

XXI.—DIPTERA NEMATOCERA FROM THE  
LOWLANDS OF NORTH BORNEO.

By F. W. EDWARDS

(*British Museum, Natural History*).

With 5 figures.

The following is a report on the collections of Nematocerous Diptera (other than *Culicidæ*, *Chironomidæ*, *Ceratopogonidæ* and *Cecidomyiidæ*) formed by Messrs. C. Boden Kloss and H. M. Pendlebury during a visit to British North Borneo in July-September, 1927. During this visit no ascents were made above 200 ft. On a subsequent occasion Mr. Pendlebury made the ascent of Mt. Kinabalu and obtained large collections there; these will form the basis of a later report. Thanks to the generosity of the collectors, the types of all new species here described are preserved in the British Museum.

The collection having been made chiefly near the coast, it is not surprising to find that it includes a large proportion of known species, some of which have an extensive range; among these we may note several Philippine species, and one (*Gonomyia punctipennis*, Edw.) previously recorded only from the island of Buru. The *Tipulidæ* as usual far out-number the other families in species; 72 species were represented, of which 20 are described as new; of the remaining 52 only 12 have previously been recorded from Borneo.

The only comprehensive paper on the *Nematocera* of Borneo is one by the writer reporting upon collections made by Dr. E. Mjöberg on the mountains of Sarawak in 1922-3 (*Sarawak Mus. Journ.*, III, 1926, pp. 243-278). In that paper a list was given of the craneflies known from Borneo, but in compiling the list the following were overlooked:—

*Limonia (Libnotes) impressa*, Walk. Type from Sarawak.

*Gonomyia (Lipophleps) conjugens*, White. Kuching (Brit. Mus. Coll.)

*Pselliophora ophionca*, Edw. Type from Mt. Matang (Bryant).

*Tipula vilis*, Walk. Type from Sarawak.

*Tipula cinereifrons*, de Meij. Gunung Kenepai (recorded by de Meijere, 1911).

It should further be noted that the specimen recorded as *Epiphragma klossi*, Brun., was not that species but *E. insignis* v. d. W.; also that the doubtful record of *Ctenacroscelis nova-guinæa* de Meij., probably referred to *Ct. punctifrons* Rond. The position of Rondani's species in *Ctenacroscelis* is confirmed by the fresh material now available.

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Family Mycetophilidæ.

Subfamily Ceroplatinæ.

*Rhynchoplatyura longirostris*, de Meij. Kudat, 1 ♂.

*Platyura (Isoneuromyia) xanthina* sp. n.

♂. *Head* orange, face lighter. Ocelli in a straight line, enclosed in a heart-shaped black spot; middle ocellus smaller than laterals; distance of lateral ocelli from eye-margins about the same as their distance from one another. Palpi yellowish. Antennæ thick and flattened, mainly orange, but last four segments dark brown. *Thorax* orange, without dark markings on integument; mesonotum with dense and uniformly distributed black setulæ. Pleurotergites without any distinct white dusting. *Abdomen* not much widened, normal in shape, orange, except for the eighth segment, which is black; pubescence decumbent, mainly black, but on bases of segments 2-5 it is orange, so that to the naked eye the abdomen appears indistinctly banded. Hypopygium small, claspers short, with the usual two terminal teeth. *Legs* orange; coxæ and femora unmarked; femora with short decumbent orange pubescence; tibiæ appearing blackish owing to dense rows of black setulæ, spurs and tarsi black. *Wings* clear, even at tip, veins all black; *M2*, *Cu1* and *An* as usual not quite reaching margin; *m-cu* fusion about as long as stem of fork. Halteres orange.

Length of body, 5 mm.; wing, 6.5 mm.

Bettotan, 1 ♂.

This is smaller than the other oriental species of the subgenus, and very distinct in colouring, but is a typical *Isoneuromyia*.

*Platyura (Proceroplatus) limpidapex* sp. n.

*Head* blackish above, front below ocelli yellowish, face dark. Antennæ and palpi wholly dark brown; flagellar segments 2-6 in ♂ each at least twice as deep as long, following segments successively less deep, last two much longer than deep and scarcely flattened; in ♀ the whole flagellum is much less flattened than in ♂, the intermediate segments less deep. *Thorax* brownish, shoulders, scutellum and pleuræ pale. *Abdomen* dark brownish, segments 2-4 broadly margined with ochreous posteriorly, 5 less distinctly so. *Legs* with coxæ clear yellow, femora somewhat smoky, especially on underside towards base, tibiæ and tarsi darker, spurs black. *Wings* with conspicuous markings as follows: a brown area in middle extending from *R1* to *Cu1* and covering stem of median fork; an irregular band just beyond this, extending from *R5* to *Cu2*; and a brown area in anal cell; tip of wing broadly clear. All veins (except *An*) dark brown: *R4*, *M1* and *M2* narrowly seamed with

brown. Costa reaching nearly three-quarters of the distance from *R5* to *M1*; *An* very short and indistinct. Halteres with blackish knob.

Length of body, 3 mm.; wing, 3 mm.

Bettotan, 5 ♂ 2 ♀.

