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DIPTERA NEMATOCERA FROM THE FEDERATED  
MALAY STATES MUSEUMS.

By F. W. EDWARDS.

(Plates I and II).

Nematocerous Diptera, other than mosquitoes, have been till very recently almost completely neglected by collectors in the Malay Peninsula, and it was therefore with very great pleasure and interest that the writer agreed to the proposal of Mr. H. C. Robinson, late Director of the Federated Malay States Museums, to work out the collections recently acquired by that institution. The task has proved a large one, since at least half the species of all the families other than Culicidae appear to be new to science. The material examined and reported upon in the present paper includes all the families represented in the collection with the exception of the Cecidomyiidae and Chironomidae. Some of the more striking specimens of the former family have been described in a separate paper by Mr. H. F. Barnes,<sup>1</sup> while the present writer hopes to deal with the Chironomidae at a later date.

In order to give as complete an account as possible of our present knowledge of Malayan Nematocera, lists of previously recorded species are given, and references have been included in the present paper to such few unrecorded specimens as are in the British Museum; the majority of these were contained in a collection made by Mr. H. C. Robinson and the late Dr. N. Annandale in Peninsular Siam in 1902, while a few had been received from Drs. A. T. Stanton and H. P. Hacker.

The material from the Federated Malay States Museum at Kuala Lumpur was almost entirely collected by Mr. H. M. Pendlebury, who joined the staff as entomologist in 1921 and made numerous collecting trips to the mountains. A few were collected by Messrs. M. R. Henderson and E. Seimund, these being indicated in the text. In all cases where no collector's name is given the specimens were obtained by Mr. Pendlebury, whose account of the localities is of interest. Writing to the author in September 1923 he says:—

“Cameron's Highlands is an area of high ground; a 'vortex in the mountains' as it has been termed—situated in the north west of Pahang at an altitude of 4800 ft.—5000 ft. It is well wooded and has plenty of soil on it. It is approached from Tapah (Perak) through heavy jungle (bamboos, etc.) to Jor Camp (1800 ft.)—thence one

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<sup>1</sup> Some Cecidomyiidae from the Federated Malay States. By H. F. Barnes (with five text figures) Journ. F.M.S. Mus., XIII, 1927, pp. 268-274.

contours hills and passes over the Perak-Pahang divide eventually reaching Lubok Tamang (No. 2 Camp, 3500 ft.) about five miles inside the Pahang border. The jungle here is also heavy though bamboos do not grow at this altitude.

From Lubok Tamang, a walk of about three miles takes one to the foot of Gunong Berumban where No. 3 Camp is situated (this is at the bottom of 'Robinson Falls').

From No. 3 Camp, one climbs up a side of Gunong Berumban to about 5500 ft. and then gradually descends on to the level ground known as 'Cameron's Highlands.'

At the southern end of the level ground and just above the Falls is situated No. 4 Camp (4800 ft.).

On the other hand, Gunong Tahan, which is the highest hill in the Peninsula and reaches a height of 7186 ft., is situated in north Pahang on the Kelantan border.

This Department has for some two years past been carrying out climatological observations there; I have only been able to visit it on two occasions (November—December 1921; November 1922—February 1923). This station is now closed down and has been transferred to 'Cameron's Highlands.'

At 5500 ft. there is a plateau on which the Main Station was situated—the plateau is practically devoid of jungle except in one or two small patches. It is mostly covered with low scrub—pitcher plants (*Nepenthes* spp.) orchids, low growing shrubs, *Baeckia*, etc.

The River Tembeling, Kuala Tahan, Tahan River, Kuala Teku, 'Wray's Hill' and 'Wray's Camp' are all passed on the journey to Gunong Tahan. The first four localities are below 600 ft., whereas Wray's Hill which is a foothill of Gunong Tahan rises to a height of 3300 ft. and has a half-way hut on the top of it known as Wray's Camp.

The jungle in that part is all practically untouched primeval forest, though near the camps where felling has taken place, a secondary jungle has grown up which in this part is known as 'beluka' (blukar) which you may find written on one or two of the labels.

It will be rather interesting to compare the Dipterous fauna of Gunong Tahan and Cameron's Highlands; the flora and geology of the two places shows a marked difference."

In addition to the Malayan material, a small collection was obtained by Mr. Pendlebury during a short visit to West Java; this collection, which included a number of interesting flies, is also reported upon in the present paper.

Through the generosity of the F.M.S. Museums Department, the types of all the new species have been deposited in the British Museum.

## Family MYCETOPHILIDAE.

The only member of this family hitherto recorded from the Malay Peninsula is *Macrocera bifasciata* Edw., recently described by the writer from Borneo, a specimen being recorded at the same time from "Talum, Siam" \* (*Robinson and Annandale*). While the paper containing this description was passing through the press the same species was described by de Meijere from Sumatra as *M. egregia*. In the present paper 59 species are recorded, 45 of which belong to the *Sciarinae*. Mr. Pendlebury states that apart from species of *Sciara*, members of this family are not too plentiful in Malaya, even in localities which might be considered eminently suitable for them.

## Subfamily Ceroplatinae.

*Platyura pendleburyi* sp. n. (Plate II, fig. 21).

♂. *Head* dark brown, passing into black on the vertex. Median ocellus small, placed slightly in front of the others. Eyes large, approximated below the antennae and thus rendering the face very narrow. Scape of antennae ochreous, flagellum black, the segments distinctly flattened and nearly twice as deep as long. Palpi yellow. *Thorax* blackish above, with a slight grey sheen and short black bristles; prothorax and pleurae ochreous. Postnotum and pleurotergites bare, the latter not much produced. Marginal bristles of scutellum short. *Abdomen* dark brownish, without definite markings, tip darker. Hypopygium as figured; the anal segment bears about six pairs of black combs, which are however quite hidden under the end of the ninth tergite. *Legs* long, ochreous, tibiae and tarsi darkened. First segment of front tarsi slightly longer than the tibia. The fine tibial setae arranged in regular rows. *Wings* ochreous-tinged, unmarked. *Sc* ending above base of *Rs*; third costal division only about a quarter as long as the fourth; costa scarcely produced beyond tip of *Rs*; *r-m* fusion long; *m-cu* short and nearly vertical; *An* not quite reaching the margin. Halteres with ochreous stem and dark brown knob.

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

Peninsular Siam: Nakon Sri Tamarat, Khao Luang, 30th March, 1922, 2000 ft.; 1 ♂, at light.

By venation and chaetotaxy this somewhat resembles *P. lunifrons* White, but it is quite distinct by the dark mesonotum and by hypopygical characters.

*Platyura leptura* sp. n. (Plate II, fig. 22).

*Head* ochreous. Ocelli enclosed in a black spot, the middle one not much smaller than the others, and placed

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\* Talum, Siam is an error. The locality is Telom, now known as Lubok Tamang (3500 ft.) in Pahang.

well forward. Labium and scape of antennae ochreous; palpi and flagellum black. Last palpal segment as long as the others combined. Flagellar segments a little longer than broad, stouter in the male, which therefore has rather longer antennae. *Thorax* almost uniformly ochreous, except that the scutellum is somewhat darkened and there is a vertical dark brown stripe on the pleurotergites. The fine mesonotal bristles are rather dense and uniformly distributed; none adjoining the prothoracic spiracle. Postnotal meditergite with some rather long bristles and a few shorter ones; pleurotergites bare. *Abdomen* rather long and slender, black-haired; hypopygium remarkably long, structure as figured. *Legs* ochreous. Fine tibial setae arranged throughout in conspicuously regular rows, but all of about equal size. First front tarsal segment slightly longer than the tibia. Each tibia with a single black spur. *Wings* clear, veins dark. *Sc* ending opposite base of *Rs*; *R4* very short, its tip equidistant between the tips of *R1* and *R5*; costa long, reaching three-quarters of the distance from *R5* to *M1*; stem of median fork about three times the length of the moderate *r-m* fusion; *An* absent. Halteres with whitish stem and blackish knob.

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

Pahang: Lubok Tamang (Têlom), 3500 ft., 25th January, 1902. (H. C. Robinson and N. Annandale); 1 ♂, 1 ♀, taken *in cop*.

A very distinct species, possibly deserving a separate genus or subgenus, on account of the single spurs, though the remaining characters are much as in *Platyura* s. str.

#### Subfamily Manotinae.

##### *Allactoneura cincta* de Meij.

Java: Papandajan, 5500-6000 ft., 22nd April, 1923; 1 ♂.

In this specimen the hind femora as well as the middle pair are largely yellow towards the base, as described for *A. formosana* End., but the hypopygium and other characters agree with a typical specimen from Tjibodas with black hind femora which I have examined.

Enderlein's *Scottella argenteosquamosa* has often been quoted by myself and other writers as synonymous with *A. cincta*, but this is incorrect. In *A. cincta* the scales of the abdominal tergites are all black, except on the base of the fourth, which has a sharply defined yellow band, at least in the male; the large male claspers are broad and hairy towards the tip, with a large, dorsally-directed spine well beyond the middle. In *A. argenteosquamosa* on the other hand the scales at the bases of most of the abdominal tergites are greyish, especially towards the sides; the yellow band on the fourth tergite is less conspicuous, and in the

female often absent; the male claspers are narrower and less hairy towards the tip, which is slightly bifid, and have a smaller, inwardly-directed spine before the middle. I have seen *A. argenteosquamosa* from the Seychelles, Ceylon and Assam; *A. cincta* only from Java.

Subfamily **Sciophilinae.**

**Sciophila bicolor** Brun. (?).

Pahang: Cameron's Highlands, Rhododendron Hill, 5200 ft., 22nd June, 1923; 1 ♂.

**Boletina pahangensis** sp. n. (Plate II, fig. 23).

♂. *Head* black, slightly shining, face brownish-ochreous. Ocelli in a very flattened triangle. Antennae with the scape and first two flagellar segments ochreous, the rest blackish; first flagellar segment about twice as long as broad, the rest hardly longer than broad. Palpi dark brown. *Thorax*: Mesonotum shining black with three rows of black bristles, besides longer ones towards the margins. Scutellum black with two long black bristles, between which are two very short ones. Postnotum and pleurotergites bare, shining black. Prothorax and pleurae light ochreous. Abdomen black, tergite, apical lateral triangles on tergites 2 and 3, and the whole of sternites 1-4 ochreous. Hypopygium as figured. *Legs* ochreous; tibiae and tarsi darkened, especially on the hind legs, also the tips of the hind coxae and femora dark; spurs orange. Tibial spines as long as the diameter of the tibiae. *Wings* smoky, somewhat darker towards costa. *Sc* ending well before base of *Rs*; basal section of *Rs* only about half as long as *r-m*; fork of *Cu* situated at mid-length of median fork; *An* reaching base of cubital fork. Halteres with ochreous stem and black knob.

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

Pahang: Cameron's Highlands, 4800 ft., 12th March, 1924; 1 ♂, at light.

This species has much in common with the species of *Synapha* Mg. (*Empalia* Winn.), and should perhaps be referred to that genus in spite of the absence of *Sc* 2.

**Acrodicrania bifasciata** sp. n. (Plate I, fig. 1.)

♀. *Head* deep ochreous, a small black spot round each ocellus. Median ocellus absent. Antennae rather short but slender, first three segments ochreous, the rest blackish; second segment with one long dorsal bristle; flagellar segment rather longer than broad. Palpi yellow. *Thorax* shining black, the prothorax and anterior fourth of mesonotum yellowish, shoulders with some whitish dust; the colours separated practically in a straight line. Scutellum with four long bristles, the inner pair nearer the outer pair than to one another. Pleurotergites with black bristly hair. *Abdomen* shining black, ovipositor light yellow.

*Legs* ochreous, trochanters and tarsi darkened. Spurs orange. Tibial spines black, those on the middle tibiae arranged in three dorsal and subdorsal rows of four each and two longer ventral spines. *Wings* ochreous-tinged; a broad dark brown band before the tip, and a conspicuous dark brown patch between *Cu 2* and *An*. Costa produced nearly to the tip of *M1*; *r-m* very long, not much shorter than the petiole of the median fork, which is a little over half as long as either branch. *Cu 1* conspicuously interrupted at the base, and not reaching the margin. Halteres whitish.

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

Perak: Batang Padang, Jor Camp, 1800 ft., 27th May, 1923; 1 ♀.

***Leia nigripalpis* sp. n.**

♂. *Head* black, rather shining; face more brownish, rather long. Lateral ocelli touching the eyes. Antennae and palpi black; flagellar segments nearly twice as long as broad. *Thorax* shining black, with black bristles. Scutellum with four very long bristles, the middle pair rather nearer the lateral pair than to one another. Pleurotergites with black bristly hair. *Abdomen* shining black, the first segment ochreous. Hypopygium small, almost concealed; claspers short, slightly bifid at the tips. *Legs* brownish-ochreous, the femora with blackish dorsal and ventral lines, tips of hind femora also blackened; tarsi dark brown; spurs brownish, tibial spines black. Mid-tibial spines: four inner-dorsal, one dorsal much beyond middle, five outer-dorsal, three ventral. *Wings* rather narrow, almost hyaline except on the apical fourth, which is rather conspicuously darkened. *Sc* rather faint but reaching costa; *Sc 2* placed about the middle; *r-m* very long, longer than the stem of the median fork and almost twice as long as the tip of *R1*; *Cu 1* interrupted at base. Halteres ochreous.

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

Pahang: Cameron's Highlands, No. 4 Camp, 4800 ft., 15th October, 1923; 1 ♂, at light.

Superficially rather similar to *Greenomyia nigricoxa* Brun.

***Leia* (*Indoleia* subg. n.) *bisetosa* sp. n.**

♀. *Head* black, with a slight grey dust, black bristles and fine whitish pubescence. Face and palpi ochreous. Antennae black, flagellar segments about as long as broad. *Thorax* entirely shining black, with black bristles; scutellum with only two long bristles, the outer pair being very short. Pleurotergites with short black hair. *Abdomen* shining black; ovipositor brownish. *Legs*: Front pair ochreous, only the tarsi darkened; Middle pair ochreous, the femora dark at the tip and dorsally; hind pair black, the apical half of the coxae and the basal third of the femora ochreous;

spurs ochreous, spines black. Mid-tibial spines: 1, 2, 3, 2, the anterior ventral spine very long, the posterior short. *Wings* nearly hyaline, the apical third or rather more rather dark brown. Costa produced only a short distance beyond the tip of *R*<sub>5</sub>; *r-m* moderately long, nearly half as long as the stem of the median fork, which is about two-thirds as long as the branches; *M*<sub>1</sub> not interrupted at base; *Cu* 1 interrupted at base and not reaching margin; *An* faint. Halteres whitish.

Length of body, 2.8 mm.; wing, 2.8 mm.

Pahang: Cameron's Highlands, No. 4 Camp, 1800 ft., 13th June, 1924; 1 ♀ (type).

Java: Wonosobo, v, 1909. (*E. Jacobson*); 1 ♀ in Amsterdam Museum.

Superficially similar to *Greenomyia nigricoxa* and *Leia nigripalpis*, but quite distinct in venation. It is obviously related to the European species of *Rondaniella*, though differing in having *M*<sub>1</sub> complete. The same may be said of *Anomalomyia indica* Brun., and *Leia nigra* de Meij. For these three species I would propose the new sub-generic name *Indoleia*; type *L. bisetosa*.

#### Subfamily Mycetophilinae.

##### *Allodia micans* sp. n.

♀. *Head* reddish ochreous; face pale yellow, with a silvery-white sheen when seen from above. Palpi dark brown. Antennae with the first four or five segments reddish-ochreous, the rest dark brown; flagellar segments hardly longer than broad. *Thorax* reddish-ochreous, pleurae and sides of mesonotum more yellowish; when seen from in front or from above the sides of the mesonotum appear silvery-grey, somewhat as in *Exechia argenteofasciata* White; inside the grey area the ground-colour is slightly darker. Disc of mesonotum without bristles; scutellum with two long bristles and four short ones; two strong propleural bristles. *Abdomen* dark brown; tergite 1 ochreous at base and on posterior margin; 2-5 each with large basal lateral ochreous triangles; 6 and 7 almost entirely ochreous, ovipositor short. *Legs* ochreous, tibiae and tarsi darkened. *Wings* with a slight yellowish tinge. Base of cubital fork well before *r-m*; *Cu* 2 slightly curved downwards. Halteres ochreous.

Length of body, 3.5 mm.; wing, 2.5 mm.

Pahang: Gunong Tahan, Padang, 24th January, 1923; 1 ♀.

This is closely related to *A. varicornis* (White) from Ceylon (wrongly described as a *Rhymosia*), differing in thoracic markings and in the form of the ovipositor, especially the ninth tergite, which is triangularly produced at the sides.



**Exechia mastigura** sp. n. (Plate II, fig. 25).

♂. *Head* blackish. Face pale yellowish; palpi and labium yellow, the latter not very large. Antennae of moderate length; first three or four segments ochreous, the rest blackish; flagellar segments about as broad as long. *Thorax* brownish, mesonotum rather strongly dusted with grey but without markings. Two propleural bristles projecting downwards. *Abdomen* dark brown, posterior margins of tergites narrowly and distinctly pale; also the sides of tergites 1, 2 and 6 extensively ochreous. Hypopygium as figured; the long whip-like appendages are very conspicuous. *Legs* ochreous; hind femora somewhat darkened above and below towards the base. *Wings* with a faint brown tinge. *Sc* very short, ending free; *Rs* almost straight; *r-m* about three times the length of the short petiole of the median fork, the branches of which, though faint apically, distinctly reach the margin; cubital fork not very narrow, its upper branch distinct and its base far beyond that of the median fork; *An* absent. Halteres ochreous.

Length of body, 4 mm.; wing, 3.3 mm.

Pahang: Gunong Tahan, 5500 ft., 3rd December, 1922;  
1 ♂.

**Exechia scalprifer** sp. n. (Plate II, fig. 24).

♂. *Head* brownish, eyemargin and space above antennae ochreous; face, palpi and the moderate labium ochreous. Antennae moderately long, brownish, scape lighter; flagellar segments about as long as broad. *Thorax* rather light brownish, pleurae more ochreous, unmarked. Two strong propleural bristles and also two very short ones, projecting downwards. *Abdomen* rather light brownish, without definite markings. Hypopygium as figured; the ventral apical corners of the side-pieces produced and bearing peculiar chisel-shaped bristles which have suggested the name. *Legs* ochreous, tarsi darkened. *Wings* ochreous-tinged. *Sc* short, ending free; *Rs* slightly curved down at tip; *r-m* long; branches of media not quite reaching the margin; cubital fork moderately narrow, its base far beyond that of the median fork; *An* faint but distinguishable. Halteres ochreous, base of knob somewhat darkened.

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

Pahang: Gunong Tahan, 5500 ft., 10th December, 1922;  
1 ♂.

The relationships of these two new species of *Exechia* are indicated by the following tabular arrangement of the Oriental species (including those described from the Seychelles, some of which may occur in the Orient). Closely allied forms are best distinguished by characters of the hypopygium or ovipositor which in this genus are usually very strongly marked.

One propleural bristle.

Costa extending slightly beyond *Rs*; mesonotum with silvery margin: *argenteofasciata* White; *silhouetlensis* End.

Costa ending at tip of *Rs*; mesonotum without silvery margin. (Many European species, but none yet known from the Orient).

Two or more propleural bristles.

*An* present though sometimes very faint; usually 3-4 propleural bristles: *basilinea* Brun., *simplex* Brun., *flava* White, *pallidula* Edw., *scalprifer* sp. n., *flabellipennis* End.

*An* absent; two propleural bristles (3-4 in *paramirastoma*).

Abdomen clothed with small scales: *cristata* White.  
Abdomen without scales.

Knob of halteres brown or black: *areolata* End., *mirastoma* White, *paramirastoma* White, *zeylanica* White.

Halteres entirely pale.

Mesonotum blackish with yellow border: *ampullata* White. Mesonotum greyish with three dark stripes: *longicornis* White. Mesonotum brownish, grey at the sides: *albicincta* White, *brevicornis* White, *crisatoides* White. Mesonotum unornamented: *sulvenosa* End., *tricincta* End., *mastigura* sp. n.

***Mycetophila fungorum* (Deg.) (*punctata* Mg.).**

N. Syn. *M. khasiensis* White.

Pahang: Gunong Tahan, 5500 ft., 20th December, 1922; 1 ♀, at light. Cameron's Highlands, 4800 ft., 11th March, 1924; 1 ♀, at light.

This is an interesting record, as it greatly extends the known range of the species; although it had not been recorded previously from the Oriental region, I find on examining the type that Senior-White's *M. khasiensis* is identical.

***Mycetophila lineicoxa* sp. n.**

♀. Closely resembles the European *M. lineola* Mg., differing only as follows:—

*Thorax* without any trace of dark stripes. *Abdomen* practically all black. Hind coxae with a conspicuous blackish mark behind on the apical half. Mid tibial spines 5, 4, 0, 6.

Pahang: Gunong Tahan, 5500 ft., 14th December, 1922; 1 ♀.

*Mycetophila trimaecula* sp. n. (Pl. I, fig. 2; Pl. II, fig. 26).

♂. *Head* dull blackish brown, with dark brown pubescence. *Antennae* dark brown, scape and basal half of the third segment ochreous, flagellar segments almost twice as long as broad. *Palpi* ochreous brown, last segment blackish. *Thorax* light brownish, mesonotum with three distinctly separated dull dark brown stripes; scutellum lighter. *Abdomen* blackish, the segments with rather broadly ochreous posterior margins. *Hypopygium* small, structure as figured. *Legs* ochreous, tarsi darkened; hind coxae with a blackish mark behind on the apical half; front femora with a dark brown line beneath; four posterior femora with a dark brown dorsal line. *Hind tibial spines* in two rows; mid-tibial spine formula 5, 4, 0, 4. *Wings* with a slight yellowish tinge; a dark brown central spot extending to the costa; a rather large brown mark at the tip filling the apex of cell *R1* and including the tip of *R1*; a smaller and fainter brown spot rather beyond the middle, connecting *M2* with *Cu 1*; faint brown clouds at the tips of the veins. Base of cubital fork just below *r-m*, the branches scarcely approximated distally. *Ax* long but practically straight. *Halteres* ochreous.

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

Pahang: Gunong Tahan, 5500 ft., 15th December, 1922; 1 ♂, at light.

A very distinct species in its wing-markings; it differs from *M. vittipes* Zett., and other European species which somewhat resemble it, in the absence of ventral spines on the middle tibiae.

*Mycetophila quadrifasciata* Brun.?

Pahang: Gunong Tahan, 5500 ft., 15th December, 1922; 1 ♀, at light.

The mid-tibial chaetotaxy is the same as in Brunetti's type (6, 3, 3, 4, with an additional spine out of line between the dorsal and external rows), but the mesonotum is distinctly shining black, not pale on the shoulders, the abdominal tergites are pale only on the apical corners, and the wing-markings are more suffused.

#### Subfamily Sciarinae.

*Trichomegalosphys laticornis* (Walk.).

N. Syn. *Sciara laticornis* Walk.; ? *S. sulcata* v.d.W.; *Trichomegalosphys funestus* End.

Peninsular Siam: Nakon Sri Tamarat, Khao Luang, 2000 ft., 21st March, 1922; 1 ♂.

Walker's type ♀ agrees with Enderlein's description of the ♀ of this species. The type of van der Wulp's *S. sulcata* appears to be lost, but there is nothing in his brief description to prevent us concluding that he was describing this species. There is a ♂ in the British Museum

from Sumatra which agrees rather closely with the present specimen; the following points may be noted as additions or corrections to Enderlein's description. The eyes in both sexes are almost bare, showing only a few scattered hairs; ♂ eyes much larger than those of the ♀, the bridges broader, and contiguous, not narrowly separated as in the ♀; face much narrower than in the ♀, and not much broader than the scape of one antenna. Hypopygium large, hairy; claspers much swollen, appearing nearly globular from above, but deeply emarginate at the end, with a row of 5-6 curved black spines at the tip above. The wing hairs visible under a lens are the macrotrichia, the microtrichia being very small and only discernible under a fairly high magnification.

***Psilomegalosphys xanthogaster* End.**

N. Syn. *Sciara rufoabdominalis* Brun.

Perak: Batang Padang, Jor Camp, 1800 ft., 6th June, 1923; 1 ♀.

Pahang: K. Teku, 500 ft. (bēluka and lallang), 4th December, 1921.

***Scythropochroa velata* End.**

Pahang: K. Teku, 500 ft. (in bēluka), 5th-7th December, 1921; 1 ♂, 1 ♀.

Java: Buitenzorg, 800 ft., 25th April, 1923; 1 ♂.

I think this must be correctly identified, although Enderlein does not mention that the eyes are bare, and that *Cu 1* is rather strongly bent downwards in the middle. The male (hitherto undescribed) has larger eyes than the ♀, the face being very narrow; it also differs slightly in venation, the base of the cubital fork being well beyond the base of the stem of the median fork. The hypopygium is rather large; claspers rather swollen, barely twice as long as broad, with a pencil of stiff hairs at the tip, directed inwards.

***Scythropochroa puripennis* sp. n.**

♀. *Head* shining black, nearly bare. Ocelli in a flattened triangle close behind the eye-bridge, which is rather narrow, but uninterrupted. Eyes bare. Face moderately broad, but only about two-thirds as broad as one eye. Antennae all black; flagellar segments gradually increasing in length, from 1.3-2.5 times as long as broad. Palpi black, composed of a single stout oval segment about 1.5 times as long as broad. *Thorax* shining black, hair short and black, acrostichal hairs in an irregular double row. Scutellum with numerous but short marginal bristles. *Abdomen* somewhat shining blackish brown, membrane more brownish; all tergites entire; terminal lamellae of ovipositor rather shortly oval. *Legs* blackish brown, only the tibial spurs yellowish, these not much longer than the diameter of the tibiae. Claws small, empodia well deve-

loped. *Wings* iridescent, hyaline, except for the base of the costal cell, which is smoky. Anterior veins black, whole media faint, cubitus darkened, *Sc* short, only half as long as *R*; *R1* longer than *R* and ending well beyond the base but far before the middle of the median fork; costa extending two-thirds of the distance from *R5* to *M1*; *r-m* equal in length to the base of *M1*. *R5* ending distad of *M2*; median fork rather shorter than its stem; stem of cubital fork about three-quarters as long as the basal section of *M*; *Cu 1* only gently curved; *An* indistinct. Halteres black.

Length of body, 5 mm.; wing, 4.3 mm.

Pahang: Cameron's Highlands, 4800 ft., 12th March, 1924; 1 ♀, at light.

Although the cubital fork is not so short as in the other species of this genus, I have placed this species here rather than in *Platosciara* on account of the single-segmented palpi. From *S. velata* it differs in its clear wings, with shorter *Sc* and *R1*; smaller claws, etc.

***Seythropochroa sordidata* sp. n.**

♀. *Head* broad, almost flat behind, dark brownish. Ocelli in a flattened triangle close behind the eye-bridges, which are in contact and three facets broad. Face as broad as one eye. Eyes bare. Antennae brownish, flagellar segments not quite twice as long as broad. Palpi brownish, the single segment rounded, not longer than broad. *Thorax* dark brown, somewhat shining, hair blackish, acrostichal hair very short, in a double row running the whole length of the scutum. Scutellum with numerous fine hairs and four longer ones on the margin. *Abdomen* dull dark brown, not very long. *Legs* brownish-ochreous, tibial spurs yellowish, about as long as the tibial diameter. Claws rather small, empodium as long as the claws but only slightly branched. *Wings* uniformly greyish-tinged, veins all brownish. *Sc* just reaching base of *Rs*; *R1* as long as *R* and ending just above *fM*; costa reaching almost four-fifths of the distance from *R5* to *M1*; *R5* ending just distal to tip of *M2*; median fork about as long as its stem; *r-m* as long as basal section of *M*; base of cubital fork just proximal to base of *r-m*; *Cu 1* gently curved; *An* distinct, reaching more than halfway across the anal field. Halteres dark.

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

Pahang: Sungai Tembeling, 18th November, 1922; 1 ♀, at light.

This is nearer to *S. puripennis* than to *S. velata*, but differs in many details.

***Psilosciara gymnops* sp. n.**

♀. *Head* black, nearly bare. Ocelli in a nearly equilateral triangle, placed rather close behind the eye-bridges, which are four facets wide and separated by about the width

of two facets. Eyes bare. Face broad, as broad as one eye, almost bare. Palpi black, very short, but distinctly 3-segmented, each segment about as long as broad. Antennae black, the slender flagellar segments each about three times as long as broad. *Thorax* blackish brown, almost dull, humeral angles yellowish. Scutum with the hairs very short and inconspicuous, acrostichal row irregularly double. Scutellum with about six marginal bristles. *Abdomen* slender, dull blackish brown, with short black hair; lamellae of ovipositor oval. *Legs* brownish ochreous, coxae and femora lighter. Tibial spurs yellowish, about as long as the tibial diameter. Claws moderately large, empodium rather short. *Wings* long with a slight brownish tinge, slightly iridescent. *Sc* short, reaching only to middle of *R*; *R1* as long as *R* and ending just above *fM*; costa reaching two-thirds of the distance from *R5* to *M1*; *R5* gently curved downwards, parallel with the costa, its tip distal to that of *M2*; median fork as long as its stem, branches nearly straight and parallel; *r-m* a little longer than the basal section of *M*; base of cubital fork only a little before the base of *r-m*; anal vein rather short but distinct. Halteres with ochreous stem and black knob.

Length of body, 4.5 mm.; wing, 5.5 mm.

Pahang: Cameron's Highlands, No. 4 Camp, 4800 ft., 13th-20th June, 1923; 9 ♀.

***Psilosciara glabrifrons* sp. n.**

♀. *Head* brightly shining black on the front and vertex, somewhat dusted with grey behind; face dull black, a little narrower than the width of the scapes of the two antennae. Eyes quite bare, bridges three facets wide and just in contact. Ocelli in a subequilateral triangle, placed some distance behind the eye-bridges (two or three times the ocellar diameter). Antennae dark brown, scape lighter; flagellar segments about three times as long as broad, with very short necks, pubescence as long as the diameter of the segments. Palpi blackish, very short, the three segments each about half as long again as broad. *Thorax* scarcely shining; mesonotum ochreous with three separate black stripes; scutellum dark brown, postnotum and pleurae blackish. Dorsocentral hair very short; acrostichal hair hardly distinguishable. *Abdomen* dark brownish, scarcely shining. *Legs* brownish ochreous, tarsi darkened; tibial spurs lighter, hardly longer than the tibial diameter; hind tibial comb distinct; claws simple; empodia well developed. *Wings* nearly clear, all veins fairly dark. Branches of *M* and *Cu* bare. *Sc* not quite reaching base of *Rs*; *R1* as long as *R* but ending a little before *fM*; *R5* almost straight, ending above tip of *M2*; costa reaching fully three-quarters of the distance from *R5* to *M1*; *r-m* rather longer than the basal section of *M*; median fork a little shorter than its stem, branches parallel but rather strongly curved downwards;

stem of cubital fork short, anal vein indistinct, anal area small. Halteres blackish.

Length of body, 2.3 mm.; wing, 3 mm.

Perak: Batang Padang, Jor Camp, 1800 ft., 27th May, 1923; 1 ♀.

Genus *Phorodonta* Coq.  
(*Odontonyx* Rübs.).

*Phorodonta malayana* sp. n. (Plate II, fig. 27).

