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## Diptera from the Philippine Islands

brought home by Dr. Carl Semper,

and described by

C. R. Osten Sacken.

### P r e f a c e.

Up to the present time only a few diptera from the Philippine Islands have been described. In Wiedemann I find but a single species from that region; Macquart and Walker (in his List of the Diptera of the British Museum) have a few more; Schiner and Thomson published those brought home by the naturalists of the „Novara“ and the „Eugenia“. In all, I find fifty two described species, the list of which will be given below.

The collection formed by Dr. Carl Semper, now Professor in Würzburg, during his residence in the Philippines (1859—64) contains about 250 species, and enables us for the first time to form some idea of the character of the fauna. This collection was entrusted in 1865 to the able hands of my friend Professor Bellardi in Turin, and it is very much to be regretted that other occupations prevented him from accomplishing his purpose to describe it. In November 1880 it came into my possession. — While still in the hands of Prof. Bellardi, the collection was sent by him to Mr. Walker in London for the purpose of comparing the specimens with those in the British Museum. Mr. Walker mentions this circumstance (J. Proc. Lin. Soc. IX, p. 1) and introduces the species identified by him in his „Synopsis of the Diptera of the Eastern Archipelago, discovered by Mr. Wallace“ (l. c. p. 7 and the following, fourth column, Philippines). The species thus identified however were few in number, and the identifications, even of Mr. Walker's own species, were far from trustworthy. I will discuss them in the proper places.

In preparing the present work, I have followed the same rules as those which I explained in the Preface to my „Enumeration of the Diptera of the Malay Archipelago etc.“ (Annali del Museo Civico Sc. Natur. di Genova, Vol. XVI). I consider the description of a limited faunal collection from a little-known region, as being merely preliminary work, preparing materials for systematic monographs. The final descriptions of species must be comparative ones, based upon the knowledge of all or nearly all the species of a given region. For this reason, I confined myself to describing the most striking forms only, and did not deem

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it my duty to describe as new, every specimen that I could not determine. A peculiar difficulty, attending the study of the diptera in the large groups of islands of South Eastern Asia, consists in the local varieties, which seem to exist on different islands. In several instances I have been in doubt, whether to regard them as distinct species, or as mere varieties; (for instance *Rosapha habilis* Wk. and *R. bicolor* Bigot; the specimens of *Chrysopila ferruginosa* Wied. with brown incisures on the abdomen, and those without them etc.). Such questions will be easier to solve in a special monograph, based upon more abundant materials.

Incidentally, I have inserted general observations on genera, groups and families, which I thought might be useful to the future worker in the same direction. The synoptic tables which I give, will save him some labor, but must be used with caution, as they have of necessity been prepared either from notes, taken in different collections, or merely from descriptions.

It would be premature to found, upon such small materials, a final opinion on the relation of the dipterous fauna of the Philippine Islands to that of the Malay Archipelago. Thus much is evident, that the relationship is considerable. Both faunas agree in the large representation of certain groups of diptera (for instance the genera *Laphria*, *Promachus*, *Ommatius*, *Milesia*, the family *Ortalidae*), as well as in the scanty representation of other groups (the *Dasypogonina*, with the exception of a few genera, like *Leptogaster* and *Damalis*; the whole family *Bombyliidae*). Species widespread over South-Eastern Asia, occur here also (*Chrysops dispar*, *Chrysopila ferruginea*, *Psilophus vittatus*, *Syrphus aegrotus*, *Eristalis errans*, *Ochromyia ferruginea*, several *Luciliae*, *Scholastes cinctus*, *Nerius fuscus* etc.). Several forms of an apparently more restricted area are common to the Islands and to Amboina (the genera *Scamboneura* and *Damalina*), to Celebes (the genera *Rosapha*, *Telostylus*; the species *Sphyracephala cothurnata*, *Diopsis subnotata*, *Tabanus v. d. Wulpi* etc.).

The claim of a fauna to individuality, the degree of its specialization, are more difficult to define, upon such meagre data, than its relationship to another fauna. In the present case, the relationship shows itself principally in a similar distribution of groups; whether the specialization, when better investigated, will assert itself in a large proportion of peculiar species, remains to be seen. In the vertebrata, the specialization of the fauna of the Philippines is very remarkable. According to Mr. A. R. Wallace (*Island Life*, p. 361) about nine-tenths of the mammalia and two-thirds of the land-birds are peculiar species. Such data led Mr. Wallace to believe

„that the Philippines once formed part of the great Malayan extension  
„of Asia, but that they were separated considerably earlier than  
„Java and having been since greatly isolated and much broken up  
„by volcanic disturbances, their species have for the most part been  
„modified into distinct local species“

(Compare also Wallace, Geogr. Distrib. of Animals, I, 345—349).

The scrutiny of the small collection before me reveals in some groups traces of a rather striking specialization; but whether they will be sustained by further discovery, is still a question. I have been especially struck by the peculiar characters of the Tipulidae: the two species of Libnotes, described by me, have a peculiar coloring, different from that of the eleven known species of the same genus from other parts of South Eastern Asia. Eriocera is a genus abundantly represented in all the tropical regions of Asia and America, but most of the species have only four posterior cells; among two dozen described Eriocerac from S. E. Asia only five species have five posterior cells. Now, both species, which I describe from the Philippine Islands, have five posterior cells. The Ctenophorae (Tipulidae) from the Islands also have some peculiarities in common.

As far as regards the genera, it is the family Ortalidae that seems to be the most specialized. I have been obliged to introduce in it not less than four new genera, all of them remarkable forms, not known before (*Antineura*, *Philocompus*, *Xenaspis*, *Naupoda*). The other new genera introduced by me are:

*Scamboneura* (Tipulidae), which also occurs in Amboina;

*Eurybata* (Micropezidae), represented in Amboina by a closely allied form, which I provisionally refer to the same genus.

*Notopsila* (Ortalidae), merely a new name for *Pachycephala* Dolesch., which is preoccupied. It likewise occurs in Amboina, and is closely related to the Australian *Euprosopiae*.

*Asyntona* (Ortalidae) from Amboina; I have described it on account of its relationship to *Naupoda*.

That the Islands, especially the Northern parts of Luçon, have some points in common with China is very probable, but hardly possible to ascertain now, on account of the insufficient knowledge of the Chinese fauna. Such points of contact between the two faunas have been shown to exist in the Lepidoptera (Compare the article of Mr. George Semper in the *Stett. Entom. Zeit.* 1875, p. 409.) I have not been able to obtain data on the other orders of insects.

In the course of this paper I have used the terminology for the bristles, parts of the thorax etc. adopted by me in my recent paper: *An Essay of comparative Chaetotaxy* (Mitth. Münchener Entomol. Vereins, Vol. V).

Heidelberg, Germany, January 1882.

C. R. O. S.

List of the species previously described from the Philippine Islands. (Those marked with a star are represented in Professor Semper's collection.)

- Corethra manillensis* Schin. Novara, 30.  
*Chironomus trochanteratus* Thomson, Eugenic's Resa, 445.  
*Tanypus manillensis* Schiner, Novara, 26.  
*Chrysomyia annulipes* Thomson, l. c. 461.  
*Odontomyia ochropa* Thoms., l. c. 456.  
 „ *claripennis* Thoms., l. c. 456.  
*Nemotelus albiventris* Thoms., l. c. 462.  
 \* *Ephippium maculipenne* Macq., D. E. Suppl. IV, 54.  
 \* *Ptilocera smaragdina* Walker, List etc. III, 525.  
*Phyllophora bispinosa* Thoms., l. c. 454 (Syn. of *Biaestes indicus* Wk.)  
 \* *Calochaetis bicolor* Bigot, Ann. Soc. Ent. Fr. 1879 (*Calochaetis* Syn. *Rosapha* Wk.)  
*Tabanus manillensis* Schiner, Novara, 84.  
*Chrysops manillensis* Schiner, Novara, 104.  
*Diabasis flavipennis* Macq., D. E. Suppl. IV, 35.  
 \* *Thereva lateralis* (Esch.) Wied. A. Z. I, 231.  
*Anthrax umbrifer* Walk. List etc. II, 237.  
 \* *Laphria dimidiata* Macq. D. E. Suppl. I, 72.  
 „ *Taphius* Wk. List etc. II, 380 (perhaps the same as *L. dimidiata*?).  
 \* *Philodicus longipes* Schiner, Novara, 179.  
*Erax integer* Macq. D. E. Suppl. I, 81.  
 \* *Promachus forcipatus* Schin., Nov., 178.  
 „ *maculosus* Macq. D. E. I, 2, 100 (*Trupanea*).  
 \* „ *manillensis* Macq., D. E. I, 2, 194; Suppl. I, 79 (*Trupanea*).  
 „ *varipes* Macq., D. E. I, 2, 97 (♀ Bengal); Suppl. I, 79 (♂ Manilla) (*Trupanea*).  
*Eristalis chalcopygus* Wied., A. Z. II, 178.  
 „ *Plistoanax* Walk., List etc. III, 628.  
 „ *Babytace* Walk., l. c. 629.  
 „ *Agyrus* Walk., l. c. 629.  
*Scopolia spinicosta* Thoms., Eug. R. 528.  
*Musca niveisquama* Thoms., l. c. 547.  
 „ *bivittata* Thoms., l. c. 547.  
*Rutilia dubia* Macq., D. E. Suppl. I, 182.  
*Anthomyia manillensis* Frnf. Verh. Z. B. Ges. 1867, 449.



- Lispe grandis* Thoms., l. c. 561.  
*Somomyia tagaliana* Bigot, Ann. Soc. Ent. Fr. 1877, 44.  
*Lucilia philippensis* Macq., D. E. II, 3, 146.  
*Sarcophaga frontalis* Thoms., Eug. R. 535.  
 „ *spininervis* Thoms., l. c. 538.  
*Coenosia picicrus* Thoms., l. c. 558.  
*Lauxania latifrons* Thoms., l. c. 567.  
*Sepsis linearis* Wk., List etc. IV. 998.  
*Calobata coarctata* Wk., J. Pr. Lin. Soc. V. 298.  
*Lamprogaster placida* Wk., List etc. IV. 802 (Chromatomyia).  
 \**Stenopterina abrupta* Thoms., l. c. 578 (Syn. of *S. eques* Sch.)  
*Dacus trivittatus* Wk., List etc. IV. 1072.  
 \**Herina fusca* Thoms., l. c. 575 (belongs to the *Genus Rivellia*).  
 \**Acinia stellata* Macq., D. E. Suppl. IV. 293.  
 \**Trypeta Elimia* Wk., List etc. IV. 1033.  
 \**Diopsis subnotata* Westw., Cab. Orient. Ent.  
*Chlorops vittipennis* Thomson, Eug. R. 604.  
*Ephydra pleuralis* Thomson, l. c. 591.  
*Notiphila sternalis* Thomson, l. c. 593.

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The following species are mentioned as having been received from the Philippine Islands, although the specimens originally described came from other localities.

- Microstylum duæ* Wied., A. Z. I, 568 (China), in Macq. D. E. I, 2, 29 (Manilla), where Macquart confuses it with *Dasyp. chinense* Wied.  
*Hoplistomera serripes* Macq., D. E. I. 2, 60 (Guinea, Senegal) and Suppl. I, 71 (Manilla). This, of course, requires confirmation.  
*Celyphus obtectus* Dalm. and *C. scutatus* Wied. in Walker's List etc. IV, 1138.

The following names I find in the column „Philippines“ of Mr. Walker's Synopsis etc. (l. c.) without any other authority for the statement, neither in the previous literature, nor in Dr. Semper's collection:

- Ommatius retrahens, nanus; Idia prolata; Musca favillacea; Lonchaea punctipennis; Achias maculipennis; Discomyza obscurata; Nycteribia dubia.*
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## The Diptera of the Philippine Islands.

### Tipulidae.

*Dicranomyia saltans* Dolesch. 2 Bijdr. 14, Tab. II, f. 3  
(*Limnobia saltans*; Java). —

Remarkable for the unusual shortness of the cells in the apical portion of the wing and the slenderness of the legs. The venation and the absence of spurs and empodia prove it to be a *Dicranomyia*. Doleschall calls the antennae 16-jointed; as far as I can discern, the only antenna of my only specimen has the normal number of 14 joints. According to the same author, this species is very numerous during the season of the dry monsoon; it is often found in dwellings, principally in the corners, in large numbers, dancing up and down in the air; they keep so close together that they seem to hold each other in dancing, and to form a regular chain.

*Libnotes Semperi* n. sp. ♀. *Thorax bright orange; abdomen deep black; wings uniformly brown.* — Length: 11—12 mm.

Head reddish-brown; rostrum, palpi and antennae black. The whole thorax, including coxae, bright orange. Halteres brown, extreme base orange. Abdomen deep velvet black, except the extreme base, which is orange. Legs brown. Wings uniformly brown; bases of the 2<sup>nd</sup> and 3<sup>rd</sup> post. c. on the same line; first vein incurved towards the second. — A single female.

*Libnotes termitina* n. sp. ♂ ♀. *Uniformly yellowish-orange; extreme tip of the abdomen black; wings brown.* Length: 11—12 mm.

Antennae black (reddish at the base in one of the specimens); rostrum brownish; palpi brown; halteres with a brown knob; stem paler; legs brown; femora more or less yellow, but brown towards the tip. In the male, the genitals are deep-black, in the female, the last abdominal segment, although the valves of the ovipositor have the usual, brownish-ferruginous color; they are very short. Wings tinged with brown (less dark than *L. Semperi*); this color is rather uniformly spread over the whole surface; the apex is slightly darker. First vein incurved towards the second; bases of second and third post. c. on the same line. — A male and a female.

*Libnotes familiaris* n. sp. ♂. Ochraceous, thorax with a brown stripe; wings hyaline, with a small stigmatic pale brown spot. — Length about 7 mm.

Resembles the european *L. modesta* in its coloring. Head, rostrum, palpi and antennae black (at least apparently so; the head is somewhat injured). Thorax ochraceous-yellow, shining, with a brown stripe in the middle of the dorsum. Halteres brownish. Abdomen and genitals brownish. Legs yellowish brown. Wings altogether hyaline, with brown veins; a small, rounded brownish stigmatic spot at the end of the first vein; the latter is incurved towards the costa and has the crossvein very close by its tip; bases of the 2<sup>nd</sup> and 3<sup>rd</sup> post. c. almost on the same line, the 2<sup>nd</sup> being a little more drawn inwards. — A single male.

*Mongoma tenera* n. sp. ♂. Head dark brown, antennae and palpi brown, rostrum yellowish; thorax reddish-brown above, more yellowish below; abdomen, including the genitals, brown, the venter yellowish. Wings tinged with grayish; halteres brown. Femora pale brownish; the tip, as well as the remainder of the leg, whitish. — Length 8–9 mm. — A single male.

NB. I have no doubt that this species is congeneric with *Mongoma fragillima* Westwood, Trans. Ent. Soc. Lond. 1881, 364, Tab. XVII, f. 1 (from Mongoma Lobah, tropical Africa). Not only that the generic characters are the same, but even the coloring of the species has many points in common, as for instance, the prevailing of the white color on the legs. There is a slight difference in the venation, the bases of the second and third posterior cells being in a line in *M. tenera*, while in *M. fragillima* the base of third p. c. is more drawn out in the proximal direction; the posterior crossvein in the former is a little before the discal cell, while in the latter it coincides with its proximal end.

The other generic characters of the species before me may be defined as follows:

General habit of a *Dicranomyia*, that is, its slenderness and delicate structure. Head small, rostrum short, palpi short, their last joint very short; eyes glabrous, separated by a narrow front; antennae 16-jointed; bent backwards, they would reach a little beyond the root of the wings; joints of the flagellum oblong, of nearly equal length, except the first, which is a little longer; short-verticillate; prothorax well developed, prolonged in a short neck; mesonotum gibbous; abdomen elongated, slender, forceps of the male small, slightly incrassate; legs exceedingly long (the femora alone are about 1½ the length of the

body) and slender; tibiae without spurs; unguis minute, empodia not perceptible; wings about as long as the abdomen; venation as explained above.

There is another species still, which very probably belongs here; it is the *Cylindrotoma albitarsis* Dolesch. 2 Bijdr. 15, Tab. IV, f. 1 from Java. The likeness of the venation between Dr. Doleschall's and Prof. Westwood's figures is obvious, and consists principally in the immediate contact of the submarginal with the discal cell, involving the absence of the small crossvein, and in the presence of the two crossveins<sup>1)</sup> inside of the marginal cell. The difference between them is, that in Doleschall's figure there is one cell less; and assuming that this figure is correct, we may express this difference by saying, that in Mr. Westwood's figure there are four posterior cells, in Doleschall's only three; or, should we adopt a different interpretation of the veins, that in Doleschall's figure the submarginal cell is wanting. Both alternatives represent a form of venation which is of very rare occurrence among diptera, and we must suspend our judgment on this point, until we have an opportunity of seeing the insect from Java, described by Doleschall. But in the mean time, the presence, in the three species of the extraordinary crossveins in the marginal cell, the unusual length and slenderness of the legs common to them, and indicative of the habit of aerial dancing, (attributed by Doleschall to his *C. albitarsis*), the white tarsi, also common to the three species, all these characters tend to establish a very strong presumption in favor of their generic identity.<sup>2)</sup>

A fourth species, which may claim a relationship with the other three, is the *Limnobia Trentepohlii* Wied. 1, 551; Tab. VI, b, fig. 12 (Sumatra). Here, the analogy with Doleschall's figure is very striking: the long oblique crossveins in the marginal cell, only three posterior cells, and a very abruptly curved fifth vein; but the discal cell is open; about the structure of the species too little is said to allow any conclusion.

The position of *Mongoma* in the system is somewhat doubtful. A Tipulid with 16-jointed antennae and without empodia and spurs, must be placed provisionally among the *Limnobia anomala*. *Para-*

<sup>1)</sup> I call them crossveins merely for shortness sake, because one of them may also be considered as a branch of the second vein.

<sup>2)</sup> Doleschall is probably wrong when he calls the antennae of his *C. albitarsis* 14-jointed; in the same way he counted 16 joints on the antenna of *Dicranomyia saltans*, which has only 14; and 16 joints on that of his *Cylindrotoma ornatissima*, while his own drawing, a copy of which I possess, shows 22 joints, that number being certainly much nearer the truth than the other.

*tropesa singularis* Schiner, Novara, Tab. II, f. 2 b, (South America), which I also refer to the *Linnobina anomala*, has the same crossveins in the marginal cell, the same contact between the submarginal and discal cells, and, like *Mongoma*, four posterior cells; but the submarginal cell is much shorter, and the position of the marginal crossvein, with regard to the discal cell, somewhat different. The species, *P. singularis* does not have the length of legs, nor the light, aerial structure of *Mongoma*; it has distinct empodia, which *Mongoma* has not.

*Eriocera perennis* n. sp. ♂ ♀. Five posterior cells; body black; abdomen with four yellow crossbands; wings brown, with a yellowish-white crossband. Length ♂ 15 mm.; ♀ (without ovip.) 18 mm.

Head gray, beset with black pile; antennae yellowish-tawny, the tips brownish. Thorax brownish-black, more brown on the pleurae, beset with black pile; halteres blackish. Abdomen black; segments 2—5 each with a broad reddish-yellow crossband at the base; it is broadest on the 2<sup>nd</sup> segment, and narrowest on the 5<sup>th</sup>, where it occupies about one half of the breadth of the segment. The ♂ forceps (somewhat injured in the specimen), seems to be brownish, the appendages at the tip are black. The segment bearing the ovipositor is red. Coxae black, femora yellowish-tawny with black tips; tibiae tawny with black tips; tarsi brownish tawny, the tips of the joints darker. Wings brown, yellowish at base, which color extends some distance along the costa, between the costal and the first vein; a yellowish-white crossband between the first and fifth veins, touching the proximal ends of the second submarginal and discal cells; an ill-defined yellowish-white space at the proximal end of the axillary cell. Five posterior cells; the petiole of the second rather long. Marginal crossvein about the middle of the distance between the proximal end of the first submarginal cell and the tip of the first vein; the tip of the auxiliary vein almost opposite this crossvein. (I do not perceive this crossvein in my male specimen; I suppose that this absence is accidental). — One male, one female.

NB. Two other specimens are a little smaller and have the legs and the antennae almost uniformly brown; the yellow crossbands on the abdomen are narrower, that on the second segment occupying only the proximal half of the segment; the yellow color at the base of the wings does not reach very far. Still another specimen (♀) resembles those two, but has the base of the femora and of the antennal flagellum yellow, and more yellow at the root of the wings. I suppose they are all varieties of *E. perennis*. I also have some specimens

which do not seem to have any yellow crossbands on the abdomen at all; but their abdomen is very much shrivelled and cannot be well examined.

*Eriocera mansueta* n. sp. ♂ ♀. Five posterior cells; body black; genitals orange red; a yellow crossband on the second abdominal segment; wings brown with a white crossband. Length: about 12 mm.

Body brownish-black; antennae brownish-yellow, darker at base and sometimes at tip; a yellow crossband occupies the proximal half of the second abdominal segment; the other segments are shining at the base, velvet black, opaque on their distal half; genitals orange-red, as well as the segment bearing the ovipositor. Halteres dark-brown. Legs brown. Wings brown, with a white crossband between the first and fifth veins, close by the proximal end of the discal cell. Second posterior cell unusually small, and its petiole long in proportion. (I should not wonder if specimens occurred with only four posterior cells). — Two males, one female.

NB. The antennae of this species and of *E. perennis*, in the male, are of the short kind; not much longer than in the female. —

*Tipula pedata* (Wied. A. Z. I, 45; Java).

Two specimens from the Philippine Islands answer the description, with some exceptions: „Ein kleiner, fast viereckiger Flecken des Mittelfeldes“ does not exist here. The thorax has three brown stripes; the middle one bears a longitudinal brown line. The front femora have a yellowish-white ring before the tip. The antennae are reddish-brown, the joints of the flagellum dark-brown or black at base. I do not recognize Wiedemann's description of the abdomen. Normal specimens of *T. pedata* must be compared in order to decide of the specific identity.

This species has the complete venation of *Tipula*; the only peculiarity consists in the close approximation of the auxiliary vein to the first vein; it is with some difficulty that the auxiliary vein can be seen at all. — The antennae are 13-jointed, the nasus distinct, the tibiae provided with short spurs etc.

*Pachyrrhina laconica* n. sp. ♀. The black thoracic stripes are confluent; collare black; metanotum black in the middle, yellow on the sides; abdomen black, with yellow crossbands on segments 2—4. Length about 15 mm. (without ovip.)

Head, including rostrum, bright-yellow; antennae and palpi brownish-yellow. Collare velvet-black; thoracic dorsum black (the usual three stripes being confluent); moderately shining; a large yellow spot each side on the humeri; a smaller one between the thoracic suture and the black scutellum; metanotum with a broad brownish-black longitudinal stripe in the middle; yellow on the sides. Pleurae brownish-black, with several yellow spots: a large one between the root of the wings and the collare; a smaller one near the root of the halteres; a third one above the middle coxae. Halteres yellow. Coxae black, legs brown. Abdomen black; basal half of segments 2—4 yellow; at the base of the fifth segment also, some yellow is visible; the segment bearing the ovipositor, and the narrow one which precedes it, are yellowish-ferruginous. Wings with a pale brownish tinge, more saturate in the costal cell; stigma brown; second post. c. in contact with the discal. — One female.

*Pachyrrhina ortiva* n. sp. ♀. *Black thoracic stripes confluent; collare yellow in the middle; metanotum yellow, with a black spot posteriorly; abdomen black, with yellow crossbands on segments 2—5.* Length about 13 mm. (without ovip.) —

Head and rostrum bright orange-yellow; a well defined deep black spot on the occiput; antennae yellow, joints of the flagellum, except the first, black at base. Collare yellow in the middle, black on the sides; the usual thoracic stripes coalescent, shining black; a large yellow humeral triangle, has its lower hind angle cut off by the humeral furrow; a small yellow spot between the thoracic suture and the scutellum. Metanotum yellow; a large black transverse spot on its hind margin. Pleurae mixed of black and yellow, the black forming an irregular triangle in the middle. Halteres brownish-red. Abdomen black; segments 2—5 yellow, each with a large semi-circular spot (or crossband attenuated on each side) occupying the whole hind margin; the segment bearing the ovipositor and the narrow segment preceding it, are yellowish-ferruginous. Coxae yellow, with more or less black at the base, especially on the last pair. Legs more or less dark tawny; tips of femora and tibiae brown. Wings with a pale brownish tinge, which is more saturate in the costal cell and more diluted beyond the stigma; a slight brown shadow at the tip; stigma brown. Petiole of the second post. c. very short. — Two females.

NB. At first sight, this species is very like the preceding one; it will be easily distinguished by the color of the metanotum and collare and other characters.

*Ctenophora suspirans* n. sp. ♂. — *Wings brown, with a white spot in the middle; scutellum black.* — Length 14—15 mm.

The whole body is velvet-black; head yellow, including rostrum and palpi, but the middle of the vertex black; a more or less large brown spot in the middle of the rostrum; some of the joints of the palpi infuscated; the scapus of the antenna is somewhat brownish or yellowish; the flagellum black; a broad yellow stripe occupies a large portion of the pleura; it begins in front of the root of the wing and ends above the middle coxa; above the upper end of this stripe there is a yellow spot on the mesonotum, which may be considered as the prolongation of the stripe; a more or less broad yellow band on the second abdominal segment; it is especially developed on the ventral side; legs black, with a white ring near the root of the tibiae. Wings brown; a hyaline spot at the distal end of the first basal cell; it encroaches a little on the discal and sometimes also on the marginal cell. — Three males.

NB. One of the specimens has the yellow portions of the thorax remarkably pale, almost whitish.

*Ctenophora idalia* n. sp. ♂. — *Wings brown, with a white spot in the middle; scutellum yellow.* — Length 14—15 mm.

Very like *C. spirans*, only the scutellum, the base of the femora and the sides of the metanotum are yellow; the hyaline spot on the middle of the wings is larger, and encroaches considerably on the second basal cell, as well as on the marginal; there is a small triangular hyaline spot at the extreme proximal end of the two basal cells. — Rostrum anteriorly, face and scapus of antennae brownish-yellow; front above the antennae black; a yellow crossband reaches from eye to eye across the vertex; back of it, the occiput is again black; the root of the wings, as well as the basal portion of the halteres, are yellow. — One male (damaged).

*Ctenophora dolens* n. sp. ♂ ♀. *Wings unicolorous, brown.* — Length ♂ 12—14 mm., ♀ (without ovipositor) 15—16 mm.

Whole body velvet-black, except the intermediate segments of the abdomen, which are reddish-yellow; wings uniformly brown; legs black, two basal thirds of the femora yellow; white rings near the base of the tibiae. Head dark brown, including the rostrum; antennae black or brown; in the male, each joint of the flagellum is whitish at the tip; palpi variable, pale yellowish or brownish; halteres brown. The base of the abdomen is black; the three following segments are reddish-yellow; the end, including the genitals, is again black; but the black at the base is variable in extent; in two of the specimens it emits a black dorsal and another ventral stripe, which encroach upon the yellow. — Two males, one female.

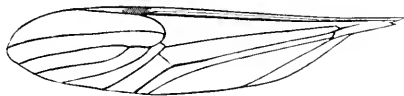


## Scamboneura

nov. gen.

General appearance of *Pachyrrhina*, from which however it differs in the venation. Rostrum short, with a distinct nasus; palpi long, with a long, whiplash-shaped terminal joint; antennae 13-jointed, once and a half longer than head and thorax together; first joint of the flagellum about twice as long as the first joint of the scapus, cylindrical; the following joints gradually decrease in length and have a very slight swelling at the base, which bears a couple of hairs; the whole flagellum is microscopically pubescent; the 13<sup>th</sup> joint is much smaller than the preceding one. Legs very long and slender, tibiae with minute spurs, which are more distinct on the last pair. Abdomen moderately club-shaped at the end; the forceps is provided with a pair of small, triangular foliaceous appendages, which resemble those of *Pachyrrhina*. Wings: the venation resembles that of *Dolichopeza sylvicola*, but the praefurca (very short in that species) is entirely obliterated here, and the great crossvein is posterior to the proximal end of the fourth posterior cell; the auxiliary vein is distinct and ends just before the stigma; the anterior branch of the second vein is obsolete, and perhaps represented by a slight thickening at the distal end of the stigma; the discal cell is wanting; the veins, on the distal half of the wing, are finely pubescent.

Fig. 1.



Scamboneura dotata.

The venation, the structure of the antennae and the slenderness of the legs, sufficiently prove the relationship of this genus to *Dolichopeza*.

As far as I remember, the *Limnobia vittifrons* Wk., J. Pr. L. Soc. V, 144 (Amboina), which I saw in the British Museum, is a *Scamboneura*, but I cannot recognise my *S. dotata* in Mr. Walker's description.

*Scamboneura dotata* n. sp. ♂

Rostrum and palpi yellow; front reddish-yellow with a brown line in the middle; vertex grayish; scapus of the antennae yellow, flagellum brown, except the distal half of each joint which is yellow; the extent of this yellow color gradually diminishes on each successive joint, so

that the last 4 or 5 joints are altogether brown. Thorax with three brown stripes, the intermediate one wedge-shaped, rather broad in front; the edges of these stripes are opaque, while their inner surface is shining, and shows a slight metallic lustre; the narrow intervals between these stripes, as well as a narrow transverse line on the prothorax, are pale whitish-yellow; the same color is more or less visible along the thoracic suture, especially in the middle; the portion of the mesothorax behind the suture, partakes of the color of the thoracic stripes; scutellum brownish, metanotum brown in the middle, yellow in the sides. The pleurae show a mixture of yellowish and brownish, and are slightly pruinose. Halteres with a brown knob. The abdomen seems to be variable in its coloring; in one of my specimens, which shows the color more distinctly, it is reddish-yellow, with a brown stripe along the suture on each side, and a series of large brown spots, one in each of the dorsal segments 2-7, the anterior and lateral sides of the segment remaining yellow; venter altogether yellow; in the other specimen the whole abdomen, including the venter, is reddish brown, except a row of bright-yellow spots along the back, on the anterior margins of the intermediate dorsal segments. I cannot say whether these differences were produced after dissication, or represent varieties; the specific identity cannot be doubtful. Legs pale tawny, tips of femora and of tibiae brownish; tarsi brownish towards the end. Wings hyaline, veins brown; stigma small, pale brownish. — Length 9—11 mm. Two males.

### Bibionidae.

*Plecia fulvicollis* Fab. Numerous specimens.

### Mycetophilidae.

*Sciara* sp. One specimen.

### Cecidomyidae.

A single specimen, belonging to Winnertz's group I (three longitudinal veins, the third being forked). Only three joints of the flagellum are present (the rest being broken), but these have a peculiar structure, slightly resembling those of *Nephrotoma*.

### Culicidae.

*Culex* several specimens, damaged.

*Megarrhina*, one male; determined by Walker as *M. immisericors* Wk., although abdomen and legs do not agree with his description. It may be *amboinensis* Dol., although the agreement is not perfect.

**Tabanidae.**

*Haematopota lunulata* (Macq.) v. d. Wulp, Sum. Exp. Tab. I, f. 14.

*Haematopota* sp.?

All the specimens before me have the design on the wings like the above-quoted figure of Mr. v. d. Wulp; but some of them have the antennae reddish, except the latter part of the 3<sup>rd</sup> joint, which is black; and, at the same time, two whitish rings on the hind tibiae; the other group of specimens has altogether black antennae and only one white ring near the base of the hind tibiae. Neither of them agrees entirely with Macquart's description.

*Chrysops signifer* Walk. J. Pr. Lin. Soc. V, 277 (Báthian). I found the species thus determined and the specimens (♂ ♀) agree with the description. They vary in size very much. About *Chr. unizonatus* Rond. I took the following note when I saw the type in Genoa, a single specimen: „very like signifer Wk., only face altogether yellow; first abdominal segment yellow. May be only a paler variety.“

*Chrysops dispar* (Fab.) Wied. A. Z. I, 196. I believe *C. impar* Rond. Ann. M. C. Gen. VII, 460, to be the same as *dispar*; I have seen the types.

*Tabanus*. There are about a dozen species in the collection, most of which it would be hopeless to recognise among the 120 described species of this genus from South-Eastern Asia, as they show no striking distinctive characters. Five of the species belong in the group with a very narrow (♀) front, and a narrow frontal callus, coalescing with a linear prolongation above, a group abundantly represented in the Austro-Malayan Archipelago. Three species have the front and callus of the ordinary structure, and resemble, in their coloring, some European and N. American species. The two following species deserve a special mention.

*Tabanus van der Wulpi* n. sp. ♂ ♀.

Syn. *Tabanus pictipennis* v. d. Wulp, Tijdschr. v. Ent. XI, 100, Tab. III, f. 1, 2 (Celebes).

Mr. v. d. Wulp's figure of this species is unmistakable; some discrepancies in the description are due to the fact, that he had a general, and therefore not fully colored individual. I owe this explanation to himself, after he had kindly compared one of my specimens with his own type. The name *pictipennis* being preoccupied by Macquart

(4. Suppl. 32), I take pleasure in dedicating this fine species to its first describer; his description I translate, supplementing it from my specimens.

„Ochraceous, front very narrow, with a median blackish line; eyes glabrous; antennae testaceous [tip of the third joint black]; anterior margins of [some of] the abdominal segments dark brown; legs black; wings with two brown crossbands; costal cells saturate yellow.“ — Length: ♂ 18 mm; ♀ 20–23 mm.

Head ochraceous-yellow, with hairs of the same color on the underside; the front (♀) very narrow, linear, with a darker, raised, central line, which is only slightly expanded below. Head of the male of moderate size, flattened above; the dividing-line between the upper, large, and lower, small facets, very marked. Eyes glabrous, bronze-color, without markings. Antennae yellowish-red, the tip of the third joint black or dark brown; first segment drawn out in a point on the upper side; the second very short, prolonged above in a point; the third but moderately excised. Palpi reddish-yellow, beset with minute black hairs, mixed with fulvous ones in the ♀; in the male there are some few black hairs at the tip only. Thorax and scutellum blackish, which color is entirely concealed under a dense ochre-yellow pollen; pleurae with ochre-yellow pile. Abdomen brownish-red, the hind margins of the segments beset with golden-yellow pile; the anterior portion of the segments is more or less dark brown, the extent and intensity of this color varies in different specimens; generally the first and second segments have no brown; on segments 3–6, sometimes the anterior half, sometimes more, is more or less dark brown, the brown band being more or less distinctly narrowed in the middle. The male specimen has comparatively little brown. Venter, except at the base, dark brown or black; hind margins of the segments yellowish-red, beset with golden-yellow pile. Coxae of the same color as the thorax; legs dark-brown or black, with black pile. Halteres reddish-yellow. Wings: proximal third and especially the costal cells tinged with yellow; a brown spot, in the shape of a crossband, covers the central crossveins, coalescing anteriorly with the saturate yellow of the costal cells, and attenuating posteriorly without reaching the posterior margin; in the distal third of the wing a broad brown crossband reaches from the anterior to the posterior margin; its distal side shows a triangular grayish-hyaline excision, within the second submarginal cell; the proximal end of this cell, however, is brown; first posterior cell closed, petiolate at the end; anterior branch of the third vein without stump of a vein; (one of the specimens has a mere rudiment of a stump). — One male; four females.

*Tabanus Ixion* n. sp. ♂. Dark brown, abdomen and legs black; wings brown; the tip and a part of the discal cell, hyaline. Length: 15—15 mm.

Palpi and face dark-brown, with some black pile; head (♂) flattened from above; the division between the large and the small facets very distinct. Antennae dark brown or reddish-brown; third joint long and narrow; its upper angle projecting squarely; the excision of its upper side very shallow. Thorax dark brown, with black pile, especially on the pleurae; abdomen black, shining; legs black; halteres with a yellow knob. Wings brown, axillary angle paler; apex hyaline within the second submarginal cell, the proximal half of which is brown, a hyaline spot in the middle of the discal cell, both ends of which are brown; on both sides of that hyaline spot the brown ground color of the wing is somewhat yellowish; first posterior cell open, although somewhat coarctate towards the tip; no stump of a vein. — Two males.

### Stratiomyidae.

*Rosapha bicolor* (Calochaetis bicolor Bigot, Ann. S. Ent. Fr. 1879, 189, Manilla). I have already said about the specimens (Enumeration etc. p. 26) from the Philippines that they differ from *R. habilis* Walker (Celebes) in having the brown stigma separated from the subapical brown cloud by a broad hyaline interval; the intermediate pair of spines of the scutellum is comparatively smaller. They may be a different species.

*Negritomyia maculipennis* (Ephippium maculip. Macq. D. E. IV. 54, Manilla). A dozen (♂ ♀) specimens. Seems to be a common and wide-spread species; the abdomen is more distinctly bluish than it was in the specimens from Ternate and New-Guinea mentioned by me in the Enumeration etc. p. 23.

*Acanthina azurea* (Gerstaecker, Linn. Ent. XI, 334; Ceylon)? I am very doubtful about the determination of this species, as the description disagrees in several points. The vertex is black, not reddish; the front and hind tarsi are black or dark brown; the description of the pattern of the thorax disagrees etc. Three specimens.

*Sargus* spec. One specimen. Closely related to, if not identical with the species from Celebes which, in the Enumeration (p. 28) I called *remeans* Walk. with a doubt. Frontal triangle, face and antennae are more reddish; the front tibiae paler, the scutellum more bluish etc.

*Pteticus* sp. A single specimen, which Mr. Walker had identified with his *Sargus rogans* from the Aru Islands.

*Ptilocera amethystina* Sn. v. Voll. — Three ♂, 6 ♀. The females have the anal and axillary cells and the proximal end of the fourth post. c. hyaline, while in the males these parts are brownish. In the specimens which I have seen from Celebes and New Guinea this character was not sexual; at least most of the females had no hyaline space in the anal portion of the wing. I am not satisfied yet about the specific distinctness of this species from *P. smaragdina* v. Voll. (Compare Enumeration etc. p. 24).

*Musama pauper* Walk. J. Pr. Linn. Soc. VII, 205 (Mysol). — A single specimen thus determined by Mr. Walker; but the description disagrees from it in many points.

### Leptidae.

*Atherix limbata* n sp. *Wings subhyaline as far as the proximal end of the discal cell; tinged with pale brownish on the distal half.* — Length about 9 mm.

Front and vertex black, the former slightly whitish above the antennae; face black, with a whitish reflexion; antennae brownish-yellow. Thorax blackish-gray, whitish-hoary on the pleurae and with whitish reflexions on the mesonotum; humeri, the posterior part of the mesonotum and the scutellum brownish-yellow. Halteres yellow with a brown knob. Abdomen brownish-yellow; the base, a dorsal stripe on segments 2 and 3, and the greater part of segments 4, 5, 6, are dark brown (this is the case in one of the specimens; in the other the abdomen is more uniformly brownish-yellow). Front coxae blackish, whitish-hoary; the other coxae brown; femora brownish-yellow, the hind ones with a broad brown ring before the tip; tibiae and tarsi dark-brown; intermediate tibiae yellowish-brown. Proximal half of the wings, as far as the proximal end of the discal cell, subhyaline; distal half pale brownish, gradually turning into grayish towards the tip; costal cell and surroundings of the stigma, yellowish. — Two females.

NB. I. *Atherix nigratarsis* Dol. 3 Bijdr. 20 (Amboina) is closely related to this species, as I can ascertain, not only from the description, but from an unpublished colored drawing in my possession. The principal differences appear to be: the hind femora of *A. nigratarsis* have no broad brown ring before the tip; the scutellum is of the same color as the mesonotum; the abdomen has brown crossbands, and not a longitudinal brown stripe.

NB. II. Mr. Walker had labeled *A. limbata* with the generic name *Suragina* Walk. I am not prepared either to maintain or to reject this genus; but it is certainly most closely allied to *Atheria*, which Mr. Walker did not even notice (J. Pr. Lin. Soc. IV, 110). It remains to be proved whether *A. limbata* is really congeneric with *Suragina illucens* (Celebes) the type of the genus.

*Chrysopila correcta* n. sp. ♀. *Wings subhyaline, their distal half with two brown, sometimes nearly coalescent crossbands, which leave but a narrow hyaline margin between the apex and the third posterior cell.* — Length 7—8 mm.

Head yellowish-brown; sides of the face whitish; antennae brownish-yellow, third joint brown; arista brown, paler at base; palpi brown. Thorax brown, more or less yellowish on and around the humeri. Abdomen reddish-yellow above, with ill-defined brown spots in the middle of the segments; venter brown. Thorax and abdomen are clothed with a delicate golden pubescence. Halteres reddish-yellow, with a brown ring before the knob. Front coxae yellowish; the other coxae brown; legs brownish-yellow, tibiae and tarsi slightly darker. Wings yellowish-hyaline; a brown cloud on the distal end of the anal cell; two broad brown crossbands on the distal half of the wing; their interval being narrow, they have one or more points of contact (so that in different

Fig. 2.

*Chrysopila correcta*.

specimens this interval appears either as a subhyaline narrow crossband, or as a series of irregular subhyaline spots; the edges of the bands are jagged; the proximal edge of the inner crossband begins at the anterior margin between the ends of the auxiliary and first veins; it ends in the fifth posterior cell, near the end of the fifth vein. — Two females.

NB. In the structure of the face this species differs from the European species of *Chrysopila*; its middle portion is very large and projects over the palpi; the latter are very hairy.

I cannot identify *C. correcta* with *C. maculipennis* Wk. J. Proc. Lin. Soc. I. 118 (Borneo), although they have some points in common.

*Chrysopila ferruginosa* Wied. Auss. Zw. I. 224. Seven specimens of this species which is common in the whole Austro-Malayan Archipelago. These specimens have no dark incisures on the abdominal segments. (Compare my Enumeration etc. p. 31.)

*Chrysopila*. Three other species of this genus are represented by single specimens in very bad condition. These species are small, have a blackish-gray body, clothed with metallic scales and subhyaline wings.

#### Asilidae.

*Leptogaster princeps* ♀. *Black, shining, with metallic bluish or purplish reflexions, especially on the abdomen; legs more or less reddish; wings brown with violet reflexions.* — Length: 24—30 mm.

Face silvery, except immediately above the mouth, where it is shining black; front and vertex black, shining; occiput grayish-silvery; antennae reddish-brown, second joint yellowish. Mesonotum black, shining, with a very slight bluish opalescence; a border of a light grayish, not very dense pollen runs above the dorso-pleural suture and also covers the scutellum and metanotum; pleurae subopaque, brownish-pollinose. Abdomen black, shining, with distinct bluish or purplish reflexions, some reddish shades on the ventral side vary in extent in different specimens. Halteres either altogether dark brown, or knob reddish. Legs more or less dark brown, with a very slight metallic purplish reflexion; hind tibiae more or less reddish, as also the end of the hind femora, where the reddish sometimes reaches beyond the middle. Wings brown, with purplish reflexions; proximal end of the second posterior cell but very little nearer the root of the wing than the proximal ends of the second submarginal and third posterior cells; contact of the fifth post. c. with the discal very short; anal cell closed, petiolate at the tip. — Three females.

NB. This fine species differs in several respects from the European species of the genus; the third antennal joint is more than three times as long as the scapus, narrow, almost linear, a little attenuated towards the tip; the two-jointed style is about one fourth the length of the third joint; the mystax is composed of a few weak, inconspicuous hairs; the anal cell is closed. The characteristic thoracic bristles of this genus are also quite conspicuous in the present species: I mean the praesutural bristle and the intra-alar, one on each side.

*Leptogaster* sp. — A single male. An inconspicuous species; mystax weak, as in the preceding species; anal cell closed. The antennae are broken.



## Damalis.

The characters of this genus have been enumerated by Dr. Loew (Südafr. Dipt. 107) and v. d. Wulp (Tijdschr. XIX, 140). I have five asiatic species before me; four from the Philippines, and one from Ceylon (*D. fulvipes* Westw.). These species seem to differ from the african ones by their mystax, which consists of only four bristles, placed in a row above the oral margin, while in the african species the mystax seems to be more bushy and to extend farther up towards the antennae. However *D. Felderi* Schin. from Ceylon, has the mystax more like the african species; (I judge of all these species merely from the descriptions). The facial swelling in all my species is very weak; it seems to be more prominent in the african ones. In *D. fulvipes* Westw. the contact between the fifth post. c. and the discal is merely punctiform (in other words, the fourth posterior cell is not petiolate); in the species from the Philippines that contact is moderately broad, (that is, the fourth post. c. has a petiole which is shorter than the posterior crossvein). Mr. v. d. Wulp described *D. marginata*, which has the anterior crossvein opposite the middle of the discal cell, and in which the veins, issuing from the discal cell (externomedial veins) are straight or nearly so. Usually however the anterior crossvein in *Damalis* is beyond the middle of the discal cell, and the externomedial veins, especially the first, are more or less arcuated.<sup>1)</sup> The four species from the Philippines are more slender than *D. fulvipes*; the abdomen is flatter; the hind femora less stout; the same differences seem to occur among the african species (comp. Loew, l. c. 111, note to *D. capensis*). The majority of the asiatic species have the hind femora armed with strong spines on the underside; however, *D. nigella* v. d. W., which I believe to recognize in one of my species from the Philippines, is without them; the absence of spines seems to occur more often among the african species. All my species have, on the underside of the middle tibiae, several (about four?) long, erect hairs, diminishing in length from the proximal to the distal end of the tibia. None of the species before me have, at the end of the middle tibiae, the prolongation („Zapfenartiger Fortsatz“) sometimes existing there; comp. for instance the descriptions of *D. Felderi* Schin. from Ceylon, and of *D. speciosa* Lw. from S.-Africa.

I give below a synopsis of all the described asiatic species including my own; it must be borne in mind that it was drawn up merely from the descriptions of most of the species, and may therefore contain inaccuracies.

<sup>1)</sup> Macquart figures the wing of *D. tibialis* as having the crossvein opposite the middle of the discal cell; but is that figure correct?

Synopsis of the Asiatic species of the genus *Damalis*.

## I. Wings uniformly brown.

Antennal scapus yellow; hind legs black;

length  $1\frac{1}{2}$  lines . . . . . *erythrophthalma* Dol.  
(3<sup>de</sup> Bijdr. 19; Amboina.)Antennae black; length 3— $3\frac{1}{2}$  lines.Body cupreous black . . . . . *fumipennis* Walk.  
(List, VII, 765; Java.)

Body reddish-ochraceous; femora black;

except at the base . . . . . *lugens* Walk.  
(J. Pr. L. Soc. V, 237;  
N. Guin.)Body brown, grayish-pollinose; fem. red *immerita* O. S." " " legs black *fuscus* Walk.  
(List etc. II, 481; Bengal.)

## II. Wings with the proximal half brown, the distal hyaline.

Abdomen with metallic blue or purple

reflexious . . . . . *tibialis* Macq.  
(D. E. I, 2, 154; East Ind.)  
*myops* W.  
(A. Z. I, 417; Sumatra.)Abdomen yellow . . . . . *planiceps* W.  
(A. Z. I, 417; East Ind.)  
*fulvipes* Westw.  
(Ann. Soc. Ent. Fr. 1835;  
Ceylon.)Abdomen rufous „utrinque nigro-sub-  
maculatus“ . . . . . *major* v. d. W.(Tijdsehr. XV, 143; Bor-  
neo, Sumatra.)

## III. Wings pure hyaline.

Hind femora unarmed . . . . . *nigella* v. d. W.  
(Tijdsehr. XV, 143; Bel  
Menado.)Hind femora spinous . . . . . *vitripennis* O. S.IV. The coloring of the wings does not belong to any of the pre-  
vious groups.

Small crossvein opposite the middle of

the discal cell . . . . . *marginata* v. d. W.  
(Tijdsehr. XV, 142; Bor-  
neo.)

Small crossvein beyond middle etc.

Wings pale brownish-yellow.

Abdomen reddish-yellow with black

spots on each side . . . . . *maculata* W.

(A. Z. I, 416, Java.)

*signata* Walk.<sup>1)</sup>

(Trans. Ent. Soc. Lond.

N. S. V, 283; Burmah.)

Abdomen reddish-yellow without

black spots . . . . . *pallida* v. d. W.

(Tijdschr. XV, 143; Borneo, Sumatra.)

Abdomen bronze color . . . . . *Andron* Wk.<sup>1)</sup>

(List etc. II, 480; China.)

Abdomen blackish-brown . . . . . *Felderi* Schin.

(Verh. Z. B. Ges. 1866, 365; Ceylon.)

Wings marked with brown

near the anterior margin . . . . . *grossa* Schin.

(Novara, 161; China.)

on the apex . . . . . *siagonensis* Bigot.<sup>1)</sup>

(Ann. Soc. Ent. Fr. 1878, 443; Cochinchina.)

*Damalis immerita* n. sp. ♂ ♀. Wings brown; legs dark red; hind femora spinous on the underside; body dark brown, thorax with fulvous pollen on the sides. — Length: 12—14 mm.

Face black, somewhat shining above the mouth; brownish pollinose under the antennae; the same pollen covers the front, except the ocellar tubercle; mystax black; antennae black; occiput with brownish-yellow pollen. Thorax densely clothed with pale fulvous, in some places brownish-fulvous, pollen; the disc of the thorax dull brown, which color forms a broad stripe in the middle, and two lateral stripes, interrupted by the pollinose suture. Abdomen dark brown, the base of the second segment and sometimes the hind margins of all the segments more or less reddish; male hypopygium brownish-red; venter grayish pollinose, with black spots on the sides of the segments; halteres brownish-yellow; legs, including the hind coxae, dark red; extreme tips of the femora black, especially on the anterior side; tarsi, especially the last pair, brownish; hind tibiae distinctly curved; hind femora stout, with a double

<sup>1)</sup> I do not know about the position of the small crossvein of these three species.

row of short, strong spines on the underside. Wings tinged with brown, which is slightly paler towards the posterior margin; anterior crossvein beyond the middle of the discal cell; the proximal end of the second submarginal cell is but little more distal than that of the second posterior. — One male, two females.

NB. This species can only be compared to *funipennis* Wk., *fusca* Wk., and *lugens* Wk. But the former is said to have a „cupreous black“ abdomen, *lugens* black femora, except at the base, and *fusca* altogether black legs.

*Damalis vitripennis* n. sp. ♂ ♀. *Wings altogether hyaline; hind femora spinous; small crossvein beyond the middle of the discal cell; legs reddish, hind tibiae brown in the middle.* — Length 9—12 mm.

Face black, shining; its upper part, as well as the facial orbits, clothed with yellowish-brown pollen; the front is likewise pollinose, except the ocellar tubercle; antennae black. Thorax clothed with yellowish-gray pollen; a geminate broad brown stripe on the mesonotum, and more or less distinct lateral stripes. Abdomen clothed with brownish-gray pollen, the anterior portion of the segments being more grayish, the posterior more brownish; venter gray, with black, shining spots, one each side, on each segment. Hypopygium of the ♂ yellowish-ferruginous; the last segment in the female black, shining. Halteres brownish-yellow. Legs yellowish, or reddish-ferruginous; the tarsi as well as the tips of the femora and tibiae are darker; hind femora more or less infuscated in the middle and provided with a double row of spines on the underside; hind tibiae curved. Wings pure hyaline, slightly yellowish near the root; anterior crossvein far beyond the middle of the discal cell; proximal end of the second submarginal cell considerably beyond that of the second posterior. — Four males, three females.

*Damalis nigella* v. d. Wulp, Tijdschr. XV, 143 (Bel Menado). I have one specimen which agrees with the description.

*Damalis* sp. One specimen, with brownish-yellow wings infuscated at the tip.

### Damalina.

This genus was introduced by Doleschall (Derde Bijdr. 19, in Naturk. Tijdschr. Nederl. Ind. Deel XVII, 91; 1858) for a species from

Amboina (*D. laticeps*). As Dr. Semper's collection contains two species of the same genus, I avail myself of the opportunity for characterizing it more completely.

Closely allied to *Damalis*, but easily distinguished by the structure of the third antennal joint, which is much longer than broad, lamelliform, sublinear, and bears an arista at the tip, which is a little shorter than the joint itself; the joints of the scapus are short, bristle-bearing, the second subglobular.

Minor differences from the five asiatic species of *Damalis* which I have before me consist in the following: the anterior crossvein is about the middle of the discal cell, and not beyond it; <sup>1)</sup> the fifth posterior cell is not in contact with the discal; the proximal end of the first submarginal cell is distinctly more proximal than the proximal end of the discal cell; the swelling of the lower part of the face is more abrupt, and the mystax consists of a greater number of bristles. The cilia of the posterior orbit, although very weak, are a little more developed here than in *Damalis*; the trochanters of the hind legs are less developed, the hind femora less stout and unarmed. The venation is very like that of *Holopogon*.

*D. laticeps* Dol., of which I possess an excellent colored drawing, agrees in the generic characters with the two species described below. In the specific characters, it seems to hold the middle between them, as it has the brownish thorax of *D. Semperi* and the metallic-blue abdomen of *D. cyanella*. My specimen of the latter shows a remarkable peculiarity in its venation: it has only four posterior cells, instead of five, because there are only two veins issuing from the end of the discal cell, instead of three. As I have only a single specimen, and as that specimen has only one wing left, I am not sure whether this peculiarity is not an accidental abnormality. Should it even prove a permanent character, it would not be a sufficient one for the formation of a new genus, as, in other respects, the agreement with *C. Semperi* is perfect.

I do not find *Damalina* mentioned in any of Dr. Schinck's lists; it seems to have been overlooked since its publication.

*Damalina Semperi* n. sp. ♂. Antennae black; arista reddish; head clothed with a fulvous pollen; thorax clothed with a fulvous pollen, or rather a microscopic fulvous pubescence; mesonotum dark brown in the middle, the outline of which color represents the usual thoracic,

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<sup>1)</sup> *Damalis marginata* v. d. Wulp, Tijdschr. etc. XV, 142 shares this character with *Damalina*.

coalescent stripes; sides of the dorsum fulvous. Abdomen brownish-fulvous, the middle portion of the segments, including the hind margin, more distinctly brownish. Halteres yellowish. Legs brown, shining, clothed with long fulvous pile; coxae fulvous-pollinose. Wings brown, darker towards the base. — Two very imperfectly preserved specimens. — Length 6—7 mm.

*Damalina cyanella* n. sp. ♀. Head black, grayish pollinose; antennae and mystax black. Thorax dark metallic-blue; humeri, posterior part of the mesonotum, scutellum and metanotum grayish-pollinose. Abdomen metallic-blue, shining above. Halteres with a brownish stem and a reddish knob. Legs black, shining, beset with black hairs, especially the hind tibiae. Wings tinged with brown, the basal portion, before the discal cell is dark-brown, with a bluish reflexion. — A single imperfect female. — Length 6—7 mm.

NB. I have already alluded above to the peculiar venation of my only specimen. The very narrow discal cell emits only two veins at its end, instead of three and thus there are only four posterior cells, instead of five. As the specimen has but one wing left, I am in doubt, whether this is a permanent character or an individual abnormality.

*Stichopogon peregrinus* n. sp. ♀. Whitish-gray, front, vertex and mesonotum in the middle brownish; antennae black; mystax white; abdominal segments with brown spots in the middle; on the first segment, the spot is small; on the second it is a large triangle, the base of which occupies the whole breadth of the posterior margin of the segment and the tip almost touches the anterior margin; the third segment is almost altogether brown, except an interrupted, narrow margin anteriorly; segments 4 and 5 have brown triangles, like the second segment; segments 6 and 7 are nearly brown, like segment 3; segment 7 is grayish. Venter gray. Halteres yellow; the dark ground-color of the legs is entirely concealed under a gray pollen. Wings subhyaline. — Length 4—5 mm. — One male.

NB. This species differs from its european congeners (at least in the specimen before me) in having the fourth posterior cell not petiolate; it is subsessile, as its contact with the second basal cell is almost punctiform.

*Laphria*. There are a dozen species of this genus in the collection. Their general character is very much like that of the *Laphriae* from the Malay Archipelago. Owing to the large number of species already described and to the insufficiency of many of the descriptions

it is in most cases impossible to determine the species without having type-specimens at hand.

*Laphria dimidiata* Macq. Dipt. Exot. 1<sup>er</sup> Suppl. 72 (Philippine Islands).

The description agreeing, and the locality being the same, the identification may be taken for certain. I suspect that *L. Taphius* Wk. List etc. II, 380 (Philippine Islands) is the same species, although the description does not mention the golden hairs on face and thorax. There are numerous ♂ and ♀ specimens; it must be a common species.

*Laphria partita* Wk. J. Lin. Soc. IV, 105 (Celebes); O. Sack. Enum. 40.

The specimens (3 ♂ ♀) were thus named by Mr. Walker; I have had occasion to compare them with the specimens of *L. partita* from Celebes mentioned in my „Enumeration,“ but did not reach any positive conclusion about their identity or diversity.

*Laphria Phalaris* n. sp. ♂ ♀. *Fulvous, thorax with black stripes; abdominal segments 1—4 with black triangular spots; segment 5 altogether black; wings with a brown apex.* — Length 15—18 mm.

Elongated and rather slender for a *Laphria*; fulvous, antennae of the same color; third joint slightly brownish, short-lanceolate in shape; mystax golden-yellow, proboscis reddish. Thorax with three broad subcontiguous black stripes; the intermediate one cuneiform, subgeminat; the lateral ones abbreviated in front and interrupted at the thoracic suture; in the ♀ these stripes occupy more space than in the male; sternum black, as well as some portions of the pleurae (more in the female than in the male); the intervals of the thoracic stripes, especially behind the humeri, and also the metanotum, golden-sericeous. Abdomen with a small black spot on the first segment, a distinct triangle on the second; a still larger one on segments 3 and 4; segment 5 altogether black; the end of abdomen, as well as the genitals, yellowish-red. Halteres and legs yellowish-red; the extreme tips of the middle and hind femora infuscated. Wings bright reddish-yellow, with a well-defined brown apex, the proximal limit of which is immediately before the proximal end of the second submarginal cell; first posterior cell broadly open; crossveins, closing the discal and the fourth post. c. parallel, although not forming a straight line. — Three males and two females.

NB. This species has a good deal of *L. concludens* Wk. J. Pr. Lin. Soc. IV, 105; but the description of the abdomen disagrees; be-

sides, if it had been the same species, Mr. Walker would probably have identified it.

*L. Phalaris* has the antennae of an *Andrenosoma*, without having the coloring, nor the other characters of that genus.

*Laphria pseudolus* n. sp. ♂. Altogether reddish-fulvous; the darker color of the thoracic dorsum hardly visible under reddish pollen and pile; legs yellowish red; wings uniformly light brownish-fulvous. — Length 22 mm.

Antennae rufous, third joint linear, brownish at tip; mystax golden-yellow; proboscis rufous; thoracic dorsum with three broad, subconfluent, very indistinct darker stripes, almost concealed under a brownish-gray pollen and a dense rufous pile; lower part of pleurae and coxae golden-sericeous; the black mesosternum is covered with yellowish pollen. Abdomen uniformly rufous, with rufous pile. Legs yellowish-red; hind femora with a brown spot on the underside, not far from the coxa. Wings uniformly light brownish-fulvous; first posterior cell slightly attenuated at the end; the crossveins closing the discal and fourth posterior cells are parallel, although not in a line. — A single male.

NB. I doubt that the brown spots on the underside of the hind femora are an essential character.

*Laphria scapularis* Wied. A. Z. I, 516. Agrees with the description, but is larger. — Two females, in one of whom the two crossveins (closing the discal and the fourth posterior cells) are not exactly in a line; nevertheless I believe it to be the same species.

*Laphria* sp. Exactly like the preceding, but the face with a bright reddish-golden mystax. Two males; in one of them the two crossveins (see above) form a straight line, in the other they are separated by a short interval. Is not the golden mystax a merely sexual character? Both Wiedemann and v. d. Wulp have described only females of *L. scapularis*.

*Laphria* sp. determined by Mr. Walker *L. dissimilis* Dol.? A single, damaged male. I possess an original colored drawing of *L. dissimilis* by Doleschall, and believe it to be a different, although closely resembling, species.

*Laphria*, three species, represented by single specimens.

*Maira* sp. A small, greenish-metallic species, with a golden face. A single specimen.



*Ommatius fulvidus* Wied. A. Z. I, 420. Must be as common in the Philippines, as in Amboina, Celebes etc.

*Ommatius*; this genus is represented by six species, besides *O. fulvidus*. I do not attempt to unravel them among the 40 species of *Ommatius* from Austro-Malayan Archipelago already described.

*Emphysomera aliena* n. sp. ♂. Black, thorax with yellowish-gray pollen on the sides, tibiae reddish-yellow; wings fuliginous, except their axillary portion, which is hyaline. — Length 10—12 mm.

Face and front with grayish-yellow pollen; mystax dense, yellowish-white above the mouth; higher up scattered black hairs; beard yellowish-white; antennae black. Thorax above black, subopaque; pleurae, scutellum, as well as the sides of the mesonotum with yellowish-gray pollen; abdomen black, subopaque, hind margins of the segments faintly reddish; hypopygium of the male black, shining above, reddish brown below; halteres reddish-yellow; all the femora, but especially the hind ones, black, shining; the latter with a row of spines on the underside; tibiae reddish-yellow; the hind ones infuscated at the tip; tarsi brown, reddish-yellow at the base. The anterior margin of the wings slightly expanded in the stigmatic region (♂); the costal cell in the stigmatic region is dark-brown; the region behind it, inside of the marginal and first submarginal cells is tinged with brownish; the remainder of the distal half of the wing is fuliginous; axillary portion of the wing, including the second basal, anal and a part of the fourth and fifth posterior cells, hyaline. — Two male specimens.

NB. The absence of the gibbosity on the face, the stout femora and the club-shaped abdomen vindicate this species as an *Emphysomera*. Dr. Schiner was however mistaken when he said that the anterior alar margin of this genus is never expanded; Mr. v. d. Wulp has described a species which has such an expansion, and *E. aliena* is another. The abdomen of the latter is narrowest in the middle and expanded at both ends.

*Promachus manillensis* Macq. D. E. I, 194 (Trupanea). Three specimens (♂ ♀).

*Promachus forcipatus* Schin. Novara, 178. Four specimens (♂ ♀).

*Promachus*. One species resembles *bifasciatus* Macq. but is certainly different; two or three other species are represented by very badly preserved specimens.

*Philodicus longipes* Schiner, Novara 179 (Philippine Isl.)

Four specimens.

*Itamus*, two ♀ closely related to *I. longistylus* Wied., but front side of the hind femora black.

There are about twenty other, badly preserved specimens, representing about a dozen species, that belong in the genera *Asilus*, *Proctacanthus* and *Erax*, or in their vicinity.

### Bombyliidae.

*Argyramoeba distigma* Wied. A. Z. I. 309 (Syn. *Anthrax argyropyga* Dol. II Bijdr. 25?) My specimens are males, and therefore agree with Doleschall's description. Wiedemann had a female. The synonymy was suggested by Mr. v. d. Wulp, Tijdschr. XXIII, 166, and seems very probable.

*Argyramoeba* sp. Similar to the former, but without the two black drops on the hyaline portion of the wing.

*Exoprosopa Oenomaus* Rond. Ann. Mus. Civ. Gen. VII, 37 (Hyperalonia).

*Exoprosopa flaviventris* Dolesch. II Bijdr. 24 (?)

Although the descriptions agree, I am by no means certain of the identification of the two above mentioned species. Both resemble *Exopr. Doryca* Boisduv. (Syn. *ventrimacula* Dol., *Pelops* Wk. *leuconoe* Jaenn.) very much, but differ as follows (if my identifications be correct):

I. The brown color on the wing covers the proximal half of the discal cell; second posterior cell narrower at its distal end than at the proximal; venter with yellow pile in the middle; the white pile on the two last abdominal segments has the shape of crossbands.

*Oenomaus.*

II. The brown color on the wings does not encroach upon the discal cell.

1. A spot of snow-white pile on the ventral segments 2-4.

Second post. c. much broader (more than twice) at its distal, than at its proximal end; the white on the two last abdominal segments has the shape of spots, rather than of crossbands.

*doryca.*

2. Venter almost altogether clothed with yellow pile.

Second post. cell very little broader at its distal end; the white on the two last abdominal segments is in the shape of crossbands.

*flaviventris.*

*Exoprosopa* sp. Perhaps small specimens of *Tantalus*?

**Therevidae.**

*Thereva lateralis* (Esch. Entomogr.) Wied. A. Z. I, 231. As Eschscholz's specimens came from the Philippines, and as this seems to be a common species, the identification is a very probable one, although there are some discrepancies; for instance the fourth abdominal segment is entirely black, shining. and without any gray posterior margin.

*Thereva* sp. A single female, very like the preceding in coloring, but the fourth post. c. open and the front black, shining, except its lower part, which is silvery.

**Empididae.**

*Elaphropeza exul* n. sp. ♀ Black, shining; mesonotum with microscopic grayish-yellow pile; pleurae and two basal abdominal segments smooth and very shining; the remainder of the abdomen dark brown. Proboscis ferruginous-brownish; palpi brown. Antennae: first and second joints yellow; the tip of the latter and the third joint brown; arista microscopically pubescent. Legs reddish-yellow, smooth; tarsi somewhat brownish; hind metatarsus a little swollen. Halteres pale-yellow. Wings with a slight brownish tinge, veins brown. Length: 2 mm.

NB. I describe this species from a single, badly preserved specimen, on account of the genus to which it apparently belongs. *Elaphropeza* was hitherto represented by a single species, belonging to the north of Europe. *E. exul* seems to share all the characters of *E. ephippitata*, as described and figured in Walker's Ins. Brit. Diptera, Vol. I, Tab. V. f. 4. Above the antennae, the eyes are separated (♀) by a space so narrow that it requires some attention to perceive it; below the antennae, the eyes may be called contiguous for an interval equal in length to the antennal scapus. The third antennal joint is shorter than represented in the above-quoted figure; the arista, on the contrary longer, about twice as long as the three joints of the antennae taken together; seen from the side, the outline of the eye shows a sinus of the lower occipital orbit not represented on the figure, and the interval between the lower corner of the eye and the root of the proboscis is broader; the tip of the first vein is beyond the middle of the wing; that of the second nearer the apex than it is on the figure. None of these differences, it seems to me, has a generic importance.

*Hybos* spec. Two damaged specimens.

**Dolichopodidae.**

*Psilopus vittatus* Wied. A. Z. II, 217. Wiedemann had only the female; although Macquart, D. E. II, 2, 116 describes the

male, he forgets to mention the broad black crossbands on the incisures of the abdominal segments, which distinguish it from the female. Seems to be a common species from the Philippines to Java.

*Psilopus longicornis* Dolesch. 3<sup>de</sup> Bijdr. 22 (Amboina). Agrees with the copy of Doleschalls original drawing, which I possess; only in the description the word tibiis should be substituted for tarsis. May also be the same as *P. crinicornis* Wied. if the latter has the gray cloud in the middle of the wings, which is not mentioned in the description. (Conf. O. S. Enumer. 48). My (♂) specimen has, on the upper side of the front tibiae, four erect bristles, and two similar bristles on the upper side of the first joint of the front tarsi.

*Psilopus*. A dozen of specimens in bad condition represent several other species of the genus.

*Diaphorus aeneus* Dolesch. 1 Bijdr. 7, Tab. XII, f. 1. A single male. The original colored drawing by Doleschall, which I possess, convinces me that it is the same species. The eyes are separated by a very narrow almost linear front: all the pulvilli, but especially those of the front legs, are very large. The conspicuous bristles at the end of the hypopygium prove it to be a *Diaphorus* in the sense of Loew, Monogr. etc. II, 157.

*Diaphorus* sp. ♂ ♀ With darker wings than the preceding; abdomen metallic-blue with golden-green incisures. Two damaged specimens.

*Diaphorus maurus* n. sp. ♂ *Eyes of the male contiguous on the front; pulvilli of the front legs enlarged; body brown, with greenish-metallic reflexions; second abdominal segment brownish-yellow; legs brownish-yellow; wings infuscated.* Length  $3\frac{3}{4}$ —4 mm.

Face, as well as the small interocular triangle above the antennae, whitish-hoary, although the ground-color is black; palpi brownish-yellow; cilia of the inferior orbit pale whitish-yellow; antennae brownish, third joint very short; arista inserted in an excision at its tip, and therefore nearly apical. The ground color of the mesonotum is dark metallic; dark purplish anteriorly, more or less covered with a delicate brownish pollen; greenish posteriorly; scutellum metallic green or coppery; pleurae black, grayish-hoary; abdomen brown, its second segment brownish-yellow, except its posterior margin, which is brown.

Halteres yellowish brown. Legs brownish-yellow; proximal half of the middle tibiae infuscated; hind legs brown, except the proximal half of the tibiae which is yellowish; underside of the hind femora, on their distal third, beset with a row of rather long hairs. The usual bristles on the hypopygium comparalively short. Wings brownish, especially between the fourth vein and the costa; third and fourth veins parallel, the last section of the fourth is nearly straight, the flexure a little before its middle being almost obsolete; posterior crossvein almost in the middle of the wing. — Two males.

NB. *Diaphorus resumens* Walk. J. Pr. Lin. Soc. III, 93 (Arn Isl.) is apparently a mixture of two different species; the female may perhaps be the same species as my *D. maurus*.

### Syrphidae.

*Syrphus striatus* v. d. Wulp, Sum. Exp. 32, Tab. II, f. 3. Three males.

It is almost impossible to determine the species of the difficult group of *S. ribesii* (to which the present species belongs), without the comparison of typical specimens; nevertheless I am almost sure of my identification, owing to Mr. v. d. Wulp's excellent description and figure. The abdomen is a little broader in my specimens, than the figure shows it to be, and the scutellum has, on its hind margin, a conspicuous fringe of black hairs, which I perceive in the figure although it is not mentioned in the description. The specimens were named by Mr. Walker *S. consequens* Walk. J. Pr. Lin. Soc. I. 18 (Singapore); that they disagree from the description is attributable, I suppose, to its careless wording rather than to a mistake in the identification.

*Syrphus*, two species, both of the group of *S. balteatus*, but neither is identical with this species. South Eastern Asia seems to contain several species belonging in this same group, such as *S. nectarinus* W. A. Z. II, 128; *alternans* Macq. D. E. II, 2, 89; *heterogaster* Thoms. and *pleuralis* Thoms. Eug. Resa 497—498; *triligatus* Walk. J. Pr. Lin. Soc. I, 19. The true *S. balteatus* occurs in Sumatra (v. d. Wulp, Sumatra Exp. 33). I cannot identify my species with any of the above quoted descriptions; at the same time, the bad state of preservation of my specimens prevents me from describing them.

Prof. Rondani (Ann. Mus. Civ. Genova, VII, 423) identified a species from Borneo with *S. neglectus* Wied. A. Z, II, 134 (patria ignota). I compared his type in Genoa with Wiedemann's description and found that the identification cannot be sustained, being merely based on

Wiedemann's latin diagnosis. As far as I can remember, one of my species is identical with that species of Prof. Rondani's.

*Syrphus aegrotus* (F.) Wied. (Compare O. S. Enumer., 49). Three specimens, in two of which there is no hyaline space at the base of the wing, a case mentioned by Wiedemann already, as a variety.

*Sphaerophoria* ♂ ♀, two specimens.

*Baccha pedicellata* Dol. 1 Bijdr. 9 (Java). One specimen.

*Baccha* sp. A fragment; the species allied to *B. pedicellata*, but different.

*Baccha* n. sp. A single male; differs from all the described asiatic species by its uniformly brownish wings.

*Ascia* sp. A fragment.

*Eristalis errans* F. A dozen specimens (5 ♂, 7 ♀.)

*Eristalis*. Three species, represented by one specimen each.

*Helophilus* ♂ ♀, two specimens (in bad condition). Must resemble *albiceps* v. d. W., but cannot be the same species.

*Helophilus celeber* n. sp. ♂. *Eyes glabrous, separated by a moderately broad front; thorax with four yellow stripes; abdomen red, with black triangles on the posterior part of segments 2-4; legs yellowish-red; hind tibiae incrassate.* Length 11 mm.

Face silvery, descending straight in the profile from the antennae to the oral margin; a black, shining triangle above the antennae, enclosed between the silvery lower frontal orbits, which meet before the beginning of the narrow portion of the front, and assume there a more golden tinge; the upper, narrower part of the front is black, slightly yellowish-pulverulent in the middle; it gradually expands towards the vertex, where is a little broader than the ocellar triangle. Antennae bright yellowish-red; arista reddish at base, glabrous. Mesonotum with four yellow stripes, contiguous near the posterior margin, in such a way that the intervening three velvet black spaces end in a point posteriorly. Scutellum black (? soiled in the specimen). Abdomen red;

on the first segment a small transverse black spot on each side; on the posterior portion of the second and third a transverse black stripe attenuated on each side and reaching the lateral margin, expanded in the middle in the shape of an obtuse triangle; a black spot or spots, representing a vestige of a similar stripe, on the fourth segment; the large male hypopygium yellowish-red. Legs yellowish-red; hind femora strongly incrassate, brown at tip; hind tibiae strong, arcuate, brown, yellow at base, and with an obsolete yellowish ring in the middle; hind tarsi brownish at tip. Wings with a yellowish tinge. — A single male.

NB. The straight silvery face of this species, neither excavated under the antennae, nor gibbous above the mouth, will render it easily recognizable.

### Graptomyza.

This genus was established by Wiedemann (Nov. Dipt. Gen. 1820; and A. Z. II, 206) for *G. longirostris* and *brevirostris* from Java. It is allied to *Volucella*; it has the same characteristic conical prolongation of the face, with a distinct notch at the tip. The principal differences are: the structure of the head, the eyes being separated by a broad front in both sexes, and the venation. The latter resembles that of *Ascia* and *Microdon* in the rectangular curvature of the ends of the fourth and fifth veins; the second vein ends in the costa and not in the first vein; the so-called spurious vein is often absent (especially in the group with a subglabrous arista); sometimes feebly marked. The scutellum shows a characteristic concavity in the middle of the disc. The abdomen is convex, in some species remarkably gibbous; the dorsal plates, on the sides, are more or less curved under the abdomen, as in *Volucella*; but the ventral plates are much smaller than in that genus, the large intervals on both sides being occupied by the connecting membrane, (not unlike *Calliphora*). In the species of the group of *G. ventralis* the abdominal dorsal incisures are very little perceptible, so that the segments seem to be soldered together; this is much less the case in the group of the smaller species.

The antennae have the first joint very short; the second but little longer (like the antennae of *Rhingia* and *Volucella*); the third joint is many times longer than the two first taken together, more or less linear in shape; the upper side in some species is distinctly concave in its outline, the lower one showing a corresponding curvature (see J. Proc. Lin. Soc. I, Tab. VI, f. 4c, the antennae of *G. inclusa* Wk.). The arista, inserted more or less near the base of the third joint, is either distinctly plumose, or microscopically pubescent; whether it is absolutely glabrous in some species (it is represented so in *G. inclusa*) I have not ascertained.

The proboscis seems to be of different length in different species; the labella are long, slender and apparently very movable.

The species *inclusa*, *gibbula*, *meliponaeformis* and *brevirostris* (Arista bare, or microscopically pubescent) are very much alike in coloring, and differ chiefly in the color of the scutellum and of the legs. In the same way *G. ventralis*, *microdon*, and some undescribed species form a natural group, provided with a plumose arista. But *G. tibialis* Wk. is said to have a plumose arista, although, on account of its coloring, it would belong to the first group; *G. interrupta* Wied. on the contrary, is said to have a bare arista, although its coloring would refer it to the second group. And thus a natural grouping cannot to be arrived at. For this reason I do not make use of the genus *Baryterocera* Walk. J. Pr. Lin. Soc. I, 123, Tab. VI, f. 4 with the species *inclusa* (Borneo) for type, which must be very like, if not the same, as *G. brevisrostris* Wied.

The following table is prepared principally from descriptions and is therefore liable to error.

### Synopsis of the **Graptomyzæ** of the Indo-malayan Archipelago.

Arista bare (or microscopically pubescent).

Wings with black crossbands or spots.

Femora black.

Scutellum black . . . . . *gibbula* Wk.

Scutellum yellow, w. black margin . *meliponaeformis* Dol.

Femora yellow, with black tips.

*brevirostris* W.

*inclusa* Wk.

Wings without black bands or spots.

Prevailing color of the abdomen black *interrupta* W.

Abdomen yellow, with a brown cross-

band and brown spots . . . . *literata* n. sp.

Arista plumose.

Abdomen without longitudinal black stripes.

A black stripe on the rostriform pro-  
longation of the face.

Femora yellow . . . . . *ventralis* W.

Front femora with black bands . . *tibialis* Wk.

No black stripe on the rostriform pro-  
longation . . . . . *microdon* n. sp.

Abdomen with longitudinal black stripes.

Abdomen with more than three stripes *longirostris* W.

Abdomen with three black stripes . . *lineata* O. S.



*Graptomyza literata* n. sp. *Arista* with a microscopic pubescence; abdominal segments 2-4 each with three large brown spots; wings subhyaline, slightly yellowish, unicolorous. Length about 4 mm.

Face brownish-yellow, with a black stripe between the root of the antennae and the edge of the mouth; the sides (under the eyes) also black. Antennae reddish, upper edge of third joint brownish. Thoracic dorsum black, with a bronze-colored metallic reflection; humeral and postalar callosities honey-yellow; scutellum black. Abdomen pale honey-yellow; the three blackish-brown spots on the second segment are contiguous, forming an uninterrupted crossband, whose posterior side is nearly contiguous with the incisure, and the anterior side projects in three lobes, the intermediate one of which is truncate at tip; on the third segment the three spots are subcontiguous; the middle one square, the lateral ones oval and placed obliquely; on the fourth segment the spots are longitudinal, nearly parallel to each other, crossing the segment like three broad stripes; a narrow brown border runs along the lateral margin from the second to the fourth segment, coming in contact with the brown spots on each segment which are nearest to it. Wings subhyaline, slightly yellowish, unicolorous; stigma yellow; veins likewise. Legs: coxae and femora blackish brown, tip of the latter reddish (to a greater extent on the first pair); tibiae reddish-tawny, black at the end; hind tibiae, except the extreme base, altogether black; tarsi reddish-tawny. — One specimen; female?

*Graptomyza microdon* n. sp. ♂ ♀. *Arista* plumose; abdomen very gibbous; wings yellowish, unicolorous; legs honey-yellow, tips of tarsi and of front and hind tibiae black. — Length about 10-12 mm. (difficult to measure on account of the great curvature of the body).

Face and rostriform epistoma pale honey-yellow; the latter subconically produced, distinctly gibbous, slightly brownish on each side; front more or less brown, yellowish immediately above the antennae; the latter brownish-red, darker along the upper edge of the third segment. Thoracic dorsum yellowish-pubescent; ground color brownish, shining, with some metallescent reflections; humeral and postalar callosities yellowish. Pleurae honey-yellow, with a shining black spot on the mesopleura, connected with the black, shining pectus. Abdomen black, shining, finely punctate and with more or less well marked brownish-yellow crossbands as follows: first segment brownish-yellow, with a black mark on each side, near the hind margin; the anterior half of the second segment is occupied by a curved crossband, reaching

from side to side, but attenuated at both sides, so as to leave the anterior corners of the segment black; it is subinterrupted in the middle; a similar crossband on the third segment is much less distinct (in one of the specimens only its ends are visible, the middle remaining black); the sides of the third segment are brownish-yellow, but this color is partly concealed under a dense, short golden-yellow pubescence; a black triangle occupies the middle and end of the segment. The abdomen is very gibbous and the fourth segment is nearly as long as it is broad, almost circular in shape. Wings unicolorous, with a yellowish tinge; stigma of a more saturate yellow. — Two specimens.

NB. Allied to *G. ventralis* Wied. (II, 207, Java), which however has three black stripes on the rostriform epistoma, altogether black tibiae, a differently colored abdomen etc.

*G. tibialis* Wk. J. Pr. Lin. Soc. III, 95 and IV, 118 (Celebes) also seems to belong in this group, but has a black line on the rostrum; „tibiae and anterior femora with black bands.“ The specimen from Java, mentioned by me in the Enumer. etc. 51 likewise belongs here, but has the femora (except at the tip) black.

The color of the front and of the abdomen of *G. microdon* must be variable; it is different even in my two specimens. The gibbous abdomen and the shape of its fourth segment remind one of *Microdon*.

*Graptomyza* spec.; one specimen. Must resemble *G. ventralis* Wied. II, 207 (Java) very much, especially in the characteristic yellow stripes, parallel to the lateral abdominal margin, on each side; but the proximal half of the femora is black, the tarsi altogether black; the rostriform epistoma has only a very weak median brown stripe and no perceptible gibbosity; the median yellow stripe on the abdomen is wanting etc. As it is evident that the species of this group are variable in their coloring, it is necessary to ascertain the possible limits of this variation, before describing many new species.

(Fortsetzung im nächsten Heft.)

Maldrich

## Diptera from the Philippine Islands

brought home by Dr. Carl Semper,

and described by

C. R. Osten Sacken.

(Fortsetzung aus Bd. XXVI Heft I)

## Milesia.

South Eastern Asia, and especially the Indo-Malayan Archipelago seem to be the real home of this handsome genus. Thirteen species from the Archipelago have already been described; to these I add now three from the Philippine Islands; one more is known from Japan. From the other parts of the world I know of only two European species and one north-american; a second north-american species, described by Macquart, may be merely a variety. The *Milesia canusium* Wk., from the Cape, does not seem to be a *Milesia* in the narrower sense; nor the *M. bilineata* Wk. List, III, 566 from New Zealand. Whether there are some true *Milesiae* among the South-American species referred by authors to that genus, I am unable to tell; by all means there are not many.

When Rondani (N. Ann. di Bologna 1844) introduced the genus *Sphixea* for *M. fulminans*, restricting the genus *Milesia* to *M. diophthalma*, he was not aware of the existence of the genus *Spilomyia* Meig. Illig. Mag. 1863, introduced for that very species *M. diophthalma* and which therefore must be retained for it. The arrangement proposed by Schiner to restrict *Milesia* to *M. crabroniformis* and *fulminans* and *Spilomyia* to *M. diophthalma*, *vespiformis* etc. is quite satisfactory, and should be retained; it has been explained at length by Schiner in his *Diptera Austriaca*, III, Syrphidae, p. 166 (Verh. Zool. Bot. Ver. 1857<sup>1</sup>).

The identification of the thirteen indo-malayan species from the descriptions is somewhat difficult, because they are often closely allied and it is sometimes hard to decide whether the observed differences are

<sup>1</sup>) It is only after the publication of Dr. Schiner's work that Rondani became acquainted with *Spilomyia* M.; he insisted nevertheless upon his own arrangement. (Rond. Dipt. Exotica, in Archivio per la Zool. Modena 1863.)

to be considered as specific or not. I have attempted to construct a Synopsis of these species, in using which it must be borne in mind that it was based principally on descriptions; the division: scutellum with, or without a well-defined yellow margin, -- especially, is somewhat vague. This table will at least help to recognize my own species and to indicate their affinities more clearly.

Synoptic table of the species of **Milesia** from the Indo-Malayan Archipelago and the Philippine Islands.

Hind femora with a spine.

Scutellum without a well-defined yellow posterior margin.

Thorax with more or less distinct yellow or gray longitudinal stripes.

Face silvery; thorax with distinct yellow longitudinal stripes  
*Diardi* Voll.

Face yellowish-sericeous; thorax with weak gray stripes  
*Doriae* Rond.

Thorax without longitudinal stripes.

Wings unicolorous . . . . . *gigas* Macq.

Apical quarter of the wings brown . . . . . *apicalis* Voll.

Scutellum with a well-defined yellow posterior margin.

Thorax with transverse yellow bands (yellow margin of the scutellum inconspicuous).

Three yellow crossbands on the abdomen  
*Reinwardtii* W.

Only one yellow crossband on the abdomen  
*Ritsemae* n. sp.

Thorax with longitudinal lines.

The prevailing color of face, front and legs is black  
*limbipennis* Macq.

The prevailing color of face, front and legs is not black.

The two short longitudinal lines of the disc of the thorax are whitish . . . . . *fuscicosta* Bigot.

The two short longitudinal lines on the disc of the thorax are yellow.

The three yellow abdominal crossbands are so broadly interrupted, that they appear more like lateral spots  
*macularis* W.

The three yellow abdominal crossbands are very little or not interrupted . . . . . *conspicienda* Wk.

Hind femora without spine.

Apex of the wings conspicuously darker *Bigoti* n. sp.

Apex of the wings concolorous or only slightly darker.

Thorax with three yellow crossbands.

The third abdominal crossband is interrupted

*flavifacies* Bigot.

All the crossbands are not interrupted

*Semperi* n. sp.

Thorax yellowish-sericeous anteriorly, with a longitudinal dark stripe, bearing a longitudinal yellow line in the middle

*Meyeri* Jaenn.

NB. Are not mentioned in this Synopsis:

*M. undulata* Sn. v. Voll. (Japan), it has a red thorax, with a black design upon it; hind femora?

*Zaniel* Wk. (Borneo), which, if the hind femora are without spine, should be placed near *Bigoti* n. sp.

*vespoides* Wk. (Singapore), with a very peculiar coloring of the abdomen: „a broad luteous crossband, which occupies rather more than half the hind part of the 2<sup>d</sup> segm. and the fore half of the 3<sup>d</sup>.“ Hind femora? Is it a *Milesia*?

*Milesia Semperi* n. sp. ♂ ♀.

Ground-color of the face brownish-yellow, but concealed (except a glabrous stripe in the middle) under a yellowish-white sericeousness; oral margin, under the cheeks, dark brown or black. Front (♀) golden-yellow pollinose, except a glabrous, yellowish-brown space above the antennae and a black, narrow stripe, connecting that space with the black vertex. In the ♂, the anterior end of the vertical triangle is yellowish sericeous, and the remainder black. Antennae brownish-red, third joint brown; arista brown, reddish at base. Thoracic dorsum dark brown, with three transverse, golden-sericeous stripes (at the anterior and posterior margins and in the middle); the first is slightly interrupted in the middle. On the meso- and sternopleura two connected pale golden-sericeous patches, forming an irregular vertical stripe. Scutellum dark brown or black, with a narrow, yellowish edge. Abdomen black, with yellow uninterrupted crossbands at the base of segments 2, 3, 4; they are narrower in the middle (on the lateral margin they occupy a little more than one third, in the middle a little less than 1/4 of the length of the segment); they are visible on the ventral side of the segments also; in the female, the first and second crossbands have a distinct notch on the posterior margin, in the middle.

The remaining portion of the segments is deep velvet-black, opaque anteriorly, and black subopaque, or faintly shining posteriorly; the latter half of the fourth segment is more shining and sometimes reddish, as well as the ♂ hypopygium. Halteres with a pale yellowish knob. Legs brownish-yellow, more or less mixed with brown; hind femora incrassate, especially in the male; without spine on the underside. Wings with a dingy brownish-yellow tinge, more brownish on the apical third, and more ochraceous along the costa; first basal cell subhyaline. Length 18—23 mm. — Two males, one female.

NB. Must be very like *M. flavifacies* Bigot (Borneo), from which it differs in having the third abdominal yellow crossband not interrupted; moreover, *flavifacies* is said to have a yellow venter and metallic blue reflections on the abdomen.

*Milesia Bigoti* n. sp. ♂ ♀. *Face silvery, abdomen with alternating black opaque and bluish-black somewhat shining crossbands; a narrow, interrupted, obscurely marked yellowish-brown crossband on the fourth segment; hind femora without spine; wings reddish-yellow, apex infuscated.* Length: ♂ 22—23 mm.; ♀ 18 mm.

Face silvery; cheeks shining black, as well as a spot above the oral margin, in the middle; frontal triangle in the ♂, silvery; vertical triangle black, its apex golden-sericeous; in the ♀ front and vertex are black; frontal orbits golden-sericeous. Antennae brownish-red. Thorax black, subopaque, with three narrow, golden-sericeous crossbands (anteriorly; in the middle, along the suture; and posteriorly, before the scutellum); the first is a little interrupted, the second sub-interrupted; the sides of the mesonotum have a slight bluish-metallic reflection. Scutellum black, but little shining. A silvery sericeous vertical band across the meso- and sternopleura. Halteres reddish. Abdomen black, opaque in the middle of the segments; at the base of segments 2—4 a narrow, shining black crossband, slightly interrupted in the middle and a little expanded at the sides, replaces the yellow crossbands that occur in the same place in other species (for instance *M. conspicienda* Wk., or *Semper* OS.); on the fourth segment alone, the black, shining crossband bears an obscurely marked reddish, interrupted crossband in the middle; the posterior portions of segments 2—4 are more or less shining, on segment 4 sometimes obscurely reddish; all the shining portions of the abdomen have a slight bluish reflection, which is hardly apparent in some specimens. Femora black, reddish-brown at the end; the hind pair, above, have a blue metallic reflection, which is very bright in some specimens and hardly apparent

in others; no spines on the underside; tibiae reddish-yellow, the hind pair brown in the middle; tarsi more or less dark brown, reddish at tip. (In my female specimen the four anterior femora are brownish-red, with very little black at the base.) Wings with a bright reddish-yellow tinge; more saturate anteriorly; the apex, immediately beyond the anterior crossvein, is clouded with brown; posterior margin pale grayish-brown. — Three males and one female.

NB. The coloration of the wings of this species must be very like that of *M. Zamiel* Wk. (Borneo); but the black legs and antennae, and the two abdominal yellow crossbands of the latter prove that it is a different species.

*Milesia Ritsemae* n. sp. ♀. Face silvery, abdomen with alternating black opaque and shining bluish-black crossbands; a very narrow, interrupted reddish crossband on the second segment; hind femora with a spine; wings brownish-yellow. — Length 24 mm.

Face black in the middle, silvery on the sides; front and vertex black, frontal orbits yellowish-sericeous; sides of the antennal tubercle yellowish, antennae brown. Thorax black, subopaque, with slight bluish reflections on the sides of the dorsum and on the pleurae; with three narrow, yellowish-sericeous crossbands; the first, between the humeri; the second along the suture; the third in front of the scutellum; humeri whitish sericeous. Scutellum bluish-black, with a brownish-yellow rim. A yellowish-white sericeous vertical band across the meso- and sterno-pleura. Halteres reddish. Abdomen bluish-black, shining; black opaque in the middle of the segments 2—4; first segment metallic blue, shining; a narrow, obscurely reddish interrupted crossband at the base of the second segment. Front and middle femora yellowish-red, black at the base; hind femora bluish-black, reddish at tip; with a spine on the underside; front and middle tibiae reddish-yellow, clothed with a microscopic golden-yellow pubescence; hind tibiae brown in the middle, reddish at the ends; tarsi brownish-red, more brownish in the middle; the last pair dark brown. Wings with a brownish-yellow tinge, more reddish-yellow anteriorly. — A single female.

*Milesia* sp. (a single male), is very like *M. conspicienda* Wk. (Celebes). The specimen of the latter (♀) mentioned by me in the Enumer. etc. 56, and now in the Museum in Genoa, is smaller, the yellow edge of the scutellum is less broad, the crossband on the second abdominal segment is a little broader; the longitudinal thoracic yellow lines are somewhat obsolete anteriorly; the brown color of the

costal portion of the wing is more distinctly limited by the third vein and not gradually evanescent etc. But all these differences may be sexual, or individual aberrations.

### Pipunculidae.

*Pipunculus*. Grayish, antennae and legs yellowish; fourth vein furcate; a single damaged male specimen, different from the three asiatic species hitherto described (*P. amboinalis* Wk., J. Pr. L. Soc. V. 150, Amboina; *armatus* and *abscissus* Thomson, Eug. Resa, 514, China).

### Muscidae Calyptratae.

The number of species of this division contained in the collection, is about forty. Among them are represented the genera *Dexia*, *Prosenia*, *Masicera*, *Miltogramma* and several other Tachinidae; several Sarcophagae, Luciliae, Idiae, Pyrelliae and Muscae; a number of Anthomyiae and one Lispe. Unfortunately most of the specimens are in a very bad condition. I will content myself with enumerating the few species which I could name, or which I found already named in the collection.

*Musca conducens* Walk. (J. Pr. Lin. Soc. IV, 138, Celebes). Was so named by the author, and may really be that species.

*Idia muscina* Rond. (Syn. Stomorhyna muscina Rond. Ann. Mus. Civ. Genova. VII, 429; Borneo). It is not said in the description that the pale crossband on the second segment is interrupted; nevertheless I believe the identification to be correct, as I remember seeing the type in the Museo Civico.

*Idia lateralis* v. d. Wulp (Sumatra Exp. 44). A single, very badly preserved specimen. I am not quite sure of the determination, as the tibiae are brownish-yellow at the base only.

*Ochromyia ferruginea* Dol. (2 Bijdr. 38, Tab. X, f. 3, Amboina). Sixteen specimens (♂ ♀); the abdomen varying from dark metallic blue (testaceous at base only), to a uniform brownish testaceous. For the Synonymy, compare my Eruener. etc. 61 and Mr. v. d. Wulp, Tijdschr. etc. XXIII, 174.

*Lucilia duw* (Esch.) Wied. A. Z. II, 399. Seven specimens.

*Lucilia ditissima* Walk. (J. Pr. L. Soc. V, 245 (New-Guinea). So determined by Mr. Walker, although the most striking character of



the species, the contrast in the coloring, between the proximal and distal half of the wing, the latter being more brown than the former, is not mentioned at all in the description. Ten specimens.

*Lucilia fortunata* Walk. (J. Pr. Lin. Soc. IV, 137; Celebes). So determined by Mr. Walker. I believe it is *L. nosocomiorum* Dol. A single specimen.

*Rhynchomyia indica* Rond. (Ann. Mus. Civ. Gen. VII, 424; Borneo). Two Specimens.

*Sarcophaga brevis* Wk. and *sericeonitens* Wk., so determined by the author.

### Sciomyzidae.

*Sepedon javensis* R. Desv. Myod. 677. I have four males and as many females, which agree exactly with an original colored drawing of this species by Doleschall, that I possess. The males alone have the front tarsi enlarged, and I do not understand why Macquart, D. E. Suppl. III, 59, attributes this character to the females also. Nor do my females have the oblique posterior crossvein, mentioned by Macquart, l. c. On comparing these specimens with a single male, which I have from Sumatra (O. S. Enumer. 63) I perceive that the latter has the distal third of the front and middle femora deep-black and the middle tibiae of the same color, the halteres whitish; while the specimens from the Philippines have the extreme tips only of the femora darker and the middle tibiae reddish; the halteres more yellow. Robineau Desvoidy's description („Tarses et tibiae noirs“) rather applies to the specimen from Sumatra. Mr. v. d. Wulp, whom I consulted on the subject, kindly informed me, that both forms occur among the numerous specimens in the Leiden Museum; that there were also transitions between them; that the same form had been received from different islands and different forms from the same island. For this reason he is of the opinion that until sufficient plastic differences are discovered, it is safer to treat these forms as mere varieties. I cannot but concur with this opinion.

### Psilidae.

*Chyliza selecta* n. sp. ♂ ♀. *Front reddish with black orbits; thorax brown, humeri, longitudinal stripe on the pleurae, and scutellum brownish-yellow; prevailing color of the legs yellowish; apical third of the wings infuscated.* Length 5—6 mm.

Head, including the antennae, reddish-yellow; in the middle of the face a black or brown spot, emarginate below, narrower above, not reaching the foot of the antennae, nor the peristoma; frontal orbits black, which color stops before the vertex (in a line with the ocelli); antennal arista plumose. Thorax brown, with a microscopic, appressed golden-yellow pubescence above; humeri and scutellum yellow; a brownish-yellow, often indistinct, stripe begins at the corner of the scutellum, passes above the root of the wing and stops at the thoracic suture, where it is a little curved towards the inside; a similar, brownish-yellow, often indistinct, stripe along the dorso-pleural suture; pleurae brown, with a longitudinal yellow stripe in the middle, which stops between the root of the wing and the middle coxa. Legs brownish-yellow, including the coxae; front tibiae and tips of all the other tibiae brown; sometimes also more or less distinct brown marks in the middle of the femora. Wings subhyaline, the apical third brownish, in the middle of the wing this tinge nearly reaches the anterior crossvein; it is much less extended near the margins. Halteres reddish-yellow. Abdomen brown, pubescent, sometimes the last segments yellowish on the margins. Venation like *Chyliza vittata* M.; only the posterior crossvein less oblique and the anal cell a little shorter in comparison to the second basal. — Three males, one female. —

### Micropezidae.

The best characters for the classification of this interesting family may be derived from the structure of the male genital appendages and the relative length and shape of the abdominal segments; but, unfortunately the shrinkage and distortion of these organs in dried specimens renders their study very uncertain. Next to these, the chaetotaxy affords some good characters for the description of groups and genera.

The chaetotaxy of the Micropezidae, as far as I can make it out from the small materials accessible to me, may be described as follows:

All the genera that I have examined have one character in common, the absence of the ocellar pair of bristles. *Tanypeza* which has it, can hardly be considered a Micropezid.

1. The two pairs of vertical bristles are present, although sometimes far apart, on account of the development of the back head. The post-vertical pair is often, but not always, present. One fronto-orbital bristle is inserted a little below the ocelli, (in *Grammicomyia*, a little higher than the ocelli; I perceive none in *Micropeza*); and generally one, or even two (*Calobata territa* n. sp.) lower down; sometimes the latter bristles are very minute, (*Nerius duplicatus*).

NB. The postvertical bristles are absent in the european Calob. cibaria, ehippium, as well as in most of the Taeniapterae from South-Eastern Asia; it is remarkable that among the latter those with dark hind femora have them (Calob. eclipsis O. S., tipularia Wk., monedula O. S., nigripes v. d. W.); I also find them in the North American Taenioptera geometra R. D. In Nerius fuscus the cephalic bristles are exceedingly small and remote from each other, on account of the longitudinal development of the head.

II. No humeral; two posthumeral bristles in the european Calobatae (cibaria, ehippium), in the exotic Taeniapterae, in Grammiomyia and Eurybata semilauta; I see only one posthumeral in Micropeza, Nerius (of the group of duplicatus, inermis etc), and in Eurybata hexapla; in some specimens of Nerius fuscus I perceive a very weak second posthumeral; it is probably very deciduous, because in most specimens it does not exist.

Two supra-alar bristles (the second and third); in Grammiomyia I perceive three.

Two praescutellar (in some species there is a second pair in front).

Two scutellar (four in Telostylus and Nothybus).

III. The pleural bristles are represented sometimes by a single strong sternopleural bristle, above the middle coxae (Micropeza), or a weak one (Eurybata hexapla); sometimes there are two, three or more weaker bristles placed in a row (the european Calobatae); or a distinct fringe of numerous bristles (Taeniaptera). In Nerius I perceive no pleural bristles at all.

The pile on the sternum, especially in front of the middle coxae, also varies in different genera, but is often difficult to observe; there is a great deal of it in the european Calobatae; a fringe of stiff bristles replaces it in Taeniaptera; in Eurybata only a few bristles are apparent. On the coxæ, some characteristic bristles deserve attention: Taeniaptera has a row of a few stiff bristles at the extreme front end of the fore-coxae, which, in Eurybata, seem to be replaced by a single hair.

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Before proceeding with the description of the species from the Philippine Islands, I will insert a notice on some little-known genera of Micropezidae from South-Eastern Asia, the types of which I have had the opportunity to examine in different collections.

*Nothybus* Rondani, Annali Mus. Civ. Genoa VII, 439 (type, *N. longithorax*, Borneo), is represented by two specimens in the Museo Civico. It is a very remarkable form, which will be easily distinguished

by the enormous development of the thorax in front of the fore-coxae and the unusual position of the prothoracic stigma, dependent on it.

Head not much developed behind the eyes; antennae: basal joints short, of the ordinary structure, third joint oblong; arista short-plumose; labella rather small. — Thorax unusually extended in front of the root of the wings and of the fore-coxae, so that its anterior portion is nearly twice as long as the posterior; the prothorax has a large development on the underside of that anterior portion, so that the prothoracic stigma is placed midway between the front coxae and the anterior end of the thorax. The scutellum is rather large, triangular, and bears four strong bristles; the metanotum is raised in the shape of a hump; the portion of the mesothorax in front of the scutellum and round the roots of the wings bears a number of strong bristles<sup>1</sup>). The legs are comparatively short (much shorter than in *Nerius fuscus*); the fore coxae are close by the middle coxae and in a vertical line under the root of the wings. — Wings, auxiliary and first veins as in *Calobata*; the second is more distant from the costa, and its tip is very near the apex, far beyond the posterior crossvein; the third and fourth veins are somewhat diverging; the third ends in the apex, the fourth exactly opposite the tip of the second; second basal cell closed; anterior crossvein not oblique. — Abdomen comparatively short, the male genitals must be small and hidden, because I could not perceive the usual appendages of the *Microspezidae*. (I suppose the specimens to be males; Mr. Rondani does not mention the sex).

*Grammicomyia* Bigot (Rev. et Mag. de Zool. 1859, No. 7; Ceylon). Although closely allied to *Calobata* (Subg. *Taeniptera*) it shows some well-marked plastic characters of its own, and may at once be accepted as a good genus. It is represented by a single species, *G. testacea*, a small yellow fly with a brown spot on each side of the front. I received it in two specimens through the kindness of Dr. C. A. Dohrn in Stettin. — It differs from the *Taenipterae* of Southern Asia in its more slender shape, in the form of its head, which is comparatively large, more detached from the thorax, oblong, flattened from above, its vertical diameter being much shorter than the longitudinal; the head projects strongly in front of the eyes, in consequence

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<sup>1</sup>) At the time when I took this note in Genoa, I had not worked out my Chaetotaxy, and for this reason I cannot describe these bristles with more accuracy.

of which the face is very much retreating. The antennae are rather distant at the base; the third joint narrow, linear, several times longer than broad; the arista glabrous. (I cannot perceive any pubescence with my strongest lens.) The thorax is proportionally longer, with a short, necklike prolongation in front, which makes the head appear more detached from the thorax, than in Taenioptera. The prothorax forms a collar-like ridge, separated by a distinct depression from the mesonotum. — Grammicomyia resembles Taenioptera in having a distinct clypeus, no transverse swelling on the upper part of the metanotum, a fringe-shaped row of hairs on the pleura above the middle coxae, etc. The venation is that of a typical Taenioptera; the anal cell oblique; the anterior basal crossvein nearly in a line with the posterior, a trifle more proximal; the tip of the second vein but very little more distal than the posterior crossvein; the first posterior cell very much attenuated at the end. The chaetotaxy likewise does not differ from the normal one of Taenioptera: two vertical and two fronto-orbital bristles on each side; no postvertical; the occiput (very much in view, in consequence of the flattened shape of the head) is beset with short, black, pile; this pile also exists in Taenioptera, but is less visible. The upper fronto-orbital bristle is inserted a little higher than the ocelli, on account of the unusually low position of the latter. Two posthumeral bristles; three supra-alar (in the Taeniopterae I know of, only two); one pair of praescutellar (far apart), and one pair of scutellar bristles.

NB. In Mr. Bigot's description of *G. testacea*, a slip of the pen has occurred; in the second line, read *vertice*, for *fronte*; and *fronte* for *facie*.

*Telostylus* Bigot, Rev. et Mag. de Zool. 1859, is also a good genus, which, in outward appearance, somewhat resembles the smaller forms of *Nerius* (*duplicatus*, *striatus* etc.), but is easily distinguished from them by the structure of the third antennal joint which is pointed, and bears the tomentose arista at the tip, and by the presence of four bristles on the scutellum, instead of two, the anterior pair being much smaller than the apical one. In other respects, the chaetotaxy is the same as in those species of *Nerius*. The venation is that of *Nerius*; the tip of the second longitudinal vein is near the apex, far beyond the posterior crossvein. Besides the *T. binotatus* Bigot, I describe below a second species, *T. maccus*. *Coenurgia remipes* Walk. J. Pr. Lin. Soc. IV, 164, is a synonym of *T. binotatus*, published a few months later.

*Anacropsis* Bigot, Ann. Soc. Entom. Fr. 1866, 201, as I have shown in my note on the Diptera with an Achias-like development of the head, Ann. Mus. Civico di Genova 1882, Vol. XVIII, is a true Micropezid, closely related to Nestima. Not having seen any females, I cannot tell, whether they have the same extraordinary structure of the head, but I am inclined to doubt it. — Type: *Anacropsis Lorquini* Bigot. l. c., Island Waigiou (Synonym: *Phytalmia guttipennis* Walker, J. Pr. Lin. Soc. V, 269; New Guinea.) The species not being a Phytalmia, will have to be called *Anacropsis guttipennis* Walker, Mr. Walker's description being earlier.

*Taeniptera* Macq., S. à B. II. 491, was without necessity suppressed by Macquart himself in the Dipt. Exot. II, 3, p. 240. As Loew has shown (Loew, Besch. Eur. Dipt. III, 255, and my Catal. N. Am. Dipt. 2<sup>d</sup> edit. p. 259), it is the same as *Tanyptoda* Rond. (*Rainieria* Rond. olim) and the european *Calob. latifrons* and *calceata*, as well as a large number of exotic species, muss be referred to it. The true *Taenipterae* from Southern Asia that I have seen, have the following characters in common, in which they differ from the european *Calobatae* (sensu stricto): a microscopically pubescent, sometimes subglabrous arista not incrassate at the base; no transverse swelling on the upper part of the metanotum; the labella rather stout; a fringe of minute stiff bristles at the extreme front end of the fore coxae; a fringe-shaped row a bristles on the pleura, above the middle-coxae; a rather long and broad ovipositor of characteristic shape; a well-developed clypeus; nearly obsolete tegulae with an almost imperceptible fringe of cilia; an oblique anal cell; the posterior crossvein and the tip of the second vein are at nearly the same distance from the apex of the wing (or, if the latter is nearer, it is less than twice as near as the posterior crossvein).

The eight species from South-Eastern Asia, which I mention below as *Taenipterae*, all have white front tarsi, and the wings banded with brown. If I do not finally adopt *Taeniptera* as a generic name, it is because there are several species which are neither *Taenipterae*, nor *Calobatae* in the narrower sense, but about which I do not know enough to introduce for them separate genera. For this reason I continue to maintain the genus *Calobata* in the widest sense, as I did in my Enumeration.

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The following table give a survey of the grouping of the genera of Micropezidae, as far as I can establish it upon my scanty materials. The american genus *Cardiucephala* is omitted, because I do not

know it. *Calobata* is taken in the widest sense, including *Taeniaptera* and *Grammicomyia*, which I have characterised above<sup>1)</sup>.

## I. Antennal arista dorsal

(inserted near the base of the third joint).

A. Fore coxae inserted close by the two other pairs, but very far from the head, the thorax being conspicuously developed in front of them *Nothybus* Rond.

AA. Fore coxae inserted near the head, and at a more or less considerable distance from the two other pairs.

a. The two hind pairs of femora without minute spines on the underside, near the tip.

No crossvein between the second basal and the discal cells; a distinct sterno-pleural bristle

*Micropenza* Meig.

A crossvein between the second basal and the discal cells; no distinct sterno-pleural bristle; it is replaced by more or less numerous hairs on the pleura, above the middle coxae

*Calobata* Meig.

aa. The two hind pairs of femora are beset, on the underside, towards the tip, with a series of a very minute spines.

Upper portion of the metanotum in the shape of a transverse swelling . . . *Eurybata* O. S.

Upper portion of the metanotum in the shape of a conical projection

Head of the male with an enormous lateral development (Achias-like) . . . *Anaeropsis* Bigot.

Head of the male of an ordinary shape

*Nestima* O. S. Enum.

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<sup>1)</sup> Professor Rondani's genera *Mimegralla*, *Grallopoda*, *Grallo-myia*, *Grallipeza* (Nuovi Ann. Sc. Nat. Bologna 1850; Osservazioni etc. pag. 16—19) were established for the most part in the absence of any specimens, merely upon comparison of Macquart's defective figures of the venation. Thus the genus *Grallipeza* is established for *Calobata unimaculata* Macq. Suppl. I. 215 (S. Amer.), solely because in the figure of the wing (l. c. Tab. XIX, f. 4) the crossvein closing the second posterior cell is omitted, although the absence of this crossvein is not mentioned in the description, and very probably is only accidental. I do not think that genera established in that way can be taken into consideration. The wingless genus *Calycopteryx* Eaton, Transit of Venus Exp. Zool. Tab. XIV, belongs near *Calobata*.

## II. Antennal arista apical or subapical.

A. First antennal joint many times longer than the two others taken together . . . . . *Longina* Wied<sup>1</sup>).

AA. First antennal joint not longer than the two others, taken together.

Third antennal joint truncate at the tip, with the arista on the truncature . . . . . *Nerius* Fab.

Third antennal joint pointed, with the arista on the point; scutellum with four bristles . . . . . *Telostylus* Bigot.

Of the ten species, contained in the collection from the Philippine Islands, five may be referred to *Calobata* in the wider sense; two to *Nerius*, one to *Telostylus*; for two species I form the new genus *Eurybata*. Of the five *Calobatae*, four belong to the group *Taeniaptera* Macq.; the fifth must be referred to a different group, for which however I am not prepared yet to introduce a new genus. For this reason I left all the five species in the old genus *Calobata*.

In the analytical table that follows, the species mentioned in my Enumeration etc. are also included, because several new characters are for the first time introduced here.

The terms anterior and posterior basal crossvein refer to the crossveins closing the second basal and the anal cells; compare Loew, Monogr. N. Am. Dipt. I, p. XXIV, fig. I, litt. p, q.

*Calobata*.

I. The distance of the posterior crossvein and of the end of the second vein from the apex of the wing is nearly the same (or, if the former is greater it is less than twice as great as the other).<sup>2</sup>)

No postvertical bristles; anterior basal crossvein a little beyond the posterior one.

A golden, sericeous stripe runs from the mesopleura to the middle coxae.

Antennae black . . . . . *chrysopleura* n. sp.

Antennae red . . . . . *galbula* n. sp.

<sup>1</sup>) *Macrotoma* Laporte (Ann. Sc. Nat. 1<sup>ère</sup> Serie XXV, 1832, p. 457, Tab. X, A.), from Cochinchina, is the same, or very nearly the same genus as *Longina* Wied., from Brazil. The descriptions and figures alone do not afford sufficient data for a close comparison.

<sup>2</sup>) The species of this group are *Taeniapterae*; the other characters, belonging to them have been mentioned above, on p. 198.



No conspicuous sericeous stripe on the pleura.

Front coxae and proximal third of front femora yellowish-red.

Tip of hind femora red *albimana* Dol.

Tip of hind femora black *prudens* O. S.

Front coxae and front femora black

*morbida* O. S.

Postvertical bristles present.

Anterior basal crossvein a little beyond the posterior one; on the wings one brown crossband, besides the brown apex . . . . . *nigripes* v. d. W.

Anterior basal crossvein a little before the posterior one; on the wings two brown crossbands, besides the brown apex.

Middle and hind femora brown with a distinct yellowish ring a short distance before the tip

*eclipsis* O. S. <sup>1)</sup>

Middle and hind femora brown, slightly paler at tip, but without distinct yellowish ring

*monedula* n. sp.

II. The distance of the posterior crossvein from the apex of the wing is more than twice the distance of the end of the second vein to the same apex; postvertical bristles present<sup>2)</sup>.

Prevailing colors dark; the narrow wings have three brown crossbands and a brown apex; the anal cell cut off square; arista plumose on both sides; hairs at the end of the front coxae (?) . . . *tipuloides* Walk.

Prevailing color yellowish-red; wings unicolorous yellowish; the anal cell somewhat oblique; arista plumose principally on the upper side; a single hair at the end of the front coxae . . . . . *territa* n. sp.

*Calobata (Taeniptera) chrysopleura* n. sp. ♂ ♀. Head dark metallic greenish or bluish; front with a broad, velvet-black spot, narrowed posteriorly, and reaching the occiput; upon it immediately

<sup>1)</sup> I give up *Calob. lunaria* O. S. Enumer. etc. 68, as preoccupied (*C. lunaris* Wied.), and call it *C. eclipsis*.

<sup>2)</sup> The two species of this division have only an artificial connection; both have a distinctly plumose arista and a traverse swelling on the upper part of the metanotum, under the scutellum.

behind the ocelli, there is a semicircular, pale golden-sericeous spot, which reflects the light in such a way, as to appear larger or smaller, according to the point of view; facial orbits reddish, or, in a certain light, silvery; palpi brown; antennae dark brown; third joint short, but little longer than broad, arista reddish at base, subglabrous (vestiges of a minute pubescence are perceptible in some specimens). Thorax dark metallic greenish, shining, more bluish towards the scutellum; on the mesonotum two subsolete stripes with a pale golden lustre, arising from a delicate pollen on the metallic ground color; they begin midway between the anterior margin and the mesonotal suture and run, with parallel sides, as far as the scutellum; their anterior ends are rounded off, and, at the suture, they are incised and somewhat interrupted; on each side, the interval between the stripes and the pleura is velvet black, which color also fills out the interval between the anterior end of the stripe and the humerus; on the mesopleura a large golden-sericeous spot is prolonged in the shape of a stripe towards the middle coxa; metanotum yellowish-sericeous. Abdomen black, with slight bluish reflexions; first segment pale yellowish sericeous; the second blackish on the proximal; the third on the distal half. Halteres with a brown knob; peduncle yellowish. Front coxae brownish, golden sericeous; front femora reddish-yellow at base; the remainder black, as well as the tibiae; front tarsi white, brown at the root only; the four hind legs yellowish-red; base of the femora more yellowish; three brownish rings on the femora, the one nearest the base being often the darkest; the two others generally subsolete; tarsi brownish. Wings yellowish-hyaline; a pale brownish crossband covers the posterior crossvein; its sides are parallel; the proximal side passes midway between the crossveins; apex slightly infuscated, as far as the tip of the second vein; the infuscation often obsolete; first posterior cell very much attenuated towards the apex, although open. Length 10—12 mm. (without the ovipositor). — Five males, four females.

*Calobata (Taeniptera) galbula* n. sp. ♂ ♀. Exceedingly like *C. chrysopleura*, but very easily distinguished by its bright yellowish-red antennae. Front coxae reddish-yellow (and not brown, golden-sericeous), the four hind tarsi brownish-yellow at the base, brownish towards the tips; palpi reddish; the pubescence of the arista a little more distinct; the first segment of the ovipositor much shorter; a corresponding difference seems to exist in the anal appendages of the male, but I cannot make it out distinctly.

NB. *Calob. splendens* Wied. II, 539 (also Schiner, Novara, from Ceylon) have many points in common with this species; still thorax and abdomen disagree.

*Calobata monedula* n. sp. ♀ Front ferruginous, vertex and occiput dark metallic blackish blue, as well as the fronto-orbital stripes, descending from the vertex on both sides of the ocelli; (in some specimens the metallic lustre disappears and the vertex appears only brownish); antennae black. Thorax black, with a slight bluish metallic lustre on the pleurae; humeri brownish; mesonotum clothed with a yellowish gray pollen, upon which two darker stripes are faintly perceptible; the fan of hairs above the middle coxae is black; halteres dark brown; abdomen black, with slight bluish metallic reflexions and broad fuliginous crossbands; ovipositor brown, as long as the whole abdomen. Legs brown; front coxae sometimes reddish; front tarsi white; the root of the middle and hind femora yellow; ends of the hind femora yellowish-brown. The wings (♀) are not longer than head and thorax taken together; first posterior cell closed, but not petiolate; the anterior basal crossvein is a little nearer the root of the wing than the posterior one; a feebly marked brown crossband runs between the tip of the first vein and the anal angle; another broader crossband has its straight proximal side immediately beyond the anterior crossvein; its ill-defined and somewhat convex distal side begins at the tip of the second vein and ends at the tip of the fifth; the extreme apex of the wing is also infuscated, but so that the interval between this infuscation and the second crossband is but little narrower than that crossband. Length (without the ovipositor) 8—9 mm. Three females.

NB. This species will be easily distinguished by its short wings (at least in the female); its very long ovipositor; the absence of the velvet-black spot on the ferruginous front; the position of the anterior basal crossvein, the comparatively short and slender legs, the hind femora of which, very slender on their proximal half, are slightly enlarged on the distal; the absence of a pale ring before the tip of the dark femora. It has a pair of post-vertical bristles.

*Calobata (Taeniaptera) nigripes* v. d. Wulp (Sumatra Exp. 54, Tab. III, f. 13). Agrees exactly with the description and figure, except that the thorax is somewhat bluish, and not pure black; the knob of the halteres is brown, but the peduncle yellowish; the abdomen, like the thorax, has bluish reflections. The arista on its proximal half, shows vestiges of a microscopic pubescence. A single female.

*Calobata territa* n. sp. ♂ ♀. Yellowish-ferruginous, abdomen darker; wings yellowish, unicolorous, femora brown at tip. Length: 7—10 mm.

Antennal scapus reddish-brown; third joint but little longer than

broad, dark brown, except in the upper corner, under the arista, where it is yellowish; arista black, slightly incrassate and yellowish at the base; plumose on the upper side only; front ferruginous, brownish around the ocelli, whitish-pollinose along the upper frontal orbit; the rest of the head, including proboscis and palpi ochraceous. Thorax yellowish ferruginous; abdomen ochraceous-brown; halteres yellowish. Legs yellow or reddish-yellow; tips of all the femora brown; tips of the four posterior tibiae and their tarsi brownish; the four hind femora are considerably longer than the abdomen; the front femora (in the male) are less than half as long as the hind ones, and beset, on the underside with a row of small spines; those of the female are comparatively a little longer and have no spines. Wings yellowish, a little more saturate along the costa; the tip of the second vein is far beyond the posterior crossvein; the first posterior cell is considerably coarctate, but not closed; the anterior and posterior basal crossveins are in a line; anal cell very little oblique. The male has a rather large ventral forklike appendage; the hypopygium itself is not large. The first segment of the ovipositor is about as long as the two preceding abdominal segments taken together. — One male, one female. \*

NB. The plumose arista, the presence of a transverse swelling under the scutellum, the very narrow clypeus, hardly projecting under the oral margin, the long second vein, the presence of only a single hair at the end of the front coxae and the absence of the fringe of hairs on the pleura, above the middle coxae (they are replaced by 3 or 4 slender hairs), distinguish this species from those of the genus *Taeniaptera*. There is a pair of postvertical bristles; the fronto-orbital are represented by a long upper one, and two lower ones, nearly as long as the upper one (at least it is the case in my female specimen); there are two posthumeral, a long scuteller pair etc. The first abdominal segment is shorter than in the *Taeniapterae*, and the first segment of the ovipositor of the female seems to be narrower at the base and broader at the tip, in other words to have more parallel sides (I say seems, because it is somewhat crushed in my specimen); the two posterior pairs of legs are comparatively longer.

### Eurybata

nov. gen.

Very like *Nestima* (O. S. Enumer. etc. 69); from which it differs in the structure of the metanotum, the upper portion of which, separated by a groove from the lower, has the shape of a transverse swelling, and not of a cone. The elongated, slender thorax, attenuate anteriorly almost in the shape of a cone, the long hind legs and long

narrow wings, are those of *Nestima*. The color of the two species described below is metallic or metallescent, while that of *Nestima polita* is dark brown. — The two pronglike ventral appendages of the male are less long and less rigid than in *Nestima*.

I describe *E. hexapla* as the type of the genus. *E. semilauta* is added, because it has the general shape and many characters with *E. hexapla* in common, although by and by, a separate genus may be established for it. The following description of the generic characters refers to *E. hexapla*; the differential characters of *E. semilauta* are added in brackets.

Head comparatively smaller than in *Calobata*, slightly produced on both sides of the vertex, with a concavity between [*semilauta*: no perceptible concavity], thus showing some resemblance to *Cardicephala* Macq.; cheeks narrow. Antennae: scapus short, third joint oblong, about twice as long as it is broad; arista short-plumose on both sides, but on its proximal half only [*semilauta*: arista plumose]; palpi slender; clypeus rather large, projecting [*semilauta*: palpi?]; clypeus almost concealed under the oral edge].

Thorax elongated, attenuated in the shape of a truncate cone in front; the mesonotum shows a slight shallow, transverse depression before its anterior end; the transverse suture is beyond the middle of the mesonotum, well marked; scutellum triangular; metanotum with its upper portion in the shape of a transverse swelling, separated by a distinct transverse depression. On the pleura, the sub-alar suture is distinctly marked; otherwise mesopleura and mesosternum appear smooth and coalescent, the usual suture between them being obsolete.

Abdomen elongated, slender; the pair of ventral appendages in the male slender, pointed, beset with minute hairs; ovipositor short, convex above [*semilauta*: ventral appendages of the male stouter at the base, then attenuated and button-shaped at tip; finely hairy; ovipositor short, flat].

Legs: front pair short, inserted near the head, rather distant from the two hind pairs; middle and hind femora but little shorter than the abdomen, of nearly equal length, beset with minute spines on the underside, towards the tip. [*semilauta*: the middle femora are considerably longer than the hind pair.]

Wings: narrow, comparatively long; second vein closely approximate to the costa in its whole course, ending not long before the apex, and far beyond the posterior crossvein; first posterior cell somewhat attenuated towards the tip, although broadly open; posterior crossvein very near the posterior margin; anterior crossvein before the middle of the distance between the end of the anal cell and the posterior

crossvein; the posterior basal crossvein (closing the anal cell) is very little oblique; the anterior basal crossvein (separating the discal cell from the second basal) is a little beyond the anal cell; the axillary angle of the wing is exceedingly small, not larger than the anal cell. [*semilauta*: wings of medium length and breadth; the second vein runs parallel to the costa; its tip is twice nearer to the apex than the posterior crossvein; third and fourth veins somewhat undulating; first posterior cell only slightly attenuated at tip; anal cell cut off square, therefore the posterior basal crossvein not oblique; the anterior basal crossvein a little before the posterior one; anal angle of the wing exceedingly small, smaller than the anal cell.]

Chaetotaxy. The postvertical pair nearly in a line with the inner vertical; the outer vertical bristle is placed some distance from the inner one, above the eye; the fronto-orbital bristle, soon below the ocelli, is but little smaller than the vertical ones; lower down a second minute fronto-orbital bristle. [*semilauta*: the postvertical pair has its normal position behind the inner vertical bristles; the second fronto-orbital is as large as the first.] On the thorax one posthumeral bristle, the posterior one, in its normal position, in the acute angle formed by the thoracic suture with the dorsopleural; of the anterior posthumeral bristle I do not even perceive the scar; a distinct, long sternopleural bristle, a short distance above the middle coxae; two supra-alar, and a pair of praescutellar bristles, wide apart; scutellum with two long, approximate bristles at the tip. [*semilauta*: two posthumeral bristles; the sternopleural is replaced by a row of three or four very fine hairs; the rest as in hexapla]. The fringe of a few stiff bristles which exists in Taeniaptera at the front end of the forecoxae seems to be replaced here by a single hair; this must be verified however on better preserved specimens than mine are.

*Eurybata* differs from *Calobata* (subgenus Taeniaptera) in its much more slender shape, especially of the thorax; the much shorter and narrower ovipositor; the filiform appendages of the ventral fork-like organ in the male; the very small anal angle of the wing; the long second vein and the presence of minute spines on the underside of the middle and hind femora, towards the tip.

*Eurybata hexapla* n. sp. ♂ ♀. *Metallic blue, legs reddish-yellow, wings with six brown crossbands and a brown apex.* Length: 11—12 mm.

Clypeus reddish, with blue metallic reflexions; palpi yellowish-red; antennae brown; front and vertex metallic-blue with violet reflexions; the former with a velvet-black, opaque stripe in the middle. Thorax

metallic-blue above, its anterior end, as well at two indistinct crossbands, subopaque, blackish; pleurae and pectus shining light metallic-green. Abdomen shining dark metallic blue, with a subopaque blackish crossband in the middle of the segments. Legs reddish-yellow, front femora infuscated, except at both ends. Knob of halteres reddish-yellow. Wings hyaline, with six brown crossbands at equal intervals, and a brown apex. — One male, two females. —

*Eurybata semilauta* n. sp. ♂ ♀. *Thorax ferruginous, abdomen brown, both with metallic-blue reflections; legs yellow; wings pale brownish-gray, with four hyaline spots on the distal half.* Length: 8–11 mm.

Head ferruginous-red; vertex and the broad descending fronto-orbital stripes brown, with a strong metallic-blue reflection; between these stripes, the ocelli are placed on a narrow, velvet-black stripe, pointed posteriorly and bifid in front. Antennae brownish-red, arista black. Thorax ferruginous-red, shining, with slight bluish reflections (in the male, the front part of the thorax is metallic-blue, as well as the scutellum and a portion of the mesonotum in front of it). Abdomen dark brown; strong metallic-blue reflections at the base and in the middle of the first segment, as well as on the two last segments; male genitals and ovipositor brownish-red. Halteres pale yellow; legs reddish yellow; front femora with a broad brown ring before the tip; a narrow and exceedingly faint brownish ring before the tip of the front tibiae; tip of the hind tibiae and of the hind tarsi infuscated. In the male the front femora, on the underside, have a fringe of long, soft hairs; on the underside of the tibiae a fringe of short, stiff microscopic hairs. Wings pale brownish-gray, more hyaline behind the fifth vein; four hyaline round spots form a square in the distal half of the wing; one is just in the middle of the wing, in the first posterior cell; another, in the corner of the second posterior cell, coalesces with the hyaline margin of the wing; the third corresponds to the second, between the second and third veins; the fourth in the first posterior cell, near the apex, has an irregular prolongation inside of the submarginal cell. — A male and a female.

NB. This species was determined *Micropeza fragilis* Wk. Pr. Lin. Soc. I, 37 (Malacca) by Mr. Walker; the short description of the wings agrees with my specimens, but not that of the body. *Micropeza tenuis* Dol. 3 Bijdr. 55 is a closely allied, but different species.

*Telostylus maccus* n. sp. ♀. *Reddish yellow, with black spots and stripes; antennae brownish-red, the tip of the third joint dark brown.* Length (without ovipositor) 5–6 mm.

Antennae reddish-brown, the distal half of the third joint dark brown, or black; arista white, except the root, which is black. On the head a black spot on each side, between the antenna and the eye; a brown streak on the facial orbit, and a large black spot on the vertex. Thorax with a blackish stripe in the middle of the mesonotum, interrupted before the suture; a deep black, subtriangular spot behind the humeral callus; a smaller blackish dot between this spot and the suture; a large, rounded, deep black spot behind the suture and above the root of the wing; scutellum brown on each side, yellow in the middle; on the pleura, a dark-brown streak between the front coxa and the humeral callus; a large dark brown spot on the sternopleura, between the front and middle coxae, and another on the hypopleura, above the hind coxae. On the abdomen a broad dorsal brown stripe, gradually attenuated posteriorly, and ending on the fifth segment. Halteres pale yellow. Coxae and femora reddish-yellow; tips of the femora black; tibiae and tarsi dark brown. Wings with a distinct yellowish tinge, which is more saturate along the costa; fourth vein arcuate, converging towards the third. — A single female.

NB. *T. maccus* differs from *T. binotatus* Bigot (Syn. *Coenurgia remipes* Wk.) by the pair of large deep black spots behind the thoracic suture, the brown sides of the scutellum etc.

*Nerius duplicatus* Wied. (A. Z. II, 553; Java). — A single specimen which I have agrees very well with Wiedemann's description. I have already alluded to the difficulties attending the identification of species of this group from mere descriptions. (See O. S. Enumeration etc. 64).

*Nerius fuscus* Wied. A. Z. II, 550. The coloring of the specimens varies from that, described by Wiedemann, to an almost uniform dark brown. The length of the second antennal joint is variable; in the males it is generally (but not always) longer than the third; in the females they are nearly of equal length. I feel more convinced now, than I was before, of the synonymy of *fuscus* W., *phalanginus* Dol. and *fuscipennis* Macq. (see my Enumer. 63).

### Ortalidae.

*Scholastes cinctus* Guérin. (For the synonymy compare my Enumer. etc. 91). This wide-spread species seems to be common in the Philippine Islands. The eyes, which I have revived on wet sand, are green, with three horizontal purple stripes.



*Lamprogaster* spec. A single specimen.

### Notopsila

(*Pachycephala* Dolesch., olim.)

This is merely a new name for the genus *Pachycephala* (Doleschall, 3 Bijdr. p. 43, the latter name being preoccupied several times. *Notopsila* is closely allied to *Euprosopia*; the species of the former genus, show the following differences, that may be considered generic, from *Euprosopia potens*, Wk. and *maculipennis* Guér.

The clypeus is entirely concealed; the distance between the roots of the antennae is greater, and equal to about one half the breadth of the vertex; the third antennal joint is shorter; in two of my specimens I perceive only one pair of very short vertical bristles, immediately above the eye; in the third specimen (*N. sexpunctata*) even that is wanting (broken off?); there are no other cephalic bristles. The scutellum is slightly emarginate at the tip, and three (sometimes four?) short bristles are inserted on the projection on each side of the emargination. (In the *Euprosopiae* the position of the three scutellar pairs of bristles is different; one pair on the apex, while the two other pairs are placed on the convex surface of the scutellum, the anterior pair being about the middle of the distance between the base and the tip of the scutellum). Of the other thoracic bristles I perceive a humeral and two posthumeral ones; two pairs of praescutellar bristles; the first supra-alar bristle, almost in a line with the praescutellar, a little on the side of the scutellar bridge; the second, above the alar frenum; they are all very short. (In the *Euprosopiae* the distribution in the same, except that the third supra-alar bristle, on the edge of the cavity, is also present, and that all the bristles are longer); no pleural bristles. — The face is flatter than in the *Euprosopiae*; the antennae are imbedded in the deep antennal furrows; the venation is the same; the three species have the same blackish gray color and mottled wings, as the two *Euprosopiae*; but they have besides, a fine golden yellow appressed pubescence, which that species has not.

Doleschall's typical species and mine, may be tabulated thus:

Antennae and tibiae black . . . . *Mohnikei* Dol.

Antennae and tibiae red

Face with two deep-black spots at the base of the antennae and four other spots besides

*sexpunctata* n. sp.

Face without black spots. . . . *curta* n. sp.

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<sup>1)</sup> This *Pachycephala* has nothing to do with the *Pachycephala* Mus. Berol. mentioned by Loew in Monogr. III, 38.

*Pachycephala albifacies* Dol. has red antennae and tibiae, but the black dots on the face are not mentioned in the description. It differs from the three other species in not having the fine golden pubescence, which distinguishes them all, and in having some indistinct longitudinal whitish stripes on the thorax. This last character makes me suspect that it may be a true *Euprosopia*, and not a *Notopsila* at all.

*Notopsila sexpunctata* n. sp. ♂ Head yellowish-red, the middle of the face paler and longitudinally wrinkled; on each side of the vertex, near the eye, a comma-shaped, black depression; antennal scapus deep black; another black spot at the bottom of the antennal furrow below the tip of the antenna; a third on the facial orbit, at the same height as the root of the antenna; the third joint of the latter is yellowish-red, about four times as long as it is broad; arista glabrous, brown, reddish at base. Thorax and abdomen grayish-black, microscopically punctate and chagreened, clothed with sparse, short, appressed golden-yellow pile. Femora grayish-black, grayish-pollinose, the tips of the four posterior ones, as well as the tibiae yellowish-red; first tarsal joint yellowish-white; the others brown. Wings subhyaline, sparsely mottled with pale brown spots, arranged longitudinally in the cells; some of them assume the appearance of irregular crossbands. Length 8—9 mm. — A single female.

NB. The eyes, in life, are purplish green, with a single narrow longitudinal stripe near the fronto-facial orbit (revived on wet sand by me).

*Notopsila curta* n. sp. ♂ ♀. Like *N. sexpunctata*, only the facial black spots are absent; antennal scapus and base of third joint reddish, the rest pale brownish; the femora are altogether blackish gray, except the extreme tip; the tarsi altogether yellowish-red; the brown spots on the wings are darker; a larger brown spot on the costa, extending to the small crossvein. Length about 8 mm. — Two specimens.

NB. The brownish color of the vertex and of the interval between the antennal furrows in my male specimen, I look upon as accidental. I revived the eyes on wet sand; in the ♂ they appeared like those of *N. sexpunctata*; in the ♀ the longitudinal stripe was not visible.

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*Adrama determinata* (Syn. *Dacus determinatus* Walk. J. Pr. Lin. Soc. I, 133; Borneo). I have seen the type in the Brit. Mus., without comparing it however with the specimen from the Philippine Islands.

The expression of the description: „three whitish stripes“ does not answer, as the corresponding stripes in my specimen are reddish; the abdomen is altogether red, and not „black above, at the base“. *Dacus cylindricus* v. d. Wulp, Tijdschr. etc. XXIII, Tab. XI, f. 5 (Java) also agrees with my specimen remarkably well; the differences are: the brown oral border is divided into two distinct spots; there is no black spot on the occiput; the scutellum has a black triangle in the middle, and not a black base only: the first abdominal segment is red, like the rest of the abdomen and not black. Are these different species or varieties only? It is impossible to decide such questions without the actual comparison of specimens. The same remark applies *Adrama selecta* and the synonymy adduced by me in the Enumer. etc. p. 91.

*Rivellia fusca* (Syn. *Herina fusca* Thomson, Eng. R. 575; Manilla). The yellow spots at the base of the abdomen are invisible in some specimens. There is some obscurity in the description of the design on the wings; (nervus humeralis?) — Ten specimens.

NB. This is a true *Rivellia* in the sense of Loew, Monogr. III, p. 87; l. c. p. 44, at the bottom. Dr. Loew mentions the occurrence of Rivelliae in South-Eastern Asia, and says that they differ in having the 3<sup>d</sup> joint of the antennae a little shorter; I do not perceive this difference.

### Stenopterina.

From notes, taken in different collections, as well as from descriptions, I have drawn up the following table of the species from the Malay Archipelago, which may be referred to the genus Stenopterina in Loew's sense. At present, I have only specimens of *S. calcarata*, *eques*, *aenea* (?), *chalybea* and *didyma* before me, and therefore cannot verify all the statements of this table.

I. Scutellum with four bristles; tip of the first vein nearly opposite the posterior crossvein; third and fourth veins converging.

In the ♂ a large spine on the hind trochanters.

Metallic blue, with a brown margin on the costa, and infuscated crossveins . . . . . *calcarata* Macq.

(D. E. II. 3, 207.)

Hind trochanters in the ♂ not spinose.

First basal cell brown; small crossvein distinctly oblique.

The brown of the first basal cell stops short at the anterior crossvein . . . . . *aenea* Wied.

(A. Z. II, 513.)

*C. R. Osten Sacken: Diptera*

The brown of the first basal cell continues along the fourth vein, as far as the posterior crossvein

*eques* Schin.

(Nov. 288.)

First basal cell hyaline.

Wings with a brown margin along the costa, otherwise hyaline; anterior crossvein oblique.

Thorax with three yellow stripes

*zonalis* Rond.

(Ann. Gen. VII, 430.)

Thorax without such stripes

*marginata* v. d. W.

(Tijdschr. XXIII, 179.)

Wings without a brown margin along the costa, but with the crossveins and apex clouded with brown.

Femora metallic-green; anterior crossvein not oblique. . . . . *didyma* O. S.

(Enumerat. 77.)

Femora yellow . . . . . *flavipes* Schin.

(Nov. 288.)

II. Scutellum with six bristles; tip of the first vein much more proximal than the posterior crossvein; third and fourth veins not converging.

*chalybea* Dol.

(3 Bijdr. 53.)

*bataviensis* Schin.

(Nov. 288.)

*obtrudens* Wk.

(J. Pr. Lin. Soc. III,

116.)

In this table *flavipes* Schin. and *obtrudens* Wk. are placed hypothetically, as regards their venation. The question whether *bataviensis* Schin. is merely a variety of *chalybea* Dol. (Comp. my Enumer. etc. 78) is left undecided. The *Herinae grandis*, *limpidipennis* and *nigrocostata* of Doleschall (Bijdr. 3) may also be *Stenopterinae*; I do not know them.

*Stenopterina calcarata* (Syn. *Herina calcarata* Macq. D. E. II, 3, 307; East Indies). Loew says about it (Monogr. etc. III, 47): „perhaps not a true *Stenopterina*, but closely related to that

genus." The transverse impression, connecting across the dorsum the thoracic sutures on each side, in the typical *Stenopterinae*, is hardly apparent here; the third antennal joint is comparatively shorter. The chaetotaxy is the same, only the occipito-orbital bristle, apparent in *St. eques* does not exist here; praesentellar bristles exceedingly weak. The vertical diameter of the head is longer, the front being higher, than in *St. eques*. The large spine-like processes on the hind trochanters of the male are a peculiar feature; they are not found in the female. — A dozen specimens.

*Stenopterina chalybea* (Syn. *Herina chalybea* Dolesch. 3<sup>de</sup> Bijdr. 53, Amboina). Conf. O. S. Enumer. 78. The abdomen has broad purple bands at the base of the segments, which two specimens from Ternate, also in my collection, have not; a third one however has them. The color of legs and palpi is variable between reddish and brown. — Three specimens.

*Stenopterina aenea* (Syn. *Dacus aeneus* Wied. A. Z. II, 513, Java). The wings agree, but much less the body. I have no authentic *S. aenea* at hand for comparison. Front dark ferruginous; front coxae and femora rufous, the latter especially on the front side; arista short-pubescent at base; thoracic dorsum brownish pollinose; the deep thoracic furrows on each side are free from this pollen and therefore very conspicuous. The abdomen more slender than in *S. eques*; on each side of the first abdominal segment three erect bristles (do they exist in *S. eques*? I do not perceive them in my specimens); the color of the abdomen is a shining metallic green; more opaque in the ♀, the 5<sup>th</sup> segment of which is again more shining.

### Antineura.

O. Sacken, Bullet. Soc. Entom. Fr. 10. Aug. 1881.

Will be easily recognized by the unusual position of the anterior crossvein, which is in one line with the posterior one, and by the structure of the antennae, which resemble those of *Loxocera*. The auxiliary vein is almost coalescent with the first vein, and, in this respect, *Antineura* differs from the majority of *Ortalidae*.

Head as broad, or a little broader, than the thorax; the profile projects considerably in front of the eyes; lower occipital orbits turgid; upper part of the occiput flat and smooth, forming a sharp edge with the vertex.

Face but little retreating, straight, rather long (the base of the antennae occupies about the middle of the profile of the head). Viewed

in front, the face is a little narrower above than below, antennal foveae deeply marked, descending down to the peristomium, divergent, leaving but a narrow orbit between them and the eyes; the interval between the foveae is smoothly convex; cheeks narrow.

Oral opening large, nearly circular, clypeus generally withdrawn; peristomium almost imperceptibly arched in front but not upturned; palpi elongated, narrow, flattened.

Front broad, gradually narrowed towards the vertex, its sides forming gentle curves (the boundary of the eyes, on both sides, forms a figure not unlike a lyre, contracting upwards, and then expanding again on the top of the vertex); lower portion of the front turgid; the lunule occupies nearly one-third of the breadth between the eyes. Ocelli not far from the edge of the vertex.

Eyes glabrous, descending very low (hence the narrow cheeks); in life, they are uniformly green, changing into purple.

Antennae: scapus small, third joint very long and narrow, linear, reaching beyond the peristomium; arista about once and a half the length of the third joint, finely and densely pubescent (white in both species described below).

Thorax about twice as long as it is broad; lateral transverse suture rather deeply marked, connected by a transverse depression. Scutellum a little broader than long.

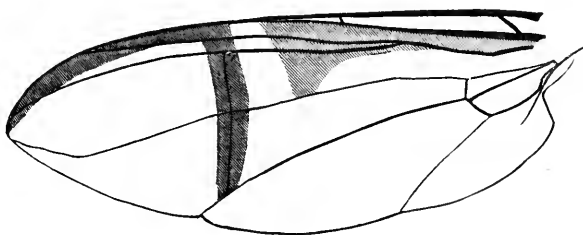
Chaetotaxy: Head, only two pairs of vertical bristles of moderate strength; the rest wanting. Thorax: no humeral bristle; post-humeral, two; supra-alar, three; antescutellar, two; mesopleural one. Scutellum, six bristles.

Abdomen elongated, slender, about as long as head and thorax together; without any bristles; four segments, the first being the longest; the second of the same length as the third; the fourth a little longer. The male hypopygium is almost withdrawn in the fourth segment. In the female, the abdomen is broader in the middle than at the ends, the first segment of the ovipositor flattened, triangular; the tip of the ovipositor is slightly enlarged and bears two pairs of microscopic hairs.

Legs, of moderate length and strength; the hind femora not incrassate; front coxae rather long, moveable, inserted very near the neck. Tegulae represented by a narrow strip. Wings. Costa and first vein beset with short hairs; third vein with a series of minute bristles on its proximal half; auxiliary vein closely approximate to the first, ending in the costa a little before the middle of the wing; beyond this spot, the first vein converges very gradually towards the costa, forming a long and exceedingly narrow stigmatic costal cell,

with an ill-defined ending. The second and third veins are almost coalescent at their bases and begin to diverge only a short distance before the end of the auxiliary vein; in their further course, they are unusually near each other, as well as to the costa, thus forming rather narrow marginal and submarginal cells. The fourth vein is comparatively distant from the third, and hence, the first basal cell is unusually broad at its proximal end; the anterior crossvein forms a straight

Fig. 3.



Antineura stolata.

line with the posterior one, the latter having its usual position; hence, the anterior crossvein becomes unusually long, of about the same length as the posterior. The end of the fourth vein is gently curved towards the third. The fifth and sixth veins are nearly straight. The second basal and anal cells are of moderate size and of equal length; the crossveins closing them are straight; the lower distal angle of the anal cell is slightly obtuse.

The general habitus and the coloring of *Antineura* as well as many details of its structure, prove its relationship to *Stenoptera*; its position in the same group is also proved by the absence of the prothoracic and sterno-pleural bristles. The differences are obvious, and consist principally in the structure of the head (*Stenopt.* has a large clypeus, a narrower, hardly prominent front, a face concave in profile, fronto-orbital bristles etc.) and the venation (indistinct auxiliary  $v_2$ , position of anterior crossvein etc.)

The name *Antineura* alludes to the position of the crossveins.

*Antineura stolata* n. sp. ♂ ♀. *Metallic greenish-blue, thorax with faint gray stripes; femora brown, mixed with red; length 13–16 mm.*

Metallic greenish-blue, moderately shining on the thorax, more so on the abdomen; face black, facial and frontal orbits white; occiput whitish-pollinose below, black above. Antennae: second joint reddish, third brown; arista white, yellowish at base; bottom of the antennal

foveae grayish-pollinose. Thorax with three faint grayish-pollinose stripes; the middle one often hardly perceptible; the lateral ones, placed immediately above the dorso-pleural suture, have on the inner side, an irregular outline; pleurae grayish-pollinose and tomentose; scutellum and methathorax likewise, but slightly. Abdomen with a short, delicate, moderately dense, whitish pubescence. Halteres reddish. Front coxae with a dense silvery-gray sericeousness; front legs brown, femora more or less reddish above; similarly the other legs are brown, but the femora more or less mixed with reddish. Wings almost hyaline; (Fig. 3) a brown crossband runs across the two crossveins and is continued along the costa to the apex; between the stigma and the fourth vein there is a large brownish-yellow spot, which, gradually attenuating, runs towards the root of the wing. Two males and four females.

*Antineura sericata* n. sp. ♂ ♀. *Metallic-green, thorax with three golden-yellow sericeous stripes; femora yellow; length 8—15 mm.*

Front metallic-violet above the antennae, blue towards the vertex; facial and frontal orbits golden-yellow; antennal grooves with a golden-yellow bottom; between them the facial triangle brown. Antennae reddish at base; third joint brown; arista white, yellowish as base. Occiput golden-yellowish sericeous below, with a golden-yellow down; black above. Thorax with three golden-yellow, sericeous stripes; the intermediate one is a little expanded before the scutellum; a similar stripe crosses the pleurae and invades the mesosternum. Abdomen with a delicate, short, not very dense golden-yellow pubescence; the fourth segment is a little reddish at tip. Front coxae and all the femora yellow; tibiae brownish, tarsi brown. The pattern of the wings is like that of the preceding species, only the brown crossband is less dark; the costal margin (between the crossband and the apex) is yellowish-brown. — One male, two females. The specimens of this, as well as of the preceding species vary very much in size.

### Philocompus.

O. Sacken, Bull. Soc. Entom. Fr. 10. Aug. 1881.

Philocompus differs from *Antineura* in its venation; the fourth vein is remarkably contorted; the anterior crossvein is beyond the middle of the wing, and hence unusually long; the posterior crossvein very much curved.

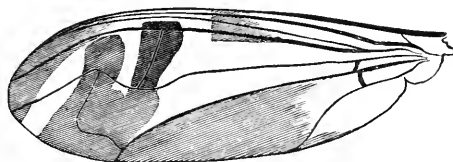
The structure of the body is so like that of *Antineura* that the description of the latter need not be repeated. The differences which



I notice, are unimportant: the front, above the antennae, is still more turgid, and forms a conspicuous bump; the interval between the lunule and the eye on each side in a little broader; the face being a little longer, the antennae do not quite reach the peristoma; the abdomen is, comparatively, a little smaller; the fourth segment is of nearly the same length as the second and third. Chaetotaxy exactly the same. —

Wings. Costa and first vein beset with very short hairs; third vein, on its proximal half with a few, very small, sparse bristles. Auxiliary vein closely approximate to the first; its ending in the costa is obsolete; the first vein, before the middle of the wing comes in contact with the costa, and runs alongside of it for a long distance, until they gradually coalesce in the apical portion of the wing. The second and third veins diverge very early; the second forms a gentle curve upwards and runs, some distance before its end, close alongside the first vein. The third vein also forms a long flat curve, convexity

Fig. 4.

*Philocompus cupidus*.

upwards, and ends in the apex. The fourth, before its end, is deeply bisinuate; the long, oblique anterior crossvein is inserted in the first sinus. The posterior crossvein forms a strong, almost angular, bend, which sometimes emits a stump of a vein. Fifth vein nearly straight. Second basal and anal cells of moderate size and equal length; the latter not drawn out in a point.

From what has been said above, the relationship of the genus to *Antineura* is obvious.

*Philocompus* means boaster, braggart.

*Philocompus cupidus* n. sp. ♂ ♀.

Reddish-yellow; frontal bump black, with violet reflections; facial and frontal orbits sericeous-golden; third antennal joint brown, arista white, yellowish at base. Thorax with the middle of the dorsum black, with metallic violet reflections; this black dorsal color shows on each side a broad interruption at the thoracic suture; it gradually disappears in front of the scutellum; a more or less large greenish-black spot on the pleura. I have a pale-colored specimen in which the black on the thorax is replaced by faint indication of two longitudinal brownish stri-

pes. Abdomen metallic greenish-black, reddish at the base, beset with a fine golden pubescence. Front tarsi, and four last joints of the other tarsi, dark brown. Halteres reddish. Wings tinged with brownish-yellow; two dark brown crossbands cover the anterior and posterior crossveins; both become evanescent posteriorly and merged into a broad, gray, ill defined shadow along the posterior margin. The anterior margin has a border of more intense yellow, which encroaches a little beyond the third vein; about the middle of the wing it is abruptly cut off; between the apex and the tip of the second vein there is a brown margin, the proximal end of which comes in contact with the anterior end of the brown crossband that passes over the posterior crossvein. In some specimens this apical brown margin, as well as the crossband connected with it, are much paler than in others; the other crossband, or dark brown elongated spot, upon the anterior crossvein is usually much darker. — Length 11—17 mm. Six specimens. — The eyes, revived on wet sand, appeared purplish-green, without stripes.

### Xenaspis.

O. Sacken, *Bullet. Soc. Entom. Fr.* 10. Aug. 1881.

The most striking peculiarities of this genus consist: 1) In the structure of the scutellum, which is merely a transverse swelling, projecting very little; 2) in the shape of the abdomen, the elongated first segment of which is much narrower than the others. The shape of the second basal cell is also very peculiar, but, as I will show below, does not seem to be an altogether constant character.

Head a little broader than the thorax, the profile projecting in front of the eyes; lower occipital orbits moderately swollen, the upper part of the occiput flat, falling off perpendicularly behind the sharp edge of the vertex. Face slightly concave, although very little retreating (in the profile); viewed in front, it is narrower above than below; antennal foveae divergent, with wellmarked edges; a very narrow orbit between them and the eyes; the triangular interval between the foveae smooth, transversely concave. Oral opening large, nearly circular; clypeus moderately broad; peristomium almost imperceptibly arched in front, but much more behind; palpi elongated, flattened. Front broad with nearly parallel sides, turgid above the lunule; the latter occupies more than half of the distance from eye to eye. Ocelli not far from the edge of the vertex.

Bristles; two pairs of vertical bristles of moderate size; no other bristle on the head, except a small one on the check, near the peristomium, perceptible with some difficulty among a small tuft of short hairs.

Eyes glabrous, oblong; in life, they are purple, with a green crossband in the middle and another, broader one, below.

Antennae: scapus small; third joint linear, reaching to about two-thirds of the face; arista long, with a very short pubescence.

Thorax short, very little longer than broad; lateral transverse sutures deeply marked, connected by a transverse depression. Two post-humeral and two supra-alar bristles; the third of the latter, usually inserted near the scutellar bridge, is wanting; no praescutellar bristles and none on the pleurae. Scutellum in the shape of a transverse swelling, twice and a half broader than long, projecting very little in profile; hence there is no distinct upper nor underside to it; in the middle, there are two long, erect bristles, the distance between them being a little less than one third of the breadth of the scutellum; metanotum flat, and, on account of the smallness of the scutellum, very much in view.

Abdomen clavate, the first segment being long and narrow, with parallel sides; the following three segments are much broader than the first and do not differ much in length; the first segment of the ovipositor in the female is rather small and narrow; the ovipositor ends in a point, which bears some microscopic hairs.

Legs of moderate length and strength; hind femora not incrassate; front legs short; fore coxae very moveable. Tegulae very small. Wings: Costa and first vein beset with short hairs; the bristles on the third vein exceedingly minute; auxiliary vein closely approximate to the first, but with a distinct ending in the costa; stigmatic costal cell long, its distal end distinctly marked, although very acutangular; second vein straight; the third diverges from it early, is straight as far as the anterior crossvein, and gently arched beyond; the anterior crossvein is placed a trifle beyond the end of the auxiliary vein; fourth, fifth and sixth veins nearly straight; second basal and anal cells very small, the latter not drawn out in a point. The shape of the second basal cell is very peculiar: the discal cell is distinctly formed by a bifurcation of the fourth vein and is undivided by any crossvein at the base; thus the second basal cell is outside of the discal, crowded in between it and the anal. Among my seven specimens, six have this structure; in the seventh, however, the second basal cell is separated from the discal by a crossvein, as usual among the Ortalidae. The difference between these two structures merely depends on the more or less oblique position of the crossvein; nevertheless, as the rule seems to be in this genus that it is very oblique and coalesces with the further course of the fifth vein, the interpretation of this venation is, at first sight, somewhat puzzling.

The name *Xenaspis* alludes to the unusual shape of the scutellum. I am in doubt about the relationship of this genus. The shape of the scutellum and the smallness of the second basal and anal cells are very peculiar characters.

Fig. 5.

*Xenaspis polistes.*

*Xenaspis polistes* n. sp. ♂ ♀. General coloring brownish-yellow, with some brown markings on head and thorax and a longitudinal brown stripe on the abdomen; wings with a pale yellowish-brown tinge, more saturate on the anterior side. Length: 12—14 mm.

Head reddish-yellow; a more or less well-marked brown stripe in the middle of the face, does not reach the base of the antennae; bottom of antennal furrows brown; an ill-defined subtriangular brown spot on the front, above the yellowish lunule; a brownish shade on each side of the ocelli; antennae reddish-yellow; palpi brown, reddish at tip. Thoracic dorsum clothed with a short and dense golden pubescence; brown markings, in the shape stripes, are more or less distinct in different specimens; scutellum yellow. Abdomen densely clothed with a golden-yellow pubescence, with an irregular black longitudinal stripe in the middle and more or less distinct lateral stripes of the same color. Coxae brownish; femora reddish-yellow, usually with a brown spot on the underside of the distal half; tibiae and tarsi reddish-brown, the former with some irregular dark-brown lines and marks. Halteres reddish. Wings with a pale brownish tinge, more saturate yellowish between the costa and the fourth vein, darker brownish on the distal half, especially along the third vein. — Two males and five females.

### Naupoda.

O. Sacken, Bull. Soc. Entom. Fr. 10. Aug. 1881.

*Naupoda* is a curious little fly, especially distinguished by its broad and short stature, its flattened head and large development of its basal cells; the second basal cell reaches the middle of the wing and thus crowds out the discal cell, which is reduced to the shape of a square (see fig. 6).

Head as broad as the thorax; almost disciform, its longitudinal diameter being very short; it hardly projects in front of the eyes; the occiput is excavated above and allows the head to be closely applied to the thorax; vertex with a sharp edge; lower posterior orbit a little swollen; cheeks moderately broad. Face concave under the antennae, the antennal foveae within are but feebly marked, and the interval between them not raised; above the peristomium, the face is somewhat swollen, and this portion of the face is separated from that above by a weak, arched furrow, running transversely from cheek to cheek. Oral opening large, nearly circular; palpi broad and flat.

Front and vertex broad, even, nearly flat; about as broad as each eye; a little narrowed anteriorly, not swollen above the lunule; the space on each side, between front and lunule, very narrow; profile not projecting; ocelli near the edge of the vertex. Two pairs of vertical bristles; no other cephalic bristles. Eyes, glabrous, oblong, the vertical diameter being  $1\frac{1}{4}$ — $1\frac{1}{2}$  of the horizontal one. Revived on wet sand, the eyes appeared green, with eleven transverse purple stripes. Antennae appressed to the face, nearly contiguous at the base, scapus small, third joint oblong, its length about double its breadth, reaching about the middle of the face; arista microscopically pubescent.

Thorax broader than long; the lateral transverse sutures are very near the humeri, ending on each side in a feeble longitudinal furrow (visible in oblique light only). Two post-humeral bristles; two supra-alar, one near the scutellum, the other above the alar frenum; on the pleurae, I perceive only one mesopleural bristle (this statement about the bristles requires verification). Scutellum comparatively large, almost semicircular, closely applied to the abdomen, so that the metanotum is invisible; on the edge, two (or three?) bristles each side; (the second pair is smaller than the first, and the third, if it may be taken for one, almost disappears among the other pubescence).

Abdomen short and broad, finely pubescent, but without bristles; consisting apparently only of two segments; the first is transverse and visible on the sides of the scutellum only; the second occupies the remainder of the upper side of the abdomen and is nearly as long as it is broad, convex, smooth; under it, the short basal segment of the ovipositor, with its protruding second segment. In the specimen which I take for the male, the second segment seems to be less large, and a third, short segment is distinctly visible under it; (the abdomen of this specimen is somewhat injured).

Legs comparatively short; hind femora not incrassate; tibiae not expanded, nor ciliate; no bristles. Tegulae of moderate size. Wings: Costa and first vein distinctly hairy; the third is glabrous. Auxiliary

in close contact, with the first; 1st ending rather indistinct. The first vein ends nearly opposite the posterior crossvein; the second soon after it; the bifurcation of second and third takes place about the middle of the length of the wing; anterior crossvein very short; second basal

Fig. 6.



Naupoda platessa.

cell unusually broad and long, reaching beyond the middle of the wing; as a consequence, the discal cell is shortened and nearly square; anal cell comparatively long although shorter than the second basal; cut off square at the end; alula large. The wings are not expanded horizontally, their distal half being somewhat bent (as in *Stegana*); the figure, represents the outline of the venation only.

The name *Naupoda* means inhabitant of an Island.

*Naupoda* has many points in common with *Gorgopis* Gerst.; (Stett. Ent. Z. 1860, p. 180) only the head of the latter is much broader, the antennae distant at the base etc.; otherwise the structure of the head and of the abdomen, as rendered in Dr. Gerstaecker's excellent description, agree remarkably well with *Naupoda*. *Gorgopis* does not have the enormous second basal cell and small discal cell of *Naupoda*; but *G. bucephala* and *N. platessa* have nearly the same coloring (black, with yellowish head and legs); the eyes of the former are described by Doleschall (*Zygaenula paradoxa*, Derde Bijdr. p. 46) as „green with nearly concentric red rings“; the eyes of the latter are green with purple stripes.

*Gorgopis*, according to Loew's supposition belongs to the Ulidina (Monogr. N. A. Dipt. III, p. 65). But the Ulidina, in Loew's system, have the first longitudinal vein glabrous, while *Naupoda* and probably also *Gorgopis* have it pubescent; the Ulidina have the anal cell drawn out in a point; (l. c. p. 64), which *Naupoda* and *Gorgopis* have not. Moreover, *Gorgopis*, as Gerstaecker finds, and apparently with good reason, is related to *Pterogenia* Bigot and the latter, it seems to me, may be better placed among the Platystomina. The fauna of the Archipelago seems to abound in forms, related to these, although generically distinct. Thus Gerstaecker himself acknowledges that his second species of *Gorgopis*, *G. cristiventris*, is only provisionally united with the first. Mr. Bigot's *Pterogenia dayak* appears to be generically distinct from *P. albivarsis*. Rondani's three genera (*Elachigaster*,

*Ditomogaster* and *Hemigaster*) seem likewise to belong in this vicinity. Still another form of this group I publish below, (*Asyntona* nov. gen.)

*Naupoda platessa* n. sp. ♂ ♀.

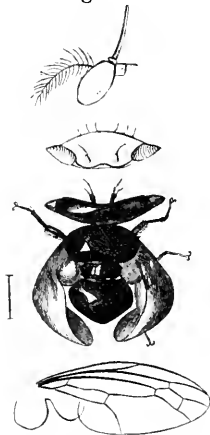
Front and face reddish, or yellowish-brown; antennal scapus brownish-yellow; third joint brownish; face shining; on the vertex, on each side of the ocelli, a large, shining square space, with a little pit, or depression below it; the rest of the front opaque. (The color of the eyes, in life, has been described above). Thorax and abdomen black, shining, microscopically pubescent. Tegulae and halteres yellowish. Legs yellow, hind femora brownish at the root. Wings tinged with yellowish; proximal half brownish, which color is especially distinct in the first basal cell, from which it extends and becomes gradually evanescent, towards the costa, the discal and the third posterior cell. There are faint, small, grayish clouds at the tip of the auxiliary, first and second veins, and also about the middle of the last section of the third and fourth veins. Length, about 4 mm. — Four specimens, two of which are females; the abdomens of the two others are damaged, still one of them I believe to be a male.

#### Asyntona.

O. Sacken, Bullet. Soc. Entom. Fr. 10. Aug. 1881.

I possess of this genus only a good drawing, executed by Doleschall. I publish it in order to utilize it, the more so as it is a very remarkable, easily recognizable form, closely allied to *Naupoda*, which I have just described, but abundantly different.

Fig. 7.



*Asyntona* Doleschalli.

The venation is very like that of *Naupoda*, only the second basal cell is less broad, and a little longer. The head is broad, almost *Achias*-like, the interval between the eyes being broader than the horizontal diameter of each eye, taken separately; the occiput is not closely applied to the thorax (as it is in *Naupoda*). The antennae are distant at their bases; scapus small; the second joint (or base of the third?) as the figure seems to show, bears a styliform organ, pointed at the end and about as long as the third joint; third joint elliptical; arista plumose. Thorax rounded, broader than long; Abdomen comparatively small (the segments are not indicated in the drawing).

*Asyntona* resembles *Gorgopis* in the breadth of the front and the remote antennae; but differs in the shape of the head and thorax; the shape of the head does not allow it to be closely applied to the thorax; the thorax is more rounded in front; the abdomen comparatively larger than in *Gorgopis*: the venation is altogether different, the basal cells being enormously developed here, while they have the usual shape in *Gorgopis*.

The drawing, which is reproduced here, bore no name; I call the genus *Asyntona*, in allusion to the carriage of the wings, which are not fully expanded, but somewhat bent under, towards the end.

*Asyntona Doleschalli* n. sp. *Metallic blue, legs and antennae (apparently) black, tarsi yellowish.* Length 5—6 mm.

Hab. Amboina (Doleschall). Doleschall's drawing bears the date of January 28 1859; he died Febr. 26 of the same year.

### Trypetidae.

A comparatively small proportion of the Trypetidae from South-Eastern Asia can be referred to the groups, formed for the European or North-American species. A number of new genera have been introduced for them by different authors; but, except the well-characterized genus *Ptilona* v. d. Wulp, those genera require a closer definition. Unable, on account of insufficient materials, to draw up such definitions, I have attempted to point out some characters, principally chaetotactic, that may be of use in future.

*Dacus Icarus* n. sp. ♂. Body brownish-yellow; scutellum lemon-yellow, with four long bristles; likewise yellow are: the humeri, a pleural stripe between them and the pteropleura, a more or less square spot on the mesopleura, under that stripe, and the lateral meta-pleural callosities. Thoracic dorsum with three dark brown stripes, not



reaching the scutellum; the lateral ones more or less interrupted on the thoracic sutures; between the lateral stripe and the root of the wing there is faint indication of another short stripe. Metathorax black, with a faint paler spot in the middle; large blackish spots on the hypopleura and sternopleura, above the hind and middle coxae. On the abdomen there are four narrow, black crossbands, ending on both sides in the black lateral borders of the segments; the first crossband is in the middle of what, in Loew's terminology, is the first segment (Monogr. N.-Am. Dipt. I, p. 54, line 7 from bottom), but is, in reality, composed of two segments; this first crossband occupies therefore the anterior margin of the second segment; the following three crossbands, likewise occupy the anterior margins of the three following segments. Legs honey-yellow, hind tibiae more brownish. Head brownish-yellow, including the palpi and antennae; the third joint of the latter is shorter than in the typical *Dacus* and does not reach the peristoma; arista microscopically pubescent. Wings with a brown picture consisting of a large brown spot on the distal half of the wing, between the second and the fourth veins; a narrow, arcuate crossband crosses the wing in the middle and follows the anterior margin to very near the apex; the

Fig. 8.

*Dacus Icarus*.

large brown spot and the crossband are connected on the fifth vein; another crossband reaches from the stigma to the sixth vein; it emits two branches, running towards the root of the wing, one in the first basal, the other in the anal cell. The intervals of the brown are hyaline, except that in the apical part of the wing, which is grayish. Length 8—9 mm. — A single male.

NB. Although this species has the general appearance and the coloring of a *Dacus*, it differs in some respects from the typical species of the genus. The second basal cell is less broad; the lobe of the anal cell much less long; the second vein less near the anterior margin; the third antennal joint shorter; the arista microscopically, but distinctly, pubescent; the scutellum less rounded, more triangular and flatter on the surface; its four bristles longer and stronger. There is one praescutellar pair of bristles; the pteropleural bristle is rather large for a Trypetid; in other respects, the chaetotaxy, as far as I can see, is like that of *Trypeta*.

*Dacus ferrugineus* (Wied.) Macquart, D. E. Suppl. IV, 284. One of my specimens (♀) agrees exactly with Macquart's description; another, also a ♀, has a black spot on the scutellum, but no black marks on the front femora; a third (♂) is much smaller, less than  $\frac{2}{3}$  of the size of the other; the median reddish thoracic stripe is wanting, the apical brown spot on the wings is smaller; the design of the abdomen is the same. A female from the Andaman Isl., in my collection, agrees with this last specimen in the coloring, but is larger.

*Baetrocera maculipennis* Dol. 1. Bijdr. p. 10, Tab. I, f. 1 is exactly like *D. ferrugineus*, except that, in Doleschall's drawing, the median thoracic stripe is more marked on the posterior portion of the thorax than in front, and is more yellow than ferruginous. About *D. conformis* Dol. 3 Bijdr. 50, the author says: „simillima maculipenni Dol.“, but does not state in what the difference consists.

There are therefore, either a number of closely resembling species, or this is a wide-spread and variable species.

*Ptilona brevicornis* v. d. Wulp, Tijdschr. etc. XXIII, 135, Tab. XI, f. 6. 7. (Sumatra).

The color of the abdomen in my specimens is somewhat different from Mr. v. d. Wulp's description: the proximal portion of it is altogether yellowish, embracing the first (double) segment, and the anterior margin of the second; in some specimens (♂ and ♀) the whole second segment is yellowish. The length is given as 9 mm.; my largest specimen is a little more than 7 mm., without the ovipositor. The agreement of the wings is perfect, and the presence of the costal bristle leaves me little doubt about the identification.

*Rioxa* sp. A single female. Mr. Walker published a *Rioxa lanceolata* in J. Pr. L. Soc. I, 35, Tab. II, f. 3. (Malacca, Borneo), about which later (l. c. I, 132) he observes that it is variable in the distribution of the spots on the wings. My specimen looks very much like the above quoted figure, except that the streak on the disc of the wing, and the dot at the end of it, are wanting. Still more like my specimen is the figure of *Ptilona sexmaculata* v. d. W. (Sumatra Exped. 51, Tab. III, f. 11 (♀), only the white dot at the end of the first vein is wanting; the dot at the end of the sixth vein is almost imperceptible. Under such circumstances, I prefer to abstain from describing the species.

Note on the Genus *Rioxa*. As far as I can judge from the single specimen before me, *Rioxa* may be distinguished from *Ptilona* as follows: 1. the arista is plumose on one side only; 2. there is a praesutural bristle in the humeral thoracic region, (no such bristle in

Ptilona); 3. six bristles on the scutellum, the intermediate pair being smaller (Ptilona has only four); 4. the tip of the first vein is in the middle or beyond the middle of the distance between the tips of the auxiliary and second veins (it is before that middle in Ptilona); 5. the section of the third vein before the anterior crossvein is microscopically bristly (glabrous in Ptilona).

Mr. v. d. Wulp has noticed the probable relationship between Ptilona and Rioxa (Tijdschr. etc. XXIII, 183, at the bottom), and some of the above-quoted differences (No. 1 and 4) have been indicated by him in the description of his *Ptilona sermaculata*; I infer therefrom, that *P. sermaculata* would be better placed in the genus Rioxa. Rioxa, on account of the presence of a praesutural bristle, would seem to be nearer to Trypeta (in the sense of Meigen), than Ptilona. Prof. Rondani (Ann. Mus. Civ. Gen. VII, 436) has described some species of Rioxa from Borneo.

There is a small species *Trypeta paritii* Dol. 1 Bijdr. 10, Tab. I, f. 2. (I have little doubt that it is the same as *T. modesta* Wied. A. Z. II, 496),<sup>1)</sup> which, in the design of the wings, resembles a Ptilona. But it has a praesutural bristle, 6 long bristles on the scutellum and the third vein microscopically bristly. From Rioxa it differs in having the arista plumose on both sides, the first longitudinal vein shorter, third antennal joint shorter; the general shape of the body is also different. *T. paritii* is a true Trypeta, in Meigen's sense, although I would hesitate to place it in any one of the existing subdivisions.

*Rioxa* sp. A fragment of a male; the species is different from the preceding.

*Trypeta melaleuca* Wk. J. Pr. Lin. Soc. VII, 238. (North Ceram; Comp. O. S. Enum. 71). Belongs in the Subg. *Acidia*.

*Trypeta Elimia* Wk. List etc. IV, 1033 (Philippine Islands). The description is recognizable; the locality being the same, the identification is certain. *Ortalis regularis* Dol. 3 Bijdr. 47 (Amboina) is the same species.

*Trypeta stellata* (Syn. *Acinia stellata* Macq. D. E. Suppl. IV, 293; Manilla). I have seen the type in Mr. Bigot's collection. Macquart's short description does not quite apply, unless „bande dorsale brune“ is read in the plural, and not in the singular, and „base jaunâtre“ is put, instead of brunâtre. *T. stellipennis* Wk. J. Pr. Lin. Soc. IV, 159

<sup>1)</sup> The „Borste ungefedert“ in Wiedemann does not agree; but is that statement correct?

(Celebes), of which I have specimens before me is a closely allied, if not the same species; the wings are exactly the same, and the body likewise, as far as the very poor condition of my specimens of *stellata* allows a comparison. Mr. Walker had determined the latter specimens *T. amplissima*, which means I suppose *T. amplipennis* Wk. J. Pr. L. Soc. IV, 159 (Celebes), a species described on the same page as *T. stellipennis*, and marked as occurring in the Philippine Islands in Mr. Walker's Synopsis (J. Pr. Lin. Soc. IX, 27). But *amplissima* is said to have a „bare arista“, while the arista is distinctly plumose in my specimens of *T. stellata*, as well as in *T. stellipennis*. But Mr. Walker had also called bare the arista of his *Sophira punctifera* (which is again nothing else but his own *T. stellipennis*), and nevertheless his own type, which I saw in the Br. Mus., has a distinctly plumose arista. (Compare my Enumer. etc. 71). With *Eutreta* Lw. these species (whether there are one or several I do not decide) have the broad wings, dotted with white, in common; but their scutellum has six, instead of four, bristles and the third vein is bristly.

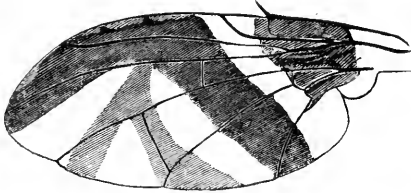
*Trypeta* (subg. *Tephritis*); a single, damaged male. Small species, the design on the wings very like that of the European and north-american species of the group, without being exactly like any of them.

*Trypeta Cassandra* n. sp. ♂. Venation like *Ceratitis*; body black shining; humeri and anterior portion of the scutellum pale-yellow; abdominal segments alternately black and gray; wings banded with brown. Length 6—7 mm.

Face pale-yellow, hardly excavated in the profile; cheeks brownish under the eyes; front yellow, brownish-ferruginous in the middle; antennae yellowish-red, reaching down to about half the face; arista plumose; occiput very tumid behind the eyes, pale yellow; its upper, flat portion brownish. Thorax black, shining; humeri, a short band behind them, across the mesopleura, the metapleura, the lateral callus of the metanotum, and the anterior part of the scutellum, pale yellow. Abdomen: first segment gray, opaque; its anterior margin black; second segment, black, brownish pollinose; the third gray, like the first; the fourth black; the gray portions are clothed with a short whitish pubescence. Halteres: stem reddish, knob brownish. Legs (only the front pair is extant) reddish-yellow, with black bristles. Wings hyaline, banded with brown: the basal crossband fills the second costal cell and reaches the posterior margin at the axillary excision; a second band forms an arch, which begins at the apex, runs along the costa, stopping

short a little before the end of the first vein and then crosses the wing in a straight line, ending behind the end of the sixth vein; inside of the hyaline space enclosed by this arch, there is an angular figure of a paler brown, in the shape of a greek lambda, the tip of which is

Fig. 9.



Trypeta Cassandra.

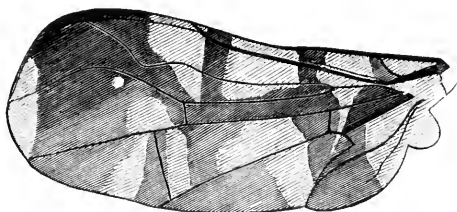
connected with the arch, the somewhat curved proximal branch covers the posterior crossvein and ends in the posterior margin, behind the fifth vein; the straight distal branch ends in the second posterior cell, behind the fourth vein. — A single male.

NB. There is a distinct costal bristle; the anal cell is drawn out in a short, but well defined, thumblike point, the crossvein separating that cell from third posterior forming a deep, retreating angle. The form of the anal cell, as well as the general shape of the wing and the venation are those of *Ceratitis*; but the bristles of the third vein are very small, and the fronto-orbital bristles are not expanded into lamels at the tip. For this reason I leave this species in the genus *Trypeta*, in the wider sense.

*Trypeta Alkestis* n. sp. ♂. Yellowish-ferruginous; thorax with four dark brown stripes; the outer ones are interrupted at the suture and connected posteriorly, in front of the scutellum, with the corresponding inner stripe: a narrow black or brown longitudinal line in the middle of the mesonotum, between the two pairs of stripes; on each side, above and in front of the root of the wings, there are vestiges of short brown lines. Metanotum black on each side with a narrow yellowish-red space in the middle. Abdomen in the middle of each of the segments 1—3 with an arcuated black crossband, which reaches the lateral margins on both sides and is attenuated in the middle; the last segment is black, with but little reddish in the middle. Legs yellowish-ferruginous; halteres yellowish. Wings brown, with a design composed of yellow spots: on the anterior margin a square spot between two triangular ones; on the posterior margin a double spot

surrounding, but not covering, the posterior crossvein and an angular, large spot in the discal and third posterior cells; the root of the wing and a segment of the apex are likewise yellow; the only white mark is a circular small spot in the first posterior cell, within the sinus of

Fig. 10.



Trypeta Alkestis.

the third vein; the apex of the yellow triangle above the anterior crossvein and a narrow streak across the second basal cell are also white. Third antennal joint slightly excised anteriorly, rounded at the tip, which does not reach the peristoma; arista rather densely plumose. The chaetotaxy is the normal one of *Trypeta* (as far as it is preserved on the specimen); thoracic bristles rather long; two praescutellar pairs and two scutellar; but between the latter, a very minute third pair; the praesutural bristle is present; I perceive but one lower fronto-orbital; but the head of the specimen is damaged. Length 8—9 mm. — A single male.

NB. I. The course of the first vein in *T. Alkestis* is peculiar: after joining the costa, it seems to continue alongside of it, thus producing the appearance of a flattened thickening of the costal vein between the tip of the first vein and the apex. This thickening gives an unusual breadth to the apical half of the wing; it is possible that it characterizes the male sex only. Something similar, although in a lesser degree takes place in *T. Manto*.

NB. II. *T. Alkestis*, in the distribution of the spots on the wings, the venation, the structure of the antennae etc. has a good deal in common with *Themara ampla* Walk. J. Pr. Lin. Soc. I, 33, Tab. I, f. 5, and may belong to the same generic group, whether this group be called *Themara* or *Acanthoneura*. It must be borne in mind that the specimen which Mr. Walker describes here as a male, he declares l. c. p. 124 to be a female, the true male being *Achias maculipennis* Westw.; a fly which I believe to be a Trypetid, its *Achias*-like head notwithstanding (Comp. my Enumer. etc. p. 73).

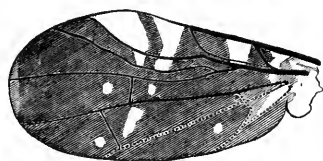
*Trypeta Polyxena* O. S. Enumer. 74 probably likewise belongs to the same group; only the third vein is much more straight, perhaps owing to its sex only, as the described specimen was a female.

The costa, the first and third veins in all these species are beset with bristles; only in *T. Alkestis* these bristles are very small on the costa and the third vein. In Macquart's figure of *Acanthoneura* their length must be exaggerated (D. E. II, 3, Tab. 30, f. 2). *Themara hirtipes* Rond. Ann. M. C. Gen. VII, 435 likewise seems to belong to the same group.

*Trypeta Manto* n. sp. ♂. Although the only specimen which I have is very much damaged, I will attempt to describe it, on account of its singular venation.

Yellowish-ferruginous; third antennal joint somewhat brownish; arista plumose; abdomen brown or black (damaged); halteres with a brown knob; legs uniformly yellowish-ferruginous. Wings brown; two triangular white spots on the costa, between the tips of the auxiliary and first veins; a small round white spot in the first posterior cell, not far from the anterior crossvein; a similar but less round spot at an equal distance from that crossvein, but on the opposite side, in the first basal cell; somewhat larger spots, one each side of the posterior crossvein and a round one in the third posterior cell. This design has

Fig. 11.

*Trypeta Manto*.

a great resemblance to that of *Themara ampla* Wk., J. Pr. Lin. Soc. I, Tab. I, f. 5, but with this important difference: in *Trypeta Manto* both triangular white spots on the costa lie within the stigmal cell (third costal cell of Loew. Monogr. etc. I, p. XXIV); in *T. ampla* one of them is outside of that cell. The reason lies in the very peculiar venation of *T. Manto*: the stigmal cell here is unusually large, owing to the course of the first vein, the tip of which is more distal than in the related species; beyond this tip, the costa is stouter, as it is in *T. Alkestis*, but for a shorter distance, and not so conspicuously; the second vein is much more deeply arcuated here than in *T. Alkestis*, the third vein, on the contrary, much less. It may be that the extraordinary shape of the stigmal cell belongs to the male sex only. Length 7—8 mm.

NB. The scutellum of my specimen of *T. Manto* has only two bristles, inserted on each side near the base, and far apart from each other. I cannot perceive the scars of the apical pair of bristles. If

this is really a character of *T. manto* it would show an affinity with the European *Aciuræ*, so very like it in the distribution of the spots on the wings. As far as I can see the third vein is nearly bare; the costa and first vein are beset with weak, microscopic hairs; the antennae are plumose, (which is not the case in *Aciura*). — In the figure which I give, the venation of the posterior portion of the wing is indicated by dots, because the wings are pasted together in my specimen.

### Enicoptera.

The genus *Enicoptera* Macq. D. E. Suppl. III p. 63, Tab. VII, f. 9, is easily recognizable by its singular venation, due to a wavy course of the second vein, near its end, the wave coming in contact with the end of the first vein and forming a kind of noose. The supernumerary row of bristles on the lower part of the front on each side, and the presence of a praesutural bristle, prove that it is a Trypetid, although the termination of the auxiliary vein is like that of the Ortalidae. The number of abdominal segments in the male is four, the first segment consisting of two, soldered together; the suture is visible on the ventral side. The female has five abdominal segments, the fifth being as long as the preceding. The first segment of the ovipositor is unusually long, as long as the three or four preceding segments taken together (it is comparatively longer in the larger specimens); convex above and below; the second segment is of corresponding length. (Macquart described only the male).

The chaetotaxy is very like that of *Trypeta*:

Vertical bristles: outer pair but little shorter than the inner; post-vertical small; ocellar pair exceedingly minute; two fronto-orbital bristles (only one in some specimens?); lower fronto-orbital 3 (sometimes 4?) placed in an oblique row, at equal intervals, between the orbit and the lunule; a genal bristle, under the eye. Humeral bristle, one; posthumeral two, praesutural one; supra-alar three; a praescutellar pair, far apart. Mesopleural, one; sternopleural none, pteropleural one (very small). — Scutellum — four.

The difference from the typical *Trypetæ* consists in the absence of a second pair of bristles in the dorso-central region, and of a sternopleural bristle; and in the presence of only a single mesopleural.

Mr. Walker (J. Pr. Lin. Soc. IV, 155) described four species from Celebes, which he refers to *Enicoptera*. But his *E. pictipennis* is identical with his own *Sophira distorta* (Walker, Trans. Ent. Soc. N. S. IV, 230) and is not a *Enicoptera*. *E. tortuosa* Wk. seems to be closely related to *E. flava* Macq. The two other species, if *Enicopterae* at all, are different from my *E. proditrix*.



*Enicoptera proditrix* n. sp. ♂ ♀. —

Is very like *E. flava* Macq. D. E. Suppl. 3. 63, Tab. 7, f. 9, but differs principally in having a black median thoracic stripe, besides the two lateral ones; the abdomen has two longitudinal black stripes; the hind femora are more or less infuscated.

Head brownish-yellow; in the male, the third antennal joint is more brown and there is a brown spot in the middle of the face, and another on each side of the frontal lunule; (these characters are wanting in my four females specimens). Thorax yellow, with three black stripes; the lateral ones interrupted at the suture; humeral callus and an indistinct stripe between it and the root of the wing, brownish; a similar stripe across the pleura, between the humerus and the front coxa, the brown extending to the latter; and another between the root of the wing and the hind coxae; these two stripes on the pleurae are almost evanescent in the female, but very distinct in the male; scutellum with a round black spot on the apex; metanotum brown. Abdomen yellow, with two broad lateral brown stripes, which begin in the middle of the first segment, where they are sometimes connected by a crossband; in the male that crossband fills the whole distal half of the first segment, and the longitudinal stripes are so broad that they reach the lateral margins of the segments; halteres reddish with a brown knob; legs brownish-yellow, hind femora more or less brown; in the male, the front and middle femora also have a dark brown spot on the posterior side before the tip. Wings like Macq. l. c. Tab. 7, fig. 9; only the brown of the costa fully fills the space between it and the third vein. In the male, the large, oblique crossband coalesces with the brown cloud on the posterior crossvein, and then follows the elongation of the anal cell, and thus joins the brown at the base of the wing. In the female the cloud on the posterior crossvein is separated from the great oblique crossband by a broad hyaline interval, but connected with it at its anterior end by a yellowish prolongation running towards the anterior crossvein. Length ♂ 11—12 mm.; ♀ 10—15 mm. (without the ovi positor). — One male, four females.

**Diopsidae.**

I have five species from the Philippine Islands before me, which may be tabulated thus:

Alulae distinct; sixth vein distinctly prolonged beyond the anal cell. Genus

*Sphyracephala* Say. . . . . 1. *cothurnata* Bigot.

Alulae obsolete; sixth vein not prolonged beyond the anal cell.

Two pairs of thoracic spines (besides the pair on the scutellum). Genus *Teleopsis* Rond.

Tip of the wings hyaline

Head as dark as the thorax; wings with two brown bands, sub-connected in the middle . . . 2. *belzebuth* Bigot.

Head red, thorax black; wings with a brown crossband just before the tip; the band in the middle of the wing much paler, subsolete . . . . . 3. *motatrix* n. sp.

Tip of the wings dark brown; head yellow . . . . . 4. *selecta* n. sp.

Only one pair of thoracic spines (besides those on the scutellum). Genus

*Diopsis* . . . . . 5. *subnotata* Westw.

### 1. *Sphyracephala cothurnata*.

*Diopsis* cothurnata Bigot, Ann. S. E. Fr. 1874, p. 115 (Celebes).

#### *Sphyracephala* (?).

The front is pubescent, but there are no conspicuous bristles, except one, each side, near the orbit of the eye. In Mr. Bigot's description, the word „superne“ in the diagnosis and the corresponding „en dessus“ in the french letterpress, must be struck out; there is only a single lateral thoracic spine under the root of each wing. (Compare Bigot, Ann. Soc. Ent. Fr. 1881, p. 373.)

Note on the Genus *Sphyracephala*. *D. cothurnata*, as well as the african *Diopsis Beccarii* Rond. differ from the majority of the Diopsidae as follows: 1. There is a distinct alula. 2. The sixth vein is distinctly prolonged beyond the anal cell. 3. The peristomium is not excised in the middle, and hence, there are no distinct projections on each side. 4. The head, viewed in front (in the direction of the axis of the body), appears triangular; that is, its sides rise obliquely from the peristomium (and not almost perpendicularly, as in an ordinary *Diopsis*). 5. The abdomen is not pedunculate and clubshaped (as it is in *Diopsis*), but rather flat, and attenuated at both ends. 6. The male hypopygium is large and protruding; in the female the ovipositor is represented by two small valvules (white in both of the above-named species); thus the sexes are more easily distinguished, than in *Diopsis*. 7. The prothorax is shorter, more closely applied to the mesothorax, and has not the saddleshaped depression, which

distinguishes *Diopsis*. The fore femora are incrassated (more so than in any *Diopsis* I know of). —

I have no specimen of the typical N. Amer. *Sphyracephala brevicornis* for comparison, but as Prof. Westwood mentions the large alulae of his *Sph. hearseyana* (Cabinet of Orient. Entom. Plate XVIII 1848) as a ground for referring it to Say's genus, and as Prof. Loew (*Zeitschr. f. d. Ges. Naturw.* Vol. 42, 101, 1873) has the distinct prolongation of the sixth vein among the characters which he assigns to *Sphyracephala*, I have but little doubt that I am right in referring the above-named two species to the same genus. Moreover, *S. Beccarii* must be exceedingly like *S. hearseyana* in its coloring, as Prof. Westwood's description is applicable word for word to it, except that the infuscated tips of the hind femora of *S. Beccarii* are not mentioned.

Assuming therefore the generic identity of those three species, there would be no necessity for the genus *Hexachopsis* Rondani (*Ann. Mus. Civ. Gen.* VII, 442, 1875) introduced for *Diopsis Beccarii*, but very insufficiently characterized. *S. cothurnata* differs from the other species in the absence of the usual vertical bristle, each side, between the eye and the ocelli; but this is not a sufficient generic character.

Dr. Loew described a new species from the region of the Amur River, *S. nigrimana* Lw. I assume its identity with the species from Wladivostok (in the same region), which Mr. Portchinski took for Say's species (*Horae Soc. Ent. Ross.* VIII, 287, 1871). Dr. Loew also described a *S. succini* from the prussian amber.

The living species of *Sphyracephala*, at present known, may be grouped as follows:

Wings without spots

Asiatic sp. . . . . *hearseyana* Westw.  
 African sp. . . . . *Beccarii* Rond.

Wings spotted

The dark crossband in the middle of the wing does not reach the costa.

Asiatic sp. . . . . *cothurnata* Bigot.

The dark crossband etc. reaches the costa.

Front tarsi black. North-Asiatic sp. *nigrimana* Lw.

Front tarsi yellowish. North-American sp. . . . . *brevicornis* Say.

1. *Teleopsis helzebuth* Bigot, *Ann. Soc. Entom. Fr.* 1874,

I refer, with a doubt, to this description a species which seems to be common in the Philippines, as it is represented by a dozen specimens. They vary in size from 7—8 mm. in length and 10—11 mm. in breadth from eye to eye, to 4—5 mm. in length and 3—4 mm. in breadth. The *Teleopsis longiscopium* Rond. (= *breviscopium* Rond.) must be a closely allied, if not the same, species.

3. *Teleopsis motatrix* n. sp. *Body black; head and front femora rufous; legs with sparse, fine hairs; wings with a single distinct brown crossband on the distal half.* Length: 5—8 mm. breadth of head, from eye to eye 5—14 mm.

Head rufous sometimes reddish-yellow; ocular peduncles brown; antennae brown, reddish on the underside of the third joint; the usual bristle-bearing spines are of moderate size, midway between the eyes and the ocelli in the specimens with short oculiferous stalks, and comparatively nearer to the ocelli in those with long ones. Thorax with all its spines black or dark brown, shining; scutellar spines large, curved; the pair above the root of the wings are straight, more than half as long as those of the scutellum; the lower pair much smaller. Halteres reddish. Abdomen brown, reddish at the base. Legs brownish; front femora incrassated, reddish-yellow or yellowish-red, brownish at base; the coxae brown; front tarsi paler brown. The whole body, including the legs, is clothed with very sparse delicate hairs. Wings subhyaline, with a brown crossband before the tip; its distal margin coincides on the costa with the end of the second vein; it is a little broader in the middle than at the ends, as it is convex on the proximal side; the anterior crossvein is slightly clouded, and there is a very faint oblique

Fig. 12.



*Teleopsis motatrix.*

cloud between it and the posterior margin; another cloud between that margin and the end of the anal cell; a very minute cloud, which resembles a crossvein, in the marginal cell; all these clouds are paler than the apical crossband. — Five specimens, four of which fragments without abdomen; in the only specimen which has one, it is remarkably slender.

4. *Teleopsis selecta* n. sp. *Head yellow; vertical bristles developed into strong spines, which are yellowish-white at the*

base; upper thoracic and scutellar spines with yellowish-white rings; body black, abdomen with hoary bands and spots; wings dark brown, hyaline at base and with three interrupted hyaline crossbands. Length 5—6 mm.; breadth from eye to eye (of my single specimen) 5—6 mm.

Head pale yellow, ocular peduncles with a brown line; antennae brown, paler on the underside; the bristle-bearing frontal spines unusually strong, and nearly as long as the distance from their base to the ocelli. Thorax dark brown, with some gray marks on the shoulders and on the suture, each side; brownish-pollinose in the middle, with two indistinct grayish stripes; the spines above the root of the wings unusually long (at least as long as those on the scutellum), curved, brown, with a pale ring in the middle; scutellar spines long, slightly curved, with a pale ring before the tip, which is dark. Abdomen brownish-black, with crossbands of grayish pollen on the first three segments; the two last segments slightly grayish-pollinose; some other gray spots on the sides of the segments. Legs brownish-yellow, variegated with brown; front coxae and femora brown, the latter with a yellow ring before the tip; middle and hind femora brownish-yellow, with a brown ring in the middle and the distal third brown; (the extreme base also has a little brown); front and middle tibiae yellowish-brown; hind tibiae brown, with a yellow ring a little beyond the middle; tarsi brownish. Halteres yellowish. Wings dark brown; the base hyaline nearly as far as the tip of the anal cell; the first hyaline

Fig. 13.



Teleopsis selecta.

band is interrupted by the breadth of the discal cell; the second, by the breadth of the first posterior cell; the third band, placed before the apex, just beyond the tip of the second vein, is only slightly interrupted on the third vein. — A single specimen.

5. *Diopsis subnotata* Westw. Cabinet of Orient. Entom. Tab. XVIII, f. 2 (Philippines)!

Synon. *D. argentifera* Bigot, Ann. Soc. Ent. Fr. 1874, p. 112 (Celebes)!

Two specimens.

**Sapromyzidae.**

*Sapromyza*. There are nine or ten species in the collection, none of which can be referred to the existing descriptions of asiatic *Sapromyzae*. One of them has the abdomen colored like *Minettia signata* v. d. Wulp, Sumatra Exp. 52, Tab. III, f. 12. only the penultimate abdominal segment has a round brown spot on the underside, on each side of the brown stripes represented on the figure.

*Celyphus levis* v. d. Wulp, Sumatra Exp. 53. I refer the specimens to this species, on account of their smooth surface, although their abdomen is metallic green, and not black, the antennae nearly brown etc.

**Sepsidae.**

*Sepsis revocans* Walk. J. Pr. Lin. Soc. IV. 163 (Celebes). The specimens were so determined by Mr. Walker, and agree with his unmeaning description.

*Sepsis* sp. Two specimens, determined *S. testacea* Wk. J. Pr. L. Soc. IV, 163 (Celebes), by Mr. Walker, but certainly different from it. The species is remarkable for its very bristly legs: the male has teeth on the underside of the front femora.

*Sepsis* spec. named *basifera* by Mr. Walker (J. Pr. L. Soc. III, 125; Aru) is most certainly a different species.

**Ephydriidae.**

*Paralimna* sp. Agrees with the description of *Notiphila chinensis* Schiner, Nov. (which, is a *Paralimna*), except that the knees and the extreme tips of the tibiae are reddish, a character not mentioned in that description; the gray design on the first abdominal segment also seems to be a little different. — Two specimens.

**Dryx0 Rob. D.**

This genus was established by Robineau Desvoidy (Myod. p. 787) for *D. lispoidea* R. D. (Sumatra). In 1867 Mr. Jaenicke (Neue Exot. Dipt., p. 59 Tab. I, f. 14) published a good description, with excellent figures of the genus *Cyphops*, which is hardly different from *Dryxo*, although the species, *C. fasciatus* (Sumatra), is not the same as *D. lispoidea*. I possess two species from the Philippine Islands, which enable me to give a fuller description of the genus. I will base this description upon one of the species (*D. digna*), that I possess

in a sufficient number of tolerably well preserved specimens, and, at the same time, indicate the points in which the other species differs from it.

Head, seen in profile, nearly square, as the front is almost horizontal and the face nearly perpendicular; both project considerably in front of the eyes, (see Jaenicke, l. c. Tab. I, f. 14a). Front very slightly convex, clothed with a microscopic, nearly appressed pubescence, but without any bristles; on the vertex two stout, but rather short vertical bristles each side near the upper corner of the eye; the inner pair converging, the outer diverging. Eyes nearly round, glabrous, comparatively small, the face under them being nearly equal in length to the diameter of the eye. Antennae small, distant at their bases, inserted immediately under the frontal fissure and somewhat appressed to the face in a distinct depression; a couple of exceedingly small bristles near the tip of the second joint; third joint semi-elliptical, finely pubescent; arista plumose on the upper side. The facialia (Stenhammar's epistomatis partes laterales) on each side of the face, between the antennae and the cheeks, are perfectly glabrous, the face likewise. Oral opening large, clypeus retracted, proboscis rather stout, palpi slender, very slightly stouter towards the end.

Thorax very gently convex, nearly glabrous; on the thoracic dorsum only four bristles each side; a posthumeral in front of the thoracic suture, in the angle between it and the dorso-pleural suture; and three supra-alar in their normal positions; on the pleurae, a single mesopleural bristle and a sterno-pleural; the latter about midway between the root of the wing and the middle coxa.

Scutellum rather large, flat, projecting horizontally, in the shape of a truncate triangle; four bristles on the edge. Abdomen very gently convex, uniformly clothed with microscopic, semi-appressed hairs (like those on the front): in the male, five apparent segments; segments 6-8, short and narrow, are generally withdrawn.

Legs comparatively long; basal joint of front tarsi of the male distinctly incrassated; more slender in the female; on the middle tibiae, besides the ordinary pair of spurs and the other bristles at the tip, there is, on the upper side, a short bristle not far from the base, a second a little beyond it, and a third a little before the tip. The hind femora have (in both sexes) a row of short, erect spines on the distal half of the underside. Pulvilli very small: ungues curved. (The „Hinterschienen leicht gebogen“ of Jaenicke does not apply to *D. digna*; the tibiae are straight).

Wings rather long; costal vein reaching as far as the fourth vein; no costal spine; posterior crossvein very oblique, sinuate, approximate to the alar margin; second basal and anal cells obliterate.

Of *D. spreta* I have but two, very indifferently preserved specimens. The arrangement of the cephalic and thoracic bristles is the same as in *D. digna*, only they are weaker; those on the pleuræ especially are very small, and require a strong lens. On the upper side of the middle tibiae I perceive but a single bristle, a little distance from the base; but I am not sure whether this is not owing to the imperfect preservation of the specimens. The little spines on the underside of the hind femora are wanting here; and, from the silence of Mr. Jaenicke about them, I judge that they are also absent in his *C. fasciatus*. The posterior crossvein is less oblique and not quite so near the hind margin; this seems also to be the case *C. fasciatus*.

*Dryxo* belongs apparently in the member of those Notiphilina, which, like, *Paralimna* and *Corythophora*, have the second antennal joint not unguiculate, but provided with a very minute bristle; nevertheless, the presence of some bristles on the upper side of the middle tibiae vindicate its position within that group, (in accordance with the arrangement adopted by Loew; see Monogr. N. Am. Dipt. I, p. 131). With both of the above quoted genera *Dryxo* has the prolongation of the costal vein as far as the fourth vein in common. But it is abundantly distinguished from *Paralimna* by the projecting face and front, the great scarcity of cephalic and thoracic bristles etc. *Corythophora* (Loew, Öfv. K. Vet. Ak. Förh. 1862; S. Africa) I do not know; it may be closely related to *Dryxo*; it also has a very oblique posterior crossvein; but the words „scutellum crassum“ and the adjective *validae*, applied to the bristles on the middle tibiae, prevent me from assuming the identity.

The position of *Dryxo* among the Notiphilina is, no doubt, somewhat artificial. R. Desvoidy placed it near *Ochthera*; and indeed the bareness of the thoracic dorsum, the arrangement of the cephalic bristles, the venation etc., may indicate a relationship between them. Loew placed *Ochthera* at first among the *Ephydrina* (Monogr. N. A. Dipt. I. c.), but removed it afterwards among the *Hydrellina* (Berl. Ent. Z. 1874, p. 78.)

Of the four species at present known, *D. lispoidea* R. D. (Sumatra) is seven lines long, and therefore certainly distinct from the others. *Cyphops fasciatus* Jaenn. (Java) has some points in common with my *D. spreta*, but is probably distinct, — as will be shown below.

I happened to identify this genus *Dryxo* R. D., merely because I found it among Mr. Walker's determinations, and I believe that this time he was right, although the *Paralimnae* were likewise called *Dryxo* by him. Mr. Walker, in his works, frequently refers to Rob. Desvoidy's



genera and shows an unusual acquaintance with them, based, I suppose on some direct communications.

*Dryso digna* n. sp. ♂ ♀. General coloring grayish-black, hind femora with a row of small, erect spines on the underside; dorsal abdominal segments altogether grayish pollinose on the ventral side; wings grayish-hyaline. Length 7—9 mm.

Face with a dense grayish-silvery pollen; antennae brown, second joint silvery-pruinose; front black, somewhat shining in the middle, finely punctate, the microscopic hairs issuing from the punctures; its anterior edge and a narrow line in the middle, not quite reaching the ocelli, yellowish-pruinose; on each side of the vertex, between the eyes and the ocelli, there is a short, oblique streak of the same pollen; occiput blackish-gray. On the thoracic dorsum, a longitudinal geminate gray stripe in the middle and two much less distinct, similar lateral stripes; anteriorly, they coalesce with the grayish-pollinose anterior margin and humeri; posteriorly, the lateral stripes stop some distance before the scutellum; the intermediate one meets a distinct enlargement of the middle of a gray band running along the scutellar suture; pleurae and pectus grayish-pollinose, with an ill-defined, but distinct brown shade in the middle of the mesopleura. Scutellum grayish-pollinose on the edges, and with a gray line in the middle. The abdomen may be described as altogether grayish-pollinose with the following blackish-brown spots; on the second segment, an oval spot on each side; on segments 3 and 4 a broad transverse band at the base, occupying more than half of the length of the segment, its posterior margin bisinuate; from its narrower part in the middle, issues a triangle, the apex of which touches the hind margin of the segment; on segment five, the same blackish-brown design, only narrower. The ventral side of the dorsal segments in altogether grayish-pollinose. Legs black, densely grayish-pollinose; tarsi blackish; in some specimens the middle tarsi are slightly reddish at base; hind femora, on the distal half of the underside, with a row of short, erect spines. Wings grayish-hyaline; veins black, brownish-yellow near the root; posterior crossvein very oblique, bisinuate. Halteres reddish-yellow. — Five males; one female.

NB. I have described the gray design on the head and the thorax from the best preserved specimen; in ordinary specimens it is often very much rubbed off. The figure of *C. fasciatus* Jaenn. (l. c. Tab. I, f. 14) very nearly represents that design; except that on the thorax there is a middle stripe which is not represented, and that the second abdominal segment is differently marked.

*Dryoxo spreta* n. sp. General coloring dark-brown; under-side of hind femora without spinès; all the tarsi reddish ad the base; the dorsal abdominal segments 2—4 have, on the ventral side, each a large brown spot in the middle of the gray pollen; wings with a slight brownish tinge. Length 8 mm.

Although I have only two badly preserved specimens, the differences from *D. digna* are so well marked, that I do not hesitate to describe this species. The pollen on the face is darker, more yellowish than in *D. digna*; a kind of dingy yellowish gray, nearly brown between the antennae, and with a brownish shadow a little lower. Antennae dark brown. Front as in *D. digna*. Thorax with a grayish stripe in the middle (which is not geminate); on each side an almost circular humeral spot of the same color, each with a brown centre; a faint gray line issuing from each of these circles runs backwards towards the corners of the scutellum; the latter as in *D. digna*. Abdomen: Segments 1 and 2 with a grayish pollen; the latter with a brown spot on each side; segments 3—5 each with narrow grayish crossband, interrupted in the middle; the crossbands on segments 3 and 4 are very near the hind margin, but not upon it; on the ventral side, the gray of the second segment and the gray crossbands of segments 3 and 4 expand so as to occupy the whole breadth of the segment, except a large brown spot on each segment in the middle. This series of three brown spots on each side, does not exist in *D. digna*, where the dorsal segments are altogether grayish pollinose on the ventral side. Femora black, grayish pollinose; tibiae brown, more or less reddish at base; tarsi brown, first joint reddish. Wings subhyaline, with a slight brownish tinge; posterior crossvein oblique, but less so than in *D. digna* and therefore much less parallel to the alar margin; only slightly bisinuate. Halteres brownish-red. — Two specimens. (Perhaps females, as the first joints of the front tarsi are not incrassated?)

NB. These specimens must have been subjected to moisture, and for this reason the face, the stripes on the thorax etc. are perhaps darker than they should have been. — *D. spreta* is, in many respects, nearer to *C. fasciatus* Jaenicke, than *D. digna*: still the total absence of an intermediate thoracic stripe (in the figure; but the description says: three stripes?); the difference in the shape of the abdominal crossbands; the „Adern schwach gesäumt“, tend to prove that it is a different species.

## Geomyzidae.

## D i p l o c e n t r a.

Loew, Centur. II, 288; *Curtomotum* Macq. D. E. II, 3, 193; Schiner, Fauna Austr. II, 22.

The species before me agrees in the principal characters with Macquart's description; but the third antennal joint is rather short, elliptical (and not four times as long as the second); the scutellum has only four (and not six) long and strong bristles<sup>1)</sup>; there are several praescutellar macrochaetae, (while Macquart's species is said to have no macrochaetae on the thoracic dorsum). The chaetotaxy, as far as I can discern in my only specimen is as follows:

Head. Vertical bristles, inner pair longer and stronger than the outer; postvertical pair comparatively long; ocellar of moderate length; fronto-orbital, two, the upper one long, the lower one shorter and weaker; a small genal bristle; a weak vibrissa; the upper occipital orbit with a row of shorter bristles (cilia).

Thorax. Humeral bristle, one, very long; posthumeral, two; praesutural, one. Supra-alar, three (?) Praescutellar two pairs, the outer one much longer than the inner; a shorter pair, more in front, corresponds in width to the outer pair. No other macrochaetae in the dorsal region, but it is closely covered with short, semi-appressed bristles.

Pleurae. Mesopleural bristles two, near the mesopleural suture; a third, weaker one between them; a fourth, lower down, above the sterno-pleural suture. Sterno-pleural one, longer than the mesopleural bristles, inserted above the middle coxae.

Legs. Two small bristles on each of the front and middle coxae; and one (?) on the hind coxae. Four bristles on the hind side of the front femora; two long apical bristles on the middle femora (also mentioned in Macquart), and several smaller bristles on the front side; one praeapical bristle on the front side of the hind femora. Front and hind tibiae with one praeapical bristle; middle tibiae with four or five long apical and praeapical bristles.

<sup>1)</sup> The statement that there are six scutellar bristles, and no macrochaetae on the thoracic dorsum, was a mistake of Macquart's, and not a peculiarity of *C. gibbum*. Rondani, *Esame* etc. p. 18, has corrected it. But Rondani is wrong immediately afterwards, in identifying the *Helomyza circumfusa* Wied. (Sumatra), with a Brazilian species.

The wings, like those of *Helomyza*, have a series of stronger bristles along the anterior margin; nevertheless Loew places the genus among the Geomyzidae (Centuriae, List of species, Vol. I, p. 266) on account of the shortness of the first vein, the end of which coincides with the end of the auxiliary vein. The discal and second basal cells are coalescent (this character is mentioned by Schiner, Fauna Austr. Dipt. II, VII, foot-note, but not by Macquart and Loew; on the contrary, Macquart's figure shows the second basal cell as closed).

The species of the genus hitherto known, are *Curtonotum* Perrisi Schin. (syn. *Helomyza gibba* Perris), from the South of Europe; *Helom. gibba* F. (Wied.), from S. America; *Diploc. helva* Lw., Centur. II, 91, from N. Amer., and an undescribed South African species, mentioned by Loew in Centur. II, p. 288. The species from the Philippine Islands which I describe, is not unlike the European and North American species in its coloring.

*Diplocentra arenata* n. sp. *Brownish-yellow, abdomen with three rows of subcoalescent brown spots along the middle; wings pale brownish.* Length 7—8 mm.

Face yellowish-white; front reddish brown, with two short longitudinal paler stripes on which the fronto-orbital bristles are inserted; anterior margin of the front along the frontal fissure, yellow. Antennae reddish; third joint brownish.

Thoracic dorsum densely punctate with brown, a black hair issuing from each dot; the intervals of the dots pollinose (with a dirty gray anteriorly, more brownish posteriorly). Pleurae yellowish-pollinose; ill-defined grayish-brown spots on the sternopleura and the hypopleura; macrochaetae black. Halteres reddish-yellow. Abdomen yellowish, densely covered with short black hair; longer hairs along the posterior margins of the segments; a brown spot in the anterior lateral margin of each segment (on the ventral side); along the back three rows of subcoalescent brown spots: on segment one, they are coalescent and form a transverse brown spot in the middle of the segment, the anterior margin of which remains yellow; on segments 2 and 3 the three spots, in the shape of longitudinal brown stripes are connected by a transverse brown band near the posterior margin; on segment 4 nearly the same pattern, except that the lateral stripes are reduced to a mere brown spot, near the anterior margin and disconnected from the brown band on the posterior. Wings uniformly tinged with brownish; posterior crossvein very little oblique, slightly sinuate, clouded with brown. A single specimen (female?).

**Drosophilidae.**

*Drosophila ananassae* Dolesch. 3 Bijdr. 56 The description is unmeaning, and even a colored drawing which I possess does not afford any certainty about the identification. — A single specimen.

*Drosophila hypocausta* n. sp. ♂ ♀. Thorax brownish-red above; pleurae and abdomen nearly black; legs brownish-yellow, but femora and front coxae brown; wings yellowish-subhyaline. Length  $2\frac{1}{2}$ —3 mm.

Head brownish-red, including the antennae; cephalic bristles and the arista black; thorax brownish-red above; pleurae and sternum dark-brown; abdomen dark-brown, almost black, in one of the specimens slightly reddish at the base; halteres yellowish-red; legs pale brownish-yellow; front coxae and all the femora, except the knees, brown; a weak praeapical bristle on the hind tibiae; wings yellowish, subhyaline; the costal vein reaches the fourth vein; the last section of the fourth vein only a trifle longer than the preceding; it is parallel to the third vein; the second and third veins are diverging; the interval between their tips is about once and a quarter longer than the interval between the tips of the third and fourth veins; the posterior crossvein is a little longer than the last section of the fifth vein; first vein very short, its tip a little nearer to the root of the wing than the anterior crossvein. — Five specimens.

**Oscinidae.**

*Oscinis dimorpha* n. sp. ♂ ♀. — Black, fore part of the front red; tip of the wings infuscated;

♂. Antennae red; legs reddish-yellow, except the hind femora and tibiae, which are brown.

♀. Antennae dark brown; legs brown, except the fore coxae, the base of the tibiae and of the tarsi, which are pale yellow.

Male. Head black, vertex and posterior part of the front shining black, encroaching in the shape of an angle on the anterior half of the front, which is ferruginous-red. Face and palpi reddish-yellow. Antennae ferruginous-yellow: third joint rounded-oblong, arista microscopically pubescent, yellowish at base. Thorax black, slightly grayish-pollinose; scutellum with two pairs of bristles; the intermediate very long. Abdomen black. Halteres reddish-yellow. Wings hyaline, veins yellowish-brown; apex of the wing infuscated beyond the tip of the

second vein; venation like Walker, Ins. Brit. Dipt. II, Tab. XVII, f. 4 b; but the small crossvein nearer to the origin of the third vein; the tip of the fifth vein nearly touches the margin; the posterior crossvein is much less oblique; a distinct fold replaces the absent basal crossvein and the fifth vein shows a distinct break at the intersection of this fold. Legs reddish-yellow; hind femora and tibiae brown, the latter yellow at base and at tip; the anterior femora are slightly infuscated on the upper side; fore coxae yellow; the other coxae black, but the trochanters yellowish. Length  $2\frac{1}{2}$ —3 mm.

Female. Like the male, but the antennae and the palpi are brown; legs brown, except the fore coxae, the trochanters, the base of the tibiae and the tarsi, which are reddish-yellow; tip of the tarsi infuscated. The infuscation of the tip of the wing is a little less intense; the marginal cell is often slightly tinged with brownish. Length 3— $3\frac{1}{2}$  mm.

### Phoridae.

*Phora*, a small, pale-colored species.

### Pupipara.

*Myophthiria capsoides* Rondani, Ann. Mus. Civ. Genova, XII, p. 154.

Prof. Rondani's description was drawn from the specimens of Dr. Semper's Collection.

*Ornithomyia batchiana* Rondani, Ann. Mus. Civ. Genova, XII, p. 158. (Grafton Australia and Philippine Islands). The specimens were named by Prof. Rondani.

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### Addendum et Erratum.

On pag. 86, to the List of species etc. add *Asilus albispina* Thomson, Eug. Resa, 470.

On pag. 105, line 20 from top, read *saigonensis* Bigot, for *siagonensis*.







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