Differs from allied species *P. pulchripennis* S.-W. and *P. poeciloptera* Edw. of Ceylon, and *P. graphica* Skuse of Australia, in the clear wing-tip.

In reviewing the subgenera of *Platyura* (Proc. Linn. Soc. N. S. W., LIV, 1929, p. 163). I omitted to notice two features which are common to all species of the subgenus *Proceroplatus*, including the new one here described: (1) the fine tibial setulæ, although in regular rows for the whole length of the dorsal surface, are irregularly arranged beneath on about the basal third of the tibia; (2) the *m-cu* fusion is short, markedly shorter than the stem of the median fork.

#### Subfamily Sciophilinæ.

##### *Mycomyia klossi* sp. n.

♂. *Head* yellow, except for a small black ocellar spot. Palpi and scape yellow, flagellum dark brown. *Thorax* brownish-yellow, only the scutellum and a small spot above each wing-base dark brown. Scutellum with four bristles. *Abdomen* blackish, segments 1-5 broadly yellowish at base. Hypopygium small; ninth tergite consisting of two large rounded lateral hairy pieces and a small median pubescent area, beneath which are two strong, black, blunt-tipped hooks. *Legs* with coxæ and femora yellowish, tibiæ and tarsi darkened. Middle coxæ simple. First front tarsal segment shorter than tibia. *Wings* with the outer two-fifths distinctly darkened, as far back as base of median fork; a dark area in middle from costa to *r-m*, including the small cell. *Sc* ending in *R1* near end of small cell; *R5* slightly curved, ending well before wing-tip but scarcely if at all exceeded by the costa; *M2* as long as stem of fork; *fCu* below base of *r-m*. Halteres with black knob.

Length of body, 2.5 mm.; wing, 2.5 mm.

Bettotan, 1 ♂.

Although the wing-markings are suggestive of the subgenus *Neoempheria* the venation and other characters indicate an affinity with the group of *M. fimbriata* Mg.

*Mycomyia* sp. inc. (cf. *fimbriata* Mg.) Samawang 1 ♀.

*Leia* (*Rhymoleia*) *annulicornis* Brun. Samawang, 1 ♂, 1 ♀.

*Rondaniella* (*Indoleia*) *bisetosa* Edw. Samawang, 1 ♀.

#### Subfamily Manotinæ.

*Allactoneura cincta* de Meij. Bettotan, 1 ♂, 1 ♀.

## Subfamily Mycetophilinæ.

*Exechia mastigura* Edw., var.?

Differs from the type (from Malay Peninsula), as follows:—Body lighter in colour. First abdominal segment with a small blackish spot on each side at base. Hypopygium of ♂ with the intermediate appendages two-thirds as long as the whip-like appendages, composed of a slender bare stem and an elongate club fringed on one side. Halteres with base of knob somewhat darkened.

Bettotan, 1 ♂ 1 ♀.

In this species, the front tibia and first tarsal segment have a close-set, posterior row of short, blunt-tipped bristles; the middle tibiæ have a close-set anterior row of short bristles extending nearly the whole length.

## Subfamily Sciarinæ.

*Scythropochroa velata* End. Bettotan, 1 ♂.

*Scythropochroa sordidata* Edw. (?). Sandakan, 1 ♂. The venation is almost the same as in the type ♀ (from Malay Peninsula). Claspers nearly globular, with a short, blunt lobe on inner side near base, and a row of three strong spines (two long, one shorter) beyond the lobe.

*Scythropochroa longipennis* Brun. (?). Bettotan, 1 ♀.

Differs in venation from the last (*R1* longer and median fork shorter).

*Phorodonta malayana* Edw. Bettotan, 3 ♂.

*Sciara nigrifemur* Edw. Bettotan, 1 ♀.

*Sciara copiosa* Ldf. Bettotan, 2 ♂ 12 ♀; Samawang, 3 ♀; Sandakan, 1 ♀; Kudat, 1 ♀. The hypopygium is almost identical with that of *S. rufithorax* v. d. W., but the species seems distinct by the black colour of the thorax in both sexes.

*Sciara pahangensis* Edw. Bettotan, 1 ♂.

*Sciara solita* Walk. Bettotan, 1 ♂ 14 ♀.

*Sciara orientalis* Brun. Bettotan, 4 ♂ 1 ♀.

In addition to the above, the collection includes examples of half a dozen other species of *Sciara*, at present indeterminable.

## Family Bibionidæ.

*Plecia subvarians* Walk. Bettotan, 5 ♂ 2 ♀. Some of the males are typical, others have the processes of the ninth sternite much stouter than usual, and perhaps represent a distinct variety or species.

*Plecia borneensis* sp. n. (Fig. 1).

Black, with dull reddish thorax, pleuræ indistinctly darker. Antennal flagellum in ♂ 6-segmented, last two segments subequal and almost fused, in ♀ 9-segmented,

last segment small and indistinctly separated. Front tibia in ♂ stout and somewhat flattened. Hypopygium of ♂.