♂. *Head* blackish-grey above; face rather dark brown. Antennae with the scape clear orange-yellow; base of first flagellar segment ochreous, following segments rather stout, a little over twice as long as broad, with short pubescence not longer than half the diameter of the segments. Palpi blackish-brown. *Thorax* rather dark ochreous-brown, not distinctly striped; prothorax and humeral angles yellow; pleurae yellow in the middle, pleurotergites and lower part of sternopleura blackish. Scutellum with at least six marginal bristles. *Abdomen* blackish, posterior borders of segments not distinctly pale. Hypopygium brownish; claspers darker brown, about three times as long as their greatest breadth; tip curved inwards and covered with the usual fine dense black bristles; about the middle of the inner side a patch of rather long, erect, bristly hairs. No ventral hair-patch at base of hypopygium. *Legs* ochreous; tibiae and tarsi darkened; tibial spurs yellow. Claws small, with the usual microscopic teeth appearing as a median thickening under a low power. *Wings* slightly brownish, veins all dark, except stem of media; branches of *M* and *Cu* setose, also the end of the stem of *M*. Costa reaching barely half-way from *R*<sub>5</sub> to *M*<sub>1</sub>; *R*<sub>1</sub> considerably shorter than *R*, but almost reaching the level of the base of the median fork; *r-m* twice as long as the basal section of *M*; base of cubital fork a little beyond base of *r-m*. Halteres black, base of stem ochreous.

♀. Antennae shorter than those of the male, the flagellar segments barely half as long again as broad. *R*<sub>1</sub> ending distinctly before base of median fork; base of cubital fork well before base of *r-m*. Tip of knob of halteres ochreous.

Length of body, 2.8 mm.; wing, 3.5 mm.

Pahang: Cameron's Highlands, Tanah Rata, 18th January, 1924. (*M. R. Henderson*), 1 ♂ (type). Gunong Tahan, 5500 ft., 18th and 25th January, 1923; 2 ♀.

In spite of the slight differences in venation it seems probable that the females belong to the same species as the male. It is nearly allied to *P. sexsetosa* (Brun.) (*quadrisetosa* Brun.) of the Himalayas, which is similar in size and in the male claspers, but is paler in colour and has the knob of the halteres largely ochreous. The Fijian *P. pacifica* Edw., has longer male claspers without conspicuous long hairs on the inner side in the middle.

**Phorodonta lobifera** sp. n. (Plate II, fig. 28).

Rather closely resembles *P. malayana*, but pleurae almost all dark, only the pteropleurites somewhat paler; costa reaching only two-fifths of the distance from *R5* to *M1*; tooth of claws apparently larger; and hypopyginal structure quite different, the claspers being stouter and provided with an enormous hairy lobe on the inner dorsal aspect.

Pahang: Lubok Tamang (Tèlom), 3500 ft., 14th January, 1902. (*H. C. Robinson* and *N. Annandale*); 1 ♂.

Although the type is in a damaged condition, having lost the antennal flagella and most of the tarsi, it seems worth recording on account of the structure of the male claspers, which is quite unlike that of any other species of this group.

**Phorodonta trivittigera** sp. n.

♀. *Head* blackish-grey above; face dark brown. Antennae with the scape and first flagellar segments clear ochreous; remaining segments dark brown, about twice as long as broad. Palpi brownish-ochreous. *Thorax* ochreous; mesonotum with three distinct, separate, dark brown stripes, the middle one reaching the front margin and divided behind for a short distance; scutellum with a pair of small dark dots at the base; pleurotergites and lower part of sternopleura dark brown. Scutellum with four bristly hairs on the margin. *Abdomen* short, blackish, hind margins of tergites narrowly whitish. *Legs* ochreous, tibiae and tarsi darkened, claws normal. *Wings* with a slight brownish tinge, veins all dark, except stem of media; branches of *M* and *Cu* setose. Costa reaching barely half-way from *R5* to *M1*; *R1* shorter than *R* and ending just before base of median fork; *r-m* twice as long as basal section of *M*; base of cubital fork beyond base of *r-m*. Halteres yellowish.

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

Pahang: Gunong Tahan, Padang, 5500 ft., 26th January, 1923; 1 ♀.

This seems rather distinct from the other described Oriental species by the thoracic markings and the pale halteres, though it may be only a variety of the following.

**Phorodonta ? impostor** (Brun.).

Pahang: Kuala Tahan, 300 ft., 27th November, 1921; 1 ♀.

Peninsular Siam: Nakon Sri Tamarat, Khao Luang, 2000 ft., March, 1922; 1 ♀, at light.

Differs from the preceding in its dark halteres and completely fused mesonotal stripes. As no male is present I am not quite sure of the identification.

**Phorodonta ruficoxa** (Brun.).



Pahang: Kuala Tahan, 300 ft., 27th November, 1921; 1 ♀. Cameron's Highlands, No. 4 Camp, 4800 ft., 12th October, 1923; 1 ♀.

Very similar to the last, except that the antennal scape is blackish.

**Phorodonta exacta** (Brun.)?

Selangor: Kuala Lumpur, 25th December, 1924; 1 ♀, at light.

**Phorodonta pubericornis** sp. n.

♂. *Head* dull brownish, almost black round ocelli; face more ochreous brown, moderately broad. Antennae with the scape light ochreous, flagellum black. Flagellar segments all (except the last) with distinct necks over a third as long as the segments themselves, and with very long pubescence, nearly twice as long as the diameter of the segments; first few flagellar segments about half as long again as broad (excluding the slender necks), but the others gradually longer and more slender, the last few four or five times as long as broad. Palpi rather dark brownish ochreous, first two segments subequal, about twice as long as broad, the last longer. *Thorax* uniformly rather light ochreous, scarcely shining. Dorsocentral hairs in single rows, short and inconspicuous, black; acrostichal hairs confined to a few near the front margin. Scutellum with six marginal bristly hairs. *Abdomen* dark brown, hypopygium ochreous. Claspers rather long and slender, with the usual dense apical setae and with a small subapical lobe on the inner side bearing three slender curved spines. *Legs* ochreous, only the trochanters and tarsi darkened; claws small, each with one fairly large and distinct median tooth; hind tibial comb rather indefinite. *Wings* clear; anterior veins only darkened; stem of median fork very faint. Branches of *M* and *Cu* with conspicuous macrotrichia. *Sc* short; *R1* a little shorter than *R*, and ending well before *fM*; costa reaching nearly three-quarters of the distance from *R5* to *M1*; *R5* very slightly curved, ending above or immediately before the tip of *M2*; *r-m* nearly twice as long as the basal section of *M*; median fork as long as its stem, branches parallel and slightly curved downwards; stem of cubital fork short, about half as long as basal section of *M*; anal vein scarcely traceable. Halteres with ochreous stem and blackish knob.

Length of body, 2.2 mm.; wing, 3 mm.; antennae, nearly 3 mm.

Pahang: Cameron's Highlands, No. 4 Camp, 4800 ft., 13th July, 1923; 1 ♂, at light.

This is quite distinct from the other Oriental species with setose *M* and *Cu* by the longer costa and the long necks of the flagellar segments of the antennae,

Genus *Sciara* Mg.

The collection contains a rather large number of specimens belonging to this genus, representing apparently about 40 or 50 species. Of these I have described all which were represented by a fair number of specimens, or which appear to possess fairly well-marked specific characters, but there remains a considerable residue of obscure specimens which I have not attempted to classify as it seems best to wait until more material is available.

A large number of names for Oriental species of *Sciara* have been proposed by Mr. E. Brunetti, but his descriptions are for the most part useless as they hardly refer to any of the more important diagnostic points. In order as far as possible to clear up the identity of Brunetti's species of *Sciara*, Dr. Bains Prashad has kindly lent me the whole of the collection belonging to the Indian Museum. Having carefully examined the types in this collection, as well as the types in the British Museum collection of species described by Walker and Senior-White, I have ventured to compile a key differentiating these species from the new ones described in this paper. Owing to the difficulty of being certain, without mounting and examining under a high power, whether or not the claws are toothed, I have included in this key the species of *Phorodonta* as well as of *Sciara* in the restricted sense; that is to say, all Oriental *Sciarinae* in which the palpi have three distinct segments and the eyes are distinctly pubescent all over. In this key I have followed Johannsen in adopting as a primary divisional character the presence or absence of setae (macrotrichia) on the branches of the media and cubitus. This is a simple and sharp division, though the two groups so formed are not natural, as is clearly shown by a study of the venation and other characters. In addition to the characters of venation used by Winnertz and Johannsen, I have found useful specific distinctions in the width of the eye-bridges, the position of the ocelli, and the development of the mesonotal hairs or bristles, particularly the presence or absence of acrostichal hairs and the number of bristles on the scutellum.

I have included in the key the species described by Enderlein and Kieffer from the Seychelles Is., because two of them (*S. albicoxa* and *S. leucocera*) have already been found by Senior-White in Ceylon, and it is therefore not improbable that some of the others may occur in the Oriental region. *S. leucocera* is a very distinct and apparently very widely distributed species of which there are examples in the British Museum from West Africa as well as those just mentioned from the Seychelles and Ceylon.

In order to elucidate the types I have also included in the key the species described by Walker from the Moluccas and New Guinea, but the following Oriental

species are omitted, as they are unrecognisable from descriptions alone: *S. pusilla* Dol., *S. femoralis* Dol., and *S. sumatrana* End. It may further be noted that *S. trilineata* Brun., is a *Trichosia*, and *S. longinervis* Brun., a *Scythropochroa*; also that *S. sulcata* v.d.W. and *S. laticollis* Walk., seem to be synonymous with *Trichomegalosphys funestus* End.; *S. rufoabdominalis* Brun., with *Psilomegalosphys xanthogaster* End., *S. quadrisetosa* Brun. with *S. sexsetosa* Brun.; *S. evanescens* Brun. with *S. parallela* Brun.; *S. longitudinalis* Brun. with *S. longipennis* Brun.; *S. fulvescens* Brun. with *S. pallescens* Brun.; and *S. hirtilineatoides* White with *S. flammiventris* Brun. I am indebted to Dr. H. Stitz for information regarding certain types in the Berlin Museum.

1. Branches of *M* and *Cu* bearing macrotrichia at least towards the tips.....2  
Branches of *M* and *Cu* devoid of macrotrichia....30
2. Costa reaching scarcely half-way from tip of *R* $\bar{5}$  to tip of *M**1*; base of cubital fork generally below or even slightly beyond base of *r-m*; coxae rather long; claws microscopically toothed.....3  
Costa reaching distinctly more than half-way from *R* $\bar{5}$  to *M**1* (except in *S. indica* Walk. and allied species); base of cubital fork well before base of *r-m*; coxae shorter; claws simple (except in *P. pubericornis*)...12
3. Head yellow except for a black ocellar spot; thorax all yellow.....*P. filipes* Walk.  
Head dark on the whole vertex; thorax not all yellow.....4
4. Scape of antennae clear yellow.....5  
Scape of antennae, or at least the first segment, black or dark brown.....10
5. Face yellow, palpi black.....*P. sexsetosa* Brun.  
Face dark brown.....6
6. Palpi yellow or brownish ochreous.....7  
Palpi blackish.....9
7. Halteres yellowish; mesonotum with three distinctly separate blackish stripes.....*P. trivittigera* sp. n.  
Halteres blackish.....8
8. Mesonotum ochreous with three stripes, the lateral pair darker.....*P. inconspicua* Brun.  
Mesonotum mainly blackish, the stripes fused.....*P. impostor* Brun.
9. Male claspers not lobed.....*P. malayana* sp. n.  
Male claspers with a large hairy lobe...*P. lobifera* sp. n.
10. Base of cubital fork well before base of *r-m*; all coxae dark.....*P. longipes* Walk.  
Base of cubital fork just beyond base of *r-m*.....11

11. Coxae dark; *R1* only a little shorter than *R*; male claspers with a tubercle on the inner side before the tip (Brunetti's type is a ♂, not ♀ as stated) .....*P. exacta* Brun.  
Coxae mainly reddish; *R1* much shorter than *R* .....*P. ruficoxa* Brun.
12. Cubital fork sessile (*Apelmocreagris*, End.) .....13  
Cubital fork distinctly stalked.....16
13. Mesonotum mainly or all reddish orange.....14  
Mesonotum blackish.....15
14. Pleurae largely dark.....*S. rufithorax* v.d.W.  
Pleurae uniformly reddish orange..*S. simulator* sp. n.
15. First flagellar segment twice as long as the second .....*S. pruinosa* Rüb.  
First flagellar segment shorter than the second .....*S. hendersoni* sp. n.
16. Head largely yellow, except for a black ocellar spot..17  
Head entirely blackish, or at most with the face pale.....21
17. Mesonotum all orange or yellow, at least in the ♀...18  
Mesonotum with three distinct dark brown stripes (in ♀).....20
18. Wing 9 mm.; flagellum all black..*S. distinguenda* Brun.  
Wing 5 mm.; first flagellar segment ochreous.....19
19. Postnotum and pleurae yellow.....*S. varipes* Walk.  
Postnotum, pleurotergites and sternopleura dark .....*S. palliceps* sp. n.
20. Femora yellow.....*S. trifasciata* Brun.  
Hind femora blackish.....*S. nigrifemur* sp. n.
21. *R1* ending beyond, above or only a little before *fM*; anal vein long and distinct.....22  
*R1* ending well before *fM*; anal vein faint.....29
22. Scape of antennae yellow or yellowish; prothorax yellow; pleurae partly yellowish.....23  
Scape of antennae black; prothorax blackish, or mainly so.....26
23. Branches of *M* and *Cu* with macrotrichia at the tips only.....*S. opposita* Brun.  
Branches of *M* and *Cu* with macrotrichia along their whole length.....24
24. Male claspers much swollen, with a tuft of long stiff bristles at the tip.....25  
Male claspers much less swollen, without obvious tuft of bristles.....*S. rimiscutellata* End.

25. Face brown; *R1* reaching beyond *fM*; a few macrotrichia on membrane at tip of wing  
 .....*S. flavofemorata* Brun.  
 Face yellow; *R1* ending above *fm*; no macrotrichia on membrane.....*S. flavicollis* Brun.
26. Posterior divisions of pronotum clear yellow, also the pleural membrane behind them; mesonotum considerably shining; wing-length 4-5 mm.; costa reaching well over half-way from *R5* to *M1*; male clasper with several slender spines.....*S. fletcheræ* White.  
 Posterior divisions of pronotum not clear yellow; pleural membrane black; mesonotum less shining; wing-length 5 mm. ( $\delta$ )—9 mm. ( $\varphi$ ); costa (except in *S. rotunda*?) reaching barely half-way from *R5* to *M1*.....27
27. Wings with a whitish streak in cell *R5*, contrasting with the blackened anterior margin; abdomen all black ( $\delta$ ,  $\varphi$ ).....*S. fuscolumbata* End.  
 Wings without whitish streak in cell *R5*, though cells *C* and *R1* are often strongly darkened; lateral abdominal membrane reddish or partly so.....28
28. Wings without macrotrichia at the tip; abdominal membrane all reddish in  $\varphi$ ....*S. diversipes* Brun.\*  
 Wings with a few macrotrichia at the tip in cell *M1*; abdominal membrane all reddish....*S. indica* Walk.  
 Wings without macrotrichia at the tip (?); abdominal membrane largely dark (?); costa longer (?)  
 .....*S. rotunda* Rübs.\*
29. Thorax blackish; male antennae normal.....  
 .....*S. parallela* Brun.  
 Thorax ochreous; flagellar segments of male antennae with long necks and very long pubescence.....  
 .....*P. pubericornis* sp. n.
30. *R1* ending at least slightly beyond *fM*.....31  
*R1* ending above or (generally) before *fM*.....43
31. Abdomen mainly yellowish or reddish, costa reaching hardly more than half-way from *R5* to *M1*.....32  
 Abdomen blackish, or costa much longer.....33
32. *R5* nearly straight, *R1* longer than *R*; abdomen blackish at base.....*S. luteiventris* Brun.  
*R5* moderately curved; *R1* hardly as long as *R*.....  
 .....*S. ponderosa* Walk.  
*R5* strongly curved, abdomen not blackish at base  
 .....*S. curvinervis* sp. n.
33. Thorax dull black, acrostichal hairs confined to front half of scutum or less.....34

\* Perhaps not truly distinct from *S. indica*.

- Thorax somewhat shining (except in *S. horrescens*);  
acrostichal hairs running nearly the whole length of  
the scutum.....37
34. Anal vein fairly distinct, reaching at least half-way  
across the anal field.....35  
Anal vein absent or very short; wings blackish.....36
35. Wings blackish, 5-8 mm. long...*S. nigripennis* Brun.  
Wings only a little darkened, 3-5 mm. long.....  
.....*P. fruhstorferi* Rüb.;  
.....*S. pendleburyi* sp. n.
36. *R1* ending well beyond *fM*.....*S. pammela* sp. n.  
*R1* ending only slightly beyond *fM*...*S. lygropis* sp. n.
37. Thorax all blackish; distinct longish dorsocentral  
bristles present, mixed with shorter hairs.....  
.....*S. horrescens* sp. n.  
Pleurae more or less ochreous in the middle; dorso-  
central hairs all alike, not very long.....38
38. Abdomen reddish brown.....*S. brunniventris* White.  
Abdomen blackish.....39
39. Flagellar segments (♀) not longer than broad; wing-  
length 3-3.5 mm.....*S. saltuum* sp. n.  
Flagellar segments at least half as long again as broad;  
wing-length 4-5 mm.....40
40. *R1* reaching much beyond *fM*.....41  
*R1* reaching only very slightly beyond *fM*.....42
41. Median fork in ♀ narrower, almost 5 × 1; *R1* slightly  
shorter than *R*.....*S. cameronensis* sp. n.  
Median fork in ♀ broader, only 4 × 1; *R1* slightly  
longer than *R*.....*S. fratercula* Brun.
42. Flagellar segments (in ♀) quite twice as long as broad;  
ocelli small, dark and equal in size.....  
.....*S. khasiensis* White.  
Antennae shorter; ocelli pale, laterals larger than the  
median.....*S. pahangensis* sp. n.
43. Thorax entirely brightly shining black.....44  
Thorax dull or only moderately shining.....46
44. Last four antennal segments and tip of abdomen white;  
branches of median fork strongly curved down-  
wards; *R5* turned up at tip; costa long.....  
.....*S. niveiapicalis* Brun.  
Antennae and abdomen all black; branches of median  
fork not strongly curved downwards; costa reaching  
little more than half-way from *R5* to *M1*.....45
45. Head shining black; *Rs* strongly curved; each tibia with  
a single small spur.....*S. politula* sp. n.  
Head dull black; *Rs* nearly straight.....  
.....*S. nitidithorax* Brun.

46. Thorax partly ochreous or brownish-ochreous, at least on the shoulders and part of pleuræ.....47  
 Thorax all blackish, or only inconspicuously pale at the humeral angles.....61
47. First three or four segments of antennal flagellum ochreous, the few following segments each distinctly lighter at the tip than at the base...*S. leucocera* Kieff.  
 Antennal flagellum all black or at most the first segment ochreous.....48
48. Dorsocentral hairs of mesonotum long, bristly, black, in single rows (compare also *S. radicum*).....49  
 Dorsocentral hairs short and inconspicuous.....50
49. Halteres black; lamellæ of ovipositor ochreous.....  
 .....*S. luteolamellata* sp. n.  
 Halteres yellow.....*S. setilineata* Brun.
50. Head largely yellow, vertex more or less darkened; claws toothed.....51  
 Head blackish, unless on the face; claws simple...52
51. Costa reaching hardly more than half-way from *R5* to *M1*; wing 4 mm.....*P. compacta* Brun.  
 Costa reaching quite two-thirds of the distance from *R5* to *M1*; wing 2.3 mm.....*P. perpallida* Edw.
52. Halteres yellow.....53  
 Knob of halteres blackish.....54
53. Costa reaching only half-way from *R5* to *M1*; male claspers long, slender on the apical half, more swollen on the basal half, with a projection on the inner side near the base.....*S. flavipleura* Brun.  
 Costa longer; male claspers simple, without spines or projections.....*S. pallescens* Brun.
54. Mesonotum ochreous or only indistinctly striped...55  
 Mesonotum dark brown or with three contiguous dark stripes.....58
55. Dorsocentral hairs minute, pale.....*S. latipons* sp. n.  
 Dorsocentral hairs distinct, black.....56
56. *R5* straight, *M1* divergent from it; mesonotum with traces of narrow dark lines; wings under 2 mm. ....*S. radicum* Brun.  
*R5* gently curved, parallel with *M1*; mesonotum uniformly ochreous; wing about 3 mm.....57
57. Palpi yellowish.....*S. nigriceps* End.  
 Palpi black.....*S. atrifrons* sp. n.
58. Male claspers without distinct spines.....59  
 Male claspers with distinct spines.....60
59. Palpi and scape of antennæ pale yellow.....  
 .....*S. latelineata* Brun.  
 Palpi and scape dark.....*S. lucipeta* sp. n.

60. Face narrow; claspers with one spine.....  
 .....*S. monacantha* sp. n.  
 Face broader; claspers with two spines.....  
 .....*S. diacantha* sp. n.
61. Hind femora blackish, contrasting with the pale yellow  
 coxae; male hypopygium elongate..*S. albicoxa* End.  
 Hind femora and coxae of the same colour; hypopy-  
 gium not elongate.....62
62. Lateral abdominal membrane red; *R1* just reaching  
 level of *fM*; wing about 5 mm.....  
 .....*S. flammiventris* Brun.  
 Lateral abdominal membrane not red; *R1* ending  
 before *fM*; size smaller.....63
63. Wings with a black or grey band across the  
 middle.....64  
 Wings uniformly infuscated or clear.....66
64. Halteres pale yellow.....*S. melaleuca* sp. n.  
 Halteres black.....64a
- 64a. Tibial spurs black; thorax dull; wing-fascia broad and  
 dark.....*mediofusca* sp. n.  
 Tibial spurs yellow.....65
65. Thorax shining; median ocellus touching the eye-  
 bridges; wing-fascia dark grey, broadened anteriorly  
 to fill the whole of cell *R1*, also filling the base of  
 cell *M1*.....*fascipennis* Brun.  
 Thorax dull; median ocellus far removed from the  
 eye-bridges; wing-fascia light grey, leaving most of  
 cell *R1* clear.....*subfascipennis* sp. n.
66. Thorax somewhat shining; male claspers with two  
 subapical spines, somewhat as in *S. diacantha*  
 (compare also *S. uichancoi* Pettex); *S. bispinosa*  
 Pettex; *S. conulifera* sp. n. Thorax dull, or claspers  
 otherwise.....67
67. Halteres yellow; thoracic hair and scutellar bristles  
 yellowish; acrostichal hair very distinct.....  
 .....*S. flaviseta* Brun.  
 Halteres with dark knob.....68
68. Palpi, scape, and first flagellar segment yellow, also  
 legs.....*S. segmenticornis* Brun.  
 Palpi and scape more or less darkened, usually  
 black.....69
69. Acrostichal and dorsocentral hair distinct, pale; male  
 claspers with strong terminal spine; *Rs* ending proxi-  
 mal to tip of *M2*.....*S. hirtilineata* Brun.  
 Acrostichal hair short and inconspicuous or absent;  
 dorsocentral hair if longish then black; male  
 claspers without distinct terminal spine (or male  
 unknown).....70



70. *Rs* ending; distinctly distal to tip of *M2*; wing 3 mm. or more.....71  
*Rs* ending above or proximal to tip of *M2*.....74
71. Coxae and femora yellow.....*S. biformata* End.;  
.....*S. longipennis* Brun.  
Coxae and femora dark.....72
72. Anal vein short.....*S. seychellensis* End.  
Anal vein long.....73
73. Median fork barely as long as its stem.. *S. solita* Walk.  
Median fork longer than its stem.....*S. selecta* Walk.
74. Wings rather smoky, over 2.5 mm. long.....75  
Wings nearly clear, barely 2 mm. long; *Rs* ending well before tip of *M2*.....77
75. Anal vein short and indistinct; base of cubital fork well before base of *r-m*.....*S. selangoriana* sp. n.;  
.....*S. singhalensis* Rübs.  
Anal vein long and fairly distinct.....76
76. Anal lobe large; *Rs* nearly straight.. *S. orientalis* Brun.  
Anal lobe much smaller; *Rs* more curved.....  
.....*S. microtricha* sp. n.
77. Legs darker; dorsocentral hair short; *r-m* shorter than basal section of *M*.....*S. heteroptera* de Meij., ♂;  
.....*S. ratana* sp., n.  
Legs lighter; dorsocentral hair rather long; *r-m* as long as basal section of *M*.....*S. mahensis* Kieff.;  
.....*S. divergens* End.

*Sciara rufithorax* v.d.W. (Plate II, fig. 29).

Pahang: K. Tahan, 300 ft., 25th November, 1921; 2 ♂, 2 ♀.

Perak: Batang Padang, Tapah, 9th October, 1923; 1 ♀.

Selangor: Kuala Lumpur, 15th November and 19th December, 1923; 2 ♀, at light.

Java: Buitenzorg, 15th April, 1923; 2 ♀, at light.

Perak: Sungkei; Peninsular Siam: Biserat and Patani Cape, 1902. (*H. C. Robinson* and *N. Annandale*); 1 ♂, 4 ♀.

This is very distinct from all other previously described Oriental species by the combination of a blackish head with a more or less completely orange-red mesonotum, also by the sessile cubital fork; the branches of the media and cubitus are setose. Two species have however been confused under this name, both apparently common and widely distributed in the orient; in the true *S. rufithorax* the pleurae are largely blackish, at least on the pleurotergite and part of the sternopleura; the posterior coxae are more or less blackened; the male claspers are as shown in fig. 29; and there are usually a few macrotrichia on the membrane at the tip of the wing, in cells *M1* and *M2*, though these do not seem to be constant.

**Sciara simulator** sp. n. (Plate II, fig. 30).

Nearly allied to *S. rufithorax* v.d.W., differing chiefly as follows:—Pleurae and coxae entirely clear reddish-orange. Male claspers as in fig. 30. Wings without macrotrichia on the membrane at the tip.

Selangor: Kuala Lumpur, 25th June, 1921; type ♂, and 13th–14th February, 1924; 1 ♂, 1 ♀.

Perak: Batang Padang, Tapah, 25th May, 1923; 1 ♀, and Jor Camp, 1800 ft., 4th June, 1923; 1 ♀ at light.

Peninsular Siam: Biserat, Bukit Besar and Patani Cape, 1901. (*H. C. Robinson* and *N. Annandale*); 1 ♂, 11 ♀.

Ceylon: Peradeniya, 16th May, 1910; 1 ♂. (*R. Senior-White*).

India: Ramandrug, Bellary district, 3500 ft., 31st August, 1918; 1 ♂. (*Y. R. Rao*).

This resembles the African *S. thoracica* Macq., in colour, but is smaller, and the male claspers are quite different.

**Sciara palliceps** sp. n.

♂. *Head* yellowish, somewhat shining; ocellar spot black. Eyes just touching, the bridge about four facets wide. Antennae with the scape and first flagellar segment ochreous, remaining segments black, about three times as long as broad and with dense pubescence as long as their diameter. Palpi and labium black, palpal segments about equal in length, over twice as long as broad. Thorax shining ochreous, almost bare, scutum with indistinct traces of three stripes, the lateral pair darker; postnotum, pleurotergites and most of sternopleura dark brown. *Abdomen* dark brown, posterior margin of segments rather conspicuously pale; venter lighter; hair blackish. Hypopygium rather large, ochreous; clasper simple, about three times as long as broad, tip slightly turned inwards and densely set with fine black bristles. *Legs* ochreous, tibiae and tarsi darkened; spurs dark, nearly twice as long as the tibial diameter. Claws rather small, simple. *Wings* with a slight brownish tinge. Branches of *M* and *Cu* setose, but no macrotrichia on the membrane, *Sc* reaching just beyond base of *Rs*, where it ends rather abruptly. *R1* slightly longer than *R*, and ending a little beyond *fM*. *R5* somewhat sinuous, tip very slightly turned upwards. Costa reaching two-thirds of the distance from *R5* to *M1*. Median fork as long as its stem, *M2* curved down at tip; *r-m* only half as long as the basal section of *M*; cubital fork shortly stalked; anal vein long and distinct. Halteres black, base of stem ochreous.

♀. Resembles the ♂, except for the shorter antennae and the absence of obvious mesonotal stripes; scutellum darkened; posterior margins of abdominal segments less

distinctly pale. *Abdomen* rather long and slender, lamellae of ovipositor round.

Length of body, ♂ 3 mm.; ♀ 5.5 mm.; wing, ♂ 4 mm., ♀ 5 mm.

Pahang: Cameron's Highlands, No. 4 Camp, 4800 ft., 12th October, 1923; 1 ♂ (type), at light.

Peninsular Siam: Nakon Sri Tamarat, Khao Luang, 2000 ft., 26th March, 1922; 1 ♀, at light.

Only two Oriental species of *Sciara* have been described with a yellowish head: *distinguenda* Brun., which is much larger than the present species, and *trifasciata* Brun., which has the thorax of the ♀ very distinctly striped.

***Sciara nigrifemur* sp. n.**

♀. Nearly allied to *S. palliceps*, which it resembles in the colour of the head, also in venation and other structural features, but differs as follows: Scutum with three distinct though not very sharply margined dark brown stripes, the middle one reaching the front margin; scutellum blackish; hind femora almost entirely blackish, the tibiae remaining brownish ochreous.

Selangor: Kuala Lumpur, 7th Mile Cheras Road, 7th January, 1924; 1 ♀.

***Sciara fuscolumbata* End.**

Perak: Batang Padang, Jor Camp, 1800 ft., 27th May, 1923; 1 ♂, 5th June, 1923; 1 ♀, "nocturnal"; 2000 ft., 25th August, 1922; 1 ♀. (*E. Seimund*).

Pahang: K. Tahan, 6th December, 1921; 1 ♀.

A well defined species on account of the blackish front border of the wing, which however is less noticeable in the ♂ than in the ♀.

***Sciara hendersoni* sp. n.**

♀. *Head* black, with short black hair. Ocelli in a flattened triangle, not far behind the eye-bridges, which just touch and are four facets wide. Face moderately broad. Palpi black, the segments subequal in length, about three times as long as broad. Antennae black; flagellar segments gradually decreasing in length except for the last; second longer than the first and about three times as long as broad. *Thorax* black, scarcely shining, hair inconspicuous, acrostichal hairs very few; scutellum with numerous marginal bristles. *Abdomen* rather dark brownish ochreous, with dark hair. *Legs* black, front femora more brownish; tibial spurs ochreous, not much longer than the tibial diameter. *Wings* blackish, all veins dark. Branches of *M* and *Cu* setose, also most of the stem of *M*; a number of macrotrichia on the membrane at ends of cells *M1* and *M2*. *Sc* reaching beyond base of *Rs*; *R1* a little longer than *R* and ending a little beyond *fM*; costa reaching three-quarters of the distance from *R5* to *M1*; *R5*

nearly straight, its tip just proximal to that of *M*<sub>2</sub>; *r-m* a little longer than basal section of *M*; median fork as long as its stem, branches parallel and slightly curved; cubital fork sessile, not much widened apically; anal vein long, reaching quite two-thirds of the distance across the anal field. Halteres black.

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

Pahang: Cameron's Highlands, Tanah Rata, 4500 ft., 13th January, 1924. (*M. R. Henderson*); 1 ♀.

The sessile cubital fork will distinguish this species from most other Oriental species, except *S. rufithorax* v.d.W. and *S. simulator* sp. n., in which the thorax is reddish. Rübsaamen's *S. pruinosa* from Borneo differs (according to the description) in having the first flagellar segment twice as long as the second.

***Sciara ? parallela* Brun.**

N. Syn. *S. evanescens* Brun. (nec Skuse, nec Enderlein).

Pahang: Cameron's Highlands, No. 4 Camp, 4800 ft., 13th June, 1923; 1 ♀, at light.

This species differs from the other Oriental species with setose *M* and *Cu* in its much smaller size, and in that *R*<sub>1</sub> ends a little before *fM*. The identity of the present specimen is somewhat uncertain as the halteres are darkened instead of yellowish, and there is no male for comparison.

***Sciara diversipes* Brun.**

Pahang: Lubok Tamang, 4000 ft., 21st October, 1923; 1 ♀.

A large black species with dark brown wings, setose branches of *M* and *Cu*, no macrotrichia on the membrane, *R*<sub>1</sub> longer than *R*; costa reaching only about three-fifths of the distance from *R*<sub>5</sub> to *M*<sub>1</sub>; anal vein long; etc.

***Sciara curvinervis* sp. n.**

♀. *Head* blackish, with short black hair. Ocelli in a flattened triangle, placed close behind the eye-bridges, which are contiguous and about six facets wide. Face narrow, barely as wide as the scape of one antenna. Palpi long, dark brown, the segments successively longer and more slender, the terminal one quite six times as long as broad. Scape of antennae brownish ochreous, flagellum black, segments over twice as long as broad. *Thorax* dull blackish-brown, with slight grey dusting, two dull black lines visible from in front; scutum with the hair dark, dorsocentral stripes conspicuous, acrostichal hairs few in number and confined to the front third of the scutum; scutellum with numerous but short marginal bristles. *Abdomen* bright ochreous, first tergite and last two segments dark; lamellae of ovipositor rather elongate oval. *Legs* black; tibial spurs ochreous, not much longer than

the tibial diameter; hind tibia with distinct apical comb; claws rather large; empodia moderate. *Wings* broad, brownish, all veins distinct except stem of media; branches of *M* and *Cu* bare; costal cell rather broad. *Sc* reaching nearly to base to *Rs*, but faint apically; *R1* about as long as *R* and reaching slightly beyond *fM*; costa reaching a little over half-way from *R5* to *M1*; *R5* rather strongly curved, its tip distal to that of *M2*; *r-m* quite twice as long as basal section of *M*; stem of median fork long, distinctly curved downwards beyond the middle; fork shorter than the stem, the branches slightly approximated beyond the middle; stem of cubital fork below base of *r-m*, the branches divergent only for the apical third, so that the width of the fork on the margin is scarcely greater than that of the median fork; anal vein rather long but faint. Halteres black.

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

Pahang: Fraser's Hill, 4000 ft., 1st September, 1923. (*M. R. Henderson*); 1 ♀.

The combination of a blackish thorax with a reddish abdomen is seen in a number of Oriental Sciarinae (e.g. *Psilomegalosphys xanthogaster* End., *Scythropochroa leucogaster* Edw., *Sciara luteiventris* Brun., and *S. bruniventris* White), but the present species seems quite distinct by venational characters, differing conspicuously from *S. luteiventris* in the strikingly curved *Rs* and curved stem of the media.

*Sciara pammela* sp. n. (Plate II, fig. 33).

*Head* dull black, with short black hair. Ocelli in a flattened triangle close behind the eye-bridges, which are in contact and four facets wide. Face rather narrow in the ♂, broader in the ♀. Antennae black, in the ♂ the flagellar segments are about 2-2.5 times as long as broad, with short necks, pubescence only about half as long as the diameter of the segments; in the ♀ the flagellum is more slender and the segments therefore somewhat longer in relation to their breadth, pubescence shorter. Palpi rather long, the segments subequal in length, the middle one a little shorter than the other two, the first short about 2.5 times as long as broad, the others more slender. *Thorax* entirely black, mesonotum very slightly shining; hair black; dorsocentral hair fairly long and distinct, acrostichal hair confined to a short double row towards the front. Scutellum with about ten marginal bristly hairs. *Abdomen* dull black, including the lateral membrane; hair black. Male claspers a little over twice as long as broad, rounded and densely bristly at the tip with two small black spines close together on the inner side close to the tip; no ventral hair-patch. *Legs* black, even the tibial spurs blackish, but the front femora more pitchy-brown, lighter in the ♂ than in the ♀. Hind tibiae without obvious apical comb; claws

rather large; empodium and pulvilli well developed. *Wings* uniformly blackish. Branches of *M* and *Cu*, also the membrane, devoid of macrotrichia. Costal cell distinctly widened. *Sc* not quite reaching base of *Rs*; *R1* a little shorter than *R*, but ending well beyond *fM*; costa reaching nearly three-quarters of the distance from *R5* to *M1*; *R5* gently curved, ending just distal to *M2*; *M1* parallel with *R5* and about as long as the petiole; *r-m* twice or three times as long as the basal section of *M*; stem of cubital fork short but distinct; anal vein very short and indistinct. Halteres black.

Length of body, ♂ 3.5 mm., ♀ 5-6 mm., wing, ♂ 4.5 mm., ♀ 7-8 mm., at light.

Pahang: Cameron's Highlands, Tanah Rata, 4500 ft., 17th January, 1924; type ♂, and 31st January, 1924; allotype ♀. (*M. R. Henderson*); 4800 ft., 12th-15th October, 1923; 3 ♀; 13th March, 1924; 2 ♀; 19th June, 1923; Gunong Berumban, 6050 ft., 17th June, 1923; 1 ♀.

A large species superficially resembling *S. nigripennis* Brun., but quite distinct by the remarkably long *r-m* and almost complete absence of the anal vein.

***Sciara pendleburyi* sp. n.**

*Head* dull black, with short black hair. Ocelli in a slightly flattened triangle, placed close behind the eye-bridges, which are in contact and about four facets wide. Face in ♂ not much broader than one antennal scape, in ♀ about half as broad again. Antennae blackish, apex of second segment ochreous; flagellar segments in ♂ stout, about 1.7-2.2 times as long as broad, with short but fairly distinct necks, in ♀ more slender, about three times as long as broad, without distinct necks; in both sexes the pubescence as long as the diameter of the segments. Palpi blackish, first segment rather stout, over twice as long as broad, second and third segments more slender, barely twice as long as broad. *Thorax* dull blackish-brown, humeral angles obscurely ochreous. Dorsocentral hair fairly long and distinct but not bristly, dark in colour. Acrostichal hairs small, in a double row on front third of scutum only. Scutellum with about 10-12 marginal bristly hairs. *Abdomen* dull blackish-brown, including the lateral membrane; hair black. Male claspers a little over twice as long as broad, tip rounded and rather densely bristly, one or two of the fine bristles towards the inner side of the tip slightly but not conspicuously differentiated and thickened; no ventral hair-patch on hypopygium. *Legs* pitchy-brown, including the coxae, more ochreous-brown in the ♂, tibial spurs yellow, about as long as the tibial diameter; hind tibial comb indefinite. *Wings* nearly clear in the ♂, with a light brown tinge in the ♀; anterior veins dark brown, the rest light. Branches of *M* and *Cu* bare. Costal cell not widened. *Sc* reaching base of *Rs*; *R1* some-

what shorter than *R*, but reaching distinctly beyond *fM*; *R5* gently curved, ending slightly distal of the tip of *M2*; costa reaching over three-fourths of the distance from *R5* to *M1*; *r-m* a little longer than basal section of *M*; median fork as long as its stem, branches parallel, but in most specimens *M1* is slightly turned up at the tip; cubital fork moderate; anal vein faint, but traceable nearly half-way across the anal field. Halteres with ochreous stem and black knob.

Length of body, ♂ about 3 mm., ♀ 3.5–4.5 mm.; wing, ♂ 3.5–3.8 mm., ♀ 4–5 mm.

Pahang: Cameron's Highlands, 4800 ft., 12th–17th October, 1923, and 11th–13th March, 1924; 2 ♂, 21 ♀ at light. Lubok Tamang, 3500 ft., 10th March, 1924; 4 ♀ at light. Gunong Tahan, 5500 ft., 8th–11th December, 1922; 2 ♀.

Perak: Batang Padang, Jor Camp, 1800 ft., 28th May, 1923; 1 ♀.

**Sciara lygropis** sp. n.

♀. Closely resembles *S. pammela* in most particulars, but of smaller size, and differs in venation as follows:—*R1* ending above or scarcely beyond *fM*; *R5* ending above or slightly proximal to the tip of *M2*; costa longer, reaching to quite four-fifths of the distance from *R5* to *M1*; median fork rather shorter than its stem; *r-m* long, but scarcely twice as long as the basal section of *M*. The wings are less intensely black than in *S. pammela*.

Length of body, 4.5–5 mm.; wing, 5–5.5 mm.

Perak: Batang Padang, Jor Camp, 1800 ft., 28th May–1st June, 1923; 9 ♀ (including type), "nocturnal"; 30th August, 1922; 1 ♀. (*E. Seimund*). Fraser's Hill, 4000 ft., 29th August, 1923; 1 ♀. (*M. R. Henderson*).

Peninsular Siam: Nakon Sri Tamarat, Khao Ram, 750 ft., 24th February and Khao Luang, 2000 ft., 25th March, 1922; 2 ♀.

**Sciara horrescens** sp. n.

*Head* dull black, with short black hair. Ocelli pale in colour, of equal size, placed in a slightly flattened triangle close behind the eye-bridges, which are broadly contiguous and about five facets wide. Face narrow, in the ♂ scarcely as broad as the scape of one antenna, in the ♀ a little broader. Antennae black, tip of second and base of third segments ochreous; flagellar segments 2–2.5 times as long as broad, the second a little shorter, the last few a little longer; in the ♂ without distinct necks and with the pubescence not quite as long as the diameter of the segments. Palpi black; first segment about three times, second about twice, third over four times as long as broad. *Thorax* blackish, almost dull, humeral angles ochreous; hair and bristles black. Acrostichal hairs very small, in a double

row running most of the length of the scutum; on the dorsocentral stripes are some short hairs mixed with rather long bristles. Scutellum with 8-10 longish marginal bristles. *Abdomen* dull blackish, with short black hair. Male claspers tapering, tips strongly curved inwards, with a pair of small apical spines, no ventral hair-patch on the hypopygium. *Legs* brownish ochreous, in the ♀ more blackish brown; tibial spurs ochreous, about twice as long as the tibial diameter; hind tibial comb indefinite. *Wings* brownish-tinged, darker in the ♀ than in the ♂. Branches of *M* and *Cu* bare. Costal cell scarcely widened. *Sc* not quite reaching base of *Rs*; *R1* a little shorter than *R*, but reaching quite three-quarters of the distance from *R5* to *M1*; *R5* gently curved downwards, ending just distal to *M2*; *r-m* rather longer than basal section of *M*; median fork as long as its stem, branches parallel; stem of cubital fork short; anal vein short and faint. Halteres with ochreous stem and black knob.

Length of body, ♂ 3-3.5 mm., ♀ 4-5 mm.; wing, ♂ 3.5-4 mm., ♀ 4.5-6 mm.

Pahang: Lubok Tamang, 3500 ft., 10th March, 1924; 5 ♂ (including type) 5 ♀; at light. Cameron's Highlands, 4800 ft., 13th June, 1923, and 12th March, 1924; 2 ♂ at light. Selangor border, The Gap, 2700 ft., 11th August, 1923; 2 ♀, at light.

*Sciara pahangensis* sp. n. (Plate II, fig 31).

*Head* black, somewhat shining, with short black hair. Ocelli in a very flattened triangle, pale yellowish in colour, the median smaller than the lateral pair, placed close behind the eye-bridges, which are 4-5 facets wide and separated by the width of one facet. Face rather narrow in both sexes, about as broad as the scape of one antenna. Palpi rather long, black, first two segments each about twice as long as broad, first much stouter, last more slender and about four times as long as broad. Antennae black, base of first flagellar segment ochreous; flagellar segments in both sexes about 1.5 times as long as broad, but those of the ♂ as usual are stouter, though without distinct necks and with hardly longer pubescence. *Thorax* black, considerably shining; pronotal lobes, middle of pleurae and underside of scutellum more or less brownish ochreous. Acrostichal hairs very short, in an irregular double row running the whole length of the scutum, rather more numerous in the ♀ than in the ♂; dorsocentral hairs rather long, black, numerous. Scutellum with about four long marginal bristly hairs. *Abdomen* blackish-brown, somewhat shining, with short black hair. Male hypopygium brownish-ochreous with the claspers enlarged, about twice as long and nearly twice as thick as the side pieces, the inner face flattened and with three long slender spines towards the base. *Legs* ochreous, only the tarsi darkened;



tibial spurs orange, nearly twice as long as the tibial diameter; hind tibial comb rather distinct; claws rather large, empodia and pulvilli well developed. *Wings* with a slight greyish tinge; anterior veins dark, the rest pale. Branches of *M* and *Cu* bare; *Sc* short; *R1* slightly shorter than *R*, but ending a little beyond *fM*; costa very long, reaching more than five-sixths of the distance from *R5* to *M1*; *R5* gently curved downwards, ending distinctly distal of *M2*; median fork a little shorter than its stem, and somewhat unusually pointed at the base, branches slightly divergent, *M1* nearly parallel with *R5*; *r-m* a little longer than the basal section of *M*; stem of cubital fork short, *Cu 1* straighter than usual; anal vein short but stout. Halteres with ochreous stem and black knob.

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

Pahang: Cameron's Highlands, 4800 ft., 12th–13th March, 1924; 1 ♂, 2 ♀, at light.

In many respects this resembles *S. khasiensis* White, described from a single female from Assam, but White's species is almost certainly distinct as it has the ocelli equal in size, the face distinctly broader, and the antennae distinctly longer.

*Sciara cameronensis* sp. n. (Plate II, fig. 32).

Much resembles *S. pahangensis*, but differs as follows:—Antennae rather longer, the flagellar segments quite twice as long as broad, and those of the ♂ provided with short but conspicuous necks and longer pubescence, as long as the diameter of the segments. Face distinctly broader, especially in the ♀. Male claspers much smaller and not flattened on the inner face, though similarly provided with three slender spines on the inner side towards the base. *Legs* darker brown; tibial spurs dark. *Wings* with a deeper brownish tinge; costa rather shorter; *R1* scarcely as long as *R* and extending well beyond *fM*; median fork narrow, as long as its stem, the branches parallel; anal vein ill-defined but longer, extending more than half-way across the anal field.

Pahang: Cameron's Highlands, 4800 ft., 12th–15th October, 1923; 4 ♂, 4 ♀; 11th–15th March, 1924; 3 ♀. Tanah Rata, 4500 ft., 25th–28th January, 1924; 1 ♂, 2 ♀. (*M. R. Henderson*). Fraser's Hill, 4000 ft., 24th August, 1923; 1 ♀. (*M. R. Henderson*). Lubok Tamang, 3500 ft., 7th–12th June, 1923; 2 ♀, all taken at light.

It is possible that this may be Brunetti's *S. fratercula*, described from the female only from the Eastern Himalayas, but Brunetti's type differs slightly in venation as indicated in the key.

**Sciara saltuum** sp. n.

♀. Rather closely resembles *S. pahangensis*, differing as follows:—Size much smaller. Antennae shorter, the flagellar segments only just as long as broad. Last segment of palpi shorter, less than three times as long as broad. Acrostichal and dorsocentral hair of mesonotum rather longer, especially the former. *R*5 straighter and shorter, ending above tip of *M*2.

Length of body, 2.5–3 mm.; wing, 3–3.5 mm.

Pahang: Selangor border. The Gap, 2700 ft., 11th August, 1923; 2 ♀, at light.

**Sciara politula** sp. n.

♀. *Head* entirely shining black. Ocelli in a flattened triangle, rather close behind the eye-bridges, which are about three facets wide and separated by the width of two facets. The pubescence of the eyes is rather scanty. Face moderately broad. Antennae black, first flagellar segment nearly twice as long as the second, which like the following segments is barely twice as long as broad. Palpi short, blackish, segments less than twice as long as broad, first stouter than the others. *Thorax* entirely brightly shining black, dorsocentral and acrostichal hair barely distinguishable, scutellum without long marginal hairs. *Abdomen* dull blackish-brown, black haired. *Legs* with the coxae and femora brownish-ochreous, tibiae and tarsi darker. Tibial spurs very small and inconspicuous, especially those of the four posterior legs; apparently each tibia has only a single spur. Hind tibial comb well developed. Claws rather large; empodia well developed. *Wings* nearly clear, all veins rather distinctly darkened. Branches of *M* and *Cu* bare. *Sc* short; *R*1 hardly more than half as long as *R* and ending well before *M*; *R*5 strongly curved, ending above tip of *M*2; costa reaching about three-fifths of the distance from *R*5 to *M*1, which is not greater than that between the tips of *M*1 and *M*2; *r-m* shorter than the basal section of *M*; median fork slightly longer than its stem, branches wide apart near the base, then slightly but distinctly approximated towards the tips, the upper branch much more curved at the base than the lower; stem of cubital fork about half as long as the basal section of *M*; anal vein obsolete. Halteres black, base of stem ochreous.

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

Pahang: Gunong Tahan, Padang, 5500 ft., 10th–12th December, 1922, and 20th January, 1923; 3 ♀.

A very distinct species, apparently related to *S. nitidithorax* Brun., but differing in the shining head and approximated branches of the median fork, this latter character showing some approach to the genus *Zygoneura*. Both species are probably related to the European *S. quinque-lineata* Macq., which also has but a single small spur on each tibia.

**Sciara luteolamellata** sp. n.

♀. *Head* dull dark grey, with scanty black hair. Ocelli in a slightly flattened triangle, the middle one touching the eye-bridges, which are in contact and four facets wide. Face dark brown, rather broader than the first antennal segment. Antennae entirely black; flagellar segments about twice as long as broad. Palpi pale yellow; first and third segments subequal in length, fully twice as long as broad, second smaller, rather shortly oval. *Thorax* rather light ochreous, considerably shining; an ill-defined dark brown pleural stripe from above the front coxae to the base of the abdomen. On the dorsocentral lines are 6-7 strong black bristles, rather widely spaced in a single row, besides some minute pale hairs; acrostichal hairs very minute and pale. Scutellum with four strong marginal black bristles. *Abdomen* with the first five tergites dull dark brown, sternites ochreous, segments six and seven ochreous, eight black, lamellae of ovipositor pale ochreous. *Legs* with the coxae and femora ochreous, tibiae and tarsi dark; tibial spurs yellow, nearly twice as long as the apical diameter of the tibiae; comb fairly distinct; claws small, simple. *Wings* nearly clear; anterior veins only dark. Branches of *M* and *Cu* bare. *Sc* over half as long as *R*; *R1* shorter than *R* and ending well before *fM*; *Rs* nearly straight, ending much proximal to the tip of *M2*; costa reaching three-quarters of the distance from *R5* to *M1*, which is twice that from *M1* to *M2*; *r-m* a little longer than basal section of *M*; median fork a little shorter than its stem, branches slightly divergent apically; stem of cubital fork very short; anal vein obsolete. Halteres black, base of stem ochreous.

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

Pahang: Cameron's Highlands, 4800 ft., 13th March, 1924; 2 ♀, at light.

The only previously described Oriental *Sciara* which seems to be allied to this is *S. setilineata* Brun., which has yellow halteres.

**Sciara latipons** sp. n.

*Head* black, distinctly broader than the thorax in the ♂, smaller in the ♀. Ocelli in a nearly equilateral triangle close behind the contiguous eye-bridges, which are five or six facets wide. Face only about two facets wide in the ♂, broader in the ♀. Antennae black, most of second segment brownish; flagellar segments in the ♂ gradually increasing in length, 2-3 times as long as broad, without conspicuous necks, pubescence shorter than the diameter of the segments; flagellar segments of ♀ rather shorter and more slender. Palpi blackish brown, rather short and slender, segments subequal. *Thorax* somewhat shining, ochreous; scutum with indications of four darker stripes,

the middle pair contiguous; lower part of sternopleura somewhat darkened. Dorsocentral and acrostichal hairs very minute, pale, in single rather irregular rows; scutellum with two rather short marginal bristles. *Abdomen* dark brown. Male claspers slender, about three times as long as broad; bristles at tip not very dense; none developed into spines; no ventral hair-patch on hypopygium. *Legs* ochreous, tarsi darkened. Tibial spurs normal, ochreous. Claws simple, empodium well developed. *Wings* clear, with a strong bluish iridescence; anterior veins but little darkened. Branches of *M* and *Cu* bare. *Sc* short; *R1* a little shorter than *R* and ending well before base of *Rs*; costa reaching two-thirds of the distance from *R5* to *M1*; *R5* gently curved, ending just distal to tip of *M2*; median fork rather shorter than its stem, branches parallel with *R5*; *r-m* as long as basal section of *M*; stem of cubital fork moderate; anal vein obsolete. Halteres with ochreous stem and dark brown knob.

Length of body, 2-2.5 mm.; wing, 2.2-2.6 mm.

Pahang: Cameron's Highlands, 4800 ft., 11th-13th March, 1924; 1 ♂, 1 ♀, at light.

It is just possible this may be only a variety, with dark palpi and halteres, of Brunetti's *S. pallescens*, with which his *S. fulvescens* is apparently synonymous. Both these names however are preoccupied by those of species described by Enderlein in 1911.

***Sciara atrifrons* sp. n.**

♀. Resembles *S. latipons* in structure and colour, but differs as follows:—Size rather larger. Eye-bridges only four facets wide. Mesonotum dull ochreous, without any trace of darker stripes; dorsocentral and acrostichal hairs rather longer, black, in double rows; scutellum with one pair of long bristles and one pair of shorter ones external to these. *Wings* more opaque and less iridescent; *R5* less curved, ending above or slightly proximal to tip of *M2*; median fork rather longer, branches straighter.

Pahang: Cameron's Highlands, 4800 ft., 19th April and 14th October, 1923; 2 ♀, at light.

This very much resembles *S. nigriceps* End., from the Seychelles, differing in the black instead of yellowish palpi.

***Sciara lucipeta* sp. n.**

♂. *Head* dull black. Ocelli in a nearly equilateral triangle close behind the eye-bridges, which are in contact and four facets wide. Face about as broad as the scape of one antenna. Antennae all black, except for the tip of the second segment. Flagellar segments with short necks, a little over twice as long as broad, except the first two or three, which are rather shorter; pubescence about as long as the diameter. Palpi dark brown, the segments subequal

in length and thickness. *Thorax* somewhat shining, brownish-ochreous, lower part of sternopleura darker; scutum with three broad contiguous blackish-brown stripes. Dorsocentral and acrostichal hairs minute, pale, in double rows. Scutellum with two longish marginal black bristles. *Abdomen* blackish, black-haired. Claspers about three times as long as broad, tip narrowed and setose; no ventral hair-patch. *Legs* ochreous; tarsi darkened. Tibial spurs yellow, about as long as the diameter; comb distinct; empodia and claws normal. *Wings* almost clear; anterior veins distinctly, posterior veins slightly darkened. Branches of *M* and *Cu* bare. *Sc* short; *R1* rather shorter than *R* and ending a short distance before *fM*; costa reaching two-thirds of the distance from *R5* to *M2*; *R5* curved, ending above or just distal to tip of *M2*; median fork as long as its stem, branches somewhat curved downwards; *r-m* longer than basal section of *M*; stem of cubital fork short; *An* obsolete. Halteres with ochreous stem and dark brown knob.

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

Pahang: Cameron's Highlands, 4800 ft., 11th-13th March, 1924; 2 ♂, at light.

In most respects similar to Brunetti's *S. latelineata*, differing in the darker palpi and scape.

*Sciara monacantha* sp. n. (Plate II, fig. 34).

♂. *Head* dull black, distinctly broader than the thorax. Ocelli in a subequilateral triangle close behind the eye-bridges, which are just in contact and three to four facets wide. Face barely three facets wide. Antennae black, flagellar segments with short but distinct necks, 2.5-3 times as long as broad, pubescence rather longer than the diameter. Palpi brownish ochreous, short and slender, the three segments subequal, about twice as long as broad. *Thorax* moderately shining, brownish ochreous, scutum darker brown except on the shoulders. Dorsocentral and acrostichal hairs rather short but distinct, in single rather irregular rows. *Abdomen* brownish ochreous. Hypopygium of moderate size. Claspers about three times as long as broad, setose at the tip, and just before the tip on the inner side with a large elongate conical projection ending in one stout pointed spine. *Legs* rather slender, light ochreous, tarsi darkened. Tibial spurs very short, scarcely as long as the diameter. Claws small, simple, empodium well developed. *Wings* nearly clear; anterior veins somewhat darkened. Branches of *M* and *Cu* bare. *Sc* short; *R1* about two-thirds as long as *R* and ending far before *fM*; costa reaching quite four-fifths of the distance from *R5* to *M1*; *R5* nearly straight and ending just proximal to the tip of *M2*; *r-m* and basal section of *M* subequal in length; lower branch of fork almost straight, continuing the direction of the stem, which

is slightly longer than the lower branch; stem of cubital fork moderate; *An* obsolete. Halteres black, base of stem ochreous.

Length of body, 2 mm.; wing, 2.2 mm.

Pahang: Cameron's Highlands, No. 4 Camp, 4800 ft., 15th October, 1923; 1 ♂, at light.

Although superficially much resembling *S. latipons*, this species is really very distinct in the structure of the male claspers, which are very much like those figured by Rübсаamen for *Phorodonta fruhstorferi*.

*Sciara diacantha* sp. n. (Plate II, fig. 35).

♂. *Head* black, not broader than the thorax. Ocelli rather large, placed distinctly behind the eye-bridges, which are only three facets wide. Face moderately broad, broader than the scape of one antenna. Antennae long and stout; scape ochreous; flagellum black, middle segments about three times as long as broad, pubescence barely as long as the diameter. Palpi black, the segments subequal. *Thorax* dark brownish, prothorax and sternopleura more ochreous-brown. Dorsocentral and acrostichal bristles short, in double rows. Scutellum with two longish bristles rather wide apart. *Abdomen* blackish. Claspers broadest in the middle, nearly three times as long as broad, with a few fine bristles at the tip, and just before the tip on the inner side with two spines each set on a separate tubercle. No ventral hair-patch. *Legs* ochreous, femora rather stout. Tibial spurs ochreous, longer than the diameter; comb distinct. Claws small, apparently simple. *Wings* rather broad, almost clear, anterior veins dark brown, posterior veins also somewhat darkened. Branches of *M* and *Cu* bare. *Sc* short; *R1* much shorter than *R* but ending only a short distance before *fM*; costa reaching about four-fifths of the distance from *R5* to *M1*; *R5* slightly curved, ending above tip of *M2*; median fork almost as long as its stem, branches somewhat curved downwards and slightly approximated before the tip; *r-m* as long as the basal section of *M*; stem of cubital fork moderate; anal vein obsolete. Halteres black.

Length of body, 2.3 mm.; wing, 2.7 mm.

Pahang: Cameron's Highlands, 4800 ft., 12th March, 1924; 1 ♂, at light.

*Sciara conulifera* sp. n. (Plate II, fig. 36).

♂. *Head* dull black, broader than the thorax. Ocelli rather large, the middle one in contact with the eye-bridges, which touch and are three facets wide. Face about as broad as four facets. Antennae black, not very stout, flagellar segments with indistinct necks, about twice as long as broad, pubescence about as long as the diameter. Palpi black,

the segments subequal. *Thorax* blackish, somewhat shining, postnotum and pleurae rather lighter. Dorsocentral hair short; acrostichal hair apparently absent, except for a few fine hairs towards front margin. Scutellum with 6-8 marginal bristles. *Abdomen* blackish, hypopygium brown. Claspers about three times as long as broad, somewhat broadened towards the tip, which is densely set with black bristles; just before the tip on the inner side is a small conical lobe bearing two slender spines. No ventral hair-patch. *Legs* brownish, tibial spurs lighter, about as long as the diameter, comb indistinct. Claws and empodia normal. *Wings* rather narrow, greyish, all veins more or less darkened. Branches of *M* and *Cu* bare. *Sc* rather short; *R1* shorter than *R* and ending a short distance before *fM*; costa reaching about three-quarters of the distance from *R5* to *M1*; *R5* slightly curved and ending just proximal to the tip of *M2*; median fork as long as its stem, branches parallel and nearly straight; *r-m* a little longer than the basal section of *M*; stem of cubital fork moderate; anal vein short but rather distinct. Halteres black, base of stem ochreous.

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

Pahang: Cameron's Highlands, 4800 ft., 11th-13th March, 1924; 4 ♂, at light. Sungai Ringlet, 3500 ft., 10th March, 1925; 1 ♂, at light.

In some respects appears to be similar to *S. bispinosa* Pettey, but the claspers are longer and less tapering, apart from other differences.

***Sciara mediofusca* sp. n.**

♂. *Head* dull black. Ocelli in a slightly flattened triangle, the median one placed less than its own diameter behind the junction of the eye-bridges, which are practically in contact, three facets wide in the middle but only two wide near the eyes. Face rather broad, almost twice as broad as the first antennal segment. Antennae black, flagellar segments about half as long again as broad, the last two or three longer. Palpi black. *Thorax* dull black; dorsocentral and acrostichal hair very short and inconspicuous, the latter barely reaching the middle of the scutum. Scutellum apparently without distinct marginal bristles. *Abdomen* dull black; hypopygium without any distinctive feature; claspers with four or five of the apical setae towards the inner side somewhat thickened and separated from the rest. *Legs* wholly black, even including the tibial spurs, which are rather longer than the tibial diameter. *Wings* nearly hyaline at base and tip, with a blackish band across the middle two-thirds, which extends from the costa to the hind margin and fills nearly the basal half of cell *M1*. Branches of *M* and *Cu* bare. *Sc* short; *R1* shorter than *R* and ending well before *fM*; *R5* nearly straight, ending above middle of *M2*; costa reaching three-quarters of the distance

from *R5* to *M1*; *r-m* about half as long as the basal section of *M*; median fork shorter than its stem, branches parallel; stem of cubital fork rather long, *fCu* only just before base of *r-m*; *An* faint but rather long. Halteres black.

Length of body, 2.3 mm.; wing, 2.5 mm.

Selangor: Kuala Lumpur, 2nd March, 1923; 1 ♂, at light.

This specimen bears a rather considerable resemblance to *S. fascipennis* Brun., but seems to represent a distinct species. Brunetti's type ♀ has the face narrower; the median ocellus almost touching the eye-bridge; mesonotum rather brightly shining, with longer dorsocentral hair; legs brownish, with yellow tibial spurs; wing-fascia narrower, though almost filling cell *R1* and also the base of cell *M1*; median fork rather longer than its stem, etc.

***Sciara subfascipennis* sp. n.**

♀. *Head* dull black. Ocelli in a flattened triangle placed two ocellar diameters behind the eye-bridges, which are in contact, three facets wide at the junction but only two wide near the eyes. Face rather narrow, of about the same width as the first antennal segment. Antennae black, tip of second segment ochreous; flagellar segments about half as long again as broad. Palpi black, segments subequal in length about twice as long as broad. *Thorax* entirely black, almost dull; hair short and dark; acrostichal hair in a double row running the whole length of the scutum; scutellum with four marginal bristles, the outer pair smaller than the inner. *Abdomen* dull black. *Legs* entirely black, except for the yellowish tibial spurs, which are about as long as the tibial diameter. *Wings* nearly hyaline towards base and tip, with a rather faint grey band across the middle third which does not quite reach the costa or the hind margin, nor the base of the median fork. Anterior veins dark, media pale. Branches of *M* and *Cu* bare. *Sc* very short, *R1* shorter than *R* and ending a little before *fM*; *R5* very slightly curved, ending just proximal to tip of *M2*; costa reaching three-quarters of the distance from *R5* to *M1*; *r-m* shorter than basal section of *M*; median fork as long as its stem, branches parallel; stem of cubital fork rather short; *An* short and indistinct. Halteres blackish.

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

Pahang: Cameron's Highlands, Gunong Berumban, 6050 ft., 17th June, 1923; 1 ♀.

Although in many respects similar to the last, this specimen almost certainly represents a distinct species, on account of the much narrower face; where there is a sexual difference in the width of the face in *Sciara* it is usually if not always the male which has the narrower face.



**Sciara melaleuca** sp. n.

♀. Closely allied to the last, but almost certainly representing a distinct species on account of the following differences:—Eye-bridges even narrower, only a single facet wide at the origin. Scutellum with two strong marginal bristles. Wing-fascia rather broader and much blacker, reaching from the costa to the hind margin and just touching the base of the median fork; base and tip of wing with a milky-white tinge; median fork rather shorter than its stem; *r-m* shorter, only about half as long as the basal section of *M*. Halteres pale yellow.

Pahang: Gunong Tahan, 5500 ft., 15th December, 1922; 1 ♀, at light.

**Sciara selangoriana** sp. n.

♂. *Head* black. Ocelli in a flattened triangle close behind the eye-bridges which are of even width and three facets wide. Face moderately broad, broader than the scape of the antenna. Antennae black, second segment largely brownish-ochreous; flagellar segments barely twice as long as broad, pubescence shorter than the diameter, neck short and indistinct. Palpi longish, black, the three segments subequal in length. *Thorax* dull black, with a slight grey dusting; dorsocentral hair rather long, black, in double rows; acrostichal hair apparently absent, except for one or two hairs near the front margin. Scutellum with about eight longish marginal hairs. *Abdomen* black, black-haired. Claspers rather over twice as long as broad, somewhat swollen towards the tip, which is densely setose, but without distinct spines. No ventral hair-patch. *Legs* rather dark brownish-ochreous, coxae and tarsi somewhat darker; tibial spurs ochreous, nearly twice as long as the diameter. Claws and empodia normal. *Wings* rather smoky; all veins darkened. Branches of *M* and *Cu* bare. *Sc* reaching nearly to base of *Rs*; *R1* about three-quarters as long as *R* and ending slightly before *fM*; costa reaching barely two-thirds the distance from *R5* to *M1*; *R5* straight, ending just proximal to the tip of *M2*; *r-m* rather longer than basal section of *M*; median fork as long as its stem, branches almost and parallel, stem of cubital fork half as long as basal section of *M*; *An* short and indistinct. Halteres black, base of stem ochreous.

Length of body, 2.5 mm.; wing, 2.2–2.8 mm.

Selangor: Kuala Lumpur, 5th May, 1923 and 3rd July, 1923; 2 ♂.

In many respects this answers to Rübbsaamen's description of *S. singhalensis*, but it is much smaller.

**Sciara microtricha** sp. n.

♂. *Head* dull blackish grey, narrower than the thorax. Ocelli in a nearly equilateral triangle, the middle one slightly

removed from the eye-bridges, which are not quite in contact, each three facets wide at the end but narrowing to two facets wide in the middle. Face rather broader than the scape of one antenna. Antennae black, rather stout, flagellar segments gradually increasing in length, 1.7-2.5 times as long as broad, the first shorter than the second; all with short necks, pubescence shorter than diameter. Palpi black, segments subequal in length. *Thorax* blackish, almost dull, with a very slight greyish dusting visible from in front; dorsocentral and acrostichal hairs minute, the latter scarcely distinguishable, pale in colour. Scutellum without strong marginal hairs. *Abdomen* black, black haired. Claspers about 2.5 times as long as their greatest breadth, which is just before the middle; tip setose, four or five separate black spinules on the inner side near the tip. No ventral hair-patch. *Legs* blackish brown, front femora rather lighter; tibial spurs short, brownish; claws and empodia normal. *Wings* with a rather strong and uniform smoky tinge; anterior veins blackish, posterior veins also somewhat darkened. Branches of *M* and *Cu* bare. *Sc* short; *R1* rather shorter than *R* and ending well before *fM*; costa reaching barely two-thirds of the distance from *R5* to *M1*; *R5* curved down at tip, ending just proximal to tip of *M2*; *r-m* and basal section of *M* equal in length; median fork about as long as its stem, branches very slightly divergent apically; base of cubital fork only just before base of *r-m*; anal vein distinct, reaching over half-way across the anal field.

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

Pahang: Cameron's Highlands, No. 4 Camp, 4800 ft., 12th October, 1923; 1 ♂.

Perak: Batang Padang, Jor Camp, 1800 ft., 10th October, 1923; 1 ♀, identity with ♂ not quite certain.

This rather closely resembles *S. orientalis* Brun., but appears distinct by the much smaller anal lobe, longer anal vein, more curved *R5*, etc.

*Sciara ratana* sp. n. (Plate II, fig. 37).

♂. *Head* dull black. Ocelli rather large, in a sub-equilateral triangle close behind the eye-bridges, which are three facets wide. Face about three facets wide. Antennae black; flagellar segments with short necks, barely twice as long as broad, pubescence as long as the diameter. Palpi rather short and slender, black, the three segments subequal, over twice as long as broad. *Thorax* black, somewhat shining; dorsocentral hair short, black; acrostichal hair apparently absent. Scutellum with two longish bristles. *Abdomen* black, with black hair. Claspers hardly over twice as long as broad, tip rounded, setose, and rather strongly bent inwards; no ventral hair-patch on hypopygium. *Legs* dark ochreous-brown, tibiae and tarsi blackish;

claws and empodia normal; tibial spurs small, yellowish. *Wings* clear, all veins rather distinctly darkened. Branches of *M* and *Cu* bare. *Sc* short; *R1* barely half as long as *R* and ending well before *fM*; costa reaching quite three-quarters of the distance from *R5* to *M1*; *R5* nearly straight, ending just proximal to the tip of *M2*; *r-m* a little shorter than basal section of *M*; median fork a little longer than its stem, branches straight and parallel; stem of cubital fork moderate; *An* obsolete. Halteres black.

Length of body, 1.5 mm.; wing, 1.8 mm.

Pahang: Cameron's Highlands, Tanah Rata, 4500 ft., 17th January, 1924. (*M. R. Henderson*); 1 ♂, at light.

*Sciara ? flaviseta* Brun.

Pahang: Cameron's Highlands, 4800 ft., 13th-14th March, 1924; 2 ♂, at light.

The specimens agree with Brunetti's description and type in most respects, but the antennal scape is blackish and the identity is rather uncertain.

#### Family BIBIONIDAE.

*Crapitula melanaspis* (Wied.).

Java: Papandajan, 5500-7000 ft., 23rd April, 1923; 5 ♂, 1 ♀.

#### Genus *Penthetria*, Mg.

N. Syn.: *Eupeitenus* Mcq., *Paraplectomyia* Brun.

*Penthetria gracillima* sp. n.

♂. *Head* black. Antennae with 2 + 7 segments, scape very short, segments 2-6 of flagellum small and rounded, last segment distinct and larger than the penultimate. *Thorax* with the mesonotum wholly red, only the scutellum slightly darkened. Pleurae uniformly blackish. *Abdomen* black, remarkably slender for a member of this family. *Legs* black, with short black pubescence; very slender, only the femora slightly thickened apically. *Wings* blackish; venation normal for the genus. Halteres black, with long slender stem.

♀. Resembles the ♂, but antennae with 2 + 9 segments; 4-10 broader than long, 11 globular, larger than 10. Anal cerci long and conspicuous.

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

Pahang: Cameron's Highlands, No. 4 Camp, 4800 ft., 13th October, 1923; 1 ♂, at light. Lubok Tamang, 3500 ft., 23rd June, 1923; 1 ♀.

This distinct species has almost the coloration of *P. indica* (Brun.), but is readily distinguished by the much more slender build, especially of the abdomen and legs. The genus *Penthetria* has by some authors been included in *Plectia*, but it possesses two characters which render it

sufficiently distinct: (1) the vein *R4* is practically parallel with *R5* for the greater part of its course, as in *Crapitula* and in contradistinction to *Plecia*, where it is more or less vertical; and (2) the ninth tergite is small, the male claspers are distinctly lateral and fold inwards, as in *Bibio* and in such Mycetophilid genera as *Macrocera* and *Bolitophila* and other primitive forms, while in *Plecia* the claspers are ventral and the whole hypopygium has a different type of structure, the reduction of the claspers being frequently compensated for by an enormous development either of the ninth tergite or of the tips of the side pieces. These characters are shared by *Penthetria holosericea* Mg., *Eupeitenus ater* Macq., and *Parapleciomyia carbonaria* Brun.; these three genera may therefore be regarded as synonymous. Other species to be referred here are *Plecia nigerrima* Bell. (Mexico), *Pindica* Brun., *P. atra* Brun., and *P. obscura* Brun. (India).

Genus **Plecia**, Wied.

The species of this genus in the Oriental region may conveniently be grouped according as the thorax is all red (as in *fulvicollis*), red with blackish pleurae (as in *tergorata*) or all dark (as in *tristis*). In the present collection only the first two categories are represented. These are not natural groups, as is clearly shown by a study of the male genitalia, of which there are several different types, while the various species combine each type of genitalia with each form of coloration.

**Plecia fulvicollis** Fab.?

Selangor: Ginting Sempah, 18th October, 1921; 1 ♀.

Although there is no male, this determination seems probably correct on account of the flattened front tibiae.

**Plecia javensis** Edw.

Java: Buitenzorg, 800 ft., 15th April, 1923; 2 ♂, at light.

**Plecia subvarians** Walker.

Perak: Batang Padang, Jor Camp, 2500 ft., 3rd–5th June, 1923; 1 ♂, 3 ♀.

Pahang: Lubok Tamang, 3500 ft., 12th June, 1923; 1 ♀; and 10th March, 1924; 1 ♀.

**Plecia varians** sp. n. (Plate II, fig. 38).

Closely resembles *P. subvarians*, differing only in the male hypopygium, especially in the shape of the claspers (see figure).

Pahang: Gunong Tahan, 5500 ft., 6th–8th December, 1922; 3 ♂ (including type). Wray's Camp, 3300 ft., 9th–11th December, 1921; 2 ♂, 1 ♀. Cameron's Highlands,

4800 ft., 15th-17th October; 2 ♂, 1 ♀; 28th January, 1924; 1 ♂; 12th March, 1924; 1 ♀.

**Plecia forficula** sp. n. (Plate II, fig. 40).

♂. Antennae with 2 + 7 segments, the last smaller than the penultimate, but quite distinct; intermediate segments slightly broader than long. Ocellar tubercle large. *Thorax* red, except that the scutellum has a narrow black median line, and the pleurae are largely but not wholly blackish on the upper half. *Abdomen* moderately slender. Hypopygium remarkable for the enormous development of the ninth tergite, which is almost completely divided into two large lobes (see figure). *Legs* rather slender, with short pubescence; front tibiae cylindrical; hind tarsi slender, the first segment nearly half as long as the tibia. *Wings* blackish, but not very deeply tinged. *R4* almost straight and almost vertical.

♀ ? Antennae with 2 + 9 segments, the last quite small. *Head* black, but heavily dusted with greyish-ochreous. *Thorax* almost completely red, the only blackish marks being two small spots below the root of each wing; middle part of pleurae dusted with ochreous. *R4* straight, but more oblique than in the ♂.

Length of body, 6-7 mm.; wing, 7-10 mm.

Pahang: Lubok Tamang, 3500 ft., 10th-16th March, 1924; 1 ♂, 1 ♀. Tanah Rata, 4800 ft., 12th-13th March, 1925; 2 ♂, 1 ♀.

This may possibly be Osten-Sacken's *P. forcipata*, though since he does not mention which part of the hypopygium formed the large forceps one cannot be certain without examination of his type.

**Plecia dubia** sp. n. (Plate II, fig. 39).

Closely resembles the last species, but rather smaller; the upper half of the pleura rather blacker in both sexes; legs stouter; last segment of antennae larger, the intermediate segments less conspicuously separated; and the male hypopygium of very different structure, more nearly resembling, without being quite identical with, that of *P. thoracica* and *P. amplipennis*.

Length of body, 5.5-6.5 mm.; wing, 6-8 mm.

Johore: 2nd February, 1908. (*G. Meade-Waldo*); 1 ♂ (type) 1 ♀.

Singapore: (*H. N. Ridley*); 2 ♂, in British Museum.

**Plecia minor** sp. n. (Plate II, fig. 41).

Coloration and antennal structure as in *P. forficula*, but size much smaller, legs much stouter, front tibiae somewhat flattened, vein *R4* more bent, and hypopygium again

very different, the conspicuous projecting points being formed not from the ninth tergite but from the tips of the side pieces, much as in *P. varians* and *P. subvariens*.

Length of body, 4.5–5 mm.; wing, 4–6 mm.

Peninsular Siam: Mabek, 25th July, 1901. (*H. C. Robinson* and *N. Annandale*); 2 ♂, 2 ♀ in British Museum.

S. India: Methapalayam, 21st December, 1916. (*Y. Rao*); 1 ♂ in Pusa collection.

***Bibio rubicundus* v. d. Wulp.**

Perak: Batang Padang, Jor Camp, 1800 ft., 5th–6th June, 1923; 1 ♀.

Selangor: Bukit Kutu, 3500 ft. (*H. C. Robinson*); 1 ♀.

Brunetti has suggested the possibility that this might be the same as Osten-Sacken's *B. obediens*. It is however quite distinct by the colour of the wings, by having narrow black tips to the femora, and especially by the front tibial spines, the inner of which is rather stout and almost as long as the outer.

***Bibio flavicans* sp. n.**

♂. *Head* and its appendages black. Antennae short, with 2 + 8 segments, but the last three practically fused. *Thorax* and *abdomen* wholly black, with rather short ochreous pubescence. *Legs* black, the tibiae rather indistinctly brownish. Front tibiae with the outer spine almost as long as the tibia itself, and very stout, but the inner one rudimentary, hardly discernible at all with a lens, and hardly even reaching the base of the outer one. Hind femora swollen on rather more than the apical half; hind tibiae much swollen on the outer three-fourths; first segment of hind tarsi rather swollen, as long as the next three segments together. *Wings* nearly hyaline; anterior veins blackish, posterior veins very slightly darkened; stigma dark brown and rather well defined. Basal section of *Rs* nearly twice as long as *r-m*; *M*<sup>2</sup> and *Cu* 1 not quite reaching the margin. Halteres black, base of stem ochreous.

♀. *Head* yellow; ocellar tubercle, antennae and palpi black. Antennae rather longer than in the ♂, but the segmentation the same. *Thorax* and *abdomen* uniformly shining yellowish in the type, in another specimen the mesonotum has three black stripes which are ill-defined posteriorly. *Legs* of type with coxae, trochanters and front femora yellow, posterior femora more or less darkened above, tibiae and tarsi black; in the second specimen all the femora and even the hind coxae are blackish. Front tibial spines as in the ♂. Hind femora not much swollen, hind tibiae and tarsi not at all. *Wings* with a fairly strong yellowish tinge, somewhat stronger towards costa; anterior

veins brownish; stigma hardly indicated. Venation as in the ♂. Halteres yellowish.

Length of body, 6 mm.; wing, 5-6.5 mm.

Pahang: Cameron's Highlands, 4800 ft., 12th March, 1924; type ♂ and ♀ taken *in cop.* at midday, also 1 other ♂. Lubok Tamang, 3500 ft., 16th March, 1924; 1 ♀ at light.

Sumatra: Sandaran Agong, Korinchi Lake; 1 ♀.

I have previously recorded the Sumatran specimen as *B. rubicundus*, but the new species differs from this and indeed from all others hitherto described from the Oriental region in the rudimentary spine of the front tibiae. It may however be the same as *B. sumatranus* de Meij., if de Meijere was in error in describing the outer front tibial spur as half as long as the inner. Another possibility is that the male and female taken *in cop.* are not really conspecific, the male belonging to *B. brevicealcar*. In that case the name *flavicans*, should be reserved for the female.

#### **Bibio brevicealcar** sp. n.

Structurally similar to *B. flavicans*, differing as follows:—

Front femora of ♂ brownish. *Head* of ♀ dark brown above. *Thorax* of ♀ largely blackish, only the prothorax, scutellum postnotum, and parts of the pleurae ochreous. *Abdomen* of ♀ blackish, as are all the coxae. *Wings* of ♀ brownish-tinged, all veins darkened, stigma dark brown as in the ♂.

Pahang: Cameron's Highlands, 4800 ft., 13th-14th March, 1924; 3 ♂, 1 ♀ at light. Same locality, 4800 ft., 11th March, 1924; 2 ♀.

This is possibly merely a variety of *B. flavicans*, in spite of the striking difference in colour of the ♀ ♀.

#### **Bibio scaber** sp. n.

♂. *Head* and its appendages black. Antennae short, with 2 + 8 segments, the last three practically fused, terminal one small and indistinct. *Thorax* shining black, with moderately short dark brown pubescence. *Abdomen* dull black, pubescence light brownish but inconspicuous. *Legs* black, tibiae and tarsi ochreous at the base, especially on the four anterior legs. Outer spine of front tibia about as long as the short tibia itself, inner spine rather strong and two-thirds as long as the outer. Hind femur swollen on the outer two-thirds, hind tibiae swollen except at the base, first hind tarsal segment moderately swollen and almost as long as the next three segments together. *Wings* rather strongly and almost uniformly tinged with brown; stigma dark brown, conspicuous, basal section of *Rs* barely as long as *r-m*; *M*<sup>2</sup> and *Cu* 1 not reaching the margin. Halteres blackish except at base.

♀. *Head* dull black, rather long and narrow. Antennae as in the ♂, except that the scape is brownish. *Thorax* rather light brownish, the mesonotum with three sub-confluent blackish stripes, the surface of which is finely rugose and hence appears quite dull; mesonotal pubescence short but rather coarse and bristly. *Abdomen* dark brown. *Legs* rather dark brown, the tarsi blackened apically; tibial spines as in the ♂. *Wings* and halteres as in the ♂.

Length of body, 5-6 mm.; wing, 5-5.5 mm.

Pahang: Lubok Tamang, 3500 ft., 24 June, 1923; 2 ♂. Same locality 26th January, 1902. (*H. C. Robinson* and *N. Annandale*); 2 ♂, 2 ♀. Cameron's Highlands, 4800 ft., 14th March, 1924; 1 ♀ (type) at light.

This is somewhat allied to *B. proximus* Brun., differing in the dark wings, longer first segment of hind tarsi of ♂, etc.

#### Family SCATOPSIDAE.

##### *Ectaetia nigronitida* (Brun.).

Pahang: Cameron's Highlands, No. 4 Camp, 17th June, 1923; 1 ♀.

##### *Scatopse flavipalpis* sp. n.

♀. *Head* shining black. Antennae black, with 2 + 8 segments, though the last is evidently compounded of three fused segments since it bears three short verticils; intermediate segments over twice as broad as long. Palpi rather larger than usual and wholly bright orange. Eyes touching. *Thorax* moderately shining, dorsally black, pleurae more brownish. *Abdomen* rather elongate, shining black dorsally, dull black ventrally. Ovipositor small, orange; last tergite and sternite simple, not emarginate. *Legs* brownish, tibiae and tarsi orange; femora and tibiae of hind legs darker. *Wings* slightly greyish, anterior veins dark brown. Costa reaching a little beyond the middle of the wing, its two divisions about equal in length. Media forking below middle of *Rs*; branches of fork slightly and evenly divergent. *Cu* and *An* reaching the margin; the latter with one rather strong bend in the middle. Halteres blackish.

Length of body, 3 mm.; wing, 2.2 mm.

Peninsular Siam: Nakon Sri Tamarat, Khao Luang, 2000 ft., 17th March, 1922; 1 ♀ at light.

A very distinct species on account of the colour of the palpi.

##### *Scatopse thripsoides* sp. n.

*Head* black, including antennae and palpi. Antennae very short, apparently with 2 + 8 segments, the intermediate segments at least three times as broad as long.



Eyes touching. *Thorax* black, scarcely shining. *Abdomen* entirely dull black, rather long and narrow. Last tergite of male with a moderately long square-ended median projection. *Legs* black, tarsi more brownish, those of the hind legs lighter. *Wings* hyaline, anterior veins dark. *Costa* ending at middle of wing, its second division barely half as long as the first. *Media* forking beyond the middle of *Rs*, branches of fork rather widely divergent apically, reaching the margin. *Cu* not reaching the margin. *An* strongly bent downwards before the middle, thence running straight to the margin. Halteres black.

Length of body, 1.4-1.7 mm.; wing, 1.0 mm.

Pahang: Cameron's Highlands, No. 4 Camp, 4800 ft., 14th March, 1924; 1 ♂, 1 ♀.

Allied to the European *S. minutissima* Verr.

**Scatopse (Rhegmoclema) lunata** sp. n.

♂. *Head* dull black; palpi small, yellowish. Antennae black, almost as long as the thorax, with 2 + 8 segments, intermediate segments hardly broader than long and more distinctly separated than in the last two species. Eyes narrowly but distinctly separated. *Thorax* black; mesonotum brightly shining, with rather sparse pubescence; scutellum very large and broad, velvet black. *Abdomen* moderately short and broad, dull blackish, membrane blacker than the chitinised parts. *Legs* black, tibiae narrowly but conspicuously yellowish at base; tarsi rather light brownish. *Wings* with a rather strong brown tinge, except for an obliquely-placed whitish-hyaline mark running from the tip of the costa to the base of the fork; costal cell darker than the rest of the wing. Anterior veins dark brown, posterior veins rather darker than the ground colour. *Costa* reaching to two-thirds of the wing length, its second section barely as long as the first. None of the thin veins quite reach the wing margin, though *An* almost does so. *Media* forking beyond middle of *Rs*, branches of fork approximated in middle, then divergent. *Cu* twice bent, but the second bend less pronounced than the first. Halteres black.

Length of body, 1.8 mm.; wing, 2.2 mm.

Pahang: Gunong Tahan, 5500 ft., 12th December, 1922; 1 ♂.

Very distinct by the whitish wing-spot.

Genus **Lumpuria**, gen. n.

Characters as in *Scatopse* (s. str.), with the following exceptions: *Head* closely applied to the thorax, and somewhat hollowed out behind, as in many brachycerous families. Antennae with ten segments, those of the flagellum rather elongate and cylindrical, at least twice as long

as broad. *Legs* rather longer and more slender than usual; each tibia with one small spur or spur-like bristle at the tip. *Costa* extending well beyond the tip of *Rs*.

Genotype, *L. flavicornis* sp. n.

As there is only one specimen, I do not feel quite certain that the peculiar shape of the head is natural, but the other characters mentioned above seem sufficiently remarkable for the establishment of a new genus. It is probably a direct development from *Scatopse*, the elongation of the antennae being apparently a secondary phenomenon.

**Lumpuria flavicornis** sp. n.

♂ ?—*Head* dark brown, face rather lighter. Eyes separated by about a width of two facets. Ocelli close together but almost filling the small vertex. Mouth parts minute. Antennae entirely yellow; first flagellar segment about three times as long as broad, the following segments rather shorter; none with distinct necks; pubescence very short. *Thorax* dark brown, with dark pubescence. *Abdomen* blackish, with dark pubescence. Last segment large, rounded apically and fringed with longish bristly hair. *Legs* dark brown, except the tarsi, which are entirely light ochreous. *Wings* smoky grey. No macrotrichia on membrane or on the veins. Venation much as in *S. notata* L., but the *costa* longer, *Cu* not nearly reaching the wing-margin, and *An* more strongly sinuous. Halteres blackish.

Length of body, 2.2 mm.; wing, 2.8 mm.

Pahang; Cameron's Highlands, 4800 ft., 13th March, 1924; 1 ♂ at light.

Family CULICIDAE.

Subfamily Culicinae.

The mosquitoes of the Malay Peninsula have been rather thoroughly worked, first by Dr. G. F. Leicester, and subsequently by Drs. A. T. Stanton, H. P. Hacker and others, so that the total number now known is no less than 198. This is almost exactly the same as the total known from the whole of India, with Ceylon, Assam and Burma, but the great diversity of the two faunas is shown by the fact that only between sixty and seventy of the Malayan species are at present known from the Indian region; some others will doubtless be found to occur in Burma, but the difference is sufficiently striking. Especially noteworthy are the number of species of *Uranotaenia*, *Topomyia* and *Rachionotomyia* in Malaya (43 in all) against the few from India (about 8); and the comparatively few species of *Aedes* (39 Malayan against about 75 Indian, this last total being largely due to the great development of the subgenus *Finlaya* in the Himalayan region). A very different result is obtained by comparing the mosquito fauna of Malaya with that of

Borneo. From the latter island, which has only been partially worked, just about 100 species of mosquitoes are known at present, and at least 90 of these occur in Malaya, while most of the remaining few may be expected to turn up.

An idea of the richness of the Malayan mosquito fauna may be obtained from the fact that from this small area almost as many species are known as from the whole of tropical Africa. It may also be of interest to remark that from Panama, which is somewhat comparable in area and position with Malaya, 131 species have been recorded.

The present collection does not add any species to the known Malayan mosquito fauna, the list of which is as follows:—

- Anopheles (s. str.) aitkeni Theo.  
 brevipalpis Roper  
 asiaticus Leic.  
 hyrcanus Pall.  
 separatus Leic.  
 albotaeniatus Leic.  
 umbrosus Theo.  
 novumbrosus Strick.  
 barbirostris v.d.W.  
 wellingtonianus Alcock.  
 lindesayi Giles
- (Myzomyia) .. aconitus Dön.  
 vagus Dön.  
 subpictus Grassi, var. malayensis  
 Hacker.  
 ludlowi Theo.  
 fuliginosus Giles  
 philippinensis Ludl.  
 maculatus Theo.  
 karwari James  
 watsoni Leic.  
 kochi Dön.  
 leucosphyrus Dön.  
 leucosphyrus var. hackeri Edw.  
 tessellatus Theo.  
 aurorostris Watson
- Megarhinus .. klossi Edw.  
 leicesteri Theo.  
 metallicus Leic.  
 acaudatus Leic. †  
 quasiferrox Leic.  
 splendens Wied.  
 ater Daniels  
 magnificus Leic.  
 funestus Leic.  
 raris Leic.

- Uranotaenia .. trilineata Leic.  
                   nivipes Theo.  
                   unimaculiala Leic.  
                   micans Leic.  
                   bimaculiala Leic.  
                   argyrotarsis Leic.  
                   longirostris Leic.  
                   campestris Leic.  
                   macfarlanei Edw.  
                   maxima Leic.  
                   atra Theo.  
                   subnormalis Mart.\*  
                   xanthomelaena Edw.  
                   testacea Theo.  
                   nivipleura Leic.  
                   modesta Leic.  
                   bimaculata Leic.  
                   maculipleura Leic.  
                   bicolor Leic.  
                   mctatarsata Edw.  
                   lutescens Leic.  
                   brevirostris Edw.\*  
                   obscura Edw.\*
- Harpagomyia .. genurostris Leic.
- Zeugomyia .. gracilis Leic.
- Topomyia .. decorabilis Leic.  
                   minor Leic.  
                   tipuliformis Leic.  
                   dubitans Leic.  
                   argyropalpis Leic.  
                   spatulirostris Edw.  
                   argenteoventralis Leic.  
                   rubithoracis Leic.  
                   nigra Leic.  
                   gracilis Leic.  
                   tenuis Edw.
- Hodgesia .. quasisanguinae Leic.  
                   malayi Leic.
- Rachionotomyia .. aenea Edw.  
                   similis Leic.  
                   hybrida Leic.  
                   vicina Edw.  
                   coeruleocephala Leic.  
                   proxima Edw.  
                   mendacis Dan.  
                   aranoides Theo.  
                   nepenthis Edw.\*

- Heizmannia .. indica Theo.  
aureochaeta Leic.  
communis Leic.  
funerea Leic.  
metallica Leic.
- Hacmagogus .. achaetae Leic.
- Mucidus .. laniger Wied.
- Pardomyia .. aurantia Theo.
- Armigeres (s. str.) moultoni Edw.  
aureolineatus Leic.  
obturans Walk.  
durhami Edw.  
malayi Theo.  
conjungens Edw.  
jugraensis Leic.  
maiae Edw.  
giveni Edw.\*
- (Leicesteria) .. flavus Leic.  
dolichocephalus Leic.  
magnus Theo.  
annulitarsis Leic.  
cingulatus Leic.  
longipalpis Leic.  
pendulus Edw.  
digitatus Edw.  
pectinatus Edw.
- Aedes (Stegomyia) desmotes Giles  
albopictus Skuse  
albolineatus Theo.  
perplexus Leic.  
argenteus Poiret  
imitator Leic.\*
- (Finlaya) .. poicilia Theo.  
flavipennis Giles \*  
niveus Ludlow  
subniveus Edw.  
albotaeniatus Theo.  
chrysolineatus Theo.  
saxicola Edw.  
jugraensis Leic.  
dissimilis Leic.
- (Ochlerotatus) .. vigilax Skuse
- (Banksinella) .. lineatopennis Ludlow

- (Aëdimorphus) .. orbitae Edw.  
alboscuteUllatus Theo.  
vexans Mg.  
caecus Theo.
- (Skusea) .. longirostris Leic.  
amesi Ludlow  
curtipes Edw.  
fumidus Edw. M.S.\*
- (Aëdes) .. incertus Edw.  
butleri Theo.  
perditus Leic.  
fragilis Leic.  
varietas Leic.  
virilis Leic.  
singularis Leic.  
uncus Theo.  
leicesteri Edw.  
ostentatio Leic.  
vittatus Big.†  
umbrosus Brug.\*  
andamanensis Edw.\*  
cyrtolabis Edw. M.S.\*
- Mimomyia .. minima Ludl.  
aurea Leic.  
metallica Leic.
- Ficalbia .. luzonensis Ludl.  
fusca Leic.
- Taeniorhynchus } giblini Taylor  
(Coquillettidia) } ochraceus Theo.  
crassipes v.d.W.
- (Mansonioides) .. annuliferus Theo.  
annulipes Walk.  
annulatus Leic.  
uniformis Theo.
- Aedomyia .. venustipes Skuse
- Orthopodomyia .. albipes Leic.  
maculipes Theo.\*  
anopheloides Giles †
- Lutzia .. fuscana Wied.  
halifaxi Leic.

- Culex** .. bitaeniorhynchus Theo.  
 sinensis Theo.  
 whitmorei Giles  
 gelidus Theo.  
 mimeticus Noé.  
 mimulus Edw.  
 sitiens Wied.  
 tritaeniorhynchus Giles  
 vishnui Theo.  
 fatigans Wied.  
 fuscocephalus Theo.  
 minimus Leic.  
 graminis Leic.  
 brevipalpis Giles  
 hackeri Edw.  
 malayi Leic.
- (Acalleo-myia) .. obscurus Leic.
- (Culicomyia) .. pullus Theo.  
 spathifurca Edw.\*  
 fragilis Ludl.
- (Lophoceratomyia) niger Leic.  
 rubithoracis Leic.  
 fraudatrix Theo.  
 quadripalpis Edw.  
 cinctellus Edw.  
 emminetia Leic.  
 mammilifer Leic.  
 minor Leic.  
 hewitti Edw.†  
 navalis Edw.\*  
 caerulea Edw. M.S.\*  
 jenseni de Meij.\*  
 curtipalpis Edw.\*

## Subfamily Culicinae.

**Anopheles aitkeni** Theo.

Pahang: Cameron's Highlands, No. 4 Camp, 4800 ft.,  
 13th June, 1923; 2 ♀.

**Megarhinus klossi** Edw.

Pahang: Gunong Tahan, Padang Sebrang, 5000 ft.,  
 15th December, 1922; 1 ♂; Seat Point, 5460 ft., 20th Decem-  
 ber, 1922; 1 ♂.

\* These species are included in the list since they have been received from Dr. D. H. C. Given from Singapore in 1925-6. These records were partly published in the Bull. Ent. Research 1926; the rest should appear in the Bull. Ent. Research, December 1927.

† These species have since been received from the Malaria Bureau, Kuala Lumpur.

**Megarhinus metallicus** Leic.

Perak: Batang Padang, Jor Camp, 1800-2500 ft., 29th-31st August, 1922 and 30th May-6th June, 1923; 7 ♂, 2 ♀.

**Megarhinus quasiferox** Leic.

Selangor: Kuala Lumpur, March 1921; 1 ♂ ex. coll. Agr. Dept.

**Megarhinus splendens** Wied.

Perak: Verdun Estate, Batu Kurau, March 1924; 1 ♂.

**Topomyia argyropalpis** Leic.

Java: Kawah Kamodjan, 5000 ft., 19th April, 1923; 1 ♂.

**Rachionotomyia similis** Leic.

Pahang: Lubok Tamang, 3500 ft., 8th May, 1923; 1 ♀.

**Rachionotomyia vicina** Edw.

Pahang: Kuala Teku, 500 ft., 3rd December, 1922; 1 ♀.

**Rachionotomyia aranoides** Theo.

Pahang: Gunong Tahan, 5500 ft., 16th December, 1923; 1 ♀.

**Armigeres obturbans** (Walk.).

Selangor: Kuala Lumpur, Weld Hill Forest Reserve, 8th October, 1922; 1 ♂.

Perak: Taiping Hills, 5th December, 1923. (*M. R. Henderson*); 1 ♀.

Pahang: Tahan River, 1st December, 1921; 1 ♀. Gunong Tahan, Wray's Hill, 2000-2500 ft., 26th November, 1922; 1 ♀. Cameron's Highlands, 4800 ft., 14th March, 1924; 1 ♀. Fraser's Hill, 3700 ft., 28th August, 1923. (*M. R. Henderson*); 1 ♀.

Negri Sembilan: Kuala Pilah, 28th December, 1923; 5 ♀, in latrine.

**Armigeres (Leicesteria) flavus** (Leic.).

Perak: Batang Padang, Jor Camp, 1800 ft., 27th-31st May and 10th October, 1923; 1 ♀.

Pahang: Lubok Tamang, 3500 ft., 10th March, 1924; 1 ♀.

One of the specimens has an egg-mass attached to its hind legs. As described by Strickland the eggs are open and the young larvae within ready to hatch. An egg which I macerated and mounted showed a young larva apparently of an Aedine type.

**Armigeres (Leicesteria) dolichocephala** Leic.

Pahang: Lubok Tamang, 3500 ft., 11th June, 1923; 1 ♂. Wray's Hill, 2000-2500 ft., jungle, 26th November, 1922; 1 ♀.



**Armigeres (Leicesteria) magnus** (Theo.).

Perak: Batang Padang, Jor Camp, 1800 ft., 31st May, and 10th October, 1923; 1 ♀.

**Aedes (Stegomyia) argenteus** (Poiret).

Selangor: Kuala Lumpur, 31st May, 1923; 1 ♀.

**Aedes (Stegomyia) albopictus** (Skuse).

Selangor: Kuala Lumpur, March 1923; 3 ♂, 3 ♀.

Perak: Batang Padang, Tapah, 7th March, 1924; 2 ♀.

Pahang: Kuala Tahan, 300 ft., 19th November, 1922; 2 ♀.

Negri Sembilan: Kuala Pilah, 29th December, 1923; 1 ♂.

**Aedes (Finlaya) niveus** Ludl.

Perak: Batang Padang, Jor Camp, 1800 ft., 29th May, 5th June and 10th October, 1923; 6 ♀.

Pahang: The Gap, 2700 ft., 2nd August, 1923; 1 ♀, at light. Cameron's Highlands, Tanah Rata, 4800 ft., 18th January, 1924. (*M. R. Henderson*); 1 ♀, at light.

All the specimens belong to the variety *albolateralis*.

**Aedes (Finlaya) subniveus** Edw.

Perak: Batang Padang, Jor Camp, 1800 ft., 29th May, 1923; 1 ♀.

**Aedes (Finlaya) saxicola** Edw.

Pahang: Wray's Hill, 2000 ft., jungle, 26th February, 1922; 1 ♀.

**Aedes (Banksinella) lineatopennis** Ludl.

Pahang: River Tembeling, 18th February, 1922; 1 ♀ at light.

**Aedes (Aëdimorphus) alboscuteclatus** (Theo.).

Pahang: Cameron's Highlands, No. 4 Camp, 4800 ft., 13th-14th June, 1923; 3 ♀ at light.

**Aedes (Skusea) amesi** Ludlow.

Selangor: Kuala Lumpur, 14th December, 1923; 1 ♀.

**Mimomyia metallica** Leic.

Selangor: 7th mile, Cheras Road, 25th March, 1924. (*E. Seimund*); 1 ♂, at light.

**Mimomyia aurea** Leic.

Selangor: Kuala Lumpur, 20th August, 1922; 1 ♂.

Perak: Taiping, 3rd December, 1923; 1 ♀, at light. (*M. R. Henderson*).

**Ficalbia fusca** Leic.

Pahang: Cameron's Highlands, 4800 ft., 13th March, 1924; 1 ♂.

The specimen differs somewhat from Leicester's type, the palpi being only half, instead of quite two-thirds as long as the proboscis, and this latter being considerably less swollen at the tip, but the agreement is complete in other respects.

**Taeniorhynchus (Coquillettia) crassipes** (v.d.W.)  
(*brevicellulus* Theo.).

Selangor: Kuala Lumpur, various dates; 3 ♂, 3 ♀.

**Taeniorhynchus (Coquillettia) giblini** Taylor.

Peninsular Siam: Nakon Sri Tamarat, Rompibun, 6th March, 1922; 1 ♀.

**Taeniorhynchus (Coquillettia) ochraceus** Theo.

Singapore I., 19th January, 1924; 1 ♀.

**Taeniorhynchus (Mansonioides) annulipes** (Walk.).

Selangor: Kuala Lumpur, 13th February and 25th March, 1924, 7th mile, Cheras Road; 14 ♀ at light.

Pahang: River Tembeling, 17th November, 1922; 1 ♀ at light.

**Taeniorhynchus (Mansonioides) uniformis** Theo.

Selangor: Kuala Lumpur, various dates; 6 ♀.

Java: Batavia, 27th April, 1923; 1 ♀. Buitenzorg, 15th April, 1923; 1 ♀.

**Aedomyia venustipes** (Skuse.) (*catastieta* Knab.).

Selangor: Kuala Lumpur, 7th mile, Cheras Road, 13th-17th February and 25th March, 1924; 3 ♀ at light.

**Orthopodomyia albipes** Leic.

Perak: Batang Padang, Jor Camp, 1800 ft., evening, 3rd June, 1923; 2 ♂. Tapah, 1200 ft., 8th March, 1925; 1 ♂.

**Orthopodomyia maculipes** Theo.

Peninsular Siam: Nakon Sri Tamarat, Khao Ram, 750-1200 ft., 23rd February, 1922; 1 ♀.

**Lutzia fuscana** Wied.

Selangor: Kuala Lumpur, 22nd November, 1922 and 27th January, 1924; 1 ♂, 1 ♀.

**Culex bitaeniorhynchus** Giles.

Java: Tjisoeroepan, 4200 ft., 18th April, 1923; 2 ♂ at light.

**Culex sinensis** Theo.

Java: Tjisoeroepan, 4200 ft., 18th April, 1923; 1 ♀ at light. Buitenzorg, 25th April, 1923; 1 ♂ at light.

**Culex mimeticus** Noé.

Pahang: Cameron's Highlands, 4800 ft., 12th-13th March, 1924; 2 ♀, at light.

**Culex whitmorei** Giles.

Java: Buitenzorg, 800 ft., 15th-25th April, 1923; 1 ♂, 8 ♀, at light.

**Culex gelidus** Theo.

Selangor: Kuala Lumpur, various dates; 1 ♂, 7 ♀.

Perak: Taiping, 29th November, 1923. (*M. R. Henderson*); 1 ♂, 1 ♀, at light.

Java: Buitenzorg, 17th April, 1923; 1 ♂.

**Culex sitiens** Wied.

Peninsular Siam: Nakon Sri Tamarat, Khao Luang, 2000 ft., 29th March, 1922; 1 ♀.

The occurrence of this salt-marsh species at such an altitude is probably to be explained by the fact that a north-east monsoon was blowing at the time of its collection.

**Culex vishnui** Theo.

Selangor: Kuala Lumpur, 19th August, 1923; 2 ♀.

Java: Buitenzorg, 17th April, 1923; 3 ♂.

**Culex tritaeniorhynchus** Giles.

Selangor: Kuala Lumpur, various dates; 5 ♀.

Java: Buitenzorg, 3 ♂, 3 ♀.

**Culex fatigans** Wied.

Selangor: Kuala Lumpur.

Pahang: Gunong Tahan, 5500 ft. Fraser's Hill, 4000 ft.

Negri Sembilan: Kuala Pilah.

Java: Tjisoeroepan, 4200 ft., 18th April, 1923.

**Culex (Culiciomyia) pullus** Theo.

Java: Buitenzorg, 800 ft., 16th April, 1923; 1 ♂, at light.

Subfamily **Chaoborinae**.**Chaoborus asiaticus** Giles.

Selangor: Kuala Lumpur, various dates; 2 ♂, 8 ♀.

Pahang: River Tembeling, 17th February, 1922; 1 ♂, at light.

Subfamily **Dixinae**.**Dixa binotata** Edw. var.?

Pahang: Cameron's Highlands, No. 4 Camp, 4800 ft., 21st June, 1923; 1 ♀, at light.

## Family SIMULIIDAE.

Having examined types or authentically named specimens of almost all the described Oriental species, I offer the following tabular arrangement of the female *Simulium* now known from this region:

## Group 1.

Front tarsi distinctly flattened and enlarged. Front tibiae with grey or silvery dusting on the outer side. Last three abdominal tergites always more or less shining, the whole abdomen nearly bare (except in *S. indicum*). Claws either simple or with small sub-basal tooth.

Frons dull, with rather dense golden pubescence; thorax and abdomen similarly clothed; radius hairy: *indicum* Becher (= *nigrogilvum* Summers).

Frons dull with scanty black pubescence; radius hairy: *griseifrons* Brun., *digrammicum* sp. n.

Frons shining, almost bare.

Mesonotum dull, with rather coarse golden pubescence.

Mesonotum conspicuously striped.

Radius hairy: *hirtinervis* sp. n.

Radius bare as far as the fork.

Femora all yellow: *latistriatum* White.

Femora darkened apically: *striatum* Brun.

Mesonotum not striped.

Claws simple: *eximium* de Meij.

Claws toothed: *hackeri* sp. n.

Mesonotum more or less shining, faintly striped, with fine dull golden pubescence: *rufibasis* Brun., *gurneyae* White, *argentipes* sp. n.

Mesonotum shining, with fine dark brownish pubescence: *iridescens* de Meij., *fuscopilosum* sp. n.

## Group 2.

Front tarsi almost or quite cylindrical. Front tibiae without silvery dusting, though sometimes with coarse silvery pubescence. Frons always dull and with coarse pubescence. Claws with strong basal tooth or talon. Radius uniformly hairy.

Last three abdominal tergites shining, nearly bare.

\* Palpi yellow: *ceyonicum* End.

Palpi black as usual: *atratum* de Meij.

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\* Dr. Enderlein states that the types of *S. ceyonicum* are old and faded, but even so the palpi are brownish and not yellow. This species is therefore most probably synonymous with *S. atratum* de Meij.

Abdomen entirely dull, pubescent.

Thorax reddish: *rufithorax* Brun.

Thorax black or dark grey.

Larger, mesonotum not striped: *aureohirtum* Brun.

Small, mesonotum faintly striped, basal tooth of claws smaller: *pattoni* White.

There appears to be a noteworthy contrast between the Oriental and Ethiopian faunas, the former having a great predominance of species of group 1, the latter of group 2. No Oriental species of the *Prosimulium* group (with forked radial sector) has yet been found, nor any species with a hairy pleural membrane. In addition to those tabulated above, five species have been described from this region from the male sex only, and cannot at present be associated with their respective females. Of these, *S. varicorne* Edw., differs from all the other Oriental species in having only ten instead of eleven segments to the antennae, which are ringed with yellow; *S. nobile* de Meij., and *S. grisescens* Brun., belong to group 1 (*S. nobile* being well distinguished by its yellow, black-tipped antennae), while *S. senile* Brun., and *S. metatarsale* Brun., belong to group 2.

Dyar and Shannon have recently called attention to the fact that some species of *Simulium* have the basal part of the radial vein, as far as the origin of *Rs*, distinctly hairy, while others have it bare; they have proposed to regard the absence of these hairs as a generic character separating *Simulium* (s. str.) from *Eusimulium* and *Prosimulium*. The feature is evidently of great value in specific distinction, but should not in my opinion be given generic importance any more than the other features which Enderlein proposed to use in this way. Two of the new species described below, though in other respects quite typical of *Simulium* s. str. (my Group 1) have a hairy radius.

#### ***Simulium hackeri* sp. n.**

♀. *Head* black, with short black hair, which is very scanty on the frons and face, but denser on the occiput. *Frons* slightly but quite distinctly shining, moderately narrowed above the antennae. *Face* strongly dusted with silvery-grey. *Antennae* with the scape and first flagellar segment orange, the rest black. *Palpi* black. *Thorax* with dull blackish integument, with slight grey dusting which forms a pattern on the front of the mesonotum somewhat like that of *S. ornatum*, though much less conspicuous and smaller. *Mesonotum* in good specimens densely covered with coarse dark golden pubescence. *Scutellum* with dense golden pubescence and black marginal hair. *Pleural membrane* bare. *Abdomen* with the first segment brownish with long light-brown fringe, second tergite yellowish with silvery dusting, the rest black; last three tergites shining.

*Legs:* Front coxae orange; femora orange, gradually darkened towards the tips, tibiae with a large silvery patch on the outer side; tarsi black, moderately expanded, first segment about five times as long as its depth at the tip; segments 1 and 3 with long hairs at the tip above. Middle and hind coxae blackish; trochanters and base of femora orange; tibiae yellowish on the basal half, with silvery white dusting; basal three fourths of first and bases of second and third tarsal segments orange. All claws with small sub-basal tooth. *Wings* normal, hyaline; radius bare as far as the fork. Halteres yellow.

Length of body or wing about 3.5 mm.

Pahang: Cameron's Highlands, No. 4 Camp, 4800 ft., 13th-15th June, 1923; 15 ♀; also a large number of ♀ (including type) from same place, 5000 ft. (*Dr. H. P. Hacker*). Tanah Rata, 4800 ft., 12th-13th March, 1925; 3 ♀.

Siam: Talum, 25th January, 1902. (*H. C. Robinson* and *N. Annandale*); 1 ♀. Doi Chom Chang, 5500 ft., near Chiangmai, 15th April, 1921. (*Dr. M. E. Barnes*); 1 ♀.

Allied to the European *S. ornatum* Mg.

#### *Simulium digrammicum* sp. n.

♀. *Head* blackish, with scanty black hair on the front and occiput. Front dull, slightly dusted with grey, considerably narrowed above antennae; face more conspicuously silvery grey. Antennae black, scape and base of third segment reddish. Palpi black. *Thorax* with dull integument. When viewed from in front the mesonotum shows a greyish ground with two rather broad black stripes which reach from the front margin to just before the scutellum, where they unite; a little behind the front margin these stripes are somewhat narrowed and approximated, widening again and diverging slightly behind this narrowest point. Between these two stripes is a thin median black line which does not reach the front margin. As usual when viewed from behind the grey and black colours are reversed, and in slightly discoloured specimens the pattern disappears. Mesonotal pubescence rather fine and scanty, golden; somewhat denser on scutellum, which has the usual fringe of black hair. Pleurae brownish posteriorly; membrane bare. *Abdomen* with the first two tergites brownish yellow, fringe of first dark, second with slight silvery-grey dusting; following segments blackish, with narrow pale posterior margins; last three tergites reddish tinged in some specimens, only slightly shining. *Legs:* Front coxae and trochanters yellow; femora yellow at the base, becoming dark brown on the apical half; tibiae yellow with the apical fourth black, and slight silvery dusting on the outer side; tarsi black, moderately flattened, first segment about six times as long as deep. Mid and hind coxae black; trochanters yellow at the base, black apically; femora black with

about the basal third yellow; tibiae with the basal three-quarters yellowish-white, tip black; tarsi black, on the mid legs the basal third, and on the hind legs the basal half of the first segment obscure yellow. Claws simple. Wings normal, hyaline; radius hairy throughout. Halteres yellow.

Length of body or wing, about 2.7-3 mm.

Pahang: Cameron's Highlands, Gunong Berumban, 6050 ft., 17th June, 1923; 6 ♀; also other ♀ from Cameron's Highlands, 5000 ft. (Dr. H. P. Hacker). Gunong Tahan, Seat Point, 5470 ft., 13th December, 1922; 1 ♀.

Peninsular Siam: Nakon Sri Tamarat, Khao Luang, 3500 ft., 15th March, 1922; 1 ♀.

The specimens agree with Brunetti's description and type of *S. griseifrons*, except that the base of the antennae is reddish, the frons is less conspicuously grey and the posterior femora are black on more than the apical half. In Brunetti's type the thorax is discoloured, thus obscuring the mesonotal ornamentation.

**Simulium argentipes** sp. n.

♀. *Head* black with slight metallic reflections; short black hair on the occiput, frons and face practically bare; frons brightly shining, almost parallel sided, about one-third deeper than broad, face moderately dusted with grey. Antennae black, the first two or three segments reddish. Palpi black. *Thorax* dark; mesonotum considerably shining, with greyish reflections and grey dusting towards the sides and in front, this dusting however not forming any pattern; faint traces of three dark lines on the integument; pubescence rather fine, golden. Scutellum not densely clothed. Pleurae grey-dusted; membrane bare. *Abdomen* black, the last three tergites brightly shining; fringe of first segment light brown; second segment silvered. *Legs*: Front coxae yellowish; femora brownish, darker apically, with golden pubescence; tibiae yellowish with black tip, outer side silvery-white with silvery-white pubescence; tarsi black, considerably flattened, first segment about four times as long as broad. Middle and hind coxae dark; femora black except at base; tibiae with silvery-white dusting and pubescence on the basal two-thirds, rest black; basal three-fourths of first and base of second tarsal segments silvery-white, rest of tarsi black. Claws small and simple. Wings normal, hyaline; radius bare as far as the fork. Halteres yellow.

Length of body or wing, 2 mm.

Pahang: Cameron's Highlands, 5000 ft., 1923. (Dr. H. P. Hacker); type ♀; No. 4 Camp, 4800 ft., 13th June, 1923; 2 ♀.

This species is not unlike the European *S. erythrocephalum* Deg. From *S. gurneyae* White it differs in its

smaller size, more brightly shining mesonotum, and mainly black instead of wholly yellow femora.

**Simulium fuscopilosum** sp. n.

♀. *Head* as in *S. argentipes*, but the front rather less brightly shining and rather narrower, being fully one-half deeper than broad. *Thorax* much as in *S. argentipes*, but rather less shining, without trace of dark lines, and with dark brown and therefore inconspicuous mesonotal pubescence. *Abdomen* as in *S. argentipes*, but the apical segments less shining. *Legs*: Front coxae dull yellowish; femora dark brown; tibiae black beneath and at the tip, with a large whitish area on the outer side; tarsi black, only a little flattened, the first segment being over six times as long as deep. Mid and hind coxae and femora black, tibiae with the basal half obscurely yellowish; mid tarsi only indistinctly yellowish at the base of the first segment; hind tarsi with the basal half of the first segment yellow. Claws with very small sub-basal tooth, most distinct on the posterior legs. *Wings* normal, hyaline; halteres yellow.

Length of body or wing, 2.8 mm.

Pahang: Cameron's Highlands, 5000 ft., 1923. (*Dr. H. P. Hacker*); type ♀. Gunong Tahan, 5500 ft., 5th-8th December, 1922; 3 ♀.

Allied to *S. iridescens* de Meij., but larger, thorax less shining, and bases of tibiae duller yellow.

**Simulium hirtinervis** sp. n.

♀. *Head*: Frons shining blue-black, bare, much narrowed above the antennae. Face silvery-grey, bare. Antennae with the first three or four segments reddish, the rest black. Mouthparts black. *Thorax*: Mesonotum clothed with rather coarse bright golden pubescence; integument when seen from in front greyish, with a narrow black median line and two rather broader sinuous black lines forming a lyre-shaped mark; another pair of still broader black stripes outside these, but the actual margin conspicuously silvery-grey; when viewed from behind the colours are as usual reversed, the sublateral stripes being conspicuously silvery. Pleurae black, with whitish dusting; membrane bare. *Abdomen* black, almost bare; hair on first segment rather short and dark; last three tergites very large and shining. *Legs*: Front coxae and trochanters ochreous; femora ochreous, becoming brownish on the apical half; tibiae yellow, the apical fifth black, outer surface with fine white pubescence and dusting; tarsi black, much flattened, the first segment about 4.5 times as long as its depth at the tip; first and third segments with the usual long apical hairs. Middle and hind coxae dark, femora black except narrowly at the base; tibiae yellow, with the apical fourth to third black; first tarsal segment with the basal half to



two-thirds yellow; claws simple. *Wings* with normal venation, but the radius conspicuously hairy almost to the base. Halteres yellow.

Length of body or wing, about 2.5 mm.

Pahang: Cameron's Highlands, Tanah Rata, 4800 ft., 12th March, 1925; type and two other ♀.

The hairy radius is very exceptional among species of Group 1, and will suffice to distinguish the species from *S. striatum* Brun. and others which have a somewhat similar thoracic ornamentation. *S. striatum* further differs in lacking the grey margin to the mesonotum (front view).

***Simulium aureohirtum* Brun.**

Java: Tjisoeroepan, 4200 ft., 19th April, 1923; 1 ♀ at light.

Examination of the specimens on which Brunetti's name was based, shows that the males belong to one species and the females to two other species. The name must be retained for the male, which is very similar to *S. diversipes* Edw., described from the island of Rodriguez and since found in Natal. *S. aureohirtum* differs from *S. diversipes* mainly in broader male claspers, also in the more golden and almost unicolorous mesonotal pubescence in both sexes. As in *S. diversipes* the sub-basal dark ring of the posterior tibiae is very well-marked in the female, less so in the male. The species has already been recorded from Java, as well as from Assam and Ceylon.

Family **PSYCHODIDAE.**

Subfamily **Psychodinae.**

***Telmatoscopus albipunctatus* Will. (*meridionalis* Eaton).**

Selangor: Kuala Lumpur, various dates; 21 specimens mostly ♀ taken at light.

***Psychoda alternata* Say.**

Selangor: Kuala Lumpur, various dates; 1 ♂, 2 ♀.

Pahang: Gunong Tahan, 5500 ft., 10th December, 1922 and 1st January, 1923; 2 ♂, 3 ♀.

***Brunettia indica* Eat.**

Selangor: Kuala Lumpur, 16th August, 1923; 1 ♀ at light.

Subfamily **Phlebotominae.**

***Phlebotomus perturbans* de Meij.**

Selangor: Kuala Lumpur, 5th August, 1923; 1 ♀ at light.

***Phlebotomus malabaricus* Ann.**

Perak: Batang Padang, Jor Camp, 2500 ft., 3rd June, 1923; 1 ♀.

Subfamily **Bruchomyiinae.****Nemopalpus orientalis** sp. n.

♀. *Head* and its appendages rather dark brownish-ochreous, clothed with hair of a rather lighter colour; scape of antennae lighter, base of palpi darker. Eyes separated by about the width of one scapal segment. Flagellum with fourteen segments, gradually decreasing in length, the first about ten times, the penultimate about three times as long as broad; terminal segment with rather long apical projection; all but the first two or three rather conspicuously darkened at the base. Last segment of palpi rather longer than the first three together. *Thorax* and *abdomen* rather dark-brownish ochreous, with lighter ochreous hair. *Legs* long and slender, uniformly clothed with long appressed ochreous hair. *Wings* with long brownish hair on the veins, rather longer and darker on *Cu 2* and on the base of *Cu 1* and  $M2 + 3$ ; all the hairs thin, none flattened or scale-like. *Sc* rather thickened at the tip, where it sends equal branches to *C* and *R1*, ending just beyond fork of  $R4 + 5$ ; *Rs* spurred at the base; *R2* more than twice as long as  $R2 + 3$ ; *Cu 2* over twice as long as *Cu 1a*; *An* well removed from the margin and bent sharply down at tip. Halteres brownish.

Length of body, 4.5 mm.; wing, 6 mm.

Pahang: Cameron's Highlands, Gunong Berumban, 5500 ft., 14th March, 1924.

Concerning the capture of this extremely interesting insect, the first of the genus to be recorded from the Oriental region, Mr. Pendlebury writes (July 18th, 1924):—

“There were two of them on the same tree, sitting on some damp moss, but one escaped and disappeared amongst the undergrowth, so I was only able to get the one submitted. I hope however, to get to that locality again and try and obtain further examples. The locality is a kind of “rain forest” on the slopes of Gunong Berumban, and most of the trees in that small area are covered with moss which is continually kept damp by mists. The trees are all growing normally and not stunted as one might expect at that elevation (5000–6000 ft.), consequently it is dark and quite cold.”

Family **ANISOPODIDAE.****Anisopus malayensis** Edw.

Pahang: Gunong Tahan, 5500 ft., 2nd–9th December, 1922; 7 ♀.

**Anisopus distinctus** Brun., var.?

Pahang: Gunong Tahan, 5500 ft., 10th–11th December, 1922; 2 ♀.

The two small white spots near the tip of the wing are much wider apart than in Himalayan examples.

**Anisopus pulchricornis** Brun.

Pahang: Gunong Tahan, Padang Luas, 4900 ft., 31st December, 1922; 1 ♂. Tanah Rata, 4800 ft., 12th March, 1925; 1 ♀ at light.

**Anisopus maculipennis** v.d.W.

Java: Buitenzorg, 17th April, 1923; 1 ♀.

Family **TIPULIDAE**.

The first craneflies to be reported from the Malay Peninsula were four species described by Walker from Singapore and Mt. Ophir. Four others were recorded by Brunetti, and four more by the present writer in his revisions of the genera *Styringomyia* and *Eriocera*, also one by Alexander. The only paper dealing specifically with the craneflies of the Peninsula is one by the writer (Ann. Mag. Nat. Hist. Ser. 8, xvii, pp. 349-362, 1916) in which 15 additional species are described. The list of these 28 species is as follows:—

*Dicranomyia carneotincta* Alex.  
*Rhipidia rostrifera* Edw.  
*Limnobia crocea* Edw.  
*Libnotes scutellata* Edw.  
*Libnotes stantoni* Edw.  
*Libnotes limpida* Edw.  
*Libnotes lutea* Edw.  
*Helius nigriceps* Edw.  
*Helius rufescens* Edw.  
*Ceratocheilus latifrons* Brun.  
*Gymnastes pictipennis* Edw.  
*Styringomyia ceylonica* Edw.  
*Styringomyia nigrofemorata* Edw.  
*Gnophomyia maculipleura* Edw.  
*Gnophomyia fraterna* Edw.  
*Gnophomyia nigrescens* Edw.  
*Oxydiscus umbrosus* Edw.  
*Epiphragma klossi* Brun.  
*Eriocera leucotelus* Walk.  
*Eriocera plecioides* Walk.  
*Eriocera dichroa* Walk.  
*Eriocera ornata* End.  
*Eriocera umbripennis* Edw.  
*Pselliophora chrysophila* Walk.  
*Pselliophora divisa* Brun.  
*Mitopeza nitidirostris* Edw.  
*Ctenacrosceles majesticus* Brun.(?)  
*Tipula klossi* Edw.

In the present collection 160 species are included, 13 of these being among those previously recorded, so that the total now known from the Peninsula is 175. The cranefly fauna of the whole oriental region is still so imperfectly

known that few inferences of importance can be drawn from a comparison with other areas, but as in the case of the Culicidae there appears to be a marked contrast with the Indian fauna and an equally marked resemblance to that of Borneo, Java and Sumatra. Of the 160 species dealt with, 84 have been regarded as new; 20 are well-known and widely-spread forms; 25 others have previously been recorded only from Java and Sumatra; 12 from British India and 10 from Borneo.

It may be noted that in this family the tendency to the production of local races and species is far greater than in the Culicidae, comparatively few species having a wide distribution. Nevertheless some few even among the rarer species are unexpectedly widespread; such, for example, as *Styringomyia papuana*, previously known only from New Guinea, and *Libnotes oralis* and *Limnobia longiradius*, which since the descriptions were written have been received from the island of Buru. As might be expected, there is a very marked contrast between the low-level fauna of Kuala Lumpur and that of the mountains, the former including most of the more widely-spread forms.

The subfamily Tipulinae appears to be rather poorly represented, perhaps partly owing to the lack of mountains over 7000 ft. Of special interest is the occurrence of species *Tasiocera* and *Sphaerionotus*.

#### Subfamily Limnobiinae.

##### Tribe Limnobiini.

#### *Dicranomyia tahanensis* sp. n.

*Head* dark brownish grey. Front rather narrow. Antennae black, rather short, the flagellar segments shortly oval, pubescence and verticils short. Proboscis short, dark brown; palpi well developed, black. *Thorax* dark brown; praescutum with a somewhat darker median stripe, most conspicuous when viewed from in front; pleurae somewhat pruinose, mesosternum very much so. *Abdomen* dark brown, lighter beneath. Hypopygium with the fleshy lobes large and broad, with a fascicle of hairs on the inner margin in the middle; rostrum short, with two moderately short spines. Ovipositor with the cerci very short. *Legs* rather stout, brownish, tips of femora scarcely darker. Claws with three or four teeth, the outermost one the largest. *Wings* greyish; veins dark brownish; costa and *R1* yellowish, except where they pass through the four dark areas, situated at the arculus, in the middle and at the tip of *Sc*, and at the tip of *R1*; *Rs* also yellowish in the middle. *Sc* ending opposite base of *Rs*, *Sc2* close to its tip. *Rs* nearly straight, less than half as long as  $R2 + 3$ . *Cu 1a* at base of discal cell, which is rather small and narrow, considerably shorter than cell *M1*. Halteres brownish.

Length of body, 5 mm.; wing, 6 mm.

Pahang: Gunong Tahan, 5500 ft., 6th December, 1922 and 19th January, 1923; 4 ♂, 3 ♀, including type. Cameron's Highlands, No. 4 Camp, 4800 ft., 15th October, 1923; 1 ♀.

This species, although very similar to *D. columbina* Brun. (India and Africa) is distinct by the structure of the hypopygium and other details. It has an almost greater resemblance to the African *D. tipulipes* Karsch, but again the hypopygial structure is slightly different.

**Dicranomyia sordida** Brun. var.?

Pahang: Gunong Tahan, 5500 ft., 12th December, 1922 and 19th January, 1923; 2 ♀. Lubok Tamang, 3500 ft., 7th June, 1923; 1 ♀ at light; 10th March, 1924; 1 ♂ at light. Cameron's Highlands, 4800 ft., 12th-13th March, 1924 and 12th March, 1925; 3 ♂, 1 ♀ at light. Fraser's Hill, 4000 ft., 29th August, 1923; 1 ♀ at light.

Selangor: Kuala Lumpur, 12th December, 1923, 9th January, 1924, 1st April, 1924 and 25th December, 1924; 4 ♀.

The spots at the base and tip of *R*s and over *r* vary much in distinctness. One specimen has the discal cell open on both wings, confluent with the third posterior cell.

**Dicranomyia puncticosta** Brun.

Pahang: Cameron's Highlands, 4800 ft., 15th October, 1923 and 11th-13th March, 1924; 3 ♂, 2 ♀ at light. Tanah Rata, 19th January, 1924. (*M. R. Henderson*); 1 ♀ at light.

**Dicranomyia punctulata** de Meij.

Selangor: Kuala Lumpur, various dates; 6 ♂, 4 ♀ at light.

Java: Buitenzorg, 17th April, 1923; 1 ♂.

**Dicranomyia nongkodjadjarensis** de Meij.?

Pahang: Cameron's Highlands, Tanah Rata, 5000 ft., 20th June, 1923; 1 ♀. Gunong Tahan, Padang Luas, 4900 ft., 31st December, 1922; 1 ♀.

The latter specimen has the abdomen largely ochreous, dark only at the bases of the tergites, but seems to belong to the species. Closely allied forms are *D. excelsa* Alex., *D. approximata* Brun., *D. fortis* Brun. and *D. alticola* Edw.; some of these may eventually prove identical with *D. nongkodjadjarensis*.

**Dicranomyia flagellata** sp. n.

*Head* blackish. Front very narrow but distinct. Antennae dark brown, in the male twice as long as the head and thorax together, the first flagellar segment nearly eight times as long as broad, the following segments gradually shorter, all with a dense, evenly distributed pubescence which is about as long as the diameter of the segments, and with only a few short and inconspicuous setae; in the

female the antennae are much shorter, the flagellar segments approximately equal in length and about three times as long as broad, pubescence rather shorter than in the male, and the verticil hairs relatively longer and more conspicuous, last segment longer than penultimate. Proboscis brownish, barely half as long as the height of the head. Palpi well developed, dark brown. *Thorax* uniformly dark brown; notum dull, pleurae somewhat shining. *Abdomen* dark brown. Hypopygium small, of simple structure; fleshy lobes rather small, rostrum with two moderately short spines near the tip. Ovipositor with the cerci rather long and slender. *Legs* dark brown, except for the ochreous coxae. Claws small, apparently simple. *Wings* rather strongly tinged with grey, devoid of markings except for the small brown stigma; membrane iridescent, veins dark brown. *Sc* reaching rather beyond the middle of *Rs*, *Sc*2 close to its tip. *Rs* gently curved, as long as  $R2 + 3$ . *Cu 1a* at base of discal cell, which is less than twice as long as broad. Halteres black, the slender stem ochreous at the base.

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

Pahang: Kuala Teku, 500 ft., 5th December, 1921; 1 ♂, 2 ♀.

The elongation of the male antennae is a very unusual character in this genus and renders the species quite a distinct one. On account of the long *Sc* it might almost as well be placed in *Limnobia*, but the hypopygium has the typical *Dicranomyia* structure.

***Dicranomyia (Alexandriaria) carneotincta* Alex.**

Selangor: Kuala Lumpur, 31st August, 1921; 1 ♀ flying round mango tree; 28th December, 1923; 1 ♀; 20th February, 1924; 1 ♀ at light; 5th October, 1924, 1 ♀; 24th January, 1925, 2 ♂. Also a number of specimens in the British Museum from Kuala Lumpur. (*Dr. H. P. Hacker*).

Pahang: Kuala Tahan, 300 ft., 19th November, 1922; 1 ♀.

Perak: Tanjong Malim, 22nd December, 1923; 2 ♂.

According to Mr. Robinson and Dr. Hacker this species is common round Kuala Lumpur, and is known as "the scarlet mosquito," from its resemblance in size and build to a species of *Culex*. Mr. Pendlebury states that it is common round mango trees. It is just possible that this may be the same as Doleschall's *Limnobia sanguinea*, but if so the wing is very incorrectly drawn.

***Thrypticomys ? apicalis* Wied.**

Selangor: Kuala Lumpur, various dates; 3 ♂, 3 ♀.

Negri Sembilan: Kuala Pilah, 28th December, 1923; 1 ♂, 2 ♀, "apparently ovipositing in green slime in a small ditch; soil, clay."

The dark tip to the wing is much less conspicuous than in some specimens of this species in the British Museum from Ceylon, but there is otherwise no difference.

**Rhipidia (s. str.) griseipennis** Edw.

Pahang: Cameron's Highlands, No. 4 Camp, 4800 ft., 17th October, 1923; 1 ♀ at light.

**Rhipidia (s. str.) rostrifera** Edw. (Plate I, fig. 3).

Pahang: Fraser's Hill, 4000 ft., 31st August, 1923. (*M. R. Henderson*); 1 ♂.

**Rhipidia (s. str.) morionella** sp. n.

*Head* dull black. Front moderately broad. Proboscis distinctly produced, as long as the head. Antennae and palpi blackish. First flagellar segments in ♂ each with two long pubescent appendages, last three segments simple, shortly oval. Flagellar segments of ♀ shortly oval, almost globular, with very short necks. *Thorax* entirely shining black. *Abdomen* dull black; genitalia of normal structure; fleshy claspers of ♂ moderately large, spines of rostrum very short. *Legs* blackish, but the second, third and fourth segments of all the tarsi white. *Wings* hyaline with dark veins; the only dark mark is the small brownish stigma. *Sc* ending opposite base of *Rs* (♂), or distinctly beyond it (♀); *Rs* short, less than half as long as  $R2 + 3$ ; discal cell open. Halteres blackish, base of stem ochreous.

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

Selangor: Kuala Lumpur, Damansara Rd., 31st March, 1924; type ♂; 14th February, 1924; 1 ♀ "hanging on spider's web"; 30th February, 1924; 1 ♀ at light; 20th May, 1924; ♂ at light; 25th December, 1924; 1 ♀ at light.

In spite of the very different coloration, this interesting species is evidently allied to *R. rostrifera* Edw. In size and colour it strongly suggests the European *Dicranomyia morio* F. The habit of resting on spiders webs noted by the collector is worthy of note in connection with the white-tipped tarsi, which are shown by nearly all species adopting this habit, irrespective of the genus to which they belong.

**Rhipidia (Arhipidia) pulchra** de Meij.

Selangor: Kuala Lumpur, district hospital, July 1921; 1 ♀; 25th December, 1924; 1 ♀, at light.

Pahang: Lubok Tamang, 3500 ft., 7th-12th June, 1923; 2 ♂, 2 ♀, at light.

Perak: Batang Padang, Jor Camp, 1800 ft., 2nd June, 1923; 1 ♀, nocturnal.

**Geranomyia scutellata** sp. n.

♀. *Head* blackish, somewhat dusted with grey, especially on the narrow front, which appears almost whitish in consequence. Antennae black; flagellar segments rather

elongate oval. Proboscis black, about as long as the abdomen; palpi apparently with only a single segment. *Thorax* mostly shining blackish brown above, the shoulders lighter and grey-dusted; scutellum entirely pale yellowish; pleurae entirely ochreous. When viewed from in front the praescutum appears greyer and shows traces of two dull black lines posteriorly. *Abdomen* dark brown above, lighter beneath. *Legs* dark brown, coxae and trochanters ochreous. *Wings* greyish-tinged, stigma small but distinct, brown; very small dark brown clouds at the base of *Rs*, tip of *Sc* and tip *R2* + *3*. *Sc* ending beyond middle of *Rs*, *Sc* 2 close to its tip; *Cu 1a* at the base of the open discal cell. Costal fringe very short. Halteres dark brown, except extreme base of stem.

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

Pahang: Lubok Tamang, 3500 ft., 12th June, 1923; 1 ♀.

Nearly allied to *G. nitidia* de Meij. and *G. atrostriata* Edw., but probably distinct by the yellow scutellum and open discal cell.

***Geranomyia linearis* Alex.?**

Selangor: Kuala Lumpur (*Dr. A. T. Stanton*); 1 ♀.

***Geranomyia flavitarsis* sp. n.**

*Head* dark greyish, the narrow front almost white. Antennae and proboscis black, the latter rather longer than the head and thorax together. Palpi distinctly two-segmented. *Thorax* reddish brown; praescutum with three narrow darker brown stripes, the lateral pair somewhat abbreviated in front, but extending on to the scutum; postnotum darkened at the sides. *Abdomen* dark brown. Fleshy claspers of male very large and broad; rostrum without obvious spines. *Legs* with the coxae, trochanters and bases of femora ochreous, femora darker towards the tips; tibiae brown, somewhat lighter at the tip; tarsi wholly light yellowish. *Wings* greyish-tinged, with seven brown spots towards the costal margin, the first four very small, situated near the arculus, in the middle of *Sc*, at the base of *Rs* and the tip of *Sc*; the last three spots larger, at the tips of the radial branches, the last two being confluent; between them are two yellowish areas on the costa. *Sc* reaching to middle of *Rs*, *Sc* 2 close to its tip; *R2* + *3* rather sharply curved up at the tip; *Cu 1a* well before the base of the discal cell. Halteres brownish.

Length of body, 6 mm.; wing, 7 mm.

Pahang: Gunong Tahan, 5500 ft., 6th January, 1923; type ♀, at light; 27th January, 1923; 1 ♂ (immature).

Closely related to *G. semistriata* Brun., *G. septemnotata* Edw., and *G. flaviventris* Brun., but apparently well distinguished by the colour of the legs.



**Geranomyia circipunctata** Brun.

Java: Batavia, 27th April, 1923; 1 ♂, 1 ♀.

**Limnobia longiradius** sp. n. (Plate I, fig. 4).

♂. *Head* dark brown above and behind; front narrow, silvery; face and the extremely short proboscis ochreous. Antennae black; flagellar segments rounded to shortly oval, last two more elongate, each with a long dorsal hair about twice as long as the segment and with a short neck. Palpi very short, black; apart from the small palpiger with only two segments, the first slender, about three times as long as broad, the second small and rounded. *Thorax* ochreous-brown; praescutum with the margin and interspaces and a capillary median line blackish brown; scutum with two dark areas alternating with three lighter ones. *Abdomen* dark brown, lighter beneath. Hypopygium of the *Dicranomyia* type; fleshy claspers small, rostrum long and very slender, with a single rather short black spine at its base. *Legs* brownish, coxae lighter, tips of femora somewhat darker. Claws with a single long sharp basal tooth or spine. *Wings* with the ground-colour largely brown, with a conspicuous pattern of dark brown and whitish areas as in the figure. *Sc* ending opposite apex of *Rs*; tip of *R1* reaching far beyond *r*; *Cu 1a* well before base of discal cell. Halteres with brownish stem and black knob.

Length of body, 5-6.5 mm.; wing, 7-9 mm.

Pahang: River Tahan, 350 ft., 22nd-25th November, 1923; 2 ♂.

*L. longiradius* is nearly allied to *L. trigonia* Edw. (Sumatra) and *L. opima* (Alex.) (Queensland), all three agreeing in the silvery frons and reduced palpi, and having wing-markings of a similar type. From both the allied species (as well as from most other species of *Limnobia*) the new form differs in the long tip of *R1* and in the structure of the hypopygium. The European *L. decemmaculata* Lw. is another member of the same group of species, though with much less distinct wing-markings.

Since writing the description of this species I have seen specimens from the island of Buru.

**Limnobia trigonia** Edw.

Selangor: Kuala Lumpur, 21st mile Gombak Valley, 16th October, 1921; 1 ♂.

Originally described from Sumatra, a variety of this species has been reported by Alexander from the Philippines.

**Limnobia pendleburyi** sp. n. (Plate II, fig. 42).

*Head* dark grey. Front very narrow, the eyes practically touching for a short distance in the ♀ and for a longer distance in the ♂. Antennae dark brown; basal flagellar segments rounded, the rest rather elongate oval. Proboscis

and palpi brownish. *Thorax* brownish-ochreous, scutum with two darker brown spots, postnotum darker brown. Praescutal interspaces and scutum with longish black hair. *Abdomen* ochreous, each segment with a moderately broad blackish-brown apical band. Genitalia ochreous. Anal valves of ovipositor moderately long, genital valves black at the base. Hypopygium large, of peculiar structure; only one pair of claspers; side pieces with ventral basal processes which surround the massive aedaeagus. *Legs* brownish-ochreous, tarsi darker; femora and tibiae dark brown at the tips. Claws rather small and simple. *Wings* subhyaline, veins dark; stigma small, dark grey; a distinct grey seam on the base of *Rs*, and fainter seams over the cross-veins. *Sc* ending above apex of *Rs*; *r* at tip of *R1*; *Cu 1a* at base of discal cell. Halteres ochreous, stem darkened apically.

Length of body, 6.5 mm.; wing, 7-8 mm.

Pahang: Cameron's Highlands, No. 4 Camp, 15th-20th June, 1923; 17th October, 1923 and 13th-14th March, 1924; 4 ♂, 2 ♀, at light. Sungai Ringlet, 3500 ft., 10th March, 1925; 1 ♀, at light (abdomen darker in this specimen, the bands indistinct).

This rather obscure species is related to *L. mjobergi* Edw. (Borneo). It has also a superficial resemblance to *Libnotes indica* (Brun.). The peculiar hypopygium is in some respects similar to that of *Libnotes fijiensis* Alex., and allied species.

***Limnobia infixa* Walk.**

Pahang: Lubok Tamang, 3500 ft., 11th June, 1923; 1 ♀.

This very much resembles the last in colour and venation, but has much more distinct clouds at the base and tip of *Rs* and over *Sc* 2.

***Limnobia marginata* Brun.** (Plate II, fig. 43).

Pahang: Lubok Tamang, 3500 ft., 7th June, 1923; 1 ♂ at light.

This was previously only known from the female. The male before me agrees well with Brunetti's type. It has a rather remarkable hypopygium of the *Dicranomyia* type. The fleshy claspers are rather small, with a small rostrum which has no distinct spines, the place of these being taken by a very long slender bare appendage developed from the base of the clasper below the rostrum; a rather similar structure occurs in *L. bicolor* (Brun.) and *L. biceps* Alex.

***Limnobia striopleura* Edw.**

Pahang: Cameron's Highlands, No. 4 Camp, 4800 ft., 18th June, 1923; 1 ♂ at light.

This also was only known till now from the type female. The male has a hypopygium of simple structure, the fleshy claspers very small.

**Limnobia umbrata** (de Meij.).

Selangor: Kuala Lumpur, various dates; 10 ♂, 10 ♀.

Java: Tjisoeroepan, 4200 ft., 20th April, 1923; 5 ♀, at light.

**Limnobia annulifemur** de Meij.

Perak: Jor Camp, 2000 ft., 29th August, 1922. (*E. Seimund*); 1 ♀.

Pahang: Cameron's Highlands, No. 4 Camp, 4800 ft., 1 ♀, at light. Sungai Ringlet, 3500 ft., 9th-13th March, 1925; 8 ♂, at light.

These specimens differ from those from Java and Sumatra in having no clear areas in the cells at the tip of the wing, or only very small ones, but evidently belong to the same species.

Genus **LIBNOTES** O.-S.

This genus now includes a rather large number of species showing a considerable total range of structure. Some of the least specialised forms are difficult to separate from the genera *Limnobia* and *Dicranomyia*, but agree with the other species in the length of *Sc*, which nearly always in *Libnotes* extends distinctly beyond the apex of *Rs* (this very seldom being the case in *Limnobia* and never in *Dicranomyia*); and by having the cell *M1* more or less distinctly longer than cell *M3* (the reverse being the case in both *Limnobia* and *Dicranomyia*). Apart from this, the majority of the species of *Libnotes*, including all the specialised forms, have the vein *Ax* distinctly sinuous near the base and *Cu 1a* is placed well beyond the base of the discal cell, a character of rare occurrence in *Limnobia*.

The species of *Libnotes* fall mainly into three groups, but there are so many intermediate forms that they are difficult to classify. However, as I have had the advantage of examining nearly all the described species, I venture to offer the following key for their determination:

1. Vein *Ax* more or less sinuous, converging towards or at least parallel with *An* for some distance at the base.....2  
 Vein *Ax* practically straight except for the down-curved tip, slightly and evenly divergent from *An*; cell *M1* not much longer than cell *M3*; discal cell not unusually long; *Rs* curved or even angulate at the base (? subgenus *Goniodineura* v.d. Wulp).....53
2. Cell *M1* much longer than cell *M3*; its base seldom much beyond the middle of the discal cell, which is usually very long; dorsal hairs of flagellar segments usually not much longer than the segments.....3  
 Cell *M1* only a little if any longer than cell *M3*, its base beyond three-quarters of the length of the discal cell,

- which is not so long; dorsal hairs of flagellar segments generally at least twice as long as the segments.....28
3. Small species; *Rs* distinctly curved; wing-markings consisting of dark clouds at the base and apex of *Rs* and on the cross-veins; eyes touching for a long space.....*perkinsi* (Grimshaw).  
Larger species; *Rs* straight and oblique; wing-markings otherwise, eyes at least narrowly separated.....4
4. Wings with one or more extra cross-veins.....5  
Wings without extra cross-veins.....7
5. With extra cross-veins in cells  $R2 + 3$  and  $R4 + 5$ ; very large species with yellow wings...*regalis* Edw.  
With extra cross-vein in cell  $R2 + 3$  only.....6
6. Wings conspicuously seamed with brown along many of the veins.....*fuscinervis* Brun.  
Wings almost clear.....*transversalis* de Meij.
7. Tip of *R1* turned sharply up at *r*.....8  
*R1* continued at least a short distance beyond *r* before turning up at the costa.....13
8. Wings quite unmarked except for the stigma.....  
.....*imponens* (Walk.)  
Wings with other dark markings.....9
9. Wings with only a few dark areas on the veins.....10  
Wings with very numerous dark dots and streaks...11
10. Lighter; wings without brown tinge; *M3* without spur *notata* v.d. Wulp; \**restricta* Alex.; \**solomonis* Alex.;  
.....*howensis* Alex.  
Darker; wings with strong brown tinge; *M3* often with short spur near base projecting into discal cell.....  
.....? *notata* v.d. Wulp, var. (Christmas Island).
11. Pleurae with conspicuous broad blackish stripe across the middle.....*greenwoodi* Alex.  
Pleurae without such stripe.....11a
- 11a. Pleurae with two narrow dark stripes, as in *L. punctipennis*; small species.....*puella* Alex.  
Pleurae with a small dark mark only.....12
12. Praescutum with broad blackish border...*oralis* sp. n.  
Praescutum without blackish border.....  
.....*strigivena* (Walk.)
13. A dark stripe crossing the lower part of the sternopleura; knob of halteres more or less dark.....14  
Sternopleura either unicolorous or with a small dark patch, not a stripe; wings with numerous dark spots and streaks on the veins.....23

14. *Rs* spurred; wings with a strong yellow tinge; femora black at the tips.....\* *regina* Alex.  
*Rs* not spurred; wings at most slightly yellowish; femora with a dark subapical ring, tips lighter....15
15. Wings with only a few dark seams on the veins....16  
Wings with numerous dark spots and clouds.....20
16. *R4* + *5* with a dark seam near the tip only.....  
.....*affinis* de Meij.  
*R4* + *5* with a dark seam along its basal three-fourths, but not at the tip.....17
17. Smaller; horizontal part of tip of *R1* at most as long as vertical part.....*limpida* Edw.  
Larger; horizontal part of tip of *R1* much longer than the vertical part.....18
18. Abdomen with a continuous black median longitudinal stripe.....*vittata* Edw.  
Abdominal stripe not continuous.....19
19. Dark stripe broken up into separate spots.....  
.....*vitta* var. *punctiventris* var. n.  
Abdomen ochreous without even dark spots dorsally  
.....*vittata* var. *luteiventris* Edw.
20. Tip of *R1* not longer than *r*; base of cell *M1* at two-thirds of discal cell.....21  
Tip of *R1* about twice as long as *r*; base of cell *M1* about middle of discal cell; scutellum largely dark.....22
21. Scutellum all pale; upper pleural stripe narrow and inconspicuous.....  
.....*punctipennis* de Meij. (*distincta* White)  
Scutellum dark at sides; upper pleural stripe broad and conspicuous.....*pleuralis* sp. n.
22. Wings very narrow; spots on veins with slight tendency to fusion; penis strongly bilobed at tip...*greeni* sp. n.  
Wings rather broader; spots on veins tending to run together into streaks, especially on veins *R4* + *5* and *M1* + *2*; penis not distinctly bilobed at tip.....  
.....*punctatineris* sp. n. (? *poeciloptera* O.-S. ♀)
23. Halteres and scutellum entirely yellow.....24  
Halteres with dark knob; scutellum dark at the sides.....27
24. Tip of *R1* about as long as *r*.....\* *notatineris* Brun.  
Tip of *R1* considerably longer than *r*.....25
25. Sides of praescutum with a conspicuous blackish area just behind the pseudosuture.....*scutellata* Edw.  
This marking absent.....26

26. Wings without distinct yellow tinge....*stantoni* Edw.  
 Wings with a strong yellow tinge.....*stantoni*  
 ....var. *sumatrana* Edw. (? *poeciloptera* O.-S. ♂)
27. Femora with a dark pre-apical ring....*alexanderi* Edw.  
 Femora with the actual tips dark.....*undulata* Mats.
28. Wings with numerous dark dots along the veins;  
 femora with two dark rings with a whitish ring  
 between them; tibiae dark with a pale ring near the  
 base; tip of *R1* continued beyond *r*.....  
 ....*quadrifurca* Walk. (*punctatissima* de Meij.)  
 Wings and legs quite otherwise; tip of *R1* turned up  
 at *r*.....29
29. *Cu 1a* close to apex of discal cell (slightly before or  
 beyond).....30  
*Cu 1a* little if any beyond middle of discal cell....32
30. Wings with two faint greyish transverse bands.....  
 ....*subfasciata* Edw.  
 Wings without greyish bands.....31
31. Thorax and abdomen unicolorous ochreous.....  
 ....*innotabilis* (Walk.)  
 Praescutum with four dark patches; abdominal ter-  
 gites with median basal dark spots..*aequalis* (Walk.)
32. Wings with distinct markings.....33  
 Wings without markings other than the stigma and  
 sometimes a slight seam on the cord.....39
33. A complete transverse dark band close to the base of  
 the wing.....34  
 No such band present, but three dark spots towards  
 costa, at base of *Rs*, apex of *Sc* and apex of *R1*...35
34. A second complete band just beyond the cord; front  
 margin of praescutum black.....*trifasciata* sp. n.  
 This band absent; praescutum with four confluent black  
 spots across the middle.....*aurantiaca* Dol.
35. Ground colour of wings rather dark brownish; *Rs*  
 straight.....*sphagnicola* Edw.  
 Ground colour of wings nearly hyaline; *Rs* somewhat  
 curved.....35a
- 35a. *R2* + 3 strongly curved downwards at both ends....  
 ....*nohirai* Alex.  
*R2* + 3 less strongly curved, at least proximally....36
36. Stigma large; conspicuous seams along veins at tip  
 of wing.....*terrae-reginae* Alex.  
 Stigma small; veins at tip of wing clear.....37
37. Cord and apex of discal cell distinctly clouded.....  
 ....*longinervis* Brun.  
 These veins clear.....38

38. Praescutum unicolorous.....*tritincta* Brun.  
Praescutum striped.....\* *tripunctata* de Meij.
39. Ground-colour of wings dark brownish.....40  
Ground-colour of wings hyaline.....42
40. Abdomen wholly reddish-brown....*ferruginata* Edw.  
Abdomen partly black.....41
41. Abdomen black at the tip only.....\* *termitina* O.-S.  
Abdomen with black lateral line.....\* *subopaca* Alex.  
Abdomen wholly black.....\* *semperi* O.-S.
42. *Rs* rather long (3-5 times as long as basal section of  
*R4 + 5*) (compare also *samoensis* Alex. ♀).....43  
*Rs* short, straight and oblique (at most twice as long  
as basal section of *R4 + 5*).....48
43. Praescutum ochreous with six black spots round the  
margin.....*punctithorax* Brun.  
Praescutum otherwise coloured.....44
44. Femora with a narrow black pre-apical ring; eyes large  
and touching.....*megalops* Edw.  
Femora without distinct black ring; eyes (in all ?)  
narrowly separated.....45
45. Praescutum striped; hind tibia (in the type) remark-  
ably short, much shorter than the long first tarsal  
segment.....*impressa* (Walk.)  
Thorax unicolorous reddish-ochreous.....46
46. *Cu 1a* before middle of discal cell; hind tibia normal  
.....*thwaitesiana* Westw. (= *rufa* de Meij.)  
*Cu 1a* at middle of discal cell.....47
47. Stigma absent.....\* *simplex* O.-S.  
Stigma elongate, greyish.....\* *opaca* Bezzi.
48. Apical cells straight; cross-vein *r* straight; *Sc* reaching  
well beyond apex of *Rs*.....\* *recta* nom. n.  
.....(*Dicranomyia nervosa* de Meij.)  
Apical cells distinctly curved; cross-vein *r* generally  
angled and spurred; *Sc* reaching only a short distance  
beyond apex of *Rs*.....49
49. Stigma large; the portion of cell *Sc* before it darkened;  
veins of cord thickened.....\* *manni* Alex. ♂;  
.....*samoensis* Alex. ♂; *nervosa* de Meij. ♂  
Stigma small, round or oval; veins of cord not con-  
spicuously thickened.....50
50. Thorax light ochreous, with a pair of blackish spots  
at the suture.....*lutea* Edw.  
Thorax otherwise coloured.....51
51. Praescutum ochreous brown with a dark brown  
median stripe.....\* *parvistigma* Alex.

- Praescutum yellow with three dark stripes.....  
 .....\* *manni* Alex. ♀  
 Thorax with dark ground-colour, or light without  
 stripes.....52
52. Praescutum with darker brown median stripe.....  
 .....*nervosa* de Meij. ♀ (*immaculipennis* White)  
 Praescutum without distinct stripes.....  
 .....*samoensis* Alex. ♀; \* *obliqua* Alex.
53. *Sc* extremely long, almost reaching the tip of *R1*, and  
 much swollen at the tip.....*subcostalis* Edw.  
*Sc* shorter; not swollen at the tip.....54
54. *Rs* and *R2* + 3 both angulated near the base.....  
 .....*nigriceps* v.d.W.  
 At least *R2* + 3 not angulated near the base.....55
55. Wings with at least narrow dark seams over the base  
 of *Rs* and the cross-veins.....56  
 Wings quite unmarked except for the stigma.....61
56. A large dark spot at the base of *Rs*.....57  
 Only a narrow dark seam at the base of *Rs*.....59
57. Praescutum with four rounded black marks.....  
 .....\* *picta* Alex.  
 Praescutum with a dark median stripe, broadest  
 behind.....58
58. A large dark spot over the cord... \* *montivagans* Alex.  
 Only a narrow seam at the cord, but a dark spot at  
 the wing tip.....*trimaculata* (Brun.)
59. *Cu 1a* near base of discal cell, which is under twice  
 as long as broad; male hypopygium of the ordinary  
*Dicranomyia* type.....60  
*Cu 1a* near middle of discal cell; side-pieces of hypo-  
 pygium with long subapical ventral projections,  
 which are curved upwards; only one pair of  
 claspers.....*fijiensis* Alex.
60. Thorax unicolorous yellowish.....*forcipata* de Meij.  
 Praescutum with a black median line in front.....  
 .....*indica* (Brun.)
61. Thorax mainly ochreous; praescutum with a black  
 median line in front.....\* *signaticollis* (v.d. Wulp)  
 ..... (*familiaris* de Meij., ? O.-S.)  
 Thorax largely dark, at least on the dorsum.....62  
 Praescutum without such marking.....
63. Hypopygium of the normal *Dicranomyia* structure.  
 Pleurae ochreous; abdomen unbanded.....  
 .....*nigricornis* Alex.  
 Hypopygium constructed as in *L. fijiensis*.....64



64. Pleurae ochreous; abdomen unbanded.....  
 .....*veitchiana* Edw.  
 Pleurae dark brown; abdomen with posterior margins  
 of tergites ochreous.....*toxopei* Edw.

*L. marginalis* Bezzi and *L. pulchripes* Alex., are not included in the above table; the former appears from the description to be a true *Limnobia*, and the latter has now been placed in another genus. *Limnobia rectangulum* Riedel is possibly a *Libnotes*. Species marked \* have not been examined by the author and some of them may possibly be wrongly placed in the key.

**Libnotes oralis** sp. n.

♀. *Head* ochreous. Antennae with the scape black; flagellum ochreous. Palpi and proboscis black. *Thorax* ochreous. Scutum and praescutum with a conspicuous blackish border extending from the wing-roots round the front, where it is broader, but leaves the front margin narrowly ochreous brown. Praescutum also with a pair of small dark spots just in front of the suture. Scutellum and postnotum whitish, the latter black at the sides towards the base. Pleurae unmarked except for a small blackish spot on the upper part of the sternopleura. *Abdomen* ochreous with narrow black lateral stripes and a single rather large blackish spot in the middle of the second tergite. *Legs* ochreous; front coxae with a transverse black mark in front; front femora broadly black at the tip, tibiae narrowly black at base and tip; mid and hind femora with a dark brown subapical ring, tibiae dark at tip only. *Wings* hyaline, the veins with numerous small dark dots, the most conspicuous of which is at the tip of *Sc*. Venation as in *L. notata* v.d.W.; tip of *R1* turned sharply up to the costa at *r*. Halteres ochreous.

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

Perak: Jor Camp, 2000 ft., 29th August, 1922. (*E. Seimund*); 1 ♀.

This is nearer to *L. strigivena* Walk. (New Guinea) than to any previously described Oriental species, but is quite distinct by the thoracic markings. Walker's type male of *L. strigivena*, which is still in fair condition, shows the following diagnostic points: first segment of antennae ochreous, as is the proboscis. Pronotum dark on the anterior and lateral margins. Praescutum without dark margin, but with the two dark spots posteriorly. Scutum with two dark stripes. Postnotum only slightly blackened at the sides basally. Sternopleura with two transverse blackish marks, one above and one below. *Abdomen* with distinct dark spots on the third and fourth tergites, as well as the larger one on the second. *Wings* almost exactly as in *L. oralis*.

Since describing this species I have examined a male from the island of Buru.

**Libnotes vittata** var. **punctiventris** var. n.

♂. Differs from typical *L. vittata* Edw. (from Sumatra) as follows:—Praescutum with a pair of very distinct oval dark brown spots in the middle near the suture, in addition to the pair of short stripes. Postnotum rather broadly margined with brown laterally, apart from the deep black spots at the basal corners. Dark median stripe of the abdomen broken up into separate spots. *Wings* and hypopygium as in the type.

Peninsular Siam: Nakon Sri Tamarat, Khao Luang, 2000 ft., 25th March, 1922; 1 ♂.

**Libnotes punctatinervis** sp. n. (Plate I, fig. 5).

*Head* rather bright ochreous. Antennae with the scape black, flagellum dark brown, lighter beneath; segments of the usual form, verticils short and inconspicuous. Proboscis dark brown, palpi black. *Thorax* with the ground-colour rather bright ochreous, somewhat pruinose. Praescutum with four brown stripes, the middle pair contiguous and running the whole length, but much more conspicuous posteriorly, where they form a pair of dark brown spots just in front of the suture; lateral pair of stripes short and indistinct. Scutum with a pair of large dark brown spots. Scutellum wholly whitish yellow; postnotum dark brown, with an indistinct yellowish median line. A narrow and very ill-defined dark brown stripe runs from the neck to the base of the wings; another more definite stripe crosses the sternopleura and the hypopleura, ending below the base of the halteres. *Abdomen* ochreous-brown, with indefinite dark brown lateral stripes, most distinct on the first two segments. Hypopygium rather closely resembling that of *L. stantoni*, but the tip of the penis much less distinctly bilobed. *Legs* ochreous-brown with the usual pre-apical dark brown ring on the femora; coxae marked with dark brown. *Wings* with the ground-colour slightly greyish, the veins marked with numerous dark brown patches; these more or less as shown in the figure, but somewhat variable, especially on  $R_4 + 5$ , which in some specimens has the dark area broken up into small dots. Terminal section of *R1* quite twice as long as *r*; *M1* arising about the middle, *Cu 1a* placed well before the middle of the discal cell. Halteres with ochreous stem and blackish knob.

Length of body, 9–13 mm.; wing, 10–17 mm.

Pahang: Cameron's Highlands, No. 4 Camp, 4800 ft., 15th June, 1923; 1 ♂ (type) at light. Gunong Tahan, 5500 ft., 6th December, 1922 and 24th January, 1923; 1 ♂, 2 ♀, at light. Gunong Tahan, Padang, 5500 ft., 12th December, 1921; 1 ♂.

Bhutan: 2500 ft., July-September, 1915. (G. C. Dudgeon); 1 ♂, in British Museum.

Assam: Shillong, 5500-6400 ft., 29th August, 5th September, 1915. (S. W. Kemp); 1 ♀, in Indian Museum.

India: Ghumti, Darjiling district, 4000 ft., July, 1911. (F. K. Gravelly); 1 ♂, at light, in Indian Museum.

This species has apparently very much in common with *L. notatinervis* Brun., and in fact the last two mentioned above were so determined by Brunetti. But apparently the type female of *L. notatinervis* (which I have not seen) must be a distinct species, as the figure shows the tip of *R1* much shorter, with a single dark area over it and *r*, instead of two more or less distinctly separated dark spots as in the new species. Moreover Brunetti's description does not mention dark markings on the pleurae, and states that the halteres are "yellowish brown," without referring to the blackish knob which is so distinct in all specimens of *L. punctatinervis* which I have examined.

This is probably the species recorded from Java by Osten-Sacken as the female of his *L. poeciloptera*. The species recorded under this name from Ceylon by Brunetti and Senior-White is similar, but distinct by its wing-markings and by having the penis with a conspicuously bilobed tip as in *L. stantoni*.\*

**Libnotes pleuralis** sp. n. (Plate I, fig. 6).

♀. *Head* ochreous above, dark brown at the sides. Antennae with the scape black, flagellum brown, of normal structure. Palpi black. *Thorax* with the ground colour ochreous. Praescutum with four dark areas posteriorly, the middle pair produced somewhat forwards, but not nearly reaching the front margin. Scutum with two dark areas, pale ochreous in the middle. Scutellum broadly dark at the sides, pale in the middle. Postnotum dull dark brown, with a small blackish spot on each side at the base. A broad and conspicuous dark stripe extends across the upper part of the pleurae from the neck to the base of the wing; a much narrower and less conspicuous stripe crosses the front coxae, the sternopleura and the hypopleura. *Abdomen* ochreous, with narrow lateral black stripes and a faint median dorsal brown line; first tergite wholly dark brown. *Legs* ochreous; the femora with a rather broad but ill-defined subapical dark brown ring which on the front pair almost reaches the tip. Tips of tibiae black. *Wings* as figured; in venation and markings much resembling *L. notatinervis* Brun. Halteres ochreous, knob not darkened.

\* I suggest the name *L. greeni* sp. n. for the Ceylon species. Type ♂ in British Museum from Peradeniya (E. E. Green). Characters as in the key.

♂. Resembles the ♀, but larger; scutellum less extensively dark at sides; postnotum largely pale in the middle, broadly dark on lateral and posterior margin.

Length of body, ♂ 14, ♀ 10 mm.; wing, ♂ 17.5, ♀ 12.5 mm.

Selangor: Kuala Lumpur, 21st mile, Gombak Valley, 17th October, 1921; 1 ♀.

Pahang: Fraser's Hill, 4000 ft., 29th August, 1923. (*M. R. Henderson*); 1 ♂.

Were it not for the conspicuous pleural stripe, I should have regarded this as *L. notatinervis* Brun., but the difference seems distinguish it sufficiently clearly.

**Libnotes punctipennis** de Meij.

Selangor: Kuala Lumpur, 26th April, 1924; 1 ♀, at light; 20th March, 1925; 1 ♂, at light.

**Libnotes stantoni** Edw. (= ? *L. poeciloptera* O.S.).

Pahang: Cameron's Highlands, No. 4 Camp, 4300 ft., 13th–22nd June, 1923, and 11th–13th March, 1924; 8 ♂, 2 ♀, at light. Lubok Tamang, 3500 ft., 7th June, 1923; 1 ♂, at light.

Peninsular Siam: Nakon Sri Tamarat, Khao Luang, 3000 ft., 23rd March, 1922; 1 ♂.

After examining the above series of specimens, I feel convinced that the type of *L. stantoni* (a single female from Kedah) has its wing-markings abnormally reduced; the specimens now before me agree with the type, except in having the dark spots and clouds on the wings more numerous. It also seems certain that my *L. sumatrana* is at most a variety of the same species.

The present specimens are rather darker than the types from Sumatra, the ground colour of the wings less yellow, and the markings towards the base of the wing tend to unite into a large patch; but the hypopygial structure is identical, and the thoracic markings are the same and fairly constant, the chief variation being in a small ill-defined dark patch immediately above and in front of the base of the middle coxa, which may be present or absent. The species is evidently very closely allied to *L. scutellata* Edw., the main distinction being the absence of definite black spots on the margin of the praescutum just in front of the pseudosuture, which characterise *L. scutellata*.

According to Osten-Sacken's description, *L. stantoni* differs from *L. poeciloptera* in the thoracic markings, the praescutum having only a pair of dark spots posteriorly, instead of an approximate median pair and an abbreviated lateral pair of stripes. But since Osten-Sacken mentions a difference in colour of the halteres between his two specimens it seems highly probable that he had two distinct

species before him, and he may have described the thoracic markings from the female. In that case his male type (from Sumatra) may have been *L. stantoni*, while his female type (from Java) may have been *L. alexanderi*.

In view of the doubt and confusion, and the fact that various distinct forms have certainly been recorded as *L. poeciloptera*, it seems best to let this name drop until the type can be re-examined.

**Libnotes trifasciata** sp. n.

♂. *Head* ochreous. Antennae with the first segment ochreous, the remainder black; flagellar segments each with a single strong dorsal hair which is about one and a half times as long as the segment. *Thorax* rather bright ochreous, dusted over with a whitish bloom. Praescutum and postnotum with the lateral margins rather broadly black; no other dark markings. *Abdomen* ochreous; unmarked except for a narrow black lateral stripe on the first tergite. Hypopygium of the ordinary structure. *Legs* ochreous, tibiae and tarsi darker; hind femora with traces of a dark subapical ring. *Wings* with hyaline ground-colour, very iridescent, with three grey transverse bands: one near the base one just before the base of *Rs*, and one just beyond the cord. Grey spots at the tip of the discal cell and over *r*, which is long and bent in the middle. Cells *M1* and *M3* equal at base; *Cu 1a* before middle of discal cell. Halteres long, ochreous.

Length of body, 11 mm.; wing, 13.5 mm.

Pahang: Gunong Tahan, 5500 ft., 15th December, 1922; 1 ♂, at light.

An extremely distinct species on account of its banded wings.

**Libnotes nervosa** de Meij.

N. Syn. *L. immaculipennis* White.

Selangor: Kuala Lumpur, various dates; 18 ♂, 8 ♀.

Java: Tjisoeroepan, 4300 ft., 20th April, 1923; 1 ♂, at light.

The long series of specimens taken at the same place is of interest as showing that there is some sexual dimorphism in the species. The male usually has the stigma long, often with a paler area in the middle; the area of the costal cell yellowish; *r* placed well beyond the upturned end of *R1*, with a long spur; veins of cord thickened and darkened. The female has a small round stigma; costal cell clear; *r* but little beyond upturned end of *R1* and with short spur; veins of cord scarcely thickened and not darkened. One or two of the males have wings like those of the female, and there are also several intermediates in the series. From examination of the type, it is evident that

*L. immaculipennis* White is the ♀ of *L. nervosa* de Meij.; *L. parvistigma* Alex. is probably also identical, and *L. obliqua* Alex., *L. manni* Alex., and *L. samoesis* Alex. do not seem to be well distinguished.

**Libnotes nigriceps** (v.d. Wulp).

Selangor: Kuala Lumpur, various dates; 4 ♂, 12 ♀.

Regarding some of the specimens, the collector notes that the thorax and abdomen were apple-green in life.

**Libnotes forcipata** de Meij.

Pahang: Kuala Tembeling, 5th February, 1923; 1 ♂.

**Libnotes nigricornis** Alex.

Pahang: Cameron's Highlands, No. 4 Camp, 4800 ft., 20th June, 1923; 1 ♂, at light.

Differs from the nearly allied *L. forcipata* de Meij. in the colour of the thorax and the much fainter seams over *Rs* and the cross-veins, also in the much smaller claspers. It also differs from Alexander's description in having the mesonotum much darker than the ochreous pleurae, and in venation, *Cu 1a* being nearer the base of the discal cell and cell *M1* less retracted at the base. I have however seen a female from Mt. Tjibodas, Java (the type locality for *L. nigricornis*) which agrees in all these points with the Malayan specimen and I therefore make the identification with little hesitation.

Tribe **Antochini.**

Genus **Helius** St. Farg.

This genus is now known to include numerous Oriental species. Excluding those reported by Alexander from Japan, they may be arranged as follows:—

Cross-vein *r-m* placed at or beyond fork *Rs* (*Helius* s. str.).

*Cu 1a* at or close to base of discal cell.

Wings with the tip dark: *apicalis* Alex.

Wings with the costal border dark: *funicosta* sp. n.

Wings with at most the stigma dark.

Rostrum brownish-yellow.

Veins yellow, membrane yellowish: *unicolor* Brun.

Veins dark, membrane clear.

Cells *M1* and *M3* equal at base: *ferruginosa* Brun., ? *fratella* Brun.

Cell *M1* much narrower at base: *inconspicuus* Brun., *rufescens* Edw.

Rostrum blackish: *nigriceps* Edw.; *monticola* Edw., *barbatus* Edw.

*Cu 1a* near middle of discal cell.

Wings banded: *pictus* Edw., *subfasciatus* Alex.

Wings with stigma only: *kambangani* de Meij.,  
*fasciventris* Edw.

Cross-vein *r-m* well before fork of *Rs*.

Rostrum about as long as the head (*Eurhamphidia*).

*R2* + 3 long, not turned up at tip: (*longinervis*  
sp. n.

*R2* + 3 shorter and turned up at tip.

Knees and tarsi white: *niveitarsis* Skuse.  
(*abnormalis* Brun.).

Legs uniformly ochreous: *mirus* Edw.

Rostrum as long as head and thorax together (*Rhampholinnobia*).

Wings reticulate: *reticularis* Alex.

### **Helius unicolor** Brun.?

Selangor: Kuala Lumpur, 13th February, 1924; 1 ♂,  
at light.

The specimen agrees with Brunetti's description except that the discal cell is rather large and pointed at the base; there is also a slight difference in the length of *R2* + 3, which in the present specimen is shorter than in Brunetti's type, ending only slightly beyond the tip of *R1*.

### **Helius fumicosta** sp. n.

♂. *Head* and its appendages black. Rostrum barely as long as the height of the head. Antennae very little longer than the head; first eight flagellar segments rounded to shortly oval, the rest slender and longer; verticils short. *Thorax* dark reddish brown, unmarked. *Abdomen* dark brown; hypopygium as figured. *Legs* dark brown; coxae and tarsi lighter. *Wings* with a strong brown tinge, the whole costal cell and a narrow seam beyond the stigma as far as the wing-tip dark brown. *Sc 1* longer than *Sc 2*; *R2* + 3 nearly twice as long as *Rs*, and ending only just before the middle point between the tip of *R1* and that of *R4* + 5; *r-m* well beyond base of *R4* + 5; *Cu 1a* slightly beyond base of discal cell, which is not longer than broad. Halteres dark brown.

Length of body, 6 mm.; wing, 7 mm.

Pahang: Wray's Hill, 800 ft., 9th December, 1921;  
2 ♂ (including type).

Selangor: Kuala Lumpur, 21st mile, Gombak Valley,  
13th October, 1921; 2 ♂.

One specimen shows an interesting abnormality in the venation, *M2* being forked near the tip.

***Helius ferruginosus* (Brun.)?**

Peninsular Siam: Nakon Sri Tamarat, Khao Luang, 2000 ft., 18th March, 1922; 1 ♀, at light.

In this specimen *r-m* is placed just before instead of at the fork of *Rs*, as in Brunetti's type.

***Helius kambangani* (de Meij.).**

Selangor: near Kuala Lumpur, 6th May, 1923; 1 ♂, in interior of Batu Caves.

This differs from de Meijere's description and figure mainly in having *r-m* rather longer and more oblique, joining  $R\frac{1}{2} + 5$  close to the base. As in the figure, the stigma is rather narrow and elongate, filling the apex of cell *R1*; there is no trace of darkening round the wing-tip or on the cord. The legs are very long and thin (more so than usual in this genus), brownish in colour. It is interesting to note that de Meijere's specimens were also obtained in a cave.

***Helius apicalis* (Alex.).**

Pahang: Lubok Tamang, 3500 ft., 12th June, 1923; 1 ♀, at light.

***Helius longinervis* sp. n.**

♂. *Head* blackish, dusted with grey. Rostrum barely as long as the height of the head, black. Antennae about as long as head and thorax together, blackish, second segment light brownish. First four or five flagellar segments cylindrical, each over three times as long as broad, the rest gradually shorter; all with rather dense and even pubescence about as long as the diameter of the segments; verticils short and inconspicuous. Palpi black. *Thorax* dull ochreous, scutellum and postnotum somewhat darker and rather shining. *Abdomen* dark brown. Hypopygium rather long, ochreous. Outer clasper long, slender, straight, scarcely bifid at tip; inner clasper also long, not much swollen at base. *Legs* brown, coxae lighter, femora darker at base. *Wings* mainly hyaline, veins all dark brown. Stigma oval, dark brown. Slight brown seams at the arculus, the base of *Rs*, round the tip of the wing, over the cord, and on the hind margin on each side of the tip of *Cu 2*. *Sc* reaching just beyond apex of *Rs*, *Sc 2* at its tip;  $R2 + 3$  unusually long for a member of this genus and approaching the condition found in *Elephantomyia*, its base arched, its tip not at all turned up and ending at a point in the costa about two-thirds of the distance from *R1* to  $R\frac{1}{2} + 5$ ; *r-m* vertical; joining *Rs* a short distance before the fork; discal cell small, almost square, *Cu 1a* placed at its middle. Knob of halteres dark brown.

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





3. Abdomen unicolorous.....*taiwanicola* Alex.  
 Abdomen banded, at least on sternites.....*majus* Edw.

**Ceratocheilus latifrons** (Brun.).

Kedah: Gunong Jerai (Kedah Peak), November-December 1915. (*C. Boden Kloss*); 1 ♂.

Genus **Toxorhina** Lw.

The collection contains examples of two species of this genus, both of which appear to be distinct from the three hitherto recorded from the Oriental region. These five species may be distinguished as follows:—

1. Head black, dusted with grey.....2  
 Head ochreous; pleurae with dark stripe.....4  
 2. Pleurae striped; abdomen banded.....*fasciata* Edw.  
 Pleurae unicolorous; abdomen unbanded.....3  
 3. Pleurae dark; discal cell open.....*incerta* Brun.  
 Pleurae ochreous; discal cell closed.....*occlusa* sp. n.  
 4. Praescutum less produced, ochreous with dark stripes  
 .....*trichorhyncha* Edw.  
 Praescutum strongly produced, uniformly dark.....  
 .....*producta* sp. n.

**Toxorhina occlusa** sp. n.

*Head* black, strongly dusted over with bluish-grey. Front about half the width of one eye, quite flat. Antennae entirely black, alike in the two sexes, of the usual structure, hairs on terminal segments long. Rostrum black, nearly as long as the body in the ♂, rather shorter in the ♀. Palpi indistinguishable. *Thorax* dark brown dorsally, slightly dusted with grey; shoulders indistinctly ochreous; pleurae entirely ochreous. Praescutum moderately produced. *Abdomen* dark brown, unbanded, genitalia ochreous. *Legs* dark brown, coxae and trochanters ochreous. *Wings* nearly clear, iridescent, veins dark, no stigma. Discal cell closed, *Cu 1a* just beyond its base. In one wing of the ♂ there is an accessory cross-vein in cell *R5*. Halteres blackish.

Length of body, ♂ 5, ♀ 6 mm.; rostrum, 4.5 mm.; wing, ♂ 5, ♀ 5.8 mm.

Pahang: Fraser's Hill, 4000 ft., 29th August, 1923; 1 ♂, 1 ♀, at light.

This is the only one of the five Oriental species which possesses a closed discal cell.

**Toxorhina producta** sp. n.

♀. *Head* ochreous. Front rather narrow, somewhat produced above the antennae. Antennae and proboscis black. Flagellum longer than usual in this genus, the long hairs at the tip less conspicuous. Rostrum as long as the

whole body. Neck long and slender, black. *Thorax* with the praescutum very strongly produced forwards, uniformly dull brown like the rest of the mesonotum. Postnotum with a median furrow; pleurae with a sharply margined black stripe along the upper part, extending from the neck to the base of the abdomen; below this stripe the pleurae are pale ochreous. *Abdomen* brownish, tergites with rather narrow obscurely dark basal bands. Ovipositor long. *Legs* blackish brown, except for the ochreous coxae. *Wings* greyish, veins dark. Discal cell open; cell *M3* a little longer than its stem; *Cu 1a* before the fork of *M*. Halteres dark brown.

Length of body, 8.5 mm.; rostrum, 8.5 mm.; wing, 5.7 mm.

Perak: Batang Padang, Jor Camp, 1800 ft., 30th May, 1923; 1 ♀, at light.

This species has a superficial resemblance to *Ceratocheilus brevifrons* (Brun.).

**Orimarga borneensis** Brun.

Selangor: Kuala Lumpur, various dates; 4 ♀.

**Antocha nebulosa** sp. n. (Plate II, fig. 44).

*Head* blackish, with a heavy grey dusting. Front moderately broad. Antennae alike in the two sexes; entirely black; first ten flagellar segments small and rounded, short-haired, with short pubescence beneath, last four more elongate and without ventral pubescence. Proboscis yellowish. Palpi dark brown. *Thorax* dull reddish ochreous, the praescutum with one broad median dark stripe which is usually almost black in front but gradually fades out behind; in the ♂ this stripe is less distinct; no other markings, but the pronotum and postnotum somewhat darkened. *Abdomen* brownish-ochreous, genitalia lighter. *Legs* slender with the coxae and trochanters ochreous, femora ochreous at the base, darkening to brown at the tips, tibiae and tarsi dark. *Wings* slightly opaque, base whitish; a greyish seam along *Ax*; a faint transverse grey fascia in the middle; another narrower but rather more distinct, at the cord; tip also greyish; stigma rather dark grey. *Rs* very long (longer than *R4 + 5*), slightly bent downwards near the tip; *r* rather faint, at distal end of stigma; *r-m* equal to the first section of *M1*; *Cu 1a* just before base of discal cell. Halteres ochreous, knob sometimes brownish.

Length of body, 4.5 mm.; wing, 4.5-5.5 mm.

Pahang: Lubok Tamang, 3500 ft., 7th-8th June, 1923 and 10th-16th March, 1924; 1 ♂, 9 ♀, at light. Cameron's Highlands, No. 4 Camp, 4800 ft., 12th October, 1923; 1 ♀, at light.

This new form has more resemblance to the Japanese *A. satsuma* Alex. than to any of the Indian species described

by Brunetti, but is quite distinct. The greyish markings of the wings are not visible by transmitted light.

***Antocha flavella* sp. n.**

♀. *Head* yellow. Antennae with the scape yellow; flagellum brownish, segments shortly oval, with pubescence as long as their diameter. Proboscis yellow; palpi brownish. *Thorax* light yellow; praescutum somewhat darkened in the middle towards the front. *Abdomen* yellow; ovipositor rather long and slender, nearly straight. *Legs* slender, yellowish, tips of femora scarcely darkened. *Wings* slightly milky, veins light brownish, stigma small, dark grey, bisected by the cross-vein. *Rs* not very long (shorter than  $R2 + 3$ ); *r* its own length beyond base of  $R2 + 3$ , and well before *r-m*, which is twice as long as the basal section of *M1*; *Cu 1a* about half its length before base of discal cell. Halteres pale yellow.

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

Pahang: Cameron's Highlands, No. 4 Camp, 4800 ft., 20th June, 1923; type ♀, at light. Lubok Tamang, 3500 ft., 16th March, 1924; 1 ♀, at light.

***Antocha fusca* sp. n.** (Plate II, fig. 45).

*Head* dark grey. Front very broad. Antennae entirely black; flagellar segments in the ♂ rather elongate oval, terminal segment shorter, pubescence conspicuous, evenly distributed and about as long as the diameter of the segments; in the ♀ rather more shortly oval and with rather shorter pubescence. Proboscis yellowish; palpi dark brown. *Thorax* rather dark brown, with a slight and uniform greyish bloom; praescutal stripes barely distinguishable. *Abdomen* dark brown; ovipositor ochreous, shorter and more curved than in the last two species. *Legs* very slender, dark brown. *Wings* very slightly opaque, iridescent, veins all dark brown; stigma faint, bisected by the cross-vein. *Rs* longer than  $R4 + 5$ , straight; *r* above *r-m*, which is equal to the first section of *M1*; *Cu 1a* from one-third to half its length before base of discal cell. Halteres with the stem ochreous, knob dark brown.

Length of body, 3 mm.; wing, 3.8 mm.

Pahang: Lubok Tamang, 3500 ft., 7th June, 1923 and 10th March, 1924; 10 ♂, 2 ♀, at light.

***Antocha javanensis* Alex.**

Java: Buitenzorg, 8000 ft., 15th April, 1923; 1 ♀, at light.

Although at first sight very similar to *A. fusca*, sp. n., this species differs in the yellow halteres, the somewhat shorter *Rs*, and the position of *r* close the outer end of the stigma, which is much more distinct.

**Antocha indica** Brun.

Perak: Batang Padang, Jor Camp, 1800 ft., 10th October, 1923; 1 ♀.

Pahang: Kuala Teku, 500 ft., 5th December, 1921; 1 ♀.

A larger and more stoutly built species than the last two, the body more brownish ochreous.

**Orimargula intermedia** sp. n.

*Head* blackish, with a slight grey dusting. Front rather narrow. Antennae and palpi dark brown. Antennae of the male about two-thirds as long as the body; first flagellar segment about half as long again as the second; pubescence evenly spread, nearly twice as long as the diameter of the segments. Antennae of female slightly longer than the head and thorax together; first flagellar segment about six times as long as broad, and nearly twice as long as the second; pubescence rather shorter than in the male. *Thorax* brown, without distinct markings, rather darker anteriorly, slightly shining. *Abdomen* rather dark brown. *Legs* dark brown, very slender. *Wings* slightly opaque, veins dark brown, stigma barely distinguishable. *Rs* rather longer than the first section of  $R4 + 5$ ; *r* strong, scarcely its own length beyond the base of  $R2 + 3$ ; *r-m* twice as long as the vertical section of *M1*; *Cu 1a* nearly twice its length before the fork of *M* and just beyond the level of the apex of *Rs*; stem of cell *M3* less than half as long as the last section of *Cu 1*. Halteres dark brown, base of knob ochreous.

Length of body, 3.5 mm.; wing, 4.2 mm.

Selangor: Kuala Lumpur, 8th-9th March, 1923; 1 ♂, 1 ♀, at light.

This species is of interest on account of the intermediate length of the male antennae, connecting the ordinary form of the genus with the long-horned species, such as *O. gracilicornis* Edw.

**Orimargula gracilicornis** Edw.?

Perak: Batang Padang, Jor Camp, 1800 ft., 25th June, 1923; 1 ♀, at light.

As this species was previously only known from a male from Sumatra, the identification of the present specimen is somewhat open to question. It agrees with the type of *O. gracilicornis* and differs from *O. intermedia* in the more yellowish-brown thorax and the position of *Cu 1a* a little before the level of the base of *Rs*. The antennae are rather shorter than in the female of *O. intermedia*.

**Orimargula brevivena** sp. n.

*Head* blackish, front narrow. Antennae with the scape light ochreous, flagellum blackish. In the ♂ the antennae

are as long as or slightly longer than the whole body; the flagellar segments about equal in length, cylindrical, with scanty but very long and evenly distributed hairs which are about six times the diameter and about equal to the length of the segments. Antennae of ♀ about as long as head and thorax together, rather shorter than in *O. intermedia*, the first flagellar segment only about four times as long as broad. Palpi blackish. *Thorax* and *abdomen* brownish-ochreous, scarcely shining, unmarked. Hypopygium small, side pieces barely twice as long as wide. *Legs* brownish. *Wings* slightly milky, without distinct stigma; veins dark. *Rs* about half as long as the first section of  $R4 + 5$  (a little more than half in ♂, distinctly less than half in ♀); *r* strong, at or scarcely beyond fork of *Rs* in ♂, more than its own length distant from the fork in ♀; *r-m* less than twice as long as vertical section of *M1*; *Cu 1a* a little beyond level of base of *Rs*; stem of cell *M3* about one-third as long as the last section of *Cu 1*.

Length of body or of ♂ antennae, 3 mm.; wing, 3.5 mm.

Perak: Batang Padang, Jor Camp, 1800 ft., 9th March, 1924; type ♂, at light; and 2nd June, 1923; 1 ♀, "nocturnal."

The two specimens being taken at the same place I have referred them to the same species, though the difference in venation may indicate two distinct forms. The most striking difference from both *O. intermedia* and *O. gracilicornis* is the shortness of *Rs*; the ♂ is very similar to *O. gracilicornis*, but differs in the shorter hypopygium and rather shorter and slightly differently constructed antennae. In describing the Sumatran species I omitted to notice that the flagellar segments of the male antennae, except the first, have each two slight enlargements, and that the long hairs are to a large extent concentrated on these areas, the slightly constricted middle part being nearly bare.

#### *Atarba argentata* sp. n.

*Head* shining ochreous. Front nearly as broad as one eye. Antennae with the scape ochreous, flagellum rather dark brown. In the male the first flagellar segment is large and swollen, the rest all very slender, with rather long hairs. In the female the antennae are rather longer and considerably stouter than in the male, the flagellar segments all rather elongate oval, hairs not so long. Proboscis ochreous; palpi with the first three segments ochreous, the last black. *Thorax* uniformly ochreous, dorsum shining; pleurae (in mature specimens) silvery when viewed from above. *Abdomen* brownish; venter and bases of tergites lighter. Penis long and curved. *Legs* uniformly ochreous, the femora not in the least darkened at the tips. *Wings* with a slight yellow tinge, veins light brown; no stigma or other markings. *Sc* ending just before middle

of *Rs*; third costal division (between apex of *R1* and that of *R2* + 3) barely half as long as the fourth; discal cell nearly as long as cell *M3*; *Cu 1a* a little beyond base of discal cell. Halteres ochreous.

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

Pahang: Lubok Tamang, 3500 ft., 7th–10th June, 1923; 1 ♂, 2 ♀, at light. Cameron's Highlands, 4800 ft., 15th October, 1923 and 12th–14th March, 1924; 2 ♂, 4 ♀, at light. Tanah Rata, 4500 ft., 13th January, 1924. (*M. R. Henderson*); 1 ♀.

This is more nearly related to *A. javanica* Alex. than to *A. flava* Brun., differing slightly in the venation, and also in the absence of dark tips to the femora, the absence of a dark mark on the pleurae, and the partly ochreous palpi.

#### *Atarba infuscata* sp. n.

♀. Differs from *A. argentata* as follows:—*Head* brownish. Last palpal segment rather shorter and deeper black, in striking contrast with the ochreous basal segments. *Thorax* with the mesonotum dark brownish, praescutum and scutum obscurely lighter in the middle, scutellum light brown. Pleurae with the upper half blackish the lower half pale ochreous, with only a very slight silvery sheen. *Abdomen* rather darker in colour, with a black patch at the base of the ovipositor.

Pahang: Cameron's Highlands, No. 4 Camp, 4800 ft., 14th–20th June, 1923; 2 ♀, at light.

#### *Atarba marginata* sp. n.

Differs from *A. argentata* as follows:—Scape of antennae dark. Praescutum and scutum with the lateral margins rather broadly black. Postnotum dark brown. Pleurae without silvery sheen, but with a narrow dark brown stripe extending from the base of the postnotum to between the front and middle coxae, fading out below. Abdominal tergites with the basal half ochreous, apical half dark brown. Penis nearly straight. All femora with the tips narrowly but conspicuously black. Discal cell smaller; *Cu 1a* exactly at its base.

Pahang: Cameron's Highlands, No. 4 Camp, 4800 ft., 18th June, 1923; 1 ♂ (type); 14th October, 1923; 1 ♂, No. 5 Camp, 29th January, 1924. (*M. R. Henderson*); 1 ♀.

#### *Teucholabis pahangensis* sp. n.

♂. *Head* shining black. Proboscis and palpi dull black. Proboscis about as long as the head. Flagellar segments rounded, the last few oval. *Thorax* brightly shining; prothorax, a pair of rather large triangular marks on the front of the praescutum and an area above the hind coxae orange; middle of scutum and the whole scutellum lemon yellow; rest of thorax, black. *Abdomen* shining

black, sternites 2-4 ochreous at the base; sternite 5 with the usual swollen hairy area in the middle; sternite 7 greatly swollen and nearly bare, with a large roughened transverse patch. *Legs* shining black, very finely pubescent; only the front coxae and trochanters, the base of the front femora, and the middle trochanters ochreous. Hind tibiae swollen at the tip, and concave on the inner side. *Wings* with hyaline ground colour, veins black; tip broadly brown, as far as the apex of the discal cell; a conspicuous dark brown fascia extends from the stigma to the fork of *Cu*; a rather large dark brown spot at the base of *Rs* and another at the tip of *Ax*; none at the arculus. Cells *M1* and *M3* equal at base, rather shorter than the narrow discal cell. Halteres with black stem and yellow knob.

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

Pahang: Lubok Tamang, 3500 ft., 24th June, 1923; 1 ♂.

This belongs to a small group of closely related species typified by *T. glabripes* de Meij., *T. ornata* Brun. and *T. assamensis* Brun. The new form is evidently very close indeed to *T. glabripes*, differing in the black hind coxae and the heavier wing pattern, with spots at the base of *Rs* and tip of *Ax*. If subsequent examination should prove that there are no structural differences in the abdomen between this and de Meijere's type, it would probably be better to treat *T. pahangensis* as a variety of *T. glabripes*.

***Teucholabis siamensis* sp. n.**

♀. Differs from *T. pahangensis* as follows:—Orange spots on praescutum much smaller. *Abdomen* all black. All coxae and trochanters as well as the basal halves of the front and middle femora orange. *Wings* with a large dark spot at the arculus; the spots on *Rs* and *Ax* connected, forming a broad dark fascia. Abdominal sternites and tip of hind tibia simple (as probably is the case in other females of this group).

Peninsular Siam: Nakon Sri Tamarat, Khao Luang, 2000 ft., 19th March, 1922; 1 ♀, at light.

***Teucholabis bicolor* O.-S.**

Selangor: Kuala Lumpur, 21st mile, Gombak Valley, 12th October, 1921; 1 ♂.

Peninsular Siam: Nakon Sri Tamarat, Khao Ram, 750-1200 ft., 24th February, 1922; 1 ♂.

***Teucholabis plecioides* de Meij.**

Pahang: Lubok Tamang, Gunong Terbakar, 4500 ft., 9th June, 1923; 1 ♂.

The specimen is rather larger than de Meijere's type, and has the thorax uniformly reddish.



**Gymnastes nigripes** sp. n. (Plate I, fig. 7).

♂. *Head* ochreous, somewhat shining, with an ill-defined dark median stripe; hair dark. Antennae with the first segment brownish ochreous, rest black; flagellar segments with rather long pubescence on the under side only; the first few rounded, the rest oval. Palpi and proboscis blackish. *Thorax* shining black. *Abdomen* blackish-brown, somewhat shining, with dark hair. *Legs* dark brown, unmarked, densely clothed with small blackish scales. *Wings* blackish, with three white transverse bands, one at the base, not quite reaching the costa, the other two rather narrower and tending to be interrupted in the middle, placed just before and at the end of the discal cell. *R2* about as long as and in a line with *R2* + 3; *r* meeting *R2* close to the base. Halteres black, the outer half of the knob yellow.

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

Selangor: Kuala Lumpur, 21st mile, Gombak Valley, 16th October, 1921; 4 ♂.

Perak: Batang Padang, Jor Camp, 2000 ft., 30th May, 1923; 1 ♂.

This is nearly allied to *G. pictipennis* Edw., *G. fascipennis* (de Meij.) and *G. bistrilatipennis* Brun., differing from the first-named in the absence of a yellow ring on the femora, and from all in the details of venation and wing-markings.

**Gymnastes pictipennis** Edw.

Selangor: Kuala Lumpur, 6<sup>3</sup>/<sub>4</sub> miles, Cheras Road, 1st April, 1923; 1 ♂

Pahang: Cameron's Highlands, 3500 ft. (*Dr. H. P. Hacker*); 1 ♂.

**Gymnastes berumbanensis** sp. n.

♂. *Head* black above, ochreous at the sides, rather distinctly dusted over with grey; hair long and black. Front distinctly broader than one eye. Antennae and mouthparts black. First three flagellar segments rounded, with long pubescence beneath, and long dorsal hairs; following segments oval, gradually more elongate, with long verticils. *Thorax* shining black, without obvious metallic gloss; a small area immediately below the wing root brownish. *Abdomen* blackish, scarcely shining, the hind margins of the segments rather conspicuously reddish, especially on the venter; hypopygium blackish; hair black. *Legs* dark brown, without pale rings, densely clothed with purplish-black scales. *Wings* with a slight yellowish tinge, with three complete but disconnected transverse blackish bands, the first at the level of the base of *Rs*, the second across the cord, and the third, much broader than the other two,

occupying the apical fourth of the wing; a small separate blackish spot over the outer end of the discal cell.  $R_2$  about as long as and in a line with  $R_2 + 3$ , ending in costa just beyond tip of  $R_1$ ;  $r$  meeting  $R_2$  at or close to the base. Halteres entirely yellow, stem scarcely darker than the knob.

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

Pahang: Cameron's Highlands, Gunong Berumban, 5500–6000 ft., 14th March, 1924; 1 ♂ (type). Tanah Rata, 4800 ft., 13th March, 1925; 1 ♂.

Quite distinct from all the other described species of this group by the colour of the halteres, though the wings are very similar to those of *G. pictipennis* Edw. The second specimen resembles the type in the colour of its thorax, but has wing-markings like those of the variety *rufilatera*, described below.

***Gymnastes berumbanensis* var. *rufilatera* var. n.**

♂. Differs from *G. berumbanensis* as follows:—Praescutum ochreous, with three black stripes which are not quite confluent; pleurae ochreous except for a small black spot on the lower part of the sternopleura; abdomen more extensively reddish ochreous, the hypopygium entirely so. A distinct dark cloud at the anal angle of the wing; the first two transverse bands rather broader and connected in the lower basal cell.

Length of body, 7 mm.; wing, 6.5 mm.

Pahang: Cameron's Highlands, No. 5 Camp, 29th January, 1924. (*M. R. Henderson*); 2 ♂.

***Styngomyia manicata* sp. n.**

♂. *Head* blackish, somewhat dusted with grey. Antennae with the first segment greyish-brown, second black; flagellum brown at the base, darker apically. Palpi black. *Thorax* black; praescutum shimmering greyish in the middle, giving a faintly striped appearance in some lights. Bristles normal; discal rows well developed; the four main bristles of the scutum moderately long and subequal. *Abdomen* black, scarcely shining. Hypopygium with the true ninth sternite deeply indented at the tip; upper claspers long, with the usual long terminal hair; side pieces with a moderate terminal projection bearing a long stout spine, closely adjacent to and below which is a second shorter spine. *Legs* black; front femora and tibiae narrowly yellow at the base; segments 2–4 of front and hind tarsi light yellow; segments 2–4 of middle tarsi obscurely brownish at the base. *Wings* rather strongly tinged with greyish-brown, darker in cell  $R_2 + 3$  and along *Cu*; the usual dark areas over cross-veins and near the tip of *Ax* considerably darker than the ground colour but very ill-defined; a series of three or four darker clouds faintly

indicated in cell *R*<sub>2</sub> + 3. Veins all dark. Cell *M*<sub>1</sub> just sessile. Tip of *A*<sub>1</sub> gently curved down. Halteres black.

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

Peninsular Siam: Nakon Sri Tamarat, Khao Luang, 2000 ft., 19th–26th March, 1922; 2 ♂, at light.

This well-marked species has more resemblance to the African *S. leucopeza* Edw. than to any other hitherto described; from this it differs especially in the black first segment of the hind tarsi.

***Stringomyia armata* Edw.**

One specimen (abdomen broken), in company with the above, 19th March, 1922.

***Stringomyia papuana* Edw.**

Selangor: Kuala Lumpur, 20th April, 1924; 1 ♂, 1 ♀, in "belukah."

This is nearly allied to *S. javana* Edw., *S. borneana* Edw. and other species of this group, differing chiefly in details of genital structure, also in the indistinct outer ring of the front and hind femora. The specimens agree closely with the types, which were from eastern New Guinea.

***Stringomyia ceylonica* Edw.**

Selangor: Kuala Lumpur, 6th December, 1923; 1 ♀.

Tribe **Eriopterini.**

***Molophilus malayensis* sp. n.** (Plate II, fig. 46).

*Head* blackish across the middle; occiput and frons ochreous, with yellow hair. Antennae alike in the two sexes; scape and most of flagellum ochreous brown, the latter becoming darker apically; terminal segment small and black, rather conspicuously darker than the penultimate; all flagellar segments shortly oval, with moderately long verticils. Palpi black. *Thorax* rather dark brown, dull; margin of mesonotum narrowly yellowish. *Abdomen* dark brown; genitalia lighter. Hypopygium rather large but not very elongate; claspers black, structure as figured. *Legs* dark brown. *Wings* almost uniformly clothed along the veins with dark brown hair, but that along the costa on about the basal half of the wing is whitish. Venation normal. Halteres dark brown.

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

Pahang: Cameron's Highlands, 4800 ft., 17th–18th October, 1923 and 11th–14th March, 1924; 11 specimens (including type ♂), at light. Tanah Rata, 4800 ft., 12th–17th January, 1924. (*M. R. Henderson*); 7 ♂, 1 ♀, at light.

From the somewhat similar *M. costalis* Edw. (Formosa) this species differs obviously in its dark legs and halteres.

**Taseocera orientalis** sp. n.

♀. *Head* dark brown, face lighter. Antennae with the scape ochreous; flagellum dark brown, the segments all rather shortly oval, with long verticils in the middle, about twice as long as the diameter of the segments, and just before the tip with two or three short bristles directed straight forwards. Labium ochreous, palpi dark brown. *Thorax* and *abdomen* uniformly brownish ochreous with brown hair. Last abdominal segment paler; anal valves rather long and sickle-shaped. *Legs* long and very slender, dark brown. *Wings* clothed with long dark hair; fringe on posterior margin very long, even longer than the diameter of the wing. Venation very much as in *T. tenuicornis* Skuse; *Sc* apparently ending about opposite middle of *Rs* (though it approximates so gradually to the costa that it is difficult to ascertain its termination); cell *R2* almost square at the base; *Cu 1a* placed well before fork of *M*; discal cell open; *Ax* very short and very close to the hind margin, ending below base of cell *M*. Halteres dark brown.

Length of body, 2.5 mm.; wing, 3.3 mm.

Pahang: Cameron's Highlands, 4800 ft., 11th March, 1924; 1 ♀, at light.

The genus *Taseocera* has hitherto been known only from Australia. Two species from outside that region have been referred to the genus, but incorrectly. *Taseocera minutissima*, described by me in 1911 from Seychelles is really a *Molophilus*, while Riedel's *T. fragilicornis* from Formosa is quite unrelated and has recently been made by Alexander the type of a new genus *Taiwanomyia*. The present new species is evidently very closely related to the Australian *T. tenuicornis* Skuse.

**Erioptera nigribasis** sp. n. (Plate I, fig. 8).

♀. *Head* yellow, clothed with yellow hair, dense black hair below. Antennae black; flagellar segments round to oval, terminal not much smaller than the penultimate. Palpi very short, black. *Thorax* uniformly yellowish ochreous, dorsum scarcely darker, with yellow hair. *Abdomen* light yellow, with a narrow black lateral line. Ovipositor ochreous, moderately long, cerci rather strongly curved. *Legs* with the coxae ochreous; front trochanters and about the basal halves of all the femora blackish, the rest yellow. *Wings* with a slight yellowish tinge, with conspicuous brown markings in the membrane: the whole of cells *C* and *Sc*, spots over the cord, a large spot over the base of cell *R2*, smaller spots at the base of *Rs* and the tips of *R1*, *R2*, *R3*, *M3*, *Cu 1*, *Cu 2*, and *Ax*, and a broad seam over the outer half of *R4 + 5*. Hair on veins long, yellowish. (In figure 8, the wing-fringe has been cut down to about half its proper length). *Cu 1a* and *r-m* in one line, just before middle of wing; *Rs* rather short; *R2 + 3*

long, longer than *Rs* and about equal to *R2*; base; of *R2* short, transverse, without macrotrichia, and placed well outside the base of cell *M3*. Halteres yellowish.

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

Pahang: Cameron's Highlands, No. 4 Camp, 4800 ft., 14th June, 1923; 1 ♀. Gunong Tahan, 5500 ft., 15th December, 1922; 1 ♀, at light.

A very pretty little insect, related to *E. punctipennis* Brun., but quite distinct.

**Erioptera tahanensis** sp. n.

♀. *Head* rather light ochreous, somewhat darker in the middle, with blackish hair. Antennae with the first and third segments ochreous, remainder dark brown; flagellar segments oval, terminal one shorter. Palpi black. *Thorax* rather light brown, with black hair. *Abdomen* darker brown; ovipositor rather long, ochreous. *Legs* uniformly brownish ochreous. *Wings* with a slight brownish tinge, costal and subcostal cells more ochreous; stigma distinct, oval, dark brown. Hair on veins long, dark; fringe moderately long. *Rs* long, but not quite as long as *R2*; cells *M3* long, its base scarcely beyond base of cell *R2*; *A<sub>1</sub>* long and strongly sinuous. Halteres blackish, base of stem ochreous.

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

Pahang: Gunong Tahan, 5500 ft., 25th January, 1923; 1 ♀.

A rather distinct species on account of the well-marked stigma.

**Erioptera notata** de Meij.

Selangor: Kuala Lumpur, 12th February, 1924; 1 ♀, at light.

Java: Buitenzorg, 16th August, 1923; 1 ♂, 1 ♀, at light.

The palpi are rather dark brownish, so that the distinction in colour between this and *E. nigripalpis* is not very well marked, but the hypopygia are of course very distinct. The parameres in the specimen before me are long and sharp pointed, not quite as figured by de Meijere.

**Erioptera nigripalpis** de Meij.

Pahang: Cameron's Highlands, No. 4 Camp, 4800 ft., 17th June, 1923; 1 ♂, at light; 12th March, 1925; 1 ♂, at light. Sungai Ringle, 3500 ft., 10th March, 1925; 1 ♂, at light.

**Erioptera orientalis** Brun. (Plate II, fig. 48).

Pahang: Gunong Tahan, 5500 ft., 10th December, 1922 and 19th January, 1923; 4 ♂.

The specimens agree with a female in the Indian Museum. The species is remarkable for the extreme shortness of hair on the wings. Hypopygium as figured.

**Erioptera abrasa** sp. n. (Plate II, fig. 47).

♂. Colour wholly light ochreous, except the palpi; which are rather dark brown, and the wings, which are somewhat greyish. Flagellar segments all rather elongate oval, except the last, which is small and rounded; verticils rather long. Hypopygium as figured. Hair on veins extremely short, scarcely discernible with a lens; fringe short. *Rs* moderately long; about three times as long as  $R2 + 3$ , but much shorter than *R2*. Base of cell *R2* well inside that of cell *M3*. *Ar* only slightly sinuous.

Length of body, 3 mm.; wing, 3.8 mm.

Pahang: Gunong Tahan, 5500 ft., 16th January, 1923; 1 ♂, at light. Cameron's Highlands, No. 4 Camp, 4800 ft., 12th October, 1923; 2 ♂, at light.

This interesting new species agrees with *E. orientalis* Brun. in the practically bare wings but has a very different hypopygium.

**Erioptera parallela** Brun.

Pahang: Cameron's Highlands, Tanah Rata, 4800 ft., 12th January, 1924. (*M. R. Henderson*); 1 ♂, at light. No. 4 Camp, 12th October, 1923; 1 ♂, at light.

This, together with the following two, belongs to a small group of species distinguished by the great length of the apical cells of the wings and the comparative shortness of *Rs*. Among these species *E. parallela* is distinguished by its brownish ochreous colour.

**Erioptera argentifrons** sp. n.

*Head* blackish, the rather broad front conspicuously silvery-grey. Antennae and palpi black. Male antennae short, the first few segments of the flagellum rather short, the rest extremely thin, with long verticils. Female antennae rather longer, all the flagellar segments oval, the terminal one very small. *Thorax* shining black. *Abdomen* dull blackish, with short black hair. Hypopygium blackish; side pieces somewhat produced at the tip, which has a row of three or four stout almost spine-like bristles; claspers somewhat as in *E. subfusca* Edw., but the black knob of the outer clasper more spinose; aedaeagus of complicated structure, with six long sharp points, four of which are blackened. Ovipositor ochreous. *Legs* with the coxae and trochanters ochreous, the rest black. *Wings* dark grey; veins with long black hair; fringe very long. Venation as in *E. fusca* de Meij.; cord just before middle of wing; *Rs* short; less than twice as long as  $R2 + 3$  and less than half as long as *R2*. Halteres with the knob yellowish, stem black, yellowish at the base.

Length of body, 2·8–3 mm.; wing, 3·8–4 mm.

Pahang: Cameron's Highlands, No. 4 Camp, 4800 ft., 13th–18th June, 1923, 12th October, 1923 and 12th March, 1924; 14 ♂, 7 ♀ at light. Tanah Rata, 12th January, 1924. (*M. R. Henderson*); 4 ♂, 1 ♀, at light. Sungei Ringlet, 3500 ft., 10th March, 1925; 1 ♂, 1 ♀, at light.

Evidently nearly related to *E. fusca* de Meij., and *E. subfusca* Edw., differing from the former in the colour of the halteres and from both in the structure of the hypopygium.

#### **Erioptera fusca** de Meij.

Pahang: Lubok Tamang, 3500 ft., 7th June, 1923; 1 ♂, at light; 16th March, 1924; 1 ♀, at light. Cameron's Highlands, No. 4 Camp, 4800 ft., various dates; 5 ♂, 3 ♀, at light. Tanah Rata, 4800 ft., 12th–17th January, 1924. (*M. R. Henderson*); 2 ♂, 1 ♀, at light.

The hypopygium is constructed exactly as in *E. subfusca* Edw.; the distinction between the two therefore rests solely on the colour of the halteres. The front is somewhat silvery, though less conspicuously so than in *E. argentifrons*.

#### **Ilisia fenestrata** (de Meij.).

Pahang: Gunong Tahan, 5500 ft., 15th December, 1922; 1 ♂ at light. Fraser's Hill, 4000 ft., 31st August, 1923. (*M. R. Henderson*); 1 ♂, at light.

The legs are yellowish, the femora with two black rings, the inner ring on the front femora being very broad.

Pahang: Gunong Tahan, 5500 ft., 12th December, 1922; 1 ♀, at light. Cameron's Highlands, No. 4 Camp, 4800 ft., 13th June, 1923; 2 ♂, at light.

This species seems to be rather well distinguished by the whitish longitudinal stripe along the upper surface of the hind femora. As in many species of this genus and of *Erioptera*, the legs are covered with small scales.

#### **Empeda gracilis** de Meij.

*Head* light grey. Antennae, palpi and proboscis black. Flagellar segments round to rather shortly oval, the first two or three rather large. *Thorax* shining black dorsally, pleurae lighter; prothorax and a line between mesonotum and pleurae ochreous. *Abdomen* dull dark brown, lighter beneath, genitalia ochreous. *Legs* with the coxae and trochanters ochreous; femora black, each with a narrow and sharply defined pre-apical yellow ring; tibiae dark brown, hind pair rather lighter but with black tips; tarsi black, the basal half of the first segment pale yellow. *Wings* hyaline, veins dark; venation as in *E. gracilis* de Meij. Halteres yellow.

Length of body, 2·7–3 mm.; wing, 3–3·5 mm.

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CORRIGENDA ON PAGE 102.

*Empeda gracilis* de Meij., should be inserted after line 26 from top of the page, and before :  
“ Pahang, Gunong Tahan, 5,500 ft., 12th December.”

*Empeda tarsalis* sp.n. should replace *Empeda gracilis* de Meij., in line 14 from the bottom of the page.





Pahang: Cameron's Highlands, No. 4 Camp, 4800 ft., 13th-19th June, 1923; 1 ♀, at light.

Evidently nearly related to *E. femoralis* Edw. (Sumatra), differing in possessing a conspicuous pale ring on the tarsi as well as on the femora.

#### Genus GONOMYIA Mg.

Alexander has suggested the division of this genus into four subgenera, based largely on the length of *Sc* and the presence or absence of *R2*. While agreeing with him that there are indeed four main groups of the genus, which might well be regarded as valid subgenera, I consider that some redefinition of these groups is desirable. It is obvious for example that *G. nebulosa* de Meij. and *G. nubeculosa* de Meij. are very closely allied species and should not be placed in separate subgenera merely because one of them lacks the vein *R2*, already greatly reduced in the other; *G. nubeculosa* has obviously much more affinity with *G. nebulosa* than with typical species of *Gonomyia* such as *G. tenella* Mg. The same may also be said of other species, such as *G. sulphurella* O.-S. I would therefore propose to redefine the four subgenera as below. Apart from a very few aberrant forms, these definitions will, I believe, cover most of the known species of the genus.

1. Subgenus *Gonomyia* s. str. *Sc* ending opposite or a little beyond the base of *Rs*. *R2* + 3 more or less arched upwards. *R2* always distinct and oblique; *R3* curved down rather than up at the tip. Cell *R4* + 5 only slightly if at all narrowed at the tip. Discal cell normally present, not conspicuously narrowed at the base, and the three veins proceeding from it not noticeably divergent. *Cu 1a* at or a little beyond the base of the discal cell.

2. Subgenus *Lipophleps* Bergr. (*Liponeura* Skuse). *Sc* ending before or opposite the base of *Rs*. *R2* + 3 generally straight and continuing the direction of *Rs*. *R2* either absent or short and vertical. Cell *R4* + 5 generally conspicuously narrowed at the tip. Discal cell generally present and narrowed almost to a point at the base, the three veins proceeding from it generally strongly divergent. *Cu 1a* at or just before the base of the discal cell.

Here should be included all the species in which *R2* is missing, and also the following in which it is present, though short: *abbreviata* Lw. (Europe); *sulphurella* O.-S. and *noveboracensis* Alex. (N. America); *flavonotata* (Edw.) *sobrina* Alex., *nyasae* Alex., *sulphurelloides* Alex. (Ethiopian Region), and probably others.

3. Subgenus *Ptilostena* Bergr. *Sc* ending a little or considerably beyond the base of *Rs*. *R2* always present, and more or less vertical or even somewhat recurved (as in the type species). *R3* more or less distinctly curved up at

the tip. Cell  $R_4 + 5$  not narrowed apically. Discal cell never present. Cell  $M_1$  long-stalked.  $Cu\ 1a$  at least its own length before fork of  $M$ .

Here I would place the following species, amongst others: *sexguttata* Dale, *jucunda* Lw., *schrenki* Mik, *connexa* Lw. (Europe); *blanda* O.-S., *mathesoni* Alex. (N. America); *aldabrensis* Edw., *tuckeri* Alex. (Ethiopian Region).

4. Subgenus *Progonomyia* Alex.  $Sc$  ending near the apex of  $Rs$ .  $R_2$  always present, as long as  $R_2 + 3$  and little if at all oblique, more or less continuing the direction of  $R_2 + 3$ .  $R_3$  not curved up at tip. Cell  $R_4 + 5$  not narrowed apically. Discal cell present or absent, in the latter case cell  $M_1$  stalked.  $Cu\ 1a$  about at the fork of  $M$ . Cross-vein  $r$  sometimes faintly marked (*e.g.* in the type species).

This should include such species as the European *G. lateralis* Macq. and *G. alboscuteolata* v. Ros.

#### Subgenus *Gonomyia* s. str.

This includes four Oriental species: *affinis* Brun., *aperta* Brun., *bryanti* Alex., and *symmetrica* Edw. One of these is represented in the present collection.

#### *Gonomyia* (*Gonomyia*) ? *bryanti* Alex.

Pahang: Cameron's Highlands, 4800 ft., 12th-14th March, 1924; 2 ♀, at light.

#### Subgenus *LIPOPHLEPS* Bergr.

The Indian and Malayan species of this subgenus (as defined above) may be distinguished by the following key:—

1. Pleurae without stripes; tip of  $R_1$  usually abbreviated; wings clear.....*incompleta* Brun.  
Pleurae with distinct stripes; tip of  $R_1$  not abbreviated.....2
2. Pleurae with two distinct dark stripes; femora yellow.....*nebulosa* de Meij.  
Pleurae with one distinct whitish stripe on a dark ground; femora dark or with a dark pre-apical ring.....3
3. Wings without obvious markings.....4  
Wings more or less spotted or clouded, at least with the stigma distinct.....5
4.  $Sc$  ending well before base of  $Rs$ .. *flavomarginata* Brun.

7. Vein *R2* present, though very short.....8  
 Vein *R2* absent .....9
8. Scape of antenna dark, flagellum pale.....  
 .....*nubeculosa* de Meij.  
 Scape of antenna yellow above, dark below; flagellum  
 dark except for the first segment....*conjugens* White
9. Costa and *R1* conspicuously yellow; femora not dis-  
 tinctly ringed .....*hackeri* sp. n.  
 Costa and *R1* not yellow; femora with two dark  
 rings .....*pilifera* de Meij.

**Gonomyia (Lipophleps) ? incompleta** Brun.

Selangor: Kuala Lumpur, 13th February, 1924, and  
 7th mile, Cheras Road, 25th March, 1924; 2 ♀, at light.

These specimens differ from Brunetti's example from  
 India in having *R1* complete and ending distinctly in the  
 costa, but as this may not be a constant distinction, it does  
 not seem advisable to describe them as a new species, espe-  
 cially in the absence of the male. The venation is the same  
 as in the Japanese *G. insulensis* Alex.

**Gonomyia (Lipophleps) diffusa** de Meij.

Selangor: Kuala Lumpur, 13th March, 1923; 1 ♂, at  
 light.

Pahang: Lubok Tamang, 3500 ft., 16th March, 1924;  
 1 ♀, at light.

As in *G. hackeri* and related species, the segments of  
 the male flagellum have each two very long dorsal hairs,  
 but in the female these hairs are much shorter and less  
 conspicuous. The male has rather broad yellow apical bands  
 on the abdominal tergites, which are apparently absent in  
 the female.

**Gonomyia (Lipophleps) subnebulosa** sp. n.

♀. Rather similar to *G. (L.) conjugens* White, but  
 differing as follows:—Antennal flagellum with shorter  
 pubescence and rather longer verticil hairs. First segment  
 of front tarsus rather shorter, only half as long as the tibia.  
*Wings* nearly hyaline, with a faint brownish cloud across  
 the middle of the basal cells, extending into *Cu.*, and another  
 over the tip, besides slight clouds over the cord and the  
 cross-veins. Dark spots along the costa only very faintly  
 indicated, though the stigma is distinct. Costa and *R1* only  
 slightly yellower than the other veins. *Sc* ending far before  
 the base of *Rs*, which is much shorter; *R2* absent. *Cu 1a*  
 just before base of discal cell.

Pahang: Lubok Tamang, 3500 ft., 10th June, 1923  
 and 10th March, 1924, 3 ♀, at light. Cameron's Highlands,  
 No. 4 Camp, 4800 ft., 20th June, 1923; 1 ♀, at light.

**Gonomyia (Lipophleps) robinsoni** sp. n.

♀. Much resembles *G. (L.) subnebulosa*, differing as follows:—Base of antennae less distinctly yellow. Femora uniformly brownish, without pre-apical dark ring. Wings with similar faint markings, but the cloud in the upper basal cell fills the basal two-thirds of this cell and hardly extends into the lower basal; no trace of darker spots on costa; stigma hardly darker than the other markings. Sc not quite so short, though ending distinctly before base of Rs. Knob of halteres entirely dark instead of largely yellow.

Selangor: Kuala Lumpur, 6th December, 1923; type

♀.

Pahang: Lubok Tamang, 3500 ft., 16th March, 1924; 2 ♀, at light.

**Gonomyia (Lipophleps) conjugens** White.

Pahang: Cameron's Highlands, No. 4 Camp, 4800 ft., 18th–21st June, 1923; 3 ♀, at light. Lubok Tamang, 3500 ft., 16th March, 1924; 1 ♀, at light. Fraser's Hill, 4000 ft., 26th August, 1923. (*M. R. Henderson*); 1 ♀, at light.

Sarawak: (? *J. Hewitt*); 1 ♀, in British Museum.

This is evidently nearly related to *G. nubeculosa* de Meij., but the colour of the antennae is quite different from that described by de Meijere. It may possibly be identical with the West African *G. sobrina* Alex., which is also only known in the female sex. According to the type, Alexander's species hardly differs except in the less conspicuously yellow costa.

**Gonomyia (Lipophleps) hackeri** sp. n. (Pl. II, fig. 49).

♂. Differs from *G. (L.) conjugens* as follows:—Antennae with the flagellar segments much more slender; pubescence shorter, but each segment with two extremely long dorsal hairs. Abdomen all blackish, the tergites without a trace of yellow on the posterior margins. Hypopygium as figured. Legs rather dark brownish, so that the dark ring of the femora is hardly distinguishable. Vein R<sub>2</sub> absent; Cu 1a a little before base of discal cell; no dark area at arculus. Halteres mostly bright yellow.

Pahang: Cameron's Highlands, 3500 ft. (*Dr. H. P. Hacker*); 1 ♂.

It is just possible that this may be the male of *G. conjugens* but in view of the differences enumerated this hardly seems likely.

are not much longer than the segments; this is very likely only a sexual difference, as in some species of *Atarba* and other genera. The costa and *R1* are brown, like the rest of the veins.

Subgenus **PTILOSTENA** Bergr.

Only two Oriental species of this subgenus are certainly known: *G. metatarsata* de Meij., from Java, with clear wings (probably the same as *G. proxima* Brun. from India); and *G. pruinosa* Alex. from Formosa, in which there are small dark dots at the base of *Rs* and the fork of *Cu*. Apart from the these there are three other described species which may yet be found within the region: *G. recurvinervis* (Bergr.) from Turkestan; *G. aldabrensis* (Edw.) from Aldabra and Rodriguez; and *G. teranishii* Alex. from Japan. The new species described below is evidently closely related to *G. pruinosa* Alex.

**Gonomyia (Ptilostena) peninsularis** sp. n. (Pl. II, fig. 50).

*Head* brownish, heavily dusted with light grey, especially on the front. Antennae with the scape whitish yellow, flagellum dark brown; flagellar segments oval, slightly longer in the female than in the male, verticils a little longer than the segments. Proboscis and palpi black. *Thorax* dark brown, only the pronotum somewhat yellowish, especially in the female; pleurae more ochreous; without definite stripes; dusted all over with grey. *Abdomen* dark brown, posterior margins of segments indistinctly yellowish. Hypopygium as figured. *Legs* with the coxae ochreous, rest missing. *Wings* almost hyaline, veins all dark. Stigma small but very distinct, filling the tip of cell *R1*. Small dark spots at the base of *Rs* and the tip of *R2*; *Cu 1a* and *r-m* also somewhat clouded. *Sc* ending above base of *Rs*, which is strongly arcuate; *R2* straight, slightly oblique, ending only slightly beyond tip of *R1*. Halteres dark brownish.

Length of body, 4-5 mm.; wing, 4.5 mm.

Peninsular Siam: Nakon Sri Tamarat, Khao Luang, 2000 ft., 19th March, 1922; 1 ♂, 1 ♀, at light.

Subgenus **PROGONOMYIA** Alex.

(**Gonomyella** Alex. nec Kuntze.).

This subgenus seems to be poorly represented in the Oriental region. *G. nigripes* (Brun.) (*Mesocyphona nigripes* Brun.; *Gnophornya nigra* Brun.; *Limnophila incompleta* Brun.) and *G. gracilis* (Brun.) (*Mesocyphona gracilis* Brun.) are doubtfully distinct; in both the female ovipositor is remarkably short and fleshy. Whether this is also the case in the allied *G. scutellum-album* Alex. (Formosa) is not stated in the description. The new form described below is very similar to these three, but has a long horny ovipositor, where as in *G. brunnescens* Edw.

(Borneo) (the ♀ of which is unknown) the coloration is quite different.

**Gonomyia (Progonomyia) tenebrosa** sp. n. (Pl. II, fig. 51).

*Head* dark brown, more ochreous behind and round the eyes. *Antennae*, palpi and proboscis black. Flagellar segments all oval, the last three or four gradually shorter; verticils nearly twice as long as the segments. *Thorax* blackish, somewhat pruinose, especially on the pleura; pronotum ochreous; scutellum pale on the margin only. *Abdomen* black, somewhat shining. Hypopygium as figured. Ovipositor horny, the cerci long and slender. *Legs* moderately stout and pubescent, almost uniformly dark brown, only the bases of the femora somewhat lighter. *Wings* brownish-tinged, veins all dark; stigma absent. Sc ending well beyond mid length of *Rs*; *R2* + 3 shorter than *R2*; *Cu 1a* a little beyond the fork of *M*. Halteres blackish, base of stem ochreous.

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

Peninsular Siam: Nakon Sri Tamarat, Khao Luang, 2000 ft., 17th-18th March, 1922; 1 ♂, 1 ♀, at light.

**Lechria lucida** de Meij. ?

Selangor: Kuala Lumpur, 24th September, 1923; 2 ♂, 1 ♀, on tree trunk.

Perak: Batang Padang, Jor Camp, 1800 ft., 28th May, 1923; 1 ♀, evening.

The specimens agree rather closely with de Meijere's description, but in his type the eyes are actually in contact, whereas in the present specimens they are separated by a narrow front about as broad as one facet. The Indian *L. bengalensