddish, latter shining, with darkish, ill-defined, rounded spot on pteropleura. Bristles and hairs black; dc. 3 + 2, but only posterior pair long and strong; 1 prsct.; dorsal setulae legs numerous, in scattered rows, not more than 8-10 rows on entire dorsum; 3 st.; sternopleura and mesopleura bare. Scutellum with only four bristles, slightly setulose or even bare on disc, two discal bristles less developed. Calypters yellowish translucent, with yellow borders, lower calypter much longer than upper; halteres yellowish. Abdomen in both sexes shining reddish, very little pilose or setose, hairs and bristles black; instead of usual paired black spots, shining black median stripe, complete from base to tip in female, mostly present only on terminal segments in male. Shape of male abdomen and genitalia very different from that in *A. excisa*, and more like that in *A. quadrimaculata* (*A. varia*); genitalia entirely reddish. Legs reddish; front femora of male quite simple; front tibiae and front tarsi deep black, tibiae distinctly dilated at tips; in female front femora narrowly black at tips; middle and hind tarsi black. Wings quite hyaline, unspotted; veins dark yellowish; third and fourth veins parallel at end; anterior transverse vein noticeably before middle of discal cell; posterior transverse vein quite straight, as long as or longer than portion of fifth vein beyond it.

Subfamily *LISPINAE*.Genus *LISPA*, Latr.195. *Lispa assimilis*, Wiedemann.

A widely distributed species, extending throughout the whole Oriental Region to Formosa; the Australian *L. weschei*, Malloch, seems to be closely allied.

Several specimens of both sexes from Lautoka, ii. (*W. Greenwood*); Natova, iv.1918 (*R. Veitch*).

Subfamily *FANNIINAE*.Genus *FANNIA*, Rob.-Desv.196. *Fannia glabella*, sp. n., ♀.

Near *F. glaucescens*, Zett., *F. pusio*, Wied., and *F. australis*, Malloch, and working out as one or other of these species in the keys of Stein (1914), Séguy (1923) and Malloch (1924), having a small praealar bristle and unequal calypters; but distinguished by the orbital setulae being almost wanting, and not descending below the base of the antennae.

Type ♀ and some additional specimens from Lautoka, ix.1921, "feeding in rotten cow-pea seed, pupal period 9 days" (*W. Greenwood*).

♀. Length of body 3.5-4 mm.; of wing 3-3.5 mm.

Occiput shining black. Frons parallel-sided, narrower than one eye; median stripe deep black or dark reddish, narrowed in middle and there narrower than one of parafrontalia; latter shining black interiorly and grey-dusted exteriorly, with very few, almost indistinct orbital setulae; ocellar triangle grey, slightly shining, acute, elongate, extending a little beyond middle of frons. Eyes bare. Antennae entirely black; third segment reaching epistoma; arista bare, thickened at base. Parafacialia and peristomialia linear; palpi and proboscis black, former shorter than latter. Thorax entirely black, with slightly grey-dusted, unstriped dorsum, dust being more whitish and more abundant anteriorly at sides and on pleurae; dc. 2 + 3; acr. in three rows anteriorly; praealar small but distinct; scutellum shining black, with four bristles and two bristly hairs in middle. Calypters white, lower one prominent; halteres white. Abdomen entirely shining black, without any pattern. Legs entirely black; front femora with short hairs below and without bristles; front tibiae with no bristle; middle tibiae with one bristle; hind tibiae with two bristles posteriorly. Wings quite hyaline, not yellowish at base; third and fourth veins distinctly (even though slightly) convergent at end; anterior transverse vein much beyond middle of discal cell, distance about equal to length of posterior transverse vein.

Puparium, 5 mm. long, 2 mm. broad, opaque dark reddish; along middle line of dorsum there two parallel rows of processes, those of first three segments small, remainder long, directed backwards, granulose; each segment on each side of dorsal surface with triangular, unfeathered process, ending in a long, thin, point; similar but shorter process on each side of ventral surface of each segment; last segment concave above, with six small processes, and with two distinct tubercles near base.

Subfamily PHAONIINAE.

Genus LIMNOPHORA, Rob.-Desv.

197. *Limnophora (Pseudolimnophora) mesolissa*, sp. n., ♂♀.

A small species with plumose arista, very near *L. plumiseta*, Stein (widely distributed in the Orient), but at once distinguished by its shining black frontal triangle.

Type ♂♀ and additional specimens from Taviuni, xii.1921, Suva, ix.1920, "on flowers of *Erythrina*" (*H. W. Simmonds*); Natova, i.1917, Cuvu, i.1915, Nausori, x.1920 (*R. Veitch*); Lautoka, 13.ii.1919 (*W. Greenwood*).

The present species seems to be widely spread, since I have seen examples of it from the Philippines, and also one specimen from Tahiti, 24.xii.1921 (*H. W. Simmonds*).

♂♀. Length of body 2.5-4 mm.; of wing 2-3.5 mm., male much smaller than female.

Head entirely black; occiput dark grey-dusted, narrowly whitish near eyes. Frons equally broad in both sexes, about as broad as one eye, parallel-sided, opaque black, white parafrontalia distinct only in prominent anterior portion; ocellar triangle shining black, narrow, elongate, extending nearly to antennae; bristles black, anterior or. longer and decussate. Eyes oval, bare. Antennae a little above middle of eyes, entirely black; third segment reaching epistoma, rounded at tip; plumosity of arista broader than third antennal segment. Face whitish-dusted, like linear parafacialia and very narrow peristomialia. Vibrissae decussate; palpi black; proboscis shining black. Thorax entirely black, rather shining on dorsum; sides of dorsum as far as suture, and pleurae, mainly clothed with white shining dust, sometimes, especially in female, forming narrow band in front of suture, interrupted in middle; white shining band also in front of scutellum, more developed in female. Scutellum shining black, with four bristles and also some bristly hairs. Dc. 2 + 4, but only two posterior pairs strong; 3 st.; prothoracic stigma black; calypters white, lower one broadly prominent; halteres whitish. Abdomen black, but densely grey-dusted; second and third segments each with two opaque black, broadly triangular spots; hairs and bristles black; male genitalia swollen, black, grey-dusted. Legs entirely black;

front tibiae without bristle; middle and hind tibiae each with two bristles on posterior side. Wings quite hyaline, with black veins; distance between ends of first and second veins less than twice as long as that between ends of second and third, latter longer than that between ends of third and fourth; third and fourth veins distinctly, even though slightly, convergent at tips; anterior transverse vein beyond middle of discal cell; posterior transverse vein slightly S-shaped, distinctly longer than portion of fifth vein beyond it. First vein quite bare; third vein with some bristles at base.

Genus **OPHYRA**, Rob.-Desv.

198. **Ophyra nigra** (Wiedemann) Malloch.

Distinguished by its entirely black palpi and tarsi; dark calyp- ters, and the broad, obtuse, shining black frontal triangle of the female. An oriental and Australian species.

Some male specimens from Taviuni, xi.-xii.1921, and some females from Suva, iv.1924, these latter "ex offal" (*H. W. Simmonds*).

Genus **DICHAETOMYIA**, Mall.

199. **Dichaetomyia rufa**, Stein, var. **personata**, var. n., ♂♀.

Agreeing very well in all characters, especially in the chaeto- taxy of the thorax and legs, with *D. rufa*, Stein, of New Guinea, but differing in the palpi being black, sometimes with extreme tips whitish in the male, and in the frontal stripe being entirely deep black, even in the male. The antennae of the female are entirely pale reddish, while in the male the third segment is infuscated.

Type ♂ and ♀, Suva, 8.ix.1920 (*H. W. Simmonds*); Natova, Nadi, ix.1914 (*R. Veitch*).

The typical form was originally described as a *Spilogaster*, and was subsequently transferred to *Mydaea*; it belongs, however, to Malloch's genus *Dichaetomyia*, having hairy pteropleurae, black bristly hairs along the lower margin of the metathoracic spiracle, and one or two small hairs on the base of the third vein below; the fourth vein is bent upwards only very slightly at the end.

200. **Dichaetomyia prodigiosa**, sp. n., ♂♀.

An extraordinary species, showing a striking resemblance in the coloration of the body and wings to *Sapromyza acrotoxa*, and very remarkable in the peculiar armature of the middle femora and hind tibiae in the male. The Australian *D. armata* (Stein), Malloch 1924, seems to be somewhat allied.

Type ♂ and ♀, Cuvu, 28.viii.1916 (*R. Veitch*); Walau, v.1922,

Levuka, v.1921 (*H. W. Simmonds*); 1st Falls, Mt. Evans, 23.ii.1919 (*W. Greenwood*).

Mydaea distincta, Stein 1918, seems to be similar, but has black antennae; *M. nigrolineata*, Stein 1900, of New Guinea, has simple legs in the male and blackish tibiae; *Spilogaster bilimbatus*, Bigot 1884, of New Caledonia, has a similarly coloured mesonotum, but a differently coloured abdomen, and moreover in the description nothing is to be found about the peculiar structure of the legs in the male.

♂♀. Length of body 8-9 mm.; of wing 7-8 mm.

Head very compressed, in profile twice as high as broad, viewed from in front broader than high. Occiput somewhat concave above, without lower swellings, entirely opaque black, with greyish spots at sides and in middle above neck; a complete postocular row of short black bristles, and several rigid black hairs in middle above neck. Frons of male rather broad, twice as broad as third antennal segment and gradually widening forwards; frons of female twice as broad as that of male, but always narrower than one eye; frons not at all prominent in either sex, similarly coloured in each, median stripe being black but densely grey-dusted, with whitish reflections, and parafrontalia yellowish-dusted; bristles black, oc. very thin and short, 2 upper or. bent backwards, 2 lower or. bent inwards, pair just above antennae being much stronger and decussate, and in male with another smaller pair in front of them; parafrontalia in female with several erect black hairs, not descending below base of antennae. Eyes narrow, quite bare, with inner facets distinctly enlarged in male. Antennae inserted a little above middle of eyes, entirely pale yellowish in both sexes; second segment with two or three long bristly hairs above; third segment linear, more than thrice as long as second, obtuse at tip, reaching epistoma; arista basal, yellowish and thickened at base, blackish elsewhere, with very long plumosity, breadth of which equals length of third antennal segment. Face flat, not carinate, clothed, like narrow parafacialia, with yellowish dust; vibrissal angles not very prominent, with but one pair of strong decussate vibrissae and several short hairs above them, but facial ridges not ciliated; peristomialia narrow, not broader than third antennal segment, yellowish, with fringe of long bristly black hairs on lower border. Palpi pale reddish, with black bristly hairs, clavate and as long as proboscis, which is shining reddish. Mesonotum reddish, with two broad, deep black vittae, which are exteriorly in contact with dc., narrow in front and beginning at humeri, dilated beyond suture to reach supra-alar bristles and ending at scutellum; central reddish stripe with broad median stripe of whitish dust; two broad notopleural reddish stripes, from humeri to root of wings, densely clothed with yellowish white dust; pleurae and pectus entirely deep black, only upper borders of mesopleura reddish. Scutellum triangular, reddish, with

whitish median stripe and blackish sides, in continuation of thoracic pattern. Bristles and hairs black; dc. 2 + 3; no distinct acr., even in front of scutellum, only short hairs in eight or nine rows; praealar short and thin, much smaller than a.sa.; 2 i.a.;

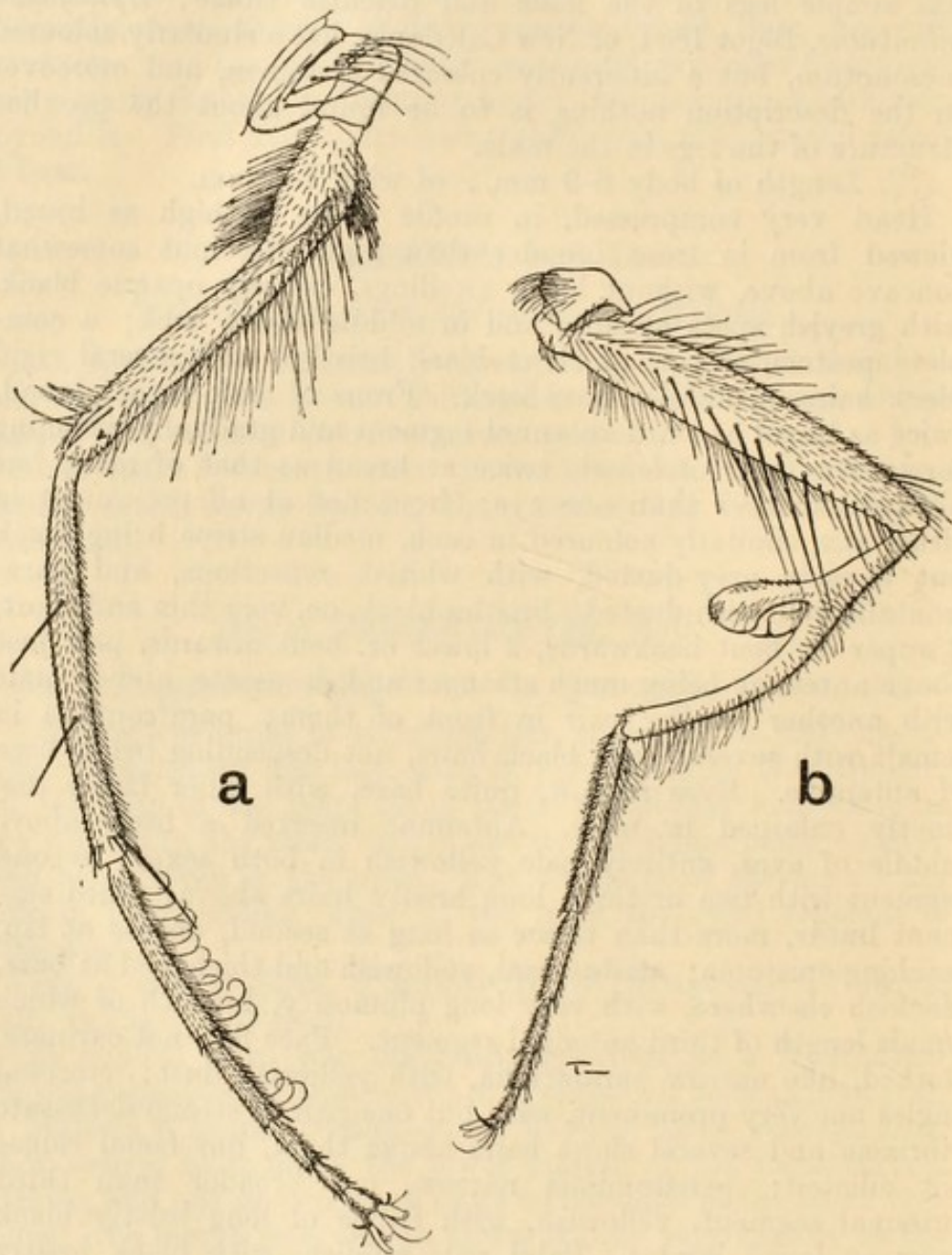


FIG. 52.—*Dichaetomyia prodigiosa*, sp. n.: a, middle leg of ♂. × 12;
b, hind leg of ♂. × 12.

mesopleurae with row of four bristles, intermingled with long hairs; st. 1:2; prosternum pale yellowish, with whitish hairs at sides; propleura clothed with short black hairs; anterior spiracle blackish; pteropleura with rather long black hairs; posterior spiracle blackish, with rigid black hairs below, overlying its surface. Scutellum short pilose on disc, with only four strong

bristles, discal and basal pairs being less developed; sides of scutellum below strong bristles rather densely pilose; lower surface bare. Mesophragma reddish, grey-dusted, bare. Calypters yellowish, with reddish borders and short golden fringes; lower calypter bare on disc, extending much beyond upper one. Halteres yellowish, with somewhat darkened knobs, especially in male. Abdomen entirely reddish, yellowish at base in male, somewhat shining at sides; fourth segment very rarely with darkish subquadrate spot on each side; all hairs and bristles black, latter present only on hind border of third segment, and on fourth segment (two rows, one discal, one terminal). Venter entirely reddish, unspotted; sternites hairy but not bristly, first one broad, with yellowish hairs at base, remaining hairs black. Male genitalia very small and retracted, not visible; lamellae of female reddish, with long blackish hairs. Legs entirely yellowish to end of tarsi; front femora simple, with long black bristles above and below; front tibiae without bristle. Middle femora in male strongly curved in middle and suddenly thickened at base, with two strong tubercles, one above and another more prominent one below, both clothed with dense tufts of black hairs; outer side of middle femora in male, clothed with very long and soft black hairs; middle tibiae with two bristles on outer surface. Hind femora simple, with row of long bristles and with long hairs on under side; hind tibiae of male curved in middle, and on inside near base with long, broad, curved process, within which is a shorter one; hind tibiae of female quite simple, with 2 : 1 bristles, while in male there are no bristles, but only fringe of soft hairs; middle tarsi of male with peculiarly curled hairs above; hind praetarsi of male ciliated with long hairs. Claws of male shorter than pulvilli. Basal half of wings yellowish anteriorly, terminal half and hind border blackish, but less intensely in third posterior cell, axillary lobe and alula. No costal bristle; veins yellowish, first entirely so, remainder black beyond anterior transverse vein, first vein quite bare; third vein bare above, with one or two small hairs below at extreme base. Anterior transverse vein at middle of discal cell; third vein curved downwards at end and parallel with fourth, which is not appreciably bent upwards at end; posterior transverse vein very long, S-shaped, about twice as long as portion of fifth vein beyond it; sixth vein short; anal cell small.

Subfamily *MUSCINAE*.

Genus *SYNTHESIOMYIA*, Br. and v. Berg.

201. *Synthesiomyia nudiseta*, v. d. Wulp.

A very distinct and widely distributed species, recorded also from Australia and Hawaii; it is at once distinguished by its

red antennae with bare arista, and by the abdomen being narrowly red at the tip.

Lautoka, 15.iii.1921 (*R. Veitch*); Nadi, 1913 (*D. S. North*).

Genus **ORTHELLIA**, Rob.-Desv.

The collection before me includes representatives of two very interesting species belonging to the present genus, as restricted by Malloch, that is, with bristly hairs on the chitinous stripe just above the base of the calypters, in front of the sides of the scutellum. These species are both characterised by their large size and Calliphorine facies, but they lack the hypopleural bristles and have bare lower calypters and a rounded bend to the fourth vein. They belong to the group of *O. chalybaea*, but have 2 dc. and well-developed prsct.; they may be distinguished as follows:

- 1 (2). Larger species with golden face, yellow antennae, yellow palpi and partly yellow legs.....*simmondsi*, sp. n.
2 (1). Smaller species, with white face and entirely black antennae, palpi and legs.....*greenwoodi*, sp. n.

202. *Orthellia simmondsi*, sp. n., ♂♀.

A beautiful species, looking very like *Calliphora salivaga*, but readily distinguishable by the yellow front coxae and otherwise partly yellow legs.

Type ♂ and ♀, Ovalau, 22.x.1921, v.1922 (*H. W. Simmonds*), in whose honour this fine insect is named; Lautoka Mts., 2.i.1920 (*W. Greenwood*).

In Malloch's key the species works out as the African *O. rubri-facies*, which however has black palpi and black legs.

♂♀. Length of body 10-11 mm.; of wing 9-10 mm.

Occiput concave above, entirely black, but densely clothed with grey dust, only upper part near vertex being without dust, with a row of black postocular bristles and scattered black hairs in middle. Frons of male linear, narrower than third antennal segment, eyes being closely approximate but not touching; frons of female considerably narrower than one eye, widened anteriorly; median stripe dark reddish in male, deep black in female; parafrontalia in both sexes clothed with golden dust anteriorly, black and slightly shining near vertex, especially in female; bristles black, in male only inner pair of vt. present, and oc. thin and short; in female outer vt. well developed, and oc. long and strong; frontorb. decussate or approximate, in female 1 or., strong and bent forwards. Eyes narrow and flat in profile, quite bare, with middle anterior facets distinctly enlarged, more so in male than in female. Antennae inserted on level with middle of eyes, entirely orange-reddish; second segment with two or three erect bristly hairs; third segment reaching to a little above epistoma, parallel-sided, rounded at tip; arista black,

with very long plumosity. Face and parafacialia entirely clothed with golden dust, parafacialia as broad as third antennal segment; epistoma very slightly prominent; peristomialia about thrice as broad as third antennal segment, with reddish patch near eyes, yellowish-dusted elsewhere, with row of black bristles on lower border and with yellowish hairs, dense and long across lower part of head. Palpi entirely reddish; proboscis black. Thorax entirely shining metallic dark blue, sometimes with greenish reflections on sides, humeri and pleurae; dorsum in front of suture, as viewed from behind, clothed with whitish dust, with two narrow black stripes; pleurae with slight whitish dust; anterior spiracle black like posterior one; hairs and bristles black, 1 prsct., 2 postsutural dc., and 2 praesutural pairs (hardly distinguishable, but sometimes a little stronger); 1 i.a. behind suture; praealar very small in male, well developed in female; propleurae with tuft of bristly hairs; st. 1:3, last of latter much larger than other two; pteropleura with black hairs, and with tuft of bristly hairs above; tympanic ridges bristly just above root of calypters. Scutellum coloured like scutum, with six strong marginal bristles, and moreover setulose on disc and at sides. Calypters blackish, with black, dark-fringed borders, quite bare on disc; halteres black, stalks yellowish at base. Mesophragma bluish black, dark grey-dusted. Abdomen broad and rounded, entirely shining metallic dark blue, with faint greenish reflections, fourth segment in both sexes densely clothed with whitish-grey dust; setulae black, but no distinct bristles, even at tip. Sternites black and black pilose. Male genitalia small, not prominent. Front coxae and all trochanters pale reddish, four posterior coxae somewhat infuscated, especially in female; femora dark reddish, more or less infuscated at tips and on outer side, tibiae and tarsi black, but former sometimes dark reddish; front femora with two complete rows of long black bristles, one on outer side, one below; front tibiae unarmed; middle tibiae with one strong bristle on inner side, and two or three similar bristles in one row on outer side. Wings greyish-hyaline, slightly infuscated antero-basally; no costal bristle; veins black throughout, first vein bare, third bristly above and below to a little before anterior transverse vein; bend of fourth vein rather narrow and rounded; apical cross-vein slightly concave inwards, first posterior cell narrowly open; small anterior transverse vein at middle of discal cell; posterior transverse vein S-shaped, oblique, much longer than portion of fifth vein beyond it.

203. *Orthellia greenwoodi*, sp. n., ♀.

Apparently not unlike the Australian *O. nigriceps* (Macq.) Stein, but distinguished by reduced dc. and the dark calypters. According to Malloch's key of 1923 it would appear to be *O. dubia*, which however is a different species, found in Africa.

Type ♀, a single specimen, Lautoka Mts., 2.i.1920 (*W. Greenwood*), and named in his honour.

♀. Length of body 8 mm.; of wing 7.5 mm.

Head black, occiput narrowly metallic blue at upper eye-borders and at vertex; postocular row black, with, in addition, rather dense black hairs. Frons narrower than one eye, gradually widened towards antennae, rounded in profile and slightly prominent near antennae; median stripe deep black; parafrontalia narrow, white-dusted, but shining blackish-blue near vertex and there with black setulae, and with 1 or., small and directed forwards; ocellar triangle narrow and short; oc. rudimentary; both vertical bristles well developed; frontal bristles numerous. Eyes narrow and quite bare. Face concave, dark grey-dusted, with not very prominent mouth-border; parafacialia bare, as broad as third antennal segment, silvery-dusted, but darkened below; vibrissal edge not very prominent; peristomialia broad, thrice breadth of third antennal segment, shining black behind and black-haired, with rufous spot in front. Antennae slightly above middle of eyes, black, only extreme base of third segment reddish, latter three and a half times as long as second, reaching epistoma; arista black, with very long plumosity. Palpi black; proboscis shining black behind. Thorax entirely shining metallic blue, with greenish reflections at sides of dorsum; a very faint whitish pruinescence in front, with beginnings of two narrow black stripes; anterior spiracle black; hairs and bristles black, only 1 pair of prsct. acr. and only 2 pairs of dc., situate far back and not strong, none before suture; 1 i.a.; praealar well developed but considerably shorter than first supra-alar; st. 1:3, but two in front of posterior one much smaller; prosternum grey-dusted, hairy at sides; pteropleura with black hairs and with tuft of setulae above; some bristly black hairs near sides of base of scutellum just above upper calypter. Scutellum shining metallic blue, black-haired, with six strong bristles, but none discal. Calypters blackish, with brown borders and short dark fringes, lower one bare and very prominent. Halteres blackish. Abdomen entirely shining metallic blue, with greenish reflections towards middle of segments; hairs black, but no distinct bristles even on last two segments; fourth segment not dusted; sternites blackish, with short dark hairs. Legs entirely black, not at all metallic even on femora; front femora with row of long black bristles below; front tibiae without middle bristle; middle tibiae with one strong bristle on inner side, and three or four bristles in a row on outer side; hind femora without bristles below; hind tibiae with a dense row of short setulae on outer surface. Wings greyish-hyaline, slightly infuscated along fore borders in basal half; veins entirely black to base; first vein bare; basal stem of radius bare; third vein with scattered bristles above and below from base to anterior transverse vein; bend of fourth vein broadly rounded, apical cross-vein straight, first posterior cell very narrow at end, opening being about as broad as third

antennal segment; anterior transverse vein a little before middle of discal cell; posterior transverse vein nearer bend, S-shaped, considerably longer than portion of fifth vein beyond it, but considerably shorter than its distance from anterior transverse vein.

Genus **MUSCA**, Linn.

204. **Musca domestica**, Linn.

The typical form (not *M. domestica vicina*), which has already been recorded many times from the Islands in economic literature.

Suva, ii.1922, bred from onions imported from Australia (*H. W. Simmonds*); Natova, iii.1916 (*R. Veitch*).

Genus **PASSEROMYIA**, Vill. and Rodh.

205. **Passeromyia veitchi**, sp. n., ♀.

Distinguished from its congeners by having bare eyes, a pair of strong decussate bristles on the bare frontal stripe in front of the ocellar plate, only 1 i.a., and wings broadly yellow at the base. In the genotype the eyes are hairy and the frontal stripe is densely pilose near the ocelli, the decussate bristles being much smaller and sometimes hardly visible among the hairs.

Type ♀, a single specimen from Natova, 1916 (*R. Veitch*), in whose honour this important addition is named.

♀. Length of body 10 mm.; of wing 9 mm.

Occiput concave, densely clothed with opaque yellowish-grey dust, with row of black bristles and with black hairs. Frons rather prominent at antennae, flat, as broad as one eye, gradually broadening from vertex to antennae and there as broad as long, while at vertex it is half as long again as broad; frontal stripe parallel-sided, deep black, quite bare, with pair of very strong decussate bristles just in front of short, yellowish-grey ocellar triangle; parafrontalia much wider in front, clothed with yellowish-grey dust and with scattered erect dark hairs; bristles black, both vt. well developed; oc. short but strong; all frontal bristles bent inwards. Eyes narrow, quite bare, with equally small facets. Antennae very long, inserted near level of middle of eyes; second segment reddish, with two black bristles; third segment black, parallel-sided, rounded at tip, nearly reaching to epistoma, six or seven times as long as second; arista basal, reddish, rather thick, with thin and bare terminal portion, with plumosity long above and shorter below, but not so short or so dense as in genotype. Face longer than frons, ovate, deep, not carinate, black, grey-dusted; facial ridges and epistoma reddish, former with short cilia to beyond middle, latter rather prominent and with convergent vibrissal angles. Parafacialia broad, about twice as broad as third antennal segment, yellowish-dusted above, reddish below, like very broad peristomialia which are grey-dusted behind and there densely clothed with long black hairs,

like lower part of head; breadth of peristomialia about half vertical diameter of eye. Mouth-opening relatively narrow; palpi black, with black setulae; proboscis short and thick, dirty reddish anteriorly, black behind. Thorax broad and short, subquadrate, dorsum not very convex; thorax entirely black, even on humeri, but clothed dorsally with dense greyish dust, somewhat yellowish when viewed from side, with four equally broad, parallel, equidistant black stripes, narrowly interrupted at suture, and abbreviated in front and behind. Pleurae darker, black ground-colour visible on upper part. Hairs and bristles black; 2 pairs of acr. in front of suture, 2 behind; dc. 2-3 + 4-5; 1 i.a. behind; praealar half as long as a.sa.; pleurae densely pilose, mesopleural row formed of 8-20 bristles; st. 1:2, in front of superior posterior one a tuft of bristly hairs; pteropleura bare, with only a few yellowish hairs above; tympanic ridges without bristles. Scutellum greyish-dusted, with blackish base when viewed from side, evenly clothed with black hairs even at sides, bare below, with six strong marginal bristles. Mesophragma black, grey-dusted. Upper calypter yellowish, lower one much larger and whitish, bare on disc; border white, with short whitish fringe, longer and yellowish on outer side of lower calypter. Halteres entirely yellowish. Abdomen broad and short, broader than thorax but not longer, entirely bluish black and rather shining, with thin whitish dust at base and tip; a narrow darker median stripe at base, not reaching hind margin of second segment; hairs black, rather long at sides and behind, but no differentiated bristles; venter entirely bluish black and more densely clothed with whitish dust, thinly black pilose, with no bristles even on broad sternites. Legs entirely black, except knees, which are very narrowly reddish; femora rather shining; middle tibiae with no bristle on inner side, but with three or four bristles on outer surface; hind tibiae with two strong bristles on outer side, and with reddish pubescence on inner surface of tips; all femora bristly below; pulvilli blackish. Wings greyish-hyaline, but deep yellow at base as far as anterior transverse vein, even veins in this portion yellow, while elsewhere they are black. No costal bristle; all veins bare, even basal stem and base of third vein. Bend of fourth vein broad and flat, as in genotype; anterior transverse vein slightly beyond middle of discal cell; posterior transverse vein long and rather straight, very oblique and not much shorter than its distance from anterior transverse vein; upper external angle of discal cell long and acute.

Subfamily *STOMOXIDINAE*.

Genus *STOMOXYS*, Geoff.

206. *Stomoxys calcitrans*, Linn.

This cosmopolitan species has already been recorded from Fiji by Miss Sophia L. M. Summers (Mrs. Connal, M.B.E.). Rarawai, 2.xi.1915; Cuvu, 19.viii.1919 (*R. Veitch*).

207. *Stomoxys limbata*, Austen.

Distinguishable by its smaller size, more approximate eyes in the male, complete black bands on hind borders of middle abdominal segments and entirely yellowish tibiae.—Not easily distinguishable from *St. indica*; *St. brunnipes* (Grünberg), Stein, of Formosa, is probably identical with this species.

One ♂ from Yeidanu, 6.v.1919 (*R. Veitch*).

Subfamily *GASTROPHILINAE*.

Genus *GASTROPHILUS*, Leach.

208. *Gastrophilus nasalis*, Linne.

One ♀ from Nausori, x.1922 (*F. C. Lord*).

Family *HIPPOBOSCIDAE*.

Genus *MYIOPHTHIRIA*, Rond.

209. *Myiophthiria reduvioides*, Rondani; Austen,
Parasitology, vol. xviii, p. 360, 1926.

Recorded from the Islands by Speiser in 1904, and by Ferris in 1925, but not represented in the present collection.

MYIODARIA SUPERIORA.

Family *CALLIPHORIDAE*.

Subfamily *CHRY SOMYINAE*.

This subfamily differs from the following one in having the radial stem ciliated above.

Genus *CHRY SOMYIA*, Rob.-Desv.

The literature of this very important genus includes certain discrepancies as regards identification of species. Dr. Patton (*Bull. Ent. Res.*, xiii, pp. 110-111, 1922) sinks as synonyms of *C. albiceps*, Wied., *C. putoria*, Wied., *C. bibula*, Wied., and *C. rufifacies*, Macq. stating that his Indian specimens were determined as *C. albiceps* by me, and as *C. putoria* by Dr. Villeneuve. But Dr. Villeneuve distinguishes *C. albiceps* and *C. putoria* by means of the good character of the prostigmatic bristle, and it is possible that both of these species are to be found in India. Of the *albiceps*-group, I have seen Australian specimens of only *C. rufifacies*, Macq., which also occurs in New Zealand.

The difference in the form of the head between the *albiceps*-group and the typical forms is very considerable, and possibly of generic value; in *C. marginalis*, Wied., which is the genotype, the parafrontalia of the male are bare, there are well-developed frontorbital bristles, and the prostigmatic bristle is also present. I append a key for the distinction of all the species which may

occur in the Region, besides the three species already found in the Islands.

- 1 (24). Males.
- 2 (21). Vibrissae considerably above oral margin; species of usual size, not less than 7-8 mm. in length.
- 3 (20). Eyes in contact or very closely approximate, always much closer together than those of females; femora black.
- 4 (9). Parafrontalia clothed with many rows of thin hairs, and without distinct frontorbital bristles; eyes separated by an interval as broad as second antennal segment with upper facets not much larger than lower ones; prothoracic spiracle white; calypters white.
- 5 (8). No bristle just below prothoracic spiracle, but only tuft of soft, white hairs; peristomialia reddish.
- 6 (7). Hairs on parafrontalia and on hind calypters all or in part black.
albiceps, Wied.
- 7 (6). Hairs on parafrontalia and on hind calypters quite white.
bibula, Wied.
- 8 (5). One strong, black bristle just below anterior thoracic spiracle; peristomialia greyish or blackish; hairs on parafrontalia and on hind calypters mainly white.....*rufifacies*, Macq.
- 9 (4). Parafrontalia bare or with very few hairs, but with well-developed frontorbital bristles; eyes united, or interval between them narrower than second antennal segment; prostigmatic bristle always present.
- 10 (13). Eyes bisected, with upper facets very greatly enlarged (each being as broad as anterior ocellus), and separated by a sharply defined line from the much smaller lower ones; prothoracic spiracle black.
- 11 (12). Peristomialia reddish; fore calypter broadly white exteriorly.
megacephala, Fabr.
- 12 (11). Peristomialia blackish; both calypters entirely blackish.
combrea, Walk.
- 13 (10). Eyes not bisected, with upper facets not or but little enlarged (much smaller than anterior ocellus), and not sharply separated.
- 14 (15). Prothoracic spiracle black; peristomialia reddish; fore calypter white exteriorly.....*megacephala*, var.*
- 15 (14). Prothoracic spiracle white or dirty yellowish.
- 16 (17). Peristomialia and antennae reddish; both calypters white, hind one mainly white-haired.....*bezziana*, Vill.
- 17 (16). Peristomialia and antennae black.
- 18 (19). Hind calypter whitish and mainly white-haired; no special pattern in front of suture on mesonotum; last abdominal segments of same colour as preceding ones.....*putoria*, Wied.
- 19 (18). Calypters blackish, fore calypter white exteriorly, posterior one black-haired; mesonotum with peculiar presutural pattern; last two abdominal segments green.....*chloropyga*, Wied.
- 20 (3). Eyes widely separated, frons about as broad as that of female; parafrontalia bare near antennae, with well-developed frontorbital bristles; femora thickened, shining metallic blue; antennae and peristomialia black; prothoracic spiracle dirty yellowish; calypters dirty whitish; prostigmatic bristle present.....*villeneuvei*, Patt.
- 21 (2). Vibrissae at oral margin; very small species, not more than 5 mm. in length; frons about as broad as that of female; legs entirely or partly red; prothoracic spiracle and calypters white; prostigmatic bristle present (*Microcalliphora*, Towns.).
- 22 (23). Frons black; legs partly black, with front femora densely fringed with white hairs.....*varipes*, Macq.
- 23 (22). Frons yellow anteriorly; legs entirely yellow, front femora black-haired.....*flavifrons*, Aldr.
- 24 (1). Females.

* I have specimens of this form from Australia.

- 25 (42). Vibrissae considerably above oral margin; peristomialia reddish or blackish; species of larger size, not less than 7-8 mm. in length.
- 26 (35). Peristomialia reddish.
- 27 (30). No bristle just below prothoracic spiracle, which is white; antennae black.
- 28 (29). Hind calypter in part dark-haired, at least towards internal posterior half.....*albiceps*, Wied.
- 29 (28). Hind calypter entirely white-haired.....*bibula*, Wied.
- 30 (27). A strong upcurved bristle just below prothoracic spiracle.
- 31 (32). Prothoracic spiracle white; antennae black.....*rufifacies*, Macq.
- 32 (31). Prothoracic spiracle black or dirty brownish; antennae red.
- 33 (34). Hind calypter whitish.....*bezziana*, Vill.
- 34 (33). Hind calypter blackish, except at base.....*megacephala*, Fabr.
- 35 (26). Peristomialia black or blackish, except in front; prostigmatic bristle always present.
- 36 (37). Antennae red; frontal stripe reddish; both calypters entirely blackish.....*combrea*, Walk.
- 37 (36). Antennae black; frontal stripe deep black; at least upper calypter white exteriorly.
- 38 (39). Parafrontalia with short black setulae directed inwards; prothoracic spiracle dark yellowish-brown; femora metallic blue.
villeneuvei, Patt.
- 39 (38). Parafrontalia clothed with thin erect hairs, which are white anteriorly; prothoracic spiracle quite white; femora black.
- 40 (41). Calypters almost entirely white; abdomen entirely green; no praesutural pattern on mesonotum.....*putoria*, Wied.
- 41 (40). Calypters blackish, white only exteriorly; basal half of abdomen blue, two terminal segments green; mesonotum with peculiar praesutural pattern.....*chloropyga*, Wied.
- 42 (25). Vibrissae at oral margin; peristomialia white; smaller species, not over 5 mm. in length (*Microcalliphora*, Towns.).
- 43 (44). Legs in part black.....*varipes*, Macq.
(Syn. *C. annulipes*, Patton 1925).
- 44 (43). Legs entirely yellow.....*flavifrons*, Aldr.
(Syn. *C. fulvipes*, Patton, 1925).

210. **Chrysomyia ruffacies**, Macquart (*C. micropogon*, Bigot).

A peculiar Australian species belonging to the *albiceps*-group, readily distinguishable owing to the presence of a strong prothoracic bristle, just below the spiracle; in this character it agrees with *C. putoria*, which has however a very different head in the male. Known to occur in Australia, New Zealand and the Hawaiian Islands. Some specimens of both sexes: Nausori, x.1920, Lautoka, viii.1919 (*R. Veitch*); Ovalau, v.1922, Macuccata, ix., Suva, 12.iv.1924, "ex offal" (*H. W. Simmonds*); Lautoka, 13.viii.1920 (*W. Greenwood*).

211. **Chrysomyia megacephala**, Fabricius (*C. dux*, Eschh.).

This is the typical form, in which the upper facets of the bisected eyes of the male are each about as broad as the anterior ocellus. Lautoka, ix.1919, Cuvu, vi.1915 (*R. Veitch*).

Widely distributed through the Oriental Region as far as the Philippines; I have seen Australian specimens of the form in which the upper facets of the male eyes are less enlarged.

Genus **MICROCALLIPHORA**, Towns.212. **Microcalliphora varipes**, Macquart.

A very peculiar little species, markedly different from all the others. Known in Australia as a serious sheep-pest.

Taviuni, ix.1921, Suva, "ex offal," iv.1914 (*H. W. Simmonds*); Natova, 1918 (*R. Veitch*).

Subfamily **CALLIPHORINAE**.Genus **CALLIPHORA**, Rob.-Desv.213. **Calliphora salivaga**, Bezzi 1927.

This species has been recently described elsewhere (*Bull. Ent. Res.* xvii, pt. 3, p. 242. March, 1927).

Two males and two females from Cuvu, 1.vi.1915, 25.viii.1916, 19.viii.1919, and one male from Nausori, v.1921 (*R. Veitch*).

Genus **LUCILIA**, Rob.-Desv.214. **Lucilia cuprina**, Wiedemann, Patton 1925 (*L. argyrocephala*, Macquart).

A very characteristic and important species, widely distributed over the Ethiopian, Oriental and Australian Regions, and recently recorded also from America (*L. pallescens*, Shannon). Some specimens of both sexes from Suva, iv.1924, "ex offal" (*H. W. Simmonds*).

Subfamily **RHINIINAE**.Genus **RHINIA**, Rob.-Desv.215. **Rhinia testacea**, Robineau-Desvoidy.

Of this easily recognizable and widely distributed species, which has been recorded from the Pacific Islands by Mr. Senior-White, there is one female from Tahiti, October (*H. W. Simmonds*).

Genus **STOMORHINA**, Rond.216. **Stomorhina discolor**, Fabricius.

Already recorded from Fiji by Mr. Senior-White.

Numerous specimens of both sexes: Suva and Tamavua, ii.-xii.1921 (*H. W. Simmonds*); Nausori, x.1920, Natova, 1918, Labasa, vii.1921, Cuvu, vi.1915 (*R. Veitch*); Labasa, viii.1922 (*W. Greenwood*).

Family **SARCOPHAGIDAE**.

The species in the collection may be distinguished as follows:

- 1 (8). Frons of male destitute of orbital bristles; posterior transverse vein much longer than its distance from bend of fourth vein, and thus

- much nearer to bend than to anterior transverse vein; large or medium-sized species, with abdomen never black-banded (*Sarcophaga*).
- 2 (5). Wings strongly suffused with yellow at base; calypters yellow.
- 3 (4). Postocular cilia in two rows; third and fourth abdominal segments in both sexes shining black, very slightly dusted.....*ganura*, sp. n.
- 4 (3). Postocular cilia in but one row; tip of abdomen with usual grey dust and with chequered spots.....*tephrura*, sp. n.
- 5 (2). Wings not yellow basally; calypters white.
- 6 (7). Hind tibiae with well-developed fringe on inner side; a single row of postocular cilia; frons broad.....*harpax*, Pand.
- 7 (6). Hind tibiae quite bare on inner side; two rows of postocular cilia; frons much narrower, one-third of width of eye.....*fuscicauda*, Bötch.
- 8 (1). Frons with or. in both sexes; posterior transverse vein as long as its distance from bend, and only a little beyond mid-way between bend and anterior transverse vein; very small species, with black-banded abdomen (*Sarcophagula*).....*limbatella*, sp. n.

Genus **SARCOPHAGA**, Meig.

217. *Sarcophaga ganura*, sp. n., ♂♀.

Closely allied to the Oriental *S. flavinervis*, Senior-White 1924, of which I have before me one male specimen from Java. It is, however, distinguishable by the parafrontalia and parafacialia not being golden, and by the very different coloration of the abdomen (male genitalia not examined). The South-African *S. elegantipes*, Villeneuve, is likewise allied, but very different.

Type ♂ from Vunilagi, v.1921 (*H. W. Simmonds*); type ♀, Cuvu, ii.1918 (*R. Veitch*).

♂♀. Length of body 16 mm., of wing 14 mm. in male, 13 mm. and 11 mm. in female.

Occiput grey-dusted, adorned with three deep black spots, median one just above neck, and one on each side near eye; postocular cilia black, in two rows, and below with some irregular ones; white hairs in centre and below. Frons of male one-third as broad as one eye, but much widened in front and rather prominent in profile; median stripe parallel-sided; parafrontalia white-dusted, with scattered thin black hairs; outer vt. small but distinct; oc. small; 4-5 descending front orbitals, very close together; in female, outer vt. more developed, with 3 strong or., one behind, two curved forwards. Antennae black; third segment thrice as long as second; arista with long plumosity. Face grey-dusted; upper mouth-border yellowish; parafacialia whitish-dusted, with bristles in both sexes weak and black. Peristomialia broad, white-dusted, with black hairs in front, pale yellowish or whitish ones below. Palpi black. Mesonotum grey, with three black, equidistant, equally broad, deep black stripes, median one continued on scutellum; narrow, deep black notopleural line extending from posterior border of humeri to root of wing; pleurae dark grey, unspotted. Anterior spiracle blackish. All hairs and bristles black; of acr., 1 praescutellar and 1 less distinct praesutural pair; dc. 4 + 2, but only 2 posterior ones well developed, others being very short; 3 i.a. Calypters orange-yellow; halteres with blackish knobs.

Abdomen shining black, grey-dusted only on two basal segments and there with black median stripe; third segment very little dusted. Hairs and bristles black; first segment only with lateral bristles; second segment with two median bristles; third and fourth segments with rows, but that of third more interrupted. First genital segment of ♂ shining black, grey-dusted on hind border, without bristles; second segment shining black, grey-dusted above in middle. Genital segment of ♀ shining black, with narrow reddish hind border, fringed with black bristly hairs, interrupted towards middle above. Legs entirely black; middle femora with comb, and with long black hairs; middle tibiae bare; hind femora with one row of bristles below; hind tibiae with well-developed fringe. Wings greyish-hyaline, membrane at base, and along fore border to middle, bright yellow; bases of all veins also bright yellow; no costal bristles; first vein bare; third vein with seven or eight bristles at base; bend of fourth vein strongly V-shaped; posterior transverse vein S-shaped, twice as long as portion of fourth vein between its upper end and bend.

218. *Sarcophaga tephura*, sp. n., ♂♀.

Very near *S. ganura*, but differing in being of smaller size, and in having strong bristles on the parafacialia, of no deep black spots at the sides of the occiput, and a more pollinose abdomen.

Type ♂, Levuka, v.1921 (*H. W. Simmonds*); type ♀, Nausori, v.1921 (*R. Veitch*).

♂♀. Length of body 9–10 mm.; of wing 8–9 mm.

Occiput grey-dusted, with only median black spot; postocular cilia in but one row; on lower part, more scattered black hairs and more abundant white hairs. Frons of male one-fourth of eye; chaetotaxy in both sexes as in *S. ganura*, but in ♂ outer vt. not distinct; parafacialia grey-dusted like parafrontalia, but with four or five strong and long black bristles. Antennae as in *S. ganura*. Peristomialia entirely clothed with whitish hairs. Palpi black. Thorax with same pattern as *S. ganura*, but with more developed bristles; dc. 4 + 2, all long and well developed; 1 pair of prsct. acr., praesutural pair very little developed. Calypters and halteres as in *S. ganura*. Abdomen as in *S. ganura*, but with even third and fourth segments grey-dusted; both genital segments of male shining black, with less developed grey dust; genital segment of female quite black, even on hind border, and with less developed fringe. Legs as in *S. ganura*, but with less developed fringe on hind tibiae. Wings as in *S. ganura*, but with bend of fourth vein less V-shaped, nearly at right angles.

219. *Sarcophaga dux*, Thomson.

S. harpax, Pandellé, Senior-White, is a synonym; and the Fiji examples correspond perfectly with specimens in my own collection from the Philippines, determined as *S. subtuberosa* by Parker (*Proc. U.S. Nat. Museum*, liv, p. 89, 1917).

A well known and widely distributed species, already reported from the Pacific Islands; in Hardy's Key (1925) running down to *S. bancrofti*.

Numerous specimens of both sexes from Natova, 1916 (*R. Veitch*); one ♀, Taviuni, xii.1921 (*H. W. Simmonds*).

220. *Sarcophaga fuscicauda*, Böttcher (Senior-White, *Rec.*

Ind. Mus., vol. xxvi, p. 252, pl. xii, fig. 20, 1924).

Widely spread throughout the Oriental Region, and recorded also from the Hawaiian Islands and Australia.

One ♂, Suva, 4.ii.1922, "from onions imported from Australia" (*H. W. Simmonds*); a doubtful ♀ from Natova, 1916 (*R. Veitch*).

Genus *SARCOPHAGULA*, v. d. Wulp.

221. *Sarcophagula limbatella*, sp. n., ♂♀.

Showing the facies of the Neotropical *S. occidua*, Fabr., but with a peculiar abdominal pattern.

Type ♂♀ and another specimen, Labasa, xii.1921 (*R. Veitch*).

♂♀. Length of body and wing 3.5-4 mm.

Occiput rather convex, clothed with dense opaque grey dust, unspotted; postocular cilia black, long, scattered, forming two subregular rows, with several others in centre above. Frons parallel-sided, half as broad as eye, about equally broad in both sexes; parafrontalia grey-dusted, median stripe narrow and reddish brown; 2 or. in both sexes; outer vt. distinct in both sexes, but much shorter than inner ones. Antennae entirely black; third segment twice as long as second; arista with long plumosity, latter twice breadth of third antennal segment. Face and parafacialia grey-dusted, latter very narrow, narrower than third antennal segment, with row of five or six bristly hairs. Peristomialia one-third of eye. Palpi and proboscis black. Thorax including scutellum, entirely clothed with opaque grey dust, with scattered short black hairs and black bristles; mesonotum with three very indistinct darker stripes, usually not visible; dc. 2 + 3; acr. short, in two rows in front of suture, and in three or four rows behind; 2 i. a.; st. 1 : 1; scutellum with only four bristles, latter very long, especially divergent terminal pairs. Calypters whitish, lower one broad and bare; halteres yellowish. Abdomen grey-dusted, opaque, with chequered spots, each segment with shining, narrow, black hind border; first segment without central bristles, second with one pair, third and fourth segments with complete rows. Male genitalia small, black. Legs entirely black, those of male without hairs on tibiae; hind tibiae with two pairs of long bristles in middle of posterior side. Wings greyish-hyaline, with extreme base pale yellowish; costa and veins yellowish, latter slightly infuscated at tips; all veins bare, only third with three or four long bristles at base; no costal spine; first posterior cell closed on wing-margin, or only

narrowly open; posterior transverse vein a little beyond mid-way between anterior transverse vein and bend; appendix of bend small.

Family TACHINIDAE (incl. Dexiidae).

Subfamily RUTILIINAE.

Genus RUTILIA, Rob.-Desv.

222. *Rutilia transfuga*, sp. n., ♀.

Very like *R. lepida*, Guér. (Engel, *Zool. Jahrb.*, p. 373, 1925), but differing in having a longer third antennal segment, more slender and pale yellowish palpi, reddish pleurae, reddish legs and the first posterior cell closed on the wing-margin. Type ♀, a solitary specimen from Suva, 26.x.1921 (*H. W. Simmonds*).

♀. Length of body 16 mm.; breadth of abdomen 9 mm.; length of wing 16 mm.

Head black, but densely clothed with opaque grey dust; occiput flat, with narrow, whitish ocular border, and with row of short, black postocular cilia; rather long whitish hairs in middle and below. Frons at vertex half as broad as one eye, but much wider anteriorly, being broader at antennae than one eye; parafacialia much widened in front, opaque grey, evenly clothed with scattered, short, thick hairs; median stripe blackish brown, as broad as one of parafacialia and likewise much wider in front, including reddish, narrow, acute ocellar triangle, base of latter with broad, rounded ocellar spot; 14-15 frontal bristles and 2 pairs of well-developed or., basal pair directed backwards, anterior pair directed forwards; oc. thin and short; inner vt. strong and long, outer vt. wanting; frons rounded in profile, at antennae as prominent as three-fourths of length of anterior praetarsus. Antennae inserted at level of middle of eyes; third segment linear, rather elongate, three-fourths as long as anterior praetarsus, rounded at tip; third segment black like basal segments, except at base, which is bright reddish; arista with very short pubescence. Parafacialia as broad as parafacialia anteriorly, entirely grey and quite bare; face distinctly reddish, with broad median keel whitish-dusted; vibrissae decussate, above them three or four irregular rows of bristly hairs as far as tips of antennae; peristomialia yellowish grey, very broad, as broad as first two tarsal segments, bare on upper half, with short scattered black hairs on lower half; prominent mouth-border broad, reddish, ciliated with row of black bristles, descending below vibrissae and continued along sides of mouth. Palpi not very clavate, pale yellowish, with thin yellowish hairs; terminal portion of proboscis shining reddish brown, two-thirds as long as front tibiae. Thorax broad, subquadrate; mesonotum metallic green, but not very shining, especially in front of suture, being clothed with grey dust; mesonotum with four dark stripes,

middle ones wide apart, ending a little beyond suture; humeri and pleurae reddish, but grey-dusted; short dorsal hairs all black, longer pleural ones yellowish; transverse row of 10-12 strong, spine-like bristles on hind border of mesonotum, in front of scutellum; dc. and acr. numerous, but very thin and short, thus less distinguishable among hairs, 4-5 pairs in front of suture more distinct than others; 3 strong i.a.; 1 praesutural, humeral, notopleural, anterior and posterior supra-alar very strong, latter being 5 in one row; a mesopleural row; st. 0:1; 6-8 pt. in one upper row, below them dense and long reddish hairs; 6-7 hypopleurals. Prothoracic spiracle dirty yellowish, just below it a tuft of 3-4 strong black bristles, with several minor ones. Scutellum entirely shining metallic green, with short black hairs in rows like those on scutum with 12 strong, spine-like marginal bristles, and moreover with apical pair of not decussate, minor bristles. Calypters dirty brownish, with blackish borders, bare on disc and almost bare on borders. Halteres yellowish. Abdomen very broad, broader than thorax, as broad as long, shining metallic above and below, but having a reddish, semi-transparent appearance; all segments of coppery-red colour, with bluish-green hind borders and median stripe; venter less coppery, without median stripe and with less developed hind borders, but with more distinct basal bands of shining white dust. Dorsum and venter with short black hairs, in regular rows; first and second segments each with only one seta on each side and no setae in middle; third segment with complete marginal row of setae, continued on venter; fourth segment with row of discal setae, continued on venter. Coxae, femora and tibiae reddish, tarsi black; hairs and bristles black; meso- and metasternum with strong spine-like black bristles, directed backwards; hind coxae with two setae; hind femora at base below with four or five strong bristles in two rows; hind tibiae on inner side with two strong approximate bristles beyond middle, and on outer side with complete row of equal black bristles. Claws black; pulvilli dirty brownish. Wings greyish-hyaline, with yellowish-fuscous bases, and with usual dark praebasal band extending from humeral cross-vein to anal cell; veins reddish with blackish tips; costa with basal dilatation strongly developed, yellowish, black-ciliated; all veins bare above and below; second and third veins quite parallel throughout; first posterior cell closed on margin; anterior transverse vein thickened and curved; bend forming a rounded angle; posterior transverse vein very long, as long as apical one, two and a half times as long as its distance from bend; fifth and sixth veins ending before reaching hind margin.

Subfamily PYRRHOSIINAE.

Genus RHINOMYIOBIA.*

223. *Rhinomyiobia plumifera*, sp. n., ♂♀.

A rather robust species of medium size, with plumose arista, and with orbital bristles in the male.

Type ♂, Sigatoka, x.1922 (*H. W. Simmonds*); type ♀, Cuvu, 19.viii.1919, and 2 additional specimens of same sex from Natova, 1916 (*R. Veitch*).

This and the following species, which evidently have affinities with *Myiobia*, are assigned to the Australian genus *Rhinomyiobia*, notwithstanding that they have the parafacialia quite bare above.

♂♀. Length of body 5.5–7 mm.; of wing 5–6.5 mm.

Head black, densely grey-dusted. Occiput flat, with row of short black postocular cilia, and clothed with dense whitish hairs, which are longer below. Frons of female only a little broader than that of male, about half as broad as one eye and little widened in front; frons in profile prominent at antennae for a distance equal to breadth of third antennal segment; median stripe deep black, about as broad as one of whitish-grey parafacialia; latter wider in front in female, and bare, but provided in both sexes with 2 strong or.; frontal bristles 7–10, descending to level of middle of second antennal segment; 1 praevertical directed backwards; both pairs of vt. well developed in both sexes; oc. small, directed forwards. Eyes bare, ovate, with vertical diameter nearly twice as long as horizontal. Antennae inserted on level with middle of eyes, two basal segments reddish, third segment infuscated with reddish base, or even entirely blackish, thrice as long as second and rounded at tip, reaching bottom of face; arista with rather long plumosity, latter at base as broad as length of third antennal segment; basal segments of arista short. Face flat, white-dusted, like quite bare parafacialia; latter as broad as third antennal segment; mouth-border very prominent between vibrissae, for distance equal to breadth of third antennal segment; vibrissae long, decussate, with only one or two bristly hairs above them, and with six or seven below along mouth-border; peristomialia whitish, one-fourth as broad as eye, with scattered, black, setulose hairs. Palpi slender, slightly clavate, entirely pale yellowish, with whitish hairs; terminal portion of proboscis shining black, about as long as vertical diameter of head; labella broad, yellowish, pale-haired. Thorax black, dark grey-dusted, with two small praesutural admedian stripes on mesonotum and two broader exterior ones, interrupted at suture and ending much before scutellum; pleurae unspotted; hairs and bristles black; dc. 3 + 3; of acr. only 1 praescutellar and 1 praesutural pair; i.a. 3; st. 2 : 1; hypopleural

* The name of the author of this genus (omitted by the late Prof. Bezzi) has proved untraceable.—E. E. Austen.

4-5; only 1 strong pt., with tuft of minor ones; 1 propleural, 2 stigmatal. Scutellum black, grey-dusted, with base broadly black viewed from side; scutellum black pilose, with 2 pairs of lateral bristles, 1 discal and 1 apical pair, latter decussate and horizontal. Postscutellum and mesophragma black, grey-dusted. Calypters whitish-translucent, with white borders, hind ones greatly developed and bare on disc; halteres yellowish. Abdomen reddish, yellowish-translucent at sides of base in male; all

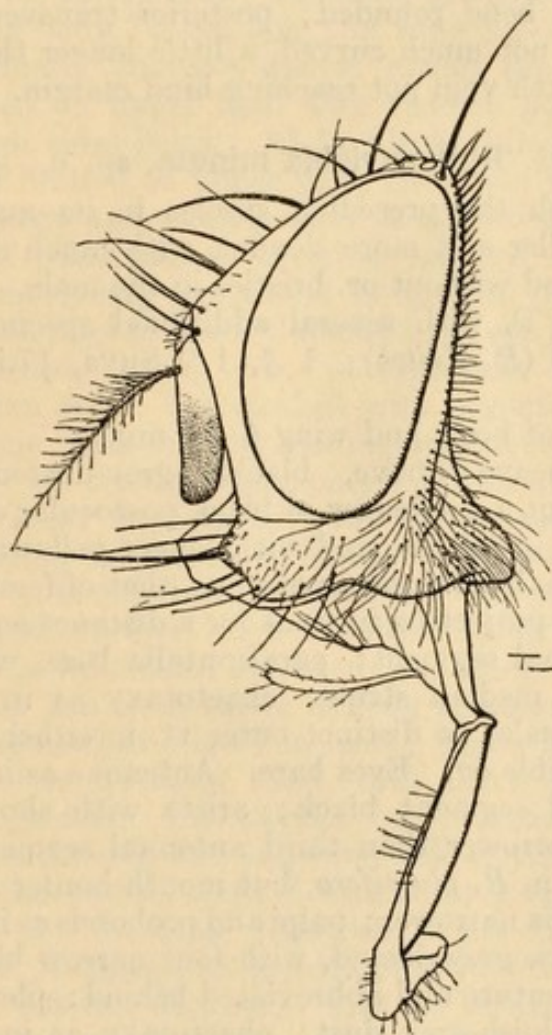


FIG. 53.—*Rhinomyiobia plumifera*, sp. n. Head of ♀ in profile. × 20.

segments with black hind borders, in male first two segments with only central hind spot, which in female is often so much enlarged as to cover almost entire segment; last segment grey-dusted, other segments with narrow basal bands of yellowish dust; venter reddish, with black hind borders to middle segments in female; sternites concealed; male genitalia likewise hidden, but greatly developed, first segment shining black, second reddish; no special piercer in female. Hairs and bristles black; first and second segments with lateral bristles only, third and fourth with complete rows; no discal bristles. Coxae and femora reddish,

latter narrowly black at tips, chiefly above; tibiae and tarsi entirely black; hind tibiae not ciliated; pulvilli and claws equally short in both sexes. Wings greyish-hyaline in male, in female with anterior half distinctly (even if slightly) yellowish-infuscated; no costal bristle; all veins bare except third, which bear 2-4 bristles above and below at extreme base. First posterior cell ending very near wing-tip, very narrowly open; apical cross-vein very near and parallel with wing-margin, only a little concave at end; anterior transverse vein slightly before middle of discal cell; bend rounded; posterior transverse vein nearer bend, oblique, not much curved, a little longer than its distance from bend; sixth vein not reaching hind margin.

224. *Rhinomyiobia minuta*, sp. n., ♂♀.

Agreeing with the preceding species in its main characters, but much smaller and more slender, with much shorter pilosity on the arista and without or. bristles in the male.

Type ♂ and ♀, with several additional specimens, Lautoka, v.-viii.1919-23 (*R. Veitch*); 1 ♂, 1 ♀ Suva, 17.ix.1920 (*H. W. Simmonds*).

♂♀. Length of body and wing 4-4.5 mm.

Occiput concave above, blackish-grey-dusted, whitish at margin, with but a single row of black postocular cilia, with very few dark hairs in middle, and with longer yellowish ones below. Frons of male half as broad as one eye, that of female as broad as one eye; frons projecting in front for a distance equal to breadth of third antennal segment; parafrontalia bare, white, as broad as deep black median stripe; chaetotaxy as in *R. plumifera*, but no or. in male, no distinct outer vt. in either sex, and hair-like, hardly visible oc. Eyes bare. Antennae as in *R. plumifera*, but with third segment black; arista with short pubescence, latter much narrower than third antennal segment. Face and parafacialia as in *R. plumifera*, but mouth-border less prominent and peristomialia narrower; palpi and proboscis as in *R. plumifera*. Mesonotum dark grey-dusted, with four narrow blackish stripes, interrupted at suture and abbreviated behind; pleura unspotted, clothed with bluish-grey dust; chaetotaxy as in *R. plumifera*, but with only 2 praesutural dc. Scutellum dark grey-dusted, with less distinct discal bristles, with very long, decussate prae-apicals and very small apicals. Calypters and halteres as in *R. plumifera*. Abdomen as in *R. plumifera*, but narrower and more elongate, and with narrower black hind borders to segments; bristles longer, one pair of median ones on hind margin of second segment; male and female genitalia as in *R. plumifera*, but former with first segment yellowish. Legs yellowish, longer than in *R. plumifera*, with more or less darkened tibiae and black tarsi; pulvilli and claws in male much longer than in female. Wings as in *R. plumifera*, but relatively narrower and longer, and those of female less infuscated; third vein quite bare at base; posterior transverse vein straight, shorter than its distance from bend.

Genus **SIPHOLESKIA**, Towns.225. *Sipholeskia ignifrons*, sp. n., ♂♀.

An elongate species, very like *Fischeria bicolor* in general shape, but differing in having a much longer proboscis, and a prominent, strikingly red frons. Placed provisionally in the present genus (*Proc. U.S. Nat. Mus.*, p. 628, 1916) and agreeing well enough with the genotype, *Drepanoglossa occidentalis*, Coq., of California.

Type ♂♀, Cuvu, 19.viii.1919; Lautoka, 22.viii.1921 (*R. Veitch*).

♂♀. Length of body 7.5–8.5 mm.; of wing 6.5–7.5 mm.

Occiput distinctly concave above, rather prominent below, dark grey-dusted on upper half, with reddish postvertical spot and with whitish sides below; 10–12 black, thin postocular cilia in one row and limited to upper part, elsewhere yellowish hairs, latter whitish below and where occiput is clothed with argenteous dust. Frons of male half as broad as one eye and not much broader in female, very prominent in profile, projecting for a distance about as long as vertical diameter of eye; median stripe long, parallel-sided, bright red; parafrontalia bare, of same colour as median stripe but clothed with argenteous dust near eyes, and in some lights entirely shining argenteous; ocellar spot small, blackish; all bristles black, only 7–8 frontals, 2 upper ones directed backwards; 2 or. in both sexes, very close to frontals, parafrontalia being very narrow, almost linear near vertex; oc. thin; no outer vt. in either sex. Eyes bare, very narrow in profile. Antennae inserted on level with middle of eyes, with third segment more or less infuscated on outer side, except at base; third segment slightly less than thrice as long as second, rounded at tip and there somewhat dilated in male; arista blackish brown, much thickened in its basal third, with short pubescence and short basal segments. Parafacialia bare, broader than third antennal segment above but narrowed below, yellowish, reddish above near parafrontalia, clothed with shining argenteous dust; face concave, not carinate, yellowish, white-dusted; mouth-border about as prominent as breadth of third antennal segment; vibrissae long, but not decussate, with no bristles above them; peristomial border with only 3–5 black marginal bristles; peristomialia rather narrow, as broad as third antennal segment, yellowish, white-dusted, with brownish subocular spot. Palpi as long as mouth, rather thin, slightly clavate, entirely yellowish, with several short bristly hairs at tips. Proboscis long and thin (shaped as in *Prosenia*), reddish at base, black elsewhere, with very small terminal labella; proboscis considerably longer than front tibiae. Mesonotum dark grey-dusted, with four narrow, equidistant, black stripes, interrupted at suture and abbreviated behind; viewed from side, these stripes coalesce into a single stripe on each side, broad and rather shining; humeri and pleurae densely clothed with white shining dust, former yellowish in ground-colour, like propleural region; hairs and bristles black; dc. 3 + 2; only 1 pair of acr., in front of scutellum; i.a. 2; 1 pro-

pleural, 1 substigmal, 2 st., 1 strong pt., 4-5 hypopleurals; pleurae with only a few scattered reddish hairs. Scutellum dark grey-dusted, with black hairs and with only two pairs of differentiated bristles, discal and apical ones being absent; postscutellum and mesophragma grey-dusted. Calypters yellowish translucent, lower one long and bare on disc; halteres yellowish. Abdomen elongate, cylindro-conical, entirely reddish, rather shining, second segment sometimes with black hind border

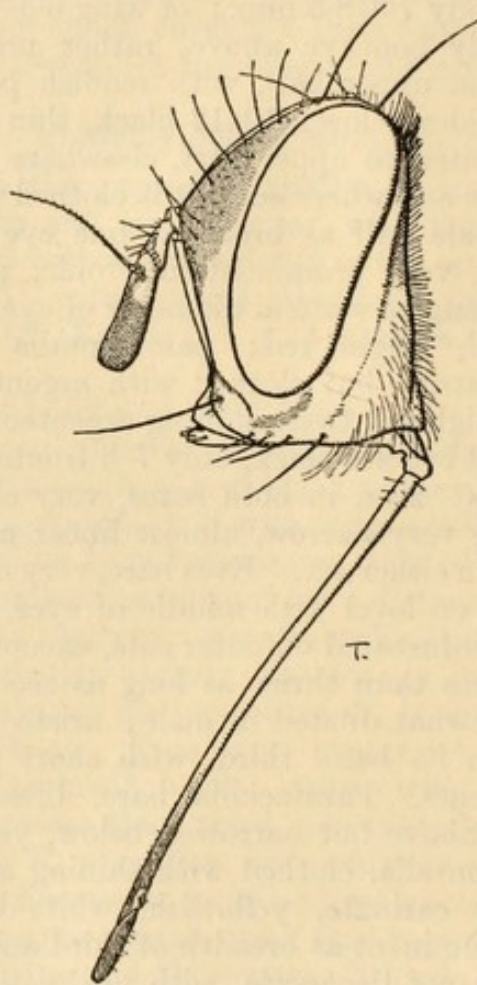


FIG. 54.—*Siphoeskia ignifrons*, sp. n. Head of ♀ in profile. × 14.

and there also with black median spot; third and fourth segments always with black hind borders, but that of fourth interrupted in middle; venter more yellowish, quite unspotted, except black terminal spots, with no visible sternites; male genitalia small, reddish, enclosed; no special piercer in female; hairs and bristles black, latter strongly developed, but only marginal; first segment with bristles only at sides, second segment with two bristles in middle and one on each side, third and fourth segments with complete rows. Legs elongate; coxae and trochanters yellowish, former white-dusted, with black bristles; femora yellowish; tibiae and tarsi black, former yellowish at base; pulvilli and claws

of male short, only a little larger than those of female; middle femora with single strong bristle in middle of anterior side; hind tibiae with only a few long, widely separated bristles. Wings relatively short, somewhat infuscated on anterior half, especially in male, with yellowish base; veins black, with yellowish base. No costal bristle; veins bare, only third with 6-8 bristles from base to mid-way from anterior transverse vein; first posterior cell narrowly open at end, and ending near wing-tip; bend of fourth vein broad and rounded, apical cross-vein rather straight and parallel with hind margin of wing; anterior transverse vein a little before middle of discal cell; posterior transverse vein oblique, only slightly curved, longer than its distance from bend; sixth vein not reaching hind margin.

Subfamily *CYLINDROMYINAE* (Ocypterinae).

Genus *CYLINDROMYIA*, Meig.

226. *Cylindromyia* (*Plesiocyptera*) *pacifica*, sp. n., ♀.

Near the Oriental *C. bicolor*, Wied. (*nec* Oliv.), but distinguished by its entirely black mesonotum and black tibiae; *Exogaster hemimelaena*, Bezzi 1923, of the Seychelles, is very similar in the coloration of legs.

Type ♀, a solitary specimen from Natova, iv.1918 (*R. Veitch*).

♀. Length of body 9 mm.; of wing 6.5 mm.

Occiput concave superiorly, convex and rather swollen in middle and below, shining black on upper part, densely white-dusted below, chiefly at sides; one row of black postocular cilia, limited to upper part, remainder clothed with greyish hairs, which are whitish inferiorly. Frons with parallel sides, being only a little widened in front, rather prominent near antennae, for a distance broader than third antennal segment; median stripe broad, parallel, broader than one of parafrontalia, reddish brown; parafrontalia bare, white-dusted; only inner vt. present; 8-10 frontals, not extending beyond base of antennae; 2 or.; oc. short. Eyes narrow in profile, bare. Antennae inserted above middle of eyes, reaching epistoma; basal segments reddish; third segment blackish, with reddish base and inner side, parallel-sided, rounded at tip, thrice as long as second; arista bare, thin, reddish, with short basal segments. Parafacialia bare, parallel-sided, slightly broader than third antennal segment, reddish, clothed with argenteous dust; face long and narrow, concave below, with short flat keel above near base of antennae; mouth-border not prominent; peristomialia not broader than parafacialia, reddish in front, shining black behind, like underside of head; vibrissae thin and short, facial ridges with several hairs above them; no marginal bristles at sides of mouth. No palpi; terminal portion of proboscis shining black; thin, only a little longer than basal portion. Thorax entirely black, even

on humeri and pleurae; dorsum with rather dense, light-grey dust in front of suture, and there with four black stripes, admedian much narrower than external ones; pleurae shining black, with broad middle band of whitish dust on meso- and sternopleura; scutellum small, trapezoidal, black, somewhat shining, not dusted; postscutellum and mesophragma black, slightly grey-dusted. All hairs, and the rather strong bristles black; no acr. before suture; dc. 3 + 3; st. 1 : 1; scutellum with only two pairs of strong laterals; apical very small, hair-like, decussate. Calypters white, lower one bare on disc; halteres with blackish knobs and yellowish stalks. Abdomen elongate, cylindrical, very little narrowed at base, reddish and rather shining, even on venter; basal half of first segment black, continued as median stripe to hind border; third and fourth segments shining black, base of third narrowly red; narrow bands of shining white dust only at base of second and third segments; venter rather carinate, but without special spinulation; genital segment small, shining black. Short hairs, as also bristles, black; no discal bristles; first segment on hind border with two bristles in middle, and one on each side; second segment likewise; third with two bristles in middle and two on each side; fourth with three or four bristles on each side, and none in middle. Front coxae reddish, white-dusted, remaining coxae blackish; all femora reddish; tibiae and tarsi entirely black; hairs and bristles black; pulvilli blackish and short, like claws. Wings with anterior half, to fourth vein and terminal cross-vein, infuscated, terminal part and posterior half whitish-hyaline, like alula; extreme base of wing infuscated. Veins normal, black, with narrowly yellowish bases; no costal bristle; third vein quite bare at base; Posterior transverse vein slightly infuscated, somewhat S-shaped, more than twice as long as its distance from bend, latter with short appendix; stalk of first posterior cell longer than anterior transverse vein and curved towards front margin; sixth vein ending before reaching hind margin.

Subfamily *RONDANIINAE*.

Genus *GRAPHOGASTER*, Rond.

227. *Graphogaster spoliata*, sp. n., ♀.

Belonging to the Section *Anurogyne*, Br. and v. Berg., and exhibiting the characters of the genus *Graphogaster*, except that the body is entirely shining black, while the legs are partly red.

Type ♀, a solitary specimen from Taviuni, 20.xii.1921 (*H. W. Simmonds*).

♀. Length of body and wings 2.5 mm.

Occiput concave, deep black, dark grey-dusted towards middle, with shining white border, obliterated above; occiput almost bare, with one row of short, thin, black postocular cilia. Frons

parallel-sided, as broad as one eye, rounded in profile, somewhat prominent near antennae; median stripe deep black, with small, slightly shining ocellar triangle; parafrontalia narrower than stripe, bare, densely white-dusted, but narrowly shining black near vertex; oc. short, directed forwards; outer vt. well developed, but only half as long as inner ones; 5 frontals extending to middle of second antennal segment, all curved backwards except first two pairs, supra-antennal pair decussate; 2 pairs of strong-or., directed forwards. Eyes bare, rounded, but in profile higher than broad. Antennae inserted on level with middle of eyes, as long as face; third segment rounded at tip, half as long again as rather elongate second segment; antennae black, third segment narrowly reddish at base; arista bare, black, thin, basal third incrassate, basal segments not elongated. Parafacialia bare, narrow, nearly linear on lower half, white-dusted; face narrow, flat, white-dusted; mouth-border not at all prominent; peristomialia narrower than third antennal segment, white-dusted, bare; vibrissae long and decussate, with only one hair above them, five or six black marginal bristles on mouth-border. Palpi thin, not clavate, entirely yellowish; proboscis very short and thick, black, with yellowish labella. Mesonotum entirely shining black, with small triangular patch of grey dust at lateral extremities of suture; pleurae shining black, clothed with slight grey dust; scutellum entirely shining black, like postscutellum and mesophragma; prothoracic spiracle black; mesonotum and scutellum quite bare, pleurae with only a few black hairs on upper part of mesopleura; bristles black, strong and long; 1-2 pairs of distinct praesutural acr., but none in front of scutellum; dc. 2 + 2; st. 1:1; 1 pt.; 3-4 hypopleurals; scutellum with two pairs of strong laterals and a smaller one between them, no discals and no apicals. Calypters whitish translucent, lower one bare, twice as long as upper, which is whiter; halteres whitish. Abdomen entirely shining black, without bands, bare, with long, strong bristles, first segment with one pair in middle of hind margin, second with one discal pair and six on hind margin, third and fourth with one discal pair and a complete row on hind margin; ovipositor conical, without piercer, venter somewhat grey-dusted. Front coxae reddish, remainder black; femora reddish, but broadly black at tips; tibiae and tarsi entirely black; pulvilli black and very short, like claws; bristles long and black, no more than two pairs in middle of tibiae, outer bristles on hind tibiae very long. Wings hyaline, unspotted; veins yellowish, blackened at tips; no costal bristle; all veins bare, third with only one bristle at base. End of auxiliary vein very close to that of first vein, stigma therefore unusually short; second vein long, straight like third, but only slightly divergent at end; third vein ending before wing-tip, and costa ending with it; bend of fourth vein at right angle, with short appendix; apical cross-vein concave,

stalk of first posterior cell half its length; anterior transverse vein considerably before middle of discal cell; posterior transverse vein straight and vertical, mid-way between anterior transverse vein and bend; fifth vein extending to hind margin, sixth ending before reaching latter.

Subfamily *TRIXINAE*.

Genus **THEROBIA**, Towns.

There are three specimens of the genus *Therobia*, all females, which show the striking characters of the want of ocelli, and the presence of the prosternal bladder, first recorded by Townsend (*Insec. Ins. Mens.*, vi, p. 165, 1918). The ocelli are entirely wanting, even in the holoptic males. The African genus *Xystomima*, Villeneuve 1914, is very closely allied, if not the same.

The specimens before me belong to two species, which differ from *T. abdominalis*, Wied., as well as from allied and as yet undescribed forms found in the Philippine Is. They may be distinguished as follows:

- 1 (2). Anterior transverse vein thickened so as to form a black spot; facial ridges setulose; larger species.....*punctipennis*, sp. n.
2 (1). Anterior transverse vein quite simple and colourless; facial ridges only pilose; smaller species.....*vesiculifera*, sp. n.

228. **Therobia punctipennis**, sp. n., ♀.

Closely allied to *T. abdominalis*, Wied., from which it is distinguishable by its darker calypters, and to *Xystomima maculipennis*, Villen., from which it seems to differ, if at all, in the presence of two pairs of praescutellar acrostichal bristles.

Type ♀, Suva, 14.ii.1920, "at light," and another ♀ from same locality, 20.iv.1922 (*H. W. Simmonds*). The insect is probably nocturnal.

♀. Length of body 8-8.5 mm.; of wing 7-7.5 mm.

Head very narrow in profile, more than twice as high as broad. Occiput concave above, reddish, grey-dusted, with scattered dark hairs; ocular border equally broad above and below, densely grey-dusted, with irregular postocular cilia. Frons as broad as one eye, somewhat wider in front, rounded in profile and not at all prominent near antennae, but slightly so towards middle; parafrontalia broad, thrice as broad as very narrow reddish-brown median stripe; parafrontalia reddish, somewhat grey-dusted, with scattered, setulose black hairs in three irregular rows; ocellar triangle greyish, with no distinct ocelli, but with one pair of short ocellar bristles, directed outwards; frontal bristles descending to middle of second antennal segment, anterior ones decussate, posterior pair directed backwards; 2-3 rather strong or. on each side; both vt. of about same strength; median stripe narrowed towards middle, somewhat dilated at each end. Eyes bare, rather narrow in profile, with rather broad

facets, but upper ones not enlarged. Antennae inserted on level with middle of eyes, very short, entirely reddish; second segment as long as, and broader than third, with some setulose black hairs and one long bristle above; third segment rounded, decidedly small; arista bare, yellowish, much longer than antenna, thickened for a short distance basally, with no distinct basal segments. Parafacialia narrow, bare, reddish, grey-dusted, about as broad as second antennal segment; face short, almost circular, reduced to coalescent antennal grooves; facial ridges very broad below, as broad as length of antenna, flat, clothed with setulose hairs in three irregular rows, inner ones longer, shorter external ones more numerous and denser; facial channel long, dilated below; peristomialia reddish, one third as broad as eye, triangular, with short black hairs. Mouth-opening closed, but with rudimentary proboscis projecting. Thorax entirely reddish, slightly grey-dusted, without distinct pattern on dorsum, only infuscated in front of scutellum, which is dark reddish, but appears blackish in some lights. Prosternal bladder greatly developed, pale yellowish, bilobate. Hairs dense, short and black; bristles short, but well differentiated; acr., 1 praesutural and 2 praescutellar; dc. 3 + 2; ia.1; st. 1:1; pteropleura clothed with long black hairs, and with one strong bristle above; a tuft of thin hypopleurals; three pairs of marginal scutellars. Postscutellum and mesophragma reddish; calypters brownish translucent, bare; halteres yellowish, with darkened knobs. Abdomen subglobose, reddish, somewhat yellowish at base, with slight whitish dust, clothed with equal black hairs, which are bristly only on last two segments and all situate on small black dots; hind borders of segments slightly infuscated; sternites free, dark pilose; no special piercer. Legs reddish, tibiae more yellowish; front coxae dilated, semi-circular, with row of black bristles on outer side; tibiae with sparse, scattered black bristles; claws and pulvilli small. Wings broad, yellowish-hyaline, with yellowish veins and thickened, black-spotted anterior transverse vein; no costal bristle; all veins bare, third vein with some short bristles at extreme base. First posterior cell narrowly open a little before wing-tip; bend forming a rounded angle; apical cross-vein concave; anterior transverse vein a little before middle of discal cell, short; posterior transverse vein S-shaped, very long, longer than apical cross-vein and considerably longer than its distance from bend; sixth vein reaching hind margin.

229. *Therobia vesiculifera*, sp. n., ♀.

Distinguished from the preceding species by its smaller size, more developed bristles on the thorax (including scutellum), and unspotted anterior transverse vein; closely allied to *Aulaccephala braueri*, Kertész 1899, of New Guinea, but differing in having narrower postocular orbits and more developed bristles.

For *A. braueri* the genus *Therobiopsis* was erected by Townsend in 1918.

Type ♀, a single specimen from Labasa, vii.1922 (*R. Veitch*).

♀. Length of body and wing 6.5 mm.

Head as in *T. punctipennis*, but occiput with postocular orbits much less developed, and broadly blackish at sides below. Frons and its chaetotaxy, eyes and antennae as in *T. punctipennis*; broad facial ridges clothed with thin hairs, which are not bristle-like; mouth-opening broader, but rudimentary proboscis shorter. Thorax as in *T. punctipennis*, but with stronger and longer bristles, especially two pairs of praescutellar acr. and all dc.; prosternal bladder even more developed; scutellum with longer hairs on disc, and with discal pair of bristles, besides three pairs of lateral ones. Calypters paler than in *T. punctipennis*, almost whitish, as in *T. abdominalis*; halteres yellowish, with blackish knobs. Abdomen as in *T. punctipennis*, but with more differentiated bristles on last two segments. Legs as in *T. punctipennis*, but with more darker femora. Wings as in *T. punctipennis*, but with anterior transverse vein not at all thickened or blackened.

Subfamily ACTIINAE.

Genus ACTIA, Rob.-Desv.

230. *Actia stiglinae*, sp. n., ♀.

Allied to the African *A. heterochaeta*, Bezzi 1908, in having a pubescent arista, with short basal segments, and only the third vein bristly, but distinguished by the abdomen not being red at the sides and by the entirely black legs.

Type ♀, a single specimen from Lautoka, 16.v.1923, bred from larvae of *Stiglina superior*, Butl. (Thyrididae) (*R. Veitch*).

♀. Length of body about 3 mm.; of wing 2.5 mm.

Occiput black, dark grey-dusted, with narrow, complete, whitish postocular border, and with one row of black postocular cilia. Frons narrower than one eye, gradually dilated anteriorly; parafrontalia opaque grey, with row of black hairs and narrower than median stripe, which is reddish; outer vt. well developed, half as long as inner ones; oc. strong; 4-5 frontals, all directed backwards; 2 strong or. Eyes bare, ovate; antennae blackish, with reddish base; third segment two and a half times as long as second, rounded at tip, slightly acute at upper external corner; arista longer than antenna, distinctly pubescent, with basal segments short and not geniculate. Parafacialia linear, whitish; face whitish, with not very prominent mouth-border; peristomialia reddish, narrower than third antennal segment; vibrissae at border of mouth, with one or two bristly hairs above them; palpi yellowish; proboscis very short, dirty yellowish. Thorax black, densely clothed with opaque grey dust, paler on pleurae, without distinct pattern on dorsum; dc. 4 + 2; acr. 3 behind

suture, 1-2 before it; 3 st. in an almost equilateral triangle; setulae black. Scutellum black, dark grey-dusted, with black setulae, and with 3 lateral and 1 apical decussate pairs of bristles. Postscutellum grey; mesophragma black. Calypters whitish translucent with white borders, lower one bare; halteres whitish. Abdomen entirely shining black, with very narrow whitish band at extreme base of second and third segments; bristles but little developed, present only on hind borders of third and fourth segments. Legs black, trochanters and tibiae reddish; claws and pulvilli exceedingly minute. Wings hyaline, without costal bristle and with black veins, which are narrowly yellowish at base; only third vein bristly, with seven or eight bristles extending to a little beyond anterior transverse vein. Stigma short; venation normal (*cf.* Bezzi, *Parasitology*, vol. xv, p. 96, fig. 7, 1923), but the posterior transverse vein nearer anterior one, last section of fifth vein being only a little shorter than preceding one; sixth vein reaching hind margin; anterior transverse vein very short, situate above middle of discal cell; third vein bare below.

Subfamily *TACHININAE*.

Genus **STOMATOMYIA**, Br. and v. Berg.

231. ***Stomatomyia tricholygoides***, sp. n., ♂.

Resembling a *Tricholyga*, but differing in having a more prominent mouth-border, facial ridges completely clothed with bristles, and thinner, filiform palpi.

Type ♂, a single specimen, Ovalau, v.1922 (*H. W. Simmonds*).

♂. Length of body 7 mm.; of wing 5.5 mm.

Occiput black, grey-dusted, white at borders, with upper row of thin black cilia, and clothed with dense whitish hairs, which are longer below. Frons as broad as two-thirds of one eye, in profile broader than width of third antennal segment; median stripe reddish brown, narrower than one of parafrontalia, with broad, greyish ocellar area; parafrontalia grey-dusted, with thin black hairs in two rows; eight or nine frontal bristles, four of which descend below arista, two praevertical ones strong and curved backwards; oc. strong, directed forwards; only inner vt. present, strong and curved backwards. Eyes oval, with scattered hairs. Antennae inserted above middle of eyes, black, second segment dark reddish; third segment very long, four or five times as long as second, parallel-sided, rounded at tip, but with external corner rather acute; arista bare, longer than antennae, basal half thickened, with short basal segments. Parafacialia bare, whitish-dusted, not broader than third antennal segment; vibrissae strong, long, decussate; eight or nine strong bristles ascending along facial ridges in one row to level of base of arista, and there in contact with descending frontals; face concave, narrow, greyish, not carinate; mouth-border prominent

for a distance equal to breadth of third antennal segment; peristomialia greyish, with scattered black hairs, twice as broad as third antennal segment, with reddish stripe above. Palpi yellowish, filiform, as long as black proboscis. Thorax black; dorsum grey-dusted, with four longitudinal stripes, external ones broader and interrupted at suture, all abbreviated behind; pleurae grey-dusted; bristles and rather long hairs black, even on pleurae; dc. 3 + 2; acr. 3 + 2; ia. 3; st. 2:1. Scutellum black and black pilose, with grey border and with three pairs of strong bristles, apical ones decussate. Postscutellum grey, mesophragma black. Calypters whitish, with white borders, lower one bare; halteres with black knobs. Abdomen black, second, third and fourth segments each with broad basal whitish-grey band, occupying almost entire segment, leaving free only hind border and narrow middle line; first segment with one posterior pair of median bristles; second with strong middle pair and a lateral one; third with complete row, but with no discals; fourth with several discal bristles; genitalia concealed; venter densely black pilose. Legs entirely black, front femora greyish on outer side; hind tibiae unequally setose; front legs with long, sharp claws and long pulvilli. Wings greyish-hyaline, without costal bristle; veins black to base; third vein with four or five hairs at base; bend forming a right angle, with long vestigial appendix; first posterior cell narrowly open, ending much before wing-tip; apical cross-vein concave; posterior transverse vein straight, oblique, only a little beyond mid-way between anterior transverse vein and bend, and shorter than its distance from bend; sixth vein not reaching hind margin.

Subfamily *EXORISTINAE*.

Genus *PROSOPAEA*, Rond.

232. *Prosopaea pygmaeella*, sp. n., ♂.

A small species, with shining black body, and somewhat atypical in having the first posterior cell ending near the wing-tip.

Type ♂, a single specimen from Nadi, 1914 (*D. S. North*).

♂. Length of body and wing about 3 mm.

Occiput black, with one row of short, dense, postocular cilia, clothed even below with black hairs. Frons narrower than half one eye, rounded, but little prominent in profile; median stripe dark reddish, distinctly broader than one of parafrontalia, latter very narrow, dark grey-dusted and bare; six or seven frontal bristles, descending to end of second antennal segment; oc. thin and short; 1 pair of praeverticals, and only inner pair of vt. Eyes oval, bare. Antennae inserted above level of middle of eyes, black, with third segment very long, four or five times as long as second, parallel-sided, rounded at tip; arista reddish,

thickened only at base, bare, with short basal segments. Parafacialia bare, narrow, narrower than third antennal segment, dark grey-dusted; face concave, narrow and long, blackish; facial ridges with five or six long bristles above vibrissae, extending to level of base of third antennal segment; mouth-border not prominent; peristomialia blackish, with reddish stripe above, twice as broad as third antennal segment; palpi yellowish, not clavate, as long as blackish proboscis. Thorax, including scutellum, entirely shining black, without dust and without pattern, only lower part of pleurae with faint whitish dust; hairs and bristles black; 2 + 3 acr. and 2 + 3 dc.; st. only 1:1; 3 pairs of scutellar bristles, middle one very short, terminal one very long and decussate, no apicals. Calypters brownish translucent, with whitish borders, hind one bare; halteres yellowish. Abdomen cylindrical, shining black, with very narrow band of white shining dust at extreme base of second, third and fourth segments, not continued on venter, which has all sternites hidden; genitalia small, concealed, shining black; hairs short, black; no discal bristles; first segment without bristles; second segment with one pair in middle and one on each side; third and fourth segments with complete rows, fourth also with middle row. Legs (only hind pair present in type) black; femora somewhat reddish below, like trochanters; hind tibiae with unequal bristles; hind claws short. Wings rather broad and obtuse, greyish-hyaline; veins black, with yellowish bases; no costal bristle. Third vein with two bristles at base; first posterior cell narrowly open very near wing-tip; bend rounded, not appendiculate; apical cross-vein concave; posterior transverse vein straight, about in middle of wing; sixth vein not reaching hind margin.

Genus **PHOROCERA**, Rob.-Desv.

233. **Phorocera (Neopales) poecilochaeta**, sp. n., ♂.

This species, which belongs to the group *Neopales*, *sensu* Aldrich and Webber, is distinguished by its unequally ciliated hind tibiae, by its abdominal macrochaetae being thin and yellowish at the tips, and by the truncate front claws of the male.

Type ♂, a single specimen from Labasa, vii.1922 (*R. Veitch*); the head of a second example was glued on to the body of a specimen of the following species from Nausori.

♂. Length of body 7 mm.; of wing 6 mm.

Occiput concave, dark grey-dusted, with white ocular border, one row of short, dense postocular cilia, and with black hairs even below. Frons half as broad as one eye, gradually broadening anteriorly, as prominent as breadth of third antennal segment; median stripe deep black, as broad as one of parafrontalia anteriorly; parafrontalia yellowish-grey-dusted, with a few black hairs; six or seven frontal bristles, three anterior ones descend-

ing to level of tip of second antennal segment. Eyes oval, densely clothed with long whitish hairs. Antennae inserted above middle of eyes, entirely black; third segment parallel-sided, truncate at tip, four times as long as second; arista microscopically pubescent, long, thin, a little thickened at base and with short basal segments. Parafacialia bare, narrowed below and there much narrower than third antennal segment, clothed with yellowish-grey dust; face broad, flat, rounded, with no prominent mouth-border; vibrissae strong and long, eight or nine ascending to end of frontal series; peristomialia twice as broad as third antennal segment; dark grey, with reddish spot above, clothed with black hairs, even behind. Palpi dark yellowish; proboscis short, dirty blackish. Thorax shining black, dark grey-dusted, dorsum with four very narrow black stripes, but only admedian ones distinct; hairs and bristles black, latter strong and not yellowish at tips; acr. and dc. 2 + 3; st. 2:1. Scutellum like scutum, entirely black, with three pairs of lateral bristles and with one pair of rather long, decussate, not erect apicals. Post-scutellum and mesophragma black, slightly grey-dusted. Calypters whitish, with yellowish borders, hind one bare on disc; halteres with blackish knobs. Abdomen elongate oval, not broader than thorax, shining black, with slight bluish tinge; second, third and fourth segments each with broad, shining white, basal band slightly interrupted in middle and prolonged on to venter; hairs black, with some yellowish ones at sides and tip; bristles black and strong on basal portion, thin and yellowish elsewhere; first segment with indistinct pair on hind border; second with strong pair on hind border, but no discals; third with one discal pair, and three pairs of equidistant bristles on hind border; fourth with one discal pair, and complete row on hind border; venter black pilose in middle, yellowish pilose at sides and tip, with concealed sternites and destitute of bristles; genitalia very small and enclosed. Legs entirely black; hind tibiae with unequal bristles and longer bristle towards middle; front pulvilli long, whitish, broad; front claws truncate, blunt, half as long as pulvilli; other legs with sharp claws, longer than their pulvilli; three terminal segments of middle tarsi slightly dilated at tips, but less noticeably than in *Lecanipus*. Wings greyish-hyaline, with faint but distinct infuscation on fore border, as far as end of second vein; no costal bristle; veins black to base, extreme base of wing infuscated; third vein with three or four bristles at extreme base; first posterior cell narrowly open not much before wing-tip; bend forming an obtuse angle, apical cross-vein being but slightly concave; posterior transverse vein oblique, somewhat S-shaped, nearer to bend and about as long as its distance from latter; anterior transverse vein slightly before middle of discal cell; sixth vein not reaching hind margin.

Genus **MICROCEROMASIA**, Villen.234. **Microceromasia sphenophori**, Villen.

Ceromasia sphenophori, Villen., *Wien., ent. Zeit.*, xxx, p. 82, 1911.

Distinguished by the presence of or. bristles in the male, and by short claws and short pulvilli in the same sex. Introduced from New Guinea.

Numerous specimens of both sexes from Nausori, x.1920 (*R. Veitch*); Yabavu, viii.1922, bred from *Rhabdoenemis obscura*, Boisd. (*R. Veitch*). Already recorded from Fiji by Illingworth (*Journ. Econ. Ent.*, vii, pp. 390-398, pl. 10, 1914); and by Muir and Swezey (*Bull. 13, Hawaii Expt. Station*, p. 16, pl. iii, 1916).

A distinctly pubescent arista, and the ending of the first posterior cell very near to the wing-tip are characters very different from those of typical *Ceromasia*, hence the genus *Microceromasia*, proposed by Dr. Villeneuve, is accepted here. It is probable, however, that the true systematic position of the genus is among the *Pseudodexiinae*.

Subfamily **STURMIINAE**.Genus **CARCELIA**, Rob.-Desv.235. **Carcelia evolans**, Wiedemann.

Distinguishable by its entirely black legs, and the relatively broad frons of the male. One male specimen, Vitoyo, 15.i.1921 (*R. Veitch*). This species, the type of which was obtained in West Africa (Sierra Leone), is widely distributed over the Oriental and Australian Regions.

236. **Carcelia leptcephala**, sp. n., ♂.

Closely allied to *C. evolans*, Wied., but differing in having much narrower peristomialia, and, in the male, a much narrower frons.

Type ♂, Savu Savu, iii.1922 (*H. W. Simmonds*). A ♀ from the Solomon Islands (*H. W. Simmonds*), ex pupa of Coconut Skipper, *Telicota* sp., appears likewise to belong to this species. I have also seen specimens from Queensland.

♂. Length of body about 10 mm.; of wing 9 mm.

Occiput concave, densely grey-dusted, with white ocular border and with row of long, thin, black postocular cilia above, clothed with dense whitish hairs, which are longer below. Frons narrow, only one-third of one eye at vertex and one-half near antennae; median stripe deep black, as broad as one of parafrontalia, which are whitish-grey-dusted and clothed with a few scattered black hairs; frons in profile prominent for a distance equal to two basal antennal segments; bristles black, 9 or., 4 of which descend to level of base of arista, and 2 praeverticals curved backwards; only inner vt. present; oc. strong and

curved forwards. Eyes narrow in profile, their vertical diameter more than twice as long as horizontal, clothed with dense long whitish hairs. Antennae inserted above middle of eyes, entirely black, as long as face; third segment four times as long as second, gradually dilated to tip and there rounded; arista bare, black, longer than antenna, but little thickened in its basal third, with short basal segments. Parafacialia bare, shining white, narrower than third antennal segment below and as broad as latter above; face flat, widened below, grey-dusted; mouth-border not at all prominent with strong vibrissae, and above them with two or three bristly hairs; peristomialia narrower than third antennal segment, grey-dusted, with black bristles on lower margin and with scattered dark hairs in middle. Palpi clavate, entirely reddish; proboscis short, with reddish labella. Thorax entirely black; dorsum grey-dusted, with four equidistant black stripes, inner ones abbreviated behind, external ones interrupted at suture; pleurae unspotted, with black hairs like those on dorsum; bristles black, 4+3 dc., 3+3 acr.; st. 1:1, anterior much smaller than posterior one. Scutellum black, grey-dusted on hind border and black-haired; 3 pairs of laterals, one discal, apicals decussate and oblique. Calypters white, hind one bare above; halteres yellowish. Abdomen black, only sides of second segment reddish; second, third and fourth segments each with broad, basal band of whitish dust narrowly interrupted by thin black middle line, and prolonged on venter; genitalia enclosed; hairs and bristles black, no discals, first segment with very small median pair of bristles on hind border, second with strong median pair, third and fourth with complete rows, latter also with discal row; no ventral bristles. Legs entirely black; claws and pulvilli long; hind tibiae ciliated with thin equal bristles, but one longer towards middle. Wings greyish-hyaline, yellowish at base; veins broadly yellowish at base; no costal bristle; first posterior cell open before wing-tip; third vein with three or four bristles at extreme base; bend forming an obtuse angle; posterior transverse vein broadly S-shaped, oblique, as long as apical cross-vein and longer than its distance from bend; anterior transverse vein before middle of discal cell; sixth vein not reaching hind margin.

Genus **WINTHEMIA**, Rob.-Desv.

237. **Winthemia dispar**, Macquart 1851 (*Exorista*).

Very near *W. quadripustulate*, Fabr., but distinguished by the hairs on the parafacialia being white instead of black. In *W. trichoparia*, Schiner (*Reise Novara, Dipt.*, p. 377), which appears to be identical with the present species, and of which the habitat was mentioned by Brauer and von Bergenstamm, the shoulders and a spot before the scutellum are red.

One ♂ Lautoka, viii.1919, 1 ♀ Natova, xi.1918 (*R. Veitch*); 1 ♀ Nadi, 1914 (*D. S. North*).

Genus **STURMIA**, Rob.-Desv.238. **Sturmia sericariae**, Cornalia.

Widely distributed over the Oriental and Australian Regions; the Tasmanian *Masicera fulviventris*, Macquart (*Dipt. Exot.*, 4^e Suppl., p. 165, 1851), would appear to be identical with this species.

Some specimens of both sexes, Lautoka, iii.1919 (*W. Greenwood*); Nadi, 1915 (*D. S. North*); Vunilagi, v.1921 (*H. W. Simmonds*); Suva Suva, bred from *Sphinx* (*P. Beddon*).

239. **Sturmia inconspicua**, Meigen.

A wide-ranging and well-known species, already recorded from the Islands under the name *S. bimaculata*, Hartig.

Some female specimens from Nadi, 1913 (*D. S. North*), and Cuvu, viii.1919 (*R. Veitch*).

Genus STURMIA, Latr. 1802, p. 107.
 288. *Sturmia ruficornis* Latr.
 This species is distinguished from the European and American species of the genus by the following characters: (1) The male genitalia are different from those of the European species; (2) the female genitalia are different from those of the European species; (3) the male genitalia are different from those of the European species; (4) the female genitalia are different from those of the European species.

289. *Sturmia inaequalis* Latr.
 A wide range of coloration and size is observed in the individuals of this species. The female genitalia are different from those of the European species; (1) the male genitalia are different from those of the European species; (2) the female genitalia are different from those of the European species; (3) the male genitalia are different from those of the European species; (4) the female genitalia are different from those of the European species.

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INDEX OF FAMILIES, GENERA AND SPECIES

- abdominalis (Therobia), 202
 acroleuca (Spathulina), 117
 acroleuca (Tephritis), 116
 acroleuca, *var. parca* (Spathulina),
 6, 116
 Acrosticta, 89
 acrotoxa (Sapromyza), 128, 133,
 134, 176
 Actia, 204
 ACTIINAE, 204
 adsiduus (Chrysotus), 58
 aegrota (Odontomyia *parallelina*,
var.), 24, 27
 aegyptius (Ischiodon), 72
 aenea (Maira), 46
 aeneiventris (Melanagromyza), 166
 aequalis (Mellesis), 100
 Agromyza, 2
 AGROMYZIDAE, 163
 albicapillus (Dasypogon), 42
 albiceps (Chrysomyia), 185, 186, 187
 albicornis (Eufijia), 10, 11, 12, 13,
 14, 15
albonotatus (Tabanus), 36
 alboscuteclatus (Pseudospheniscus),
 114, 115
 Allograpta, 74
 alysicarpi (Melanagromyza), 163, 165
 amoena (Asteia), 160
 ampelophila (Drosophila), 6, 156,
 158
 amphoterum (Xanthogramma), 74,
 75
 ananassae (Drosophila), 6, 156, 158
angulata (Pseudorichardia), 92
angulata (Odontomyia), 28
angusta (Odontomyia), 28
angustifrons (Milichia), 161
angustiventris (Ommatinus), 48
annonae (Euxesta), 88
 annulipes (Chromatopoda), 5, 32, 33
 annulipes, *var. bicolor* (Chromato-
 poda), 32, 33
annulipes (Calliphora), 187
Anthomyidae, 167
 Anurogyne, 200
 Aphiochaeta, 84
 apicalis (Asteia), 160
 appendiculata (Maira), 44, 46
ardens (Tabanus), 35
argyrocephala (Lucilia), 6, 188
argyrocephala (Sapromyza), 128, 135
aristalis (Pseudorichardia), 93, 94
armata (Dichaetomyia), 176
 Asarcina, 4, 5, 71
 ASILIDAE, 3, 4, 41
 ASILINAE, 46
 assimilis (Lispa), 6, 174
 Asteia, 160
 ASTEIIDAE, 160
 Asyncritus, 19
 Atherigona, 2, 171
 Atomosia, 42
atra (Pseudonapomyza), 7, 163, 167
atrata (Napomyza), 167
aurea (Lonchaea), 6, 99.
australis (Fannia), 174
 Baccha, 76
 Bactrocera, 100
bancrofti (Leptogaster), 41
bancrofti (Sarcophaga), 191
 Bardistopus, 83
basilaris, var. perspicillaris (Rivellia),
 5, 91
bellidis (Dizygomyza), 6, 163, 167
bezziana (Chrysomyia), 186, 187
bezzii (Chaetodacus), 103
bibula (Chrysomyia), 185, 186, 187
bicincta (Sapromyza), 132.
bicolor (Chromatopoda *annulipes*,
var.), 1, 5, 32, 33
bicolor (Cylindromyia), 199
bicolor (Fischeria), 197
bifidus (Pseudospheniscus), 112, 113
bilimbata (Drosophila), 156, 159
bilimbatus (Spilogaster), 177
bilineata (Cadrema), 6, 148, 150
bimaculata (Sturmia), 2, 211
bimaculatus (Scholastes), 2, 5, 92
binoculata (Spheniscomyia), 115, 116
bipustulata (Oscinis), 150, 151
bipustulatus (Chaetodacus), 103
birói (Sapromyza), 137

- Bistinda, 4, 8, 16, 17
 bivittatus (Pinaleus), 29, 30.
 BORBORIDAE, 160
Botanobia, 150
Brachycara, 4, 23
brachycephalus (Gaurax), 143
brachypterus (Syrphus), 72
braueri (Aulacocephala), 203
brunnipennis (Sciomyza), 133
brunnipes (Stomoxys), 185
- Cadrema, 148, 150, 151
calcitrans (Stomoxys), 2, 6, 184
caledonica (Coenosia), 169
caledonicus (Tabanus), 36
Calliphora, 188
 CALLIPHORIDAE, 4, 5, 185
 CALLIPHORINAE, 188
calva (Lonchaea), 6, 99
 CAMPSICNEMINAE, 59
caniventris (Sapromyza), 128, 131
Carcelia, 209
Carpolonchaea, 99
casei (Piophila), 6, 119
castanea (Bistinda), 17, 18
caudatus (Chaetodacus), 100, 101,
 103
celyphoides (Obrapa), 21
Cenochromyia, 42
centralis (Scoliophthalmus), 147
 CERATITINAE, 107
Ceromasia, 2
Cestoplectus, 143
Chaetodacus, 4, 5, 100, 101, 102
Chaetolauxania, 123
chalybaea (Orthellia), 180
 CHIROMYIDAE, 140
chloris (Odontomyia), 5, 24
chlorogastra (Dohrniphora), 84
 CHLOROPIDAE, 3, 4, 140
 CHLOROPINAE, 140
chloropyga (Chrysomyia), 186, 187
Chonocephalus, 2, 84
Chromatopoda, 1, 2, 4, 5, 32
 CHRYSOCHLORINAE, 32
Chrysomyia, 6
 CHRYSOMYINAE, 185
Chrysopilus, 40
Chrysosoma, 4, 5, 61
chrysotoxus (Chaetodacus), 101, 103
Chrysotus, 58
cincta (Trimerogastra), 154
cinctitarse (Chrysosoma), 64, 154
cinctus (Scholastes), 2, 6, 91
cirrhicauda (Sapromyza), 128, 129,
 130
Clariola, 42
cleghorni (Dohrniphora), 6, 84
Clinopogon, 1, 2, 4, 42
 CLITELLARIINAE, 23
- CLUSIIDAE, 87
Coenosia, 168
 COENOSIINAE, 168
coeruleothorax (Chrysopilus), 2, 40
Collocalia, 6
combrea (Chrysomyia), 186, 187
Condylostylus, 60, 67
conformis (Pinaleus), 29, 31
congressus (Dasypogon), 42
connota (Rivellia), 5, 91
contecta (Piophila), 6, 119
Coprophila, 161
corollae (Syrphus), 4, 71, 72
corollae, var. vitiensis (Syrphus), 4,
 71
coromandelensis (Syrphus), 72
coronata (Dizygomyza), 167
cosmochirus (Chrysosoma), 60, 61
costalis (Sepedon), 2
costalis, var. latus (Sepedon), 5, 84
costata (Orchisia), 6, 170
ctenophora (Pygophora), 169
cucumis (Chaetodacus), 100, 101
cucurbitae (Chaetodacus), 100, 101
cuprina (Lucilia), 6, 188
curvimargo (Ommatinus), 48, 49
curvinervis (Pseudosphenicus), 112,
 114
curvipalpis (Ophiomyia), 164
curvipennis (Chaetodacus), 101, 102
curvipennis (Dacus), 2
cyaneiventris (Lonchaea), 5
cyaneonitens (Lonchaea), 5, 99
Cyclorrhapha Athericera, 3, 70
Cylindromyia, 199
 CYLINDROMYINAE, 199
- DACINAE, 100
Dacus, 2
dahli (Telostylinus), 88
 DASYPOGONINAE, 42
debilis (Elliponeura), 140
decussata (Gampsocera), 146
decussata, var. lissoxantha (Gamp-
 socera), 147
Desmometopa, 162
Despotiscus, 4, 42
Dexiidae, 192
 DIAPHORINAE, 58
Dichaetomyia, 5, 176
dilatipennis (Ommatinus), 48
dimidiata (Eufjia), 10, 12
Diplochasma, 120
discolor (Stomorhina), 2, 6, 188
Discomyza, 154
discontinua (Sapromyza), 129, 136,
 137
dispar (Winthemia), 5, 210
Dissoptera, 4, 77
distincta (Melithreptus), 74

- distincta* (Mydaea), 177
distinctum (Xanthogramma javanum, var.), 6, 73, 74, 75
dives (Sciomyza), 85, 86, 120
Dizygomyza, 167
doddi (Tabanus), 36
dohrni (Dohrniphora), 84
Dohrniphora, 84
dolichocera (Coenosia), 168
DOLICHOPODIDAE, 3, 55
DOLICHOPODINAE, 55
domestica (Musca), 2, 6, 183
dorsalis (Chonocephalus), 2, 5, 84
Drosomyia, 128, 129
Drosophila, 2, 156
DROSOPHILIDAE, 3, 95, 155
dubia (Orthellia), 181
dubiosus (Tabanus), 36
Duomyia, 2, 4, 91
duplicatus (Chaetodacus), 103
dux (Chrysomyia), 187
dux (Sarcophaga), 6, 190

elegantipes (Sarcophaga), 189
Elliponeura, 4, 140
EMPIDIDAE, 51
ensifera (Sapromyza), 129, 139, 140
Ensina, 117
Epaphrodytus, 42
EPHYDRIDAE, 154
Epiceia, 54
ericetorum, var. *oceanica* (Asarcina), 5, 71
ericetorum, var. *papuana* (Asarcina), 5, 71
ERISTALINAE, 77
Eristalis, 77, 79, 80
erythropygus (Syrphus), 72
Euceromys, 28
Eucyclosis, 4, 120, 123
Eufijia, 4, 7, 10
Eumerus, 82
Euphranta, 4, 109
Euribia, 117
Euxesta, 88
evazaeformis (Sphaerofijia), 15
evolans (Carcelia), 6, 209
excisa (Atherigona), 2, 171, 172, 173
excisa, var. *trilineata* (Atherigona), 6, 171
Exorista, 210
EXORISTINAE, 206

facialis (Chaetodacus), 5, 102, 104
facialis (Dacus), 2
Fannia, 174
FANNIINAE, 174
felix (Syrphus), 72
femoralis (Medetera), 5, 58
fenestrata (Sapromyza), 132

ferruginata (Leptocera), 7, 161
ferruginea (Rhinoëssa), 140
ferrugineus (Chaetodacus), 100, 101
fidschiensis (Duomyia), 2, 91
fijianus (Tabanus), 2, 5, 35, 37
filifera (Lonchaea), 6, 99
flavifrons (Chrysomyia), 186, 187
flavinervis (Eufijia), 10, 13
flavinervis (Sarcophaga), 189
flavipennis (Lamprogaster), 2, 5, 91
flavitarsis (Pseudorichardia), 5, 92, 93, 94
formosae (Asarcina), 71
formosella (Euribia), 117
fossatus (Pseudospheniscus), 114
frauenfeldi (Bactrocera), 101
frenchi (Bactrocera), 100
frit (Oscinis), 153
froggatti (Chaetodacus), 101, 102
frontalis (Chromatopoda), 32, 33
fulminans (Odontomyia), 24, 28
fulvipes (Chrysomyia), 187
fulviventris (Masicera), 211
fusca (Rivellia), 91
fuscicauda (Sarcophaga), 6, 189, 191
fuscistigma (Microchrysa), 34
fuscotibialis (Syrphus), 72

gagathina (Odontomyia), 24, 25
Gampsocera, 4, 146
ganura (Sarcophaga), 189, 190
garciniae (Chaetodacus), 103
Gastrophilinae, 185
Gastrophilus, 185
Gaurax, 143, 146
GEOSARGINAE, 33
Geosargus, 33
gibbosa (Sapromyza), 136
glabella (Fannia), 174
glabra (Pegadomyia), 22
glaucesens (Fannia), 174
Goneccalypsis, 42
grandicornis (Ischiodon), 72
grandis (Promachus), 46
Graphogaster, 4, 200
gratiosa (Mycodrosophila), 6, 156
greenwoodi (Chrysosoma), 60, 61, 66
greenwoodi (Orthellia), 180, 181
greenwoodi (Rhacochlaena), 110, 111
Griphoneura, 4, 120, 126
guttiventris (Leucophenga), 6, 155

hageni (Chaetodacus), 103
Haplofijia, 4, 7, 8
harpax (Sarcophaga), 6, 189, 190
hawaiiensis (Asteia), 160
hebes (Plagiostenoptera), 89
hemimelaena (Exogaster), 199
hemipterus (Eumerus), 82, 83
hemixantha (Sapromyza), 128, 135

- hendersoni (*Atherigona*), 173
heterochaeta (*Actia*), 204
heterogastra (*Odontomyia*), 24, 25
Heteromeriinae, 4, 87
Heteroneuridae, 87
Hippelates, 148
HIPPOBOSCIDAE, 185
hologaster (*Pterogenia*), 98, 99
hyalopterus (*Syneches*), 54
Hybomitra, 38
HYBOTINAE, 51
- ignifrons (*Siphoeskia*), 197, 198
immigrans (*Drosophila*), 159
inaequalis (*Oscinis*), 153
inconspicua (*Sturmia*), 6, 211,
indica (*Stomoxys*), 185
innotatus (*Tabanus*), 36
inscriptus (*Eristalis*), 80
insignis (*Griphoneura*), 126, 127
insularis (*Sapromyza*), 140
interrupta (*Pseudorichardia*), 5, 92
invertebrata (*Sapromyza*), 129, 137
Ischiodon, 72
- javanensis (*Chrysotus*), 6, 58
javanum (*Xanthogramma*), 6, 71,
72, 73, 74, 75
javanum, *var. distinctum* (*Xantho-*
gramma), 6, 73, 74, 75
- kirki (*Chaetodacus*), 102, 103
- lacteipennis (*Milichiella*), 6, 162
Lamprogaster, 2, 91
Lamprolonchaea, 99
lantanae (*Agromyza*), 2, 164
lantanae (*Ophiomyia*), 6, 163, 164
LAPHRIINAE, 42
Lathrophthalmus, 6, 79
laticeps (*Pterogenia*), 97
latifasciatus (*Syrphus*), 71
latigena (*Cadrema*), 148
latipennis (*Gampsocera*), 152
latipes (*Piophila*), 119
lativittata (*Drosophila*), 157
latus (*Sepedon costalis*, *var.*), 5, 84
LAUXANIIDAE, 3, 4, 120
Lecanipus, 208
leguminum (*Melanagromyza*), 163,
166
lemniscata (*Euphranta*), 109, 110
lepida (*Rutilia*), 192
LEPTIDAE, 40
leptocephala (*Carcelia*), 5, 209
Leptocera, 160
Leptogaster, 41
LEPTOGASTRINAE, 41
leucochirus (*Chrysosoma*), 60, 64, 65
leucolepis (*Ophiomyia*), 163, 164
Leucophenga, 155
leucosticta (*Sapromyza*), 128, 132
leucostigma (*Obrapa*), 20, 21
limbata (*Stomoxys*), 6, 185
limbatella (*Sarcophagula*), 189, 191
limbatellus (*Tabanus*), 35, 36, 37
limbidorsum (*Maira*), 44, 45
Limnophora, 175
lineata (*Paralimna*), 6, 154
lineolata (*Drosophila*), 157
lineolatus (*Telostylinus*), 6, 88
Liriomyza, 167
Lispa, 174
LISPINAE, 174
lissonota (*Sapromyza*), 129, 138, 139
lissoxantha (*Gampsocera decussata*,
var.), 147
Lonchaea, 99
LONCHAEIDAE, 99
lonchiferus (*Scholastes*), 5, 92
longicornis (*Bactrocera*), 100
longicornis (*Syrphus*), 72
longivena (*Trimerogastra*), 154, 155
lotus (*Sepedon*), 84
Löwinella, 42
lucifer (*Ommatinus*), 50
lucifera (*Puliciphora*), 2, 5, 84
Lucilia, 7, 188
luridus (*Telostylinus*), 88
- macquarti (*Tabanus*), 36
macropus (*Chrysosoma*), 60
maculatus (*Paraclius*), 55
maculipennis (*Chaetodacus*), 103
maculipennis (*Discomyza*), 6, 154
maculipennis (*Duomyia*), 91
maculipennis (*Xystomima*), 202
magnipalpis (*Atherigona*), 171
Maira, 4, 44
major (*Cadrema*), 149
marginalis (*Chrysomyia*), 185
marginatus (*Eumerus*), 82
maxima (*Microchrysa*), 33
Medetera, 58
MEDETERINAE, 58
megacephala (*Chrysomyia*), 6, 186,
187
melanochirus (*Chrysosoma*), 60,
63, 64
melanogaster (*Drosophila*), 2, 6, 158
Melanostoma, 70
melanotus (*Chaetodacus*), 5, 102, 104
melanotus (*Dacus*), 2
melanurus (*Syrphus*), 72
Meringomeria, 89
Meroscinis, 141
mesolissa (*Limnophora*), 175
mesopleuralis (*Oscinis*), 151
metallica (*Sapromyza*), 134
Metaparaclius, 57

- Microcalliphora, 4, 188
 Microceromasia, 4, 209
 Microchrysa, 33
 MICRODONTINAE, 83
 microlepis (Coenosia), 168, 169
 MICROPEZIDAE, 88
micropogon (Chrysomyia), 187
 MILESIINAE, 82
 Milichia, 161
 Milichiella, 162
 MILICHIIDAE, 161
 Minettia, 129
 minor (Syneches), 54
 minuta (Rhinomyiobia), 196
 mixta (Cadrema), 148
 M-nigrum (Desmometopa), 6, 163
 mocsaryi (Telostylinus), 88
 mundus (Chaetodacus), 103
 Musca, 2, 183
 MUSCIDAE, 3, 4, 167
 MUSCINAE, 179
 musgravi (Tabanus), 36
 Mycodrosophila, 156
 Mydaea, 176
 Myiobia, 194
 Myiodaria, 3, 6, 7, 84
 Myiodaria inferiora, 3, 6, 84
 Myiodaria media, 167
 Myiodaria superiora, 185
 Myiophthiria, 2, 6, 185

 nasalis (Gastrophilus), 6, 185
 nasutum (Syrphus), 74
 natalensis (Syrphus), 72
 Naupoda, 4, 95
 Neobolbodimyia, 4, 34, 37
 Neopales, 207
 neurostigma (Plagiostenoptera),
 89, 90
 nexura (Stratiomyia), 28
 nigra (Asteia), 160
 nigra (Neobolbodimyia), 37
 nigra (Ophyra), 6, 176
 nigriceps (Asteia), 160
 nigriceps (Orthellia), 181
 nigricornis (Cadrema), 150
 nigriseta (Prochaetops), 121, 122
 nigrolimbatus (Chrysosoma), 5, 60,
 66
 nigrolineata (Mydaea), 177
 nitidifrons (Rhodesiella), 6, 141,
 142
 nitidus (Lathyrphthalmus), 79
nodalis (Syrphus), 72
 notatus (Tabanus), 36
novae-guinae (Melithreptus), 72
 nubecula (Oscinis), 150, 152
 nudiseta (Pterogenia), 97
 nudiseta (Synthesiomyia), 6, 179
 nuptus (Condylostylus), 61, 67

 obesa (Volucella), 77
 obliqua (Allograpta), 74
 Obrapa, 4, 8, 20
 obscuratus (Telostylinus), 88
 obscuricornis (Drosophila), 157
 obscuripes (Psilopa), 155
 occidentalis (Drepanoglossa), 197
 occidua (Sarcophagula), 191
 occultus (Scoliophthalmus), 147
 oceanica (Asarcina ericetorum, *var.*),
 5, 71
 oceanica (Syritta), 5, 82
 Ocneros, 4, 107
Ocypterinae, 199
 Odontomyia, 24, 28
 oedinemus (Syneches), 51, 52
 Ommatinus, 48
 Opeatocerus, 42
 Ophiomyia, 7, 164
 Ophyra, 176
 Orchisia, 170
orientalis (Atherigona), 171
 ornatissimus (Chaetodacus), 101
 ORTALIDAE, 3, 4, 7, 88
 Orthellia, 180
 orthoneura (Rhodesiella), 141, 142
 Orthorrhapha Brachycera, 3, 7
Oscinella, 150
 OSCININAE, 140, 141
 Oscinis, 150
Oscinosoma, 150
 Oxya, 117

 PACHYGASTRINAE, 7, 17
 pachygina (Psilopus), 60
 pacifica (Cylindromyia), 199
 pacifica (Leptogaster), 41
 pacificus (Tabanus), 2, 35
pallescens (Lucilia), 188
 pallidicorne (Chrysosoma), 61
 pallidior (Gaurax), 143
 pallipes (Acrosticta), 6, 89
 palpalis (Desmometopa), 6, 162
 Panurgopsis, 120
 papuana (Asarcina ericetorum, *var.*)
 5, 71
 Paraclius, 4, 55
 Paralimna, 154
 parallelina (Odontomyia), 24, 26, 27,
 28
 parallelina, *var.* aegrota (Odonto-
 myia), 24, 27
 parallelina, *var.* pavidata (Odonto-
 myia), 24, 27
 parallelina, *var.* pura (Odontomyia),
 24, 27
 parca (Spathulina), 116, 117
 parca (Spathulina acroleuca, *var.*),
 6, 116
 parceguttata (Spathulina), 116, 117

- parvipuncta (Pygophora), 169
 parvisquama (Coenosia), 168
 Passeromyia, 4, 183
 passiflorae (Chaetodacus), 102, 106
 passiflorae (Dacus), 2
 patellifer (Chrysosoma), 5, 60, 65, 68
 pavidata (Odontomyia parallelina, var.), 24, 27
 Pegadomyia, 4, 8, 22
 Pelastoneurus, 55
 pellucens (Psilopus), 60, 66
 pentagonella (Euribia), 117, 118
 pepisalae (Chaetodacus), 101
 personata (Dichaetomyia rufa, var.), 176
 perspicillaris (Rivellia basilaris, var.), 5, 91
 pfeifferi (Syrphus), 74
 PHAONIINAE, 175
 phaseoli (Agromyza), 165, 166
 phaseoli (Melanagromyza), 6, 163, 165, 166
 PHORIDAE, 84
 Phorocera, 207
 pilosellus (Paraclius), 58
 Pinaleus, 4, 28
 pinguis (Ophiomyia), 164
 Piophila, 119
 PIOPHILIDAE, 119
 PIPUNCULIDAE, 83
 Pipunculus, 1, 2, 83
 Plagiostenoptera, 4, 89
 planifacies (Melanostoma), 70
 platycephalus (Gaurax), 143, 144, 145
 platycephalus, var. stigmatellus (Gaurax), 143, 145
 PLATYSTOMINAE, 89
 plebeja (Sepsis), 119
 Plesioxyptera, 199
 plumifera (Rhinomyiobia), 194, 195, 196
 plumiseta (Limnophora), 175
 poecilochaeta (Phorocera), 207
 poecilogaster (Mycodrosophila), 156
 poecilogastra (Oscinis), 6, 150, 153
 Poecilohetaerus, 123
 poecilopoda (Atherigona), 171, 172
 Poecilosomella, 161
 polita (Psilopa), 7, 155
 pollinosa (Lonchaea), 99
 pollinosus (Tabanus), 36
 polypori (Mycodrosophila), 156
 posticata (Milichia), 161
 praefica (Baccha), 76
 praestans (Ocneros), 107
 Pristaspis, 4, 8, 19
 Prochaetops, 4, 120
 prodigiosa (Dichaetomyia), 176, 177, 178
 producta (Oxyina), 117
 Promachus, 46
 Prosenia, 197
 Prosopaea, 206
 Protopiophila, 119
 pseudoardens (Tabanus), 35
 PSEUDODEXIINAE, 209
 Pseudolimnophora, 175
 Pseudonapomyza, 167
 Pseudorichardia, 4, 5, 92
 Pseudospheniscus, 4, 112
 psidii (Chaetodacus), 5, 102, 104
 psidii (Dacus), 2
 Psilopa, 155
 PSILOPODINAE, 60
 Psilopus, 60, 66
 Ptecticus, 33, 76
 Pterogenia, 97, 98
 pubescens (Chaetodacus), 103
 pubicollis (Gaurax), 5, 143, 145
 puerula (Leptocera), 7, 160
 puerulus (Sympycnus), 59
 pulchripennis (Sapromyza), 132
 Pulciphora, 2, 84
 pullus (Syneches), 51, 54, 55
 pulvillatus (Condylostylus), 61, 68, 69
 pulvinata (Atherigona), 171
 punctilabris (Ocneros), 107, 108
 punctipennis (Leptocera), 6, 161
 punctipennis (Therobia), 202, 203, 204
 pura (Odontomyia parallelina, var.), 24, 27
 purpuricola (Baccha), 76
 pusilla (Liriomyza), 6, 163, 167
 pusio (Fannia), 174
 putoria (Chrysomyia), 185, 186, 187
 pygmaeella (Prosopaea), 206, 207
 pygmaeus (Tabanus), 36
 Pygophora, 4, 169
 PYRRHOSIINAE, 194
 quadrimaculata (Atherigona), 173
 quadrimaculatus (Paraclius), 55, 56, 57
 quadrincisa (Spheniscomyia), 115
 quadripustulata (Winthemia), 210
 quadrisetosus (Chaetodacus), 101, 102, 103
 quadrivittata (Euxesta), 6, 88
 rarotongae (Chaetodacus), 102, 104
 rarotongensis (Chaetodacus), 104
 recta (Elliponeura), 140, 141
 recta (Rhodesiella), 142
 reduvioides (Myiophthiria), 2, 6, 185
 refulgens (Baccha), 76
 relictus (Syrphus), 74
 reptans (Sapromyza), 129, 139, 140
 resolutus (Eristalis), 80

- Rhacochlaena, 4, 110
 Rhicnoëssa, 6, 140
 Rhinia, 188
 RHINIINAE, 188
 Rhinomyiobia, 4, 194
 Rhodesiella, 4, 141
 rhynchops (Eristalis), 80, 81
 Rhynchopsilopa, 154
 Rivellia, 5, 91, 115
 rivularis (Tabanus), 36
 rivulosa (Euphranta), 109
 RONDANIINAE, 200
 rostrifer (Pinaleus), 29, 31, 32
 rubricallosus (Tabanus), 36
 rubrifacies (Orthellia), 180
 rufa (Dichaetomyia), 176
 rufa, *var.* personata (Dichaetomyia), 176
 ruficauda (Syrphus), 72
 rufifacies (Chrysomyia), 5, 185, 186, 187
 Rutilia, 4, 192
 RUTILIINAE, 192

 salivaga (Calliphora), 180, 188
 Sapromyza, 120, 128
 SAPROMYZIDAE, 140
 Sarcophaga, 189
 SARCOPHAGIDAE, 188
 Sarcophagula 4
 sauteri (Clinopogon), 42
 saxatilis (Chrysotus), 58
 scalaris (Clinopogon), 1, 2, 42
 scalaris (Stichopogon), 1
 Scapanocnema, 28
 Scholastes, 2, 4, 91
 Sciomyza, 85, 120
 SCIOMYZIDAE, 84
 Scoliophthalmus, 4, 147
 Scotophilella, 160
 scutellaris (Chaetodacus), 103
 scutellaris (Ischiodon), 5, 71, 72, 73, 74, 75
 scutellata (Rhodesiella), 141
 scutellatus (Chaetodacus), 103
 scutellinus (Chaetodacus), 103
 semimaculata (Oscinis), 150
 senegalensis (Syrphus), 72
 Sepedon, 2, 5, 84
 SEPSIDAE, 118
 sericariae (Sturmia), 6, 211
 sertulata (Sapromyza), 128, 134, 135, 136
 setosus (Trigonometopus), 120
 sexmaculata (Spheniscomyia), 115, 116
 sexmaculatus (Paraclius), 55, 57
 sexseriata (Rhicnoëssa), 6, 140
 signata (Siphunculina), 6, 153
 Silvius, 35
 simmondsi (Despotiscus), 43, 44,
 simmondsi (Naupoda), 95
 simmondsi (Orthellia), 180, 181
 simplex (Hoplofijia), 9, 12, 13
 singaporensis (Psilopa), 155
 Sipholeskia, 4, 197
 Siphunculina, 153
 solomensis (Tabanus), 35
 sororcula (Ensina), 6, 117
 Spathulina, 116
 spectabilis (Maira), 45
 specularifer (Eumerus), 82
 Sphaerofijia, 4, 7, 13, 15
 Spheniscomyia, 4, 115
 sphenophori (Ceromasia), 2, 209
 sphenophori (Microceromasia), 5, 209
 spicata (Phytomyza), 167
 Spilogaster, 176
 spinidorsum (Syneches), 51, 52, 53
 splendens (Atherigona), 171, 173
 splendens (Syrphus), 72
 splendida (Eucyclosis), 124, 125, 126
 splendida (Lonchaea), 99
 spoliata (Graphogaster), 200, 201
 Stegana, 21, 123
 Steganopsis, 123
 Stichopogon, 1, 42
 stiglinae (Actia), 204
 stigma (Syneches), 52
 stigmatellus (Gaurax platycephalus, *var.*), 143, 145
 Stomatomyia, 205
 Stomorhina, 2, 188
 STOMOXYDINAE, 184
 Stomoxys, 2, 184
 STRATIOMYIDAE, 3, 4, 7
 STRATIOMYINAE, 24
 stricta (Odontomyia), 28
 strigicosta (Ommatinus), 48, 50, 51
 strigifera (Naupoda), 95
 Sturmia, 2, 211
 STURMIINAE, 209
 subacutipennis (Leucophenga), 6, 156
 subarcuatus (Paraclius), 55, 57
 subpilosa (Oscinis), 5, 150, 153
 subsultans (Cadrema), 148, 149
 subtuberosa (Sarcophaga), 190
 superba (Maira), 45
 Sympycnus, 59
 Syneches, 51
 Synthesiomyia, 179
 Syritta, 82
 SYRPHIDAE, 3, 4, 70
 SYRPHINAE, 70, 77
 Syrphus, 4, 71

 TABANIDAE, 3, 34
 Tabanus, 2, 5, 34, 37
 TACHINIDAE, 3, 5, 192

- TACHININAE, 205**
 taitensis (Sapromyza), 136, 137
 tarsalis (Desmometopa), 6, 162
 tarsalis (Eufijia), 10, 14, 15
 tarsalis (Rhodesiella), 141, 142
 tasmaniensis (Promachus), 46
 telostylinus, 88
 tenax (Eristalis), 82
 tenuitarsis (Chrysosoma), 5
 tenuitarsis (Psilopus), 60, 66
 Tephritis, 128
 tephrotaenia (Sapromyza), 129, 138, 139
 tephrrura (Sarcophaga), 189, 190
 testacea (Rhinia), 6, 188
 tetrachaetus (Chaetodacus), 103
 Therobia, 4, 202
 Therobiopsis, 204
 thomsoni (Brachycara), 23
 tibialis (Eufijia), 10, 13, 14
 Tinda, 16
 tongensis (Chaetodacus), 5, 102, 104
 tongensis (Dacus), 2
 transfuga (Rutilla), 192
 Tricholyga, 205
 tricholygoides (Stomatomyia), 205
 trichoparia (Winthemia), 210
 Tricimba, 153
 Trigonometopus, 120
 trilimbata (Drosophila), 156, 158, 159
 trilineata (Atherigona excisa, var.), 6, 171
 Trimerina, 155
 Trimerogastra, 4, 154
 triseriata (Atherigona), 171
 triumphans (Promachus), 46, 47
TRIXINAE, 202
 trochanterica (Merodon), 72
 truncata (Pristaspis), 20
 tryoni (Chaetodacus), 101
TRYPETIDAE, 3, 4, 100
TRYPETINAE, 116

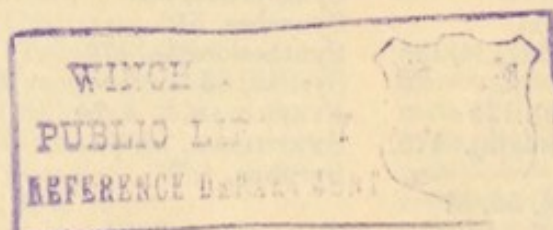
ULIDIINAE, 88
 umbrosus (Bactrocera), 100
 undulatum (Chrysosoma), 63
 unicolor (Dissoptera), 77, 78, 79
 univittatum (Melanostoma), 5, 70

 varia (Atherigona), 173
 variegata (Eucyclosis), 124, 125, 126
 varipes (Chrysomyia), 186, 187
 varipes (Microcalliphora), 5, 188
 veitchi (Heteromeringia), 87
 veitchi (Neobolbodimyia), 35, 37, 38, 39
 veitchi (Passeromyia), 183
 ventralis (Brachycara), 23
 vertebrata (Sapromyza), 129, 137
 vesiculifera (Therobia), 202, 203
 vicina (Musca), 183
 viduus (Condylostylus), 67, 68, 69
 villeneuvei (Chrysomyia), 186, 187
 virgatus (Chaetodacus), 5, 102, 106
 virgatus (Dacus), 2
 viridula (Hoplodonta), 24, 26
 vitiensis (Pipunculus), 1, 2, 83
 vitiensis (Syrphus corollae, var.), 4, 71
 vitticrus (Ommatinus), 50
 volitans (Sapromyza), 129, 140
VOLUCELLINAE, 77

 weschéi (Lispa), 174
 Winthemia, 210
 wollastoni (Maira), 45
 wollastoni (Tabanus), 36

 xanthina (Aphiochaeta), 6, 84
 xanthodes (Chaetodacus), 5, 102, 104, 105
 xanthodes (Dacus), 2
 xanthogaster (Drosophila), 159
 xanthomelas (Oscinis), 150, 151, 152
 Xystomima, 202

 zebrina (Drosophila), 156, 157
 zonatus (Chaetodacus), 101, 103





7-1



b) NL. 89
1928