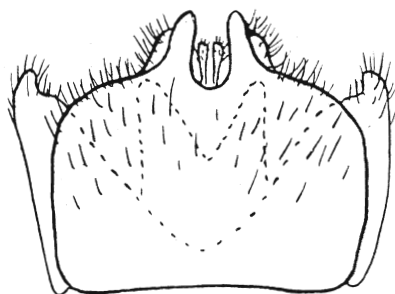


Fig. 1.

rather small, processes of sternite small, submedian in position, styles minute.

Length of body, 4-6 mm.; wing, 4-6 mm.

Bettotan, 1 ♂ 1 ♀.

A small species, allied to *P. aruensis* Edw. and *P. bakeri* Mall.

#### Family Scatopsidæ.

*Scatopse curvata* sp. n. (Fig. 2).

♂. *Head* dull black. *Antennæ* black, with 2 + 8 segments, intermediate segments less than twice as broad as long. *Palpi* black. *Eyes* just touching. *Thorax* entirely black, slightly shining dorsally, more so on pleuræ.

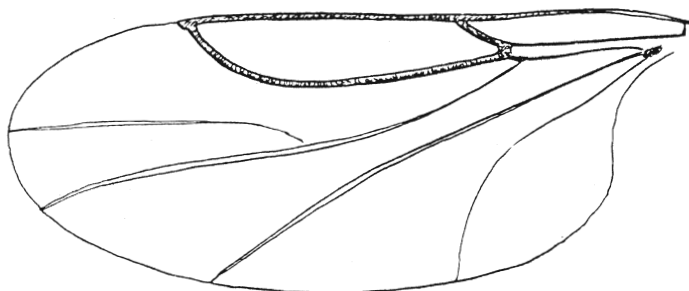


Fig. 2.

*Abdomen* black, much broadened beyond middle; surface mainly dull, but last tergite somewhat shining, its posterior margin almost straight. *Legs* with coxæ, femora and tibiæ wholly black, tarsi wholly whitish-yellow. *Wings* hyaline, anterior veins black, posterior veins scarcely coloured. *Costa* reaching to fully two-thirds of wing, its second division slightly longer than the first; radial cell unusually

broad, *Rs* being distinctly curved with a downward convexity; median fork equalling its stem in length, lower branch at first continuing direction of stem, then curved downwards. Last vein with one strong bend, in middle. Halteres black.

Length of body, 1.7 mm.; wing, 1.8 mm.

Bettotan, 1 ♂.

Very distinct in venation from other known oriental species.

#### Family Anisopodidæ.

*Anisopus maculipennis* v. d. W. Bettotan, 1 ♀.

*Mesochria intermedia* sp. n.

♀. *Head* blackish. Eyes touching as usual. Antennæ black, intermediate segments broader than long, last segment rounded at tip. Palpi black, first segment much larger than second, third small. *Thorax* dull dark brown above, pleuræ more ochreous and somewhat shining. Scutellum with two strong bristly hairs. *Abdomen* dark brown. *Legs* dull ochreous. *Wings* clear, anterior veins and *Cu2* dark. Costa produced nearly half way from *R5* to *M1*; *R2* + *3* ending in *R1* as usual, but not swollen apically; *R4* + *5* only moderately curved; median fork complete, lower branch somewhat shorter than stem. Halteres with dark knob.

Length of body, 2.5 mm.; wing, 2.7 mm.

Bettotan, 1 ♀.

On account of *R2* + *3* ending in *R1* instead of in the costa this species is placed in *Mesochria*, but in other respects its venation is more like *Mycetobia*; it differs from the four other known species of *Mesochria* in the produced costa, less curved *R4* + *5* and shorter and complete median fork.

#### Family Tipulidæ.

##### Subfamily Limoniinæ.

*Limonia* (*Dicranomyia*) *punctulata* de Meij. Bettotan, 1 ♂ 1 ♀.

*Limonia* (*Dicranomyia*) *flagellata* Edw. Samawang, 5 ♂ 1 ♀.

*Limonia* (*Limonia*) sp. cf. *alta* de Meij. Samawang, 1 ♀.

*Limonia* (*Limonia*) *labuana* sp. n. (Fig. 3).

♂. *Head* black, including antennæ and mouth parts. Eyes at vertex only very narrowly separated, their distance apart about as great as the diameter of one facet. Flagellar segments shortly oval, with short but distinct necks, last

few segments longer, last long and pointed; pubescence half as long, verticils slightly longer than diameter of segments. Rostrum very short, but palpi well developed. *Throax* shining blackish-brown, scutellum and pleuræ lighter. A few short sternopleural hairs present. *Abdomen* blackish, posterior margins of segments narrowly lighter. Hypopygium large and thick; ninth tergite simple, not emarginate, even slightly produced in middle;

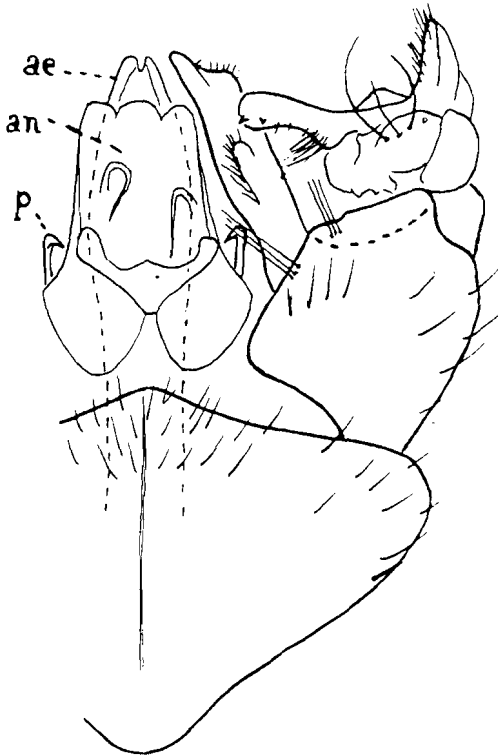


Fig. 3.

anal segment with complex chitinisation; ventral process of coxite long and somewhat lobed, but not clubbed as in *L. umbrata*, only one style, which is of rather complex form, rostrum without spines. *Legs* with coxæ and bases of femora ochreous, remainder darkened. Claws with basal tooth only. *Wings* uniformly smoky, but not very dark; stigma darker, small and inconspicuous; veins dark, but not dark-margined, *Sc* ending at middle of *Rs*, *Sc2* at its tip; *Rs* long, gently curved; tip of *R1* turned up sharply at *r*; *m-cu* at base of discal cell. Halteres blackish, base of stem pale.

Length of body, 4 mm.; wing, 5 mm.

Bettotan, 1 ♀.

Somewhat resembles and is perhaps related to *L. (D.) umbrata* de Meij., but differs conspicuously in the shining thorax and structure of hypopygium.

*Limonia (Limonia) infantula* sp. n. (Fig. 4).

♂. *Head* dull dark brownish, antennæ and palpi black. Front of moderate width, as wide as 4-6 facets. Flagellar segments shortly oval, without distinct necks; pubescence almost as long as diameter of segments, verticils scarcely longer than pubescence. Rostrum short, palpi well developed. *Thorax* uniformly dull ochreous. Apparently no sternopleural hairs. *Abdomen* dark brown. Hypopygium very small; ninth tergite slightly emarginate; ventral lobe of coxite short but broad and square-ended;

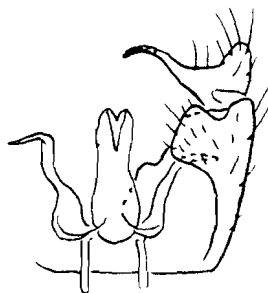


Fig. 4.

only one style present, formed of a small fleshy basal portion and a long, thin, curved, inwardly-directed apical portion, the outer part of which is darkened. *Legs* slender, brownish; claws apparently simple. *Wings* nearly clear, stigma scarcely indicated; shape narrow, anal lobe practically absent. *Sc* reaching middle of *Rs*, *Sc2* near its tip; *Rs* rather long, gently curved; tip of *R1* sharply turned up at *r*; *M3* and *M4* more divergent than usual; *An* not sinuous. Halteres with slender pale stem and dark knob.

Length of body, 2 mm.; wing, 3 mm.

Bettotan. 1 ♂.

I know of no very close relative of this species, which seems well distinguished by its small size and hypopygial structure.

*Limonia (Geranomyia) notata* de Meij. (*cornigera* Alex.)  
Kudat, 1 ♂.

*Limonia (Geranomyia) flavicosta*, Brun. Labuan, 1 ♀.

*Limonia (Geranomyia) tridens* Brun. Kudat, 1 ♂ 3 ♀.

*Limonia (Geranomyia) albilabris* sp. n.

♂. *Head* blackish, including antennæ. Front with a prominent tubercle, which is approximately hemispherical, not horn-like as in *L. (G.) notata*. Rostrum about as long



as head and thorax together, black to a little beyond the two-segmented palpi, then whitish with a very narrow blackish ring close to tip. Flagellar segments nearly globular. *Thorax* entirely dull; mesonotum chestnut-brown, darker at sides, lighter above wing-root; pleuræ dark, without stripes. Middle of pronotum forming a finely pubescent tubercle recalling the prescutal tubercle of *G. notata*, but rather larger. *Abdomen* dark brown, posterior margins of segments pale. Hypopygium with coxite long; dorsal style slender, curved; ventral style small, not half as long as coxite, rostrum long, the two "spines" scarcely distinguishable from ordinary hairs. *Legs* ochreous; femora with a narrow dark brown subterminal ring; tip of tibiæ and tarsal segments narrowly dark. *Wings* with two brown clouds, one over base of *Rs* and including tip of *Sc*, the other at middle of *R*; traces of two more clouds, above arculus and at stigma; cross-veins faintly margined with brown. *Sc* ending at one-third of *Rs*; *Sc2* just beyond base of *Rs*; tip of *R1* faint; *r* long and curved; discal cell somewhat longer than the cells beyond it. Halteres ochreous.

Length of body, 5 mm.; wing, 6.5 mm.

Kudat, 1 ♂.

Apparently related to *L. (G.) notata* de Meij., but very distinct by the absence of stripes on the pleuræ, position of thoracic tubercle, etc. Several unrelated species have a similar colouring of the proboscis.

*Limonia (Pseudoglochina) uncinatipes* Alex. Samawang jungle, 1 ♀.

In this specimen the hairs of the antennal flagellum are much longer than in *L. (D.) kobusi*, two dorsal hairs on each segment being almost three times as long as the segment bearing them. Wings with a small brown cloud on costal margin at tip.

*Limonia (Libnotes) crocea* Edw., var.

Bettotan, 3 ♂; Samawang, 1 ♂ 1 ♀.

Differs from the Malayan form in the uniformly orange thorax, the præscutum and scutum lacking the black markings of the type.

*Limonia (Libnotes) impressa* Walk. Samawang, 1 ♀.

*Limonia (Libnotes) nigricornis* Alex. (?). Bettotan, 1 ♀.

*Limonia (Libnotes) simplex* O.-S. Samawang jungle, 1 ♀.

The abdomen has no dorsal stripe, and the femora are gradually darkened to the black tips, otherwise the specimen agrees with the description of the type from Ternate. Eyes touching.

**Limonia (Libnotes) rufata** sp. n.

♂. Allied to *L. (L.) ferruginata* Edw. (Buru), differing as follows:—Size smaller. Front dark brownish (about two facets wide, as in *L. ferruginata*). First antennal segment black. Tips of femora broadly blackened. Wings with ground-colour dark grey rather than ferruginous; faintly darker clouds at base of *Rs*, tips of *Sc* and *R1*, and on *m-cu*, this last vein well before middle of discal cell. Halteres shorter and almost completely black, only base of stem pale.

Length of body, 9 mm.; wing, 11.5 mm.

Bettotan, 1 ♀.

**Orimarga borneensis** Brun. Bettotan, 7 ♂ 50 ♀; Sandakan, 1 ♂.

**Lechria lucida** de Meij. Bettotan, 2 ♀.

**Helius ferruginosus** Brun. (?). Bettotan, 1 ♂ 1 ♀.

**Helius rufescens** Edw. Bettotan, 1 ♂; Samawang, 1 ♀.

**Helius fumicosta** Edw. Bettotan, 4 ♂ 1 ♀.

**Helius fratellus** Brun. (?). Bettotan, 1 ♀.

**Elephantomyia (Elephantomyodes) argenteocincta** Walk.  
Bettotan, 9 ♂ 2 ♀.

**Elephantomyia (Elephantomyodes) nigriceps** Edw.  
Bettotan, 1 ♀.

**Elephantomyia (s. str.) pendleburyi** Edw. (?). Samawang, 1 ♂ (damaged).

**Ceratocheilus latifrons** Brun. (?). Bettotan, 5 ♂ 2 ♀.

**Toxorhina brunniventris** sp. n.

♂. *Head* black, including antennæ and proboscis. Eyes separated above and below head by about width of 6 facets. *Thorax* dark brown above, shoulders broadly ochreous, scutellum light brown; pleuræ ochreous, with a rather broad blackish stripe from neck to base of abdomen. *Præscutum* rather strongly produced; humeral angles dark brown, rather prominent and ear-like as seen from above. *Abdomen* uniformly dark brown, hypopygium somewhat lighter. *Legs* dark, coxæ and bases of femora ochreous. *Wings* clear. Discal cell open. Halteres with blackish knob.

Length of body, 4.8 mm.; wing, 4.8 mm.; proboscis, 6 mm.

Samawang jungle, 1 ♂.

Related to *T. fasciata* Edw., differing in the unicolourous abdomen.

*Toxorhina ochreata* sp. n.

♂. *Head* ochreous, dusted with grey. Eyes about as in the last species. Antennal scape ochreous, flagellum and proboscis blackish. *Thorax* uniformly ochreous above and on sides, slightly shining. Humeral angles white. *Abdomen* brownish, posterior halves of tergites lighter. *Legs* dark brownish, coxæ and bases of femora lighter. *Wings* clear. Discal cell open; cell *M*♂ very short. Halteres brownish.

Length of body, 4.5 mm.; wing, 4.5 mm.; proboscis, 6.5 mm.

Samawang jungle, 1 ♀.

Differs from all other oriental species known to me in the uniformly ochreous thorax. It can hardly be the female of the last species, though taken at the same time and place.

*Styringomyia mcgregori* Alex. Kudat, 1 ♂ 1 ♀.

*Styringomyia ceylonica* Edw. Bettotan, 2 ♂; Samawang, 1 ♀.

*Styringomyia jacobsoni* Edw. Kudat, 1 ♂ 1 ♀.

*Styringomyia biroi* Edw. (?). Kudat, 1 ♀. The specimen agrees fairly well with the description of the type ♀ from New Guinea, but in the absence of the ♂ the determination is not quite certain.

*Styringomyia armata* Edw. Bettotan, 3 ♂ 1 ♀; Samawang, 1 ♂. These agree with typical Philippine specimens.

*Styringomyia curvispina* sp. n.

♂. *Head* ochreous, bristles black. Antennæ slender, flagellar segments elongate oval; scape dark beneath, lighter above; first flagellar segment ochreous, remainder darker. Palpi black. *Thorax* brownish, with grey pruinescence; pronotum and scutellum yellowish; margins of præscutum as seen from above darker brown. One strong posterior pronotal bristle; two very small humeral; three discal; the four scutal bristles strong, outer pair much longer than inner and somewhat flattened; scutellar bristles slender. *Abdomen* dark brown, unbanded. Hypopygium with coxite short, bearing two strong, black, curved spines set on widely separated tubercles, upper spine somewhat stronger and more bent inwards than lower spine; anal segment long; the long bare style with a short thumb-like projection externally near tip. *Legs* light brownish, the usual rings only faintly darker, scarcely perceptible. *Wings* clear, veins light brownish; a distinct spot over *r-m*, and the usual seams at base of cell *M1* and over *m-cu*; *R2* + 3

and tips of most veins (especially *An* and *Ax*) darkened. *R2* + *3* short, very little oblique; *Ax* gently curved down to margin. Halteres with knob darkened.

Length of body, 5 mm.; wing, 3.5 mm.

Bettotan, 1 ♂.

Apparently belongs to the *ensifera*-group, and most resembling *S. transversa* Edw. (Sarawak), but quite distinct by the faintly ringed legs, gently curved vein *Ax*, etc.

**Teucholabis angusticapitis** Brun. (*nocticolor* Edw.)

Bettotan, 8 ♂ 4 ♀.

**Teucholabis bicolor** O.-S. Bettotan, 2 ♂.

**Gymnastes ornatipennis** de Meij. Bettotan, 2 ♂.

**Gymnastes multicinctus** sp. n.

♂. *Head* dark brown above, front yellow. Antennæ with the first segment blackish, second mainly yellowish flagellar segments pale at base. Mouth-parts black. *Thorax* dull dark brown above pronotum, shoulders and scutellum light yellow. Pleuræ light brownish, a narrow yellow stripe at notopleural suture. *Abdomen* brownish. *Legs* conspicuously variegated with black and white. Front femora blackish, with indications of a narrow pale ring beyond middle; tibiæ with two white rings, one at base and a somewhat broader one beyond middle; tarsi with basal half of first segment and almost the whole of the second segment white. Middle femora with a narrow pale ring beyond middle; tibiæ with a broad white ring in middle and a very narrow one at base; tarsi with first two segments white with black tips, remainder black. Hind femora white above on distal third; tibia with basal two-thirds white; tarsi with first segment white except tip, remainder black. *Wings* nearly clear; dark brown seams over base of *Rs* and cross-veins, and at tips of all veins. Rows of small subcircular scales on costa, *Sc*, *R*, and *R1*. *R2* short, transverse, far beyond end of *R1*. Halteres with dark brown stem and lighter knob.

Length of body, 3 mm.; wing, 4.5 mm.

Bettotan, 1 ♂.

I place this species in *Gymnastes* on account of the scaly legs, although the venation is almost that of *Paratropeza*. It is remarkably distinct from other species of the genus in leg-markings and in the presence of scales on certain veins. The wing bears a superficial resemblance to that of the African *Gonomyia venustipes* Alex.

**Erioptera notata** de Meij. Bettotan, 1 ♂ 3 ♀; Sandakan, 2 ♀.

black. *Thorax* uniformly shining, mostly blackish-brown, but pronotum, anterior third of præscutum, middle of scutum and an irregular stripe across lower half of pleuræ ochreous. *Abdomen* blackish, segments broadly banded with ochreous basally. Cerci rather long but strongly curved. *Legs* with coxæ blackish; trochanters ochreous; femora blackish with tips rather narrowly white; tibiæ black, narrowly white at base and rather more broadly at tip; tarsi whitish, slightly darkened apically. No distinct femoral spines. *Wings* with ground-colour clear, veins all dark; four conspicuous black marks on membrane, one in base of lower basal cell, one over base of *Rs*, one over *r* and the fourth over *R2*; cord, apex of discal cell and tip of *Ax* also bordered with black. *R2* far beyond *r*, nearly vertical and rather sinuous; base of cell *M3* at middle of discal cell; cell *Cu* just closed. Halteres black, base of stem ochreous.

Length of body, 11 mm.; wing, 9 mm.

Samawang, 1 ♀.

A very distinct species allied to *T. splendida* Brun., but with quite different wings.

**Trentepohlia (Mongoma) lutescens** sp. n.

*Head* ochreous with central carina; scape ochreous, flagellum and mouth parts dark brown. Flagellar segments elongate, subcylindrical, each with one long dorsal hair about twice as long as the segment (in both sexes). *Thorax* uniformly ochreous, not or scarcely shiny. *Abdomen* ochreous, first tergite mainly dark, tergites 2-6 dark in middle and apically, the dark areas forming a more or less interrupted dorsal stripe. *Legs* rather stout, uniformly ochreous, tips of femora not darkened. All femora (in both sexes) with 10-15 short black spines at base beneath, those on middle femur in two irregular rows. *Wings* clear, costal cell yellowish; stigma distinct, brown; veins of cord black, remainder brownish. *R2* long, well beyond *r*, which is oblique; cell *Cu* just closed or narrowly open; base of cell *M3* slightly proximal to that of cell *M1*. Halteres with ochreous stem and brownish knob.

Length of body, 1-12 mm.; wing, 9.5 mm.

Samawang, 5 ♂ 5 ♀.

Allied to *T. cariniceps* End., differing in the distinct stigma, long flagellar hairs, etc.

**Trentepohlia (Mongoma) setifera** sp. n.

*Head* blackish, with central keel. First antennal segment and rostrum light brownish, remainder of antennæ and palpi dark brown; flagellar segments short-haired, elongate oval. *Thorax* dull brown above, pleuræ and middle of scutum lighter. *Abdomen* blackish above, venter light ochreous. *Legs* with coxæ ochreous; femora and tibiæ

brownish; front tibiæ rather narrowly and indistinctly whitish at tip, mid and hind tibiæ more distinctly and rather more broadly white; tarsi whitish. All femora ( $\delta$   $\varphi$ ) with 6–10 very short and inconspicuous dark spines at base beneath; hind tibia in  $\delta$  only with 4–6 rather long black bristly hairs dorsally in the white apex; first hind tarsal segment of  $\delta$  with dark hair on one side at base. *Wings* clear, veins all dark. *R2* curved, approximating to horizontal, not far beyond and nearly twice as long as *r*; base of cell *M3* much proximal to that of cell *M1*. Cell *Cu* just closed. Halteres dark brown.

Length of body, 5 mm.; wing, 5.5 mm.

Bettotan, 2  $\delta$  1  $\varphi$ ; Samawang, 1  $\delta$ .

Distinguished from *T. pallidiventris* Brun. and allied species by the more distinctly white-tipped tibiæ and the tibial bristles of the  $\delta$ .

**Trentepohlia (Mongoma) labuana** sp. n.

*Head* black, antennæ and mouth-parts dark brown. Flagellar segments elongate-oval, short-haired. *Thorax* slightly shining, dark brown above, pleuræ lighter. *Abdomen* dark brown above, lighter beneath. *Legs* slender, coxæ ochreous; femora brownish, narrowly whitish at tips; all tibiæ broadly white at tips; tarsi white. Front femora with 2–4 longish slender spines at some distance from base, other femora unarmed; first hind tarsal segment with dark hair on inner side at base. *Wings* clear except for the small stigma; all veins dark. On hind margin of wings close to base (immediately beyond squama) are two stout curved bristles, stouter in  $\delta$  than in  $\varphi$ . *R2* scarcely beyond and scarcely longer than *r*, straight and oblique; base of cell *M3* proximal to that of cell *M1*; *Cu* ending in *An* just before its tip. Halteres brownish.

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

Labuan, 2  $\delta$ ; Bettotan, 1  $\varphi$ .

Differs from *T. pacifica* Alex. (Samoa) in the shorter stem to cell *R2* and other details. The strong bristles at the base of the wing are a feature not hitherto noticed in any species of the genus; similar but rather weaker, bristly hairs however occur in *T. pacifica* Alex., *T. samoensis* Alex., *T. albangusta* Edw. and probably many other species.

**Trentepohlia (Plesiomongoma) nigropennata** Edw.

Bettotan, 2  $\delta$  1  $\varphi$ .

**Trentepohlia (Plesiomongoma) candidipes** Edw., var.

Bettotan, 1  $\varphi$ ; Samawang, 1  $\varphi$ . The tibiæ are not wholly whitish as in the type  $\delta$  (from the Malay Peninsula), but are slightly darkened beyond the white base, then gradually shading to white at the tip.

**Trentepohlia (Anchimongoma) niveipes** Edw., var.

Bettotan, 6 ♂ 3 ♀. The dark tibial rings are narrower than in the Javan type.

**Trentepohlia (Trentepohlia) venustipennis** Edw.

Bettotan, 1 ♂ 3 ♀.

**Trentepohlia (Trentepohlia) trentepohli** Wied.

Bettotan, 6 ♂ 1 ♀.

**Trentepohlia (Trentepohlia) nigrogeniculata** Edw.

Bettotan, 6 ♂ 1 ♀.

**Conosia irrorata** Wied. Bettotan, 3 ♂ 13 ♀.**Clydonodozus curvinervis** sp. n.

♀. *Head* black, heavily dusted with pale grey, as is the scape; antennæ and mouth-parts black. *Thorax* uniformly dull brown above, pleuræ with integument darker but heavily dusted with grey. *Abdomen* dark brown, posterior margins of segments ochreous. *Legs* ochreous, tips of femora and tibiæ and the whole of the last four tarsal segments black. *Wings* with light brown ground colour, base paler; a dark brown transverse band immediately beyond arculus; a dark cloud at base of *Rs*; all veins of cord broadly dark-margined; tips of *R2*, *M3*, *M4*, *Cu*, *An* and *Ax* clouded; an additional dark cloud on *Ax* beyond middle. *R3* strongly curved down at tip; *R4* + *5* also somewhat curved down; basal deflection of *R4* + *5* strongly curved. Halteres blackish.

Length of body, 6.5 mm.; wing, 6 mm.

Bettotan, 1 ♀.

Apparently most nearly allied to *C. griseiceps* de Meij. (Simalur I.), differing in venation and wing-markings.

**Epiphragma signata** de Meij. Bettotan, 1 ♀.**Epiphragma bakeri** Alex. (? var. *ochrinota* Alex.).

Bettotan, 1 ♂ 1 ♀.

**Eriocera ruficauda** sp. n.

♀. *Head* blackish. Frontal tubercle distinctly divided as seen in side view. Antennæ and palpi blackish, second scapal segment lighter; antennæ about as long as head and thorax together. *Thorax* uniformly dull reddish-brown, no darker markings on mesonotum; hair longish and dark. *Abdomen* orange-red, only tergites 5 and 6 black (even base of 5 orange). *Legs* with coxæ coloured like thorax, remainder black. *Wings* blackish, including base; a broad yellowish fascia a little beyond middle extends from *R1* to hind margin. *Sc* reaching to level of *r*, which

is twice its own length from base of *R*<sub>2</sub>; cell *M*<sub>1</sub> present, as long as its stem; *m-cu* at middle of discal cell. Halteres black.

Length of body, 18 mm.; wing, 17 mm.

Bettotan, 1 ♂.

Allied to *E. mesopyrrha* Wied. (Java) and *E. pyrrhomesa* Edw. (Sumatra), differing from the former in the black legs and antennæ and from the latter in the uniformly brown thorax and more extensively orange abdomen.

#### *Eriocera unimaculata* sp. n.

*Head* dull black. Front with two tubercles, anterior one small. Antennæ and palpi black; antennæ in both sexes only about half as long as head and thorax together. *Thorax* uniformly dull black. *Abdomen* dull black, segments 2-7 each with broad shining leaden grey basal bands. Basal portion of ovipositor black, appendages reddish. *Legs* slender, black. *Wings* black, with a pure white crescent in middle reaching from *R*<sub>1</sub> to *Cu*. *Sc* ending above end of *R*<sub>2</sub> + 3; *r* about its own length from base of *R*<sub>2</sub> and scarcely twice its length from tip of *R*<sub>1</sub>; *R*<sub>2</sub> scarcely twice as long as *R*<sub>2</sub> + 3; cell *M*<sub>1</sub> absent; *m-cu* near middle of discal cell. Halteres black.

Length of body, 8-15 mm.; wing, 7-12 mm. (♀ larger).

Bettotan, 6 ♂ 6 ♀.

Allied to *E. hilpa* Walk. (Hong Kong), differing in the much shorter cell *R*<sub>2</sub>, smaller white mark on wing, and black instead of orange ovipositor.

#### Subfamily Tipulinæ.

#### *Nesopeza caloptera* sp. n.

♀. *Head* brownish, paler round eyes, space below antennæ pale ochreous; rostrum and palpi black. Antennæ about as long as thorax; scape dark brown, first flagellar segment ochreous, remainder dark. *Thorax* dull brownish, without distinct markings. *Abdomen* brown, segments with ochreous markings in middle and at sides. *Legs* with coxæ and trochanters ochreous; femora brownish with black tips and an ill-defined paler pre-apical ring; tibiæ pale brownish, shading to white on the apical half, tip narrowly black; tarsi white. *Wings* with a conspicuous pattern; four main dark areas towards costa, narrowly bordered with darker brown, and then more broadly with whitish; ground-colour of wing pale grey; tips of most veins darkened, the largest spot on tip of *An*, that at tip of *Ax* very small; an additional spot on hind margin between *An*



and *Ax*; *m-cu* with a narrow dark border. *Rs* with long spur; cell *R*<sub>3</sub> much narrowed near tip; cell *M*<sub>1</sub> very short. Halteres dark brown, only base of stem pale.

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

Bettotan, 1 ♀.

Allied to *N. perpulchra* Edw., but much smaller, with different wing-markings, venation and colouring of legs.

**Dolichopeza sandakanensis** sp. n.

♂. Closely allied to *D. cuneata* Edw. (mountains of Sarawak), differing chiefly in hypopygial structure, as follows:—Ninth tergite less produced, with only a small median emargination which includes a minute median tooth; pleurite produced into blunt, blackened process; sternite membranous in middle, produced apically into a pair of finger-like, hairy processes. Coxæ pale as in *D. cuneata*, but hind tarsi almost completely white, as in the Malayan *D. angusta*, Edw.

Length of body, 8 mm.; wing, 10 mm.

Samawang jungle, near Sandakan, 1 ♂.

The Philippine species of this group (*Nesopeza cinctitarsis* Alex., *N. annulitarsis* Alex. and *N. angustaxillaris* Alex.) are strikingly similar to the Bornean species in colouring and venation, but are all distinct in hypopygial structure.

**Scamboneura quadrata** de Meij. Samawang, 1 ♂ 2 ♀;  
Kudat, 7 ♀.

**Megistocera fuscana** Wied. Bettotan, 1 ♂; Kudat, 1 ♀.

**Nephrotoma javensis** Dol. Kudat, 2 ♂.

**Ctenacrosclis punctifrons** Rond. Bettotan, 2 ♂ 5 ♀.

**Tipula xanthomelæna** Edw. Bettotan, 1 ♀.

**Tipula (Tipulodina) cinctipes** de Meij. Bettotan, 1 ♀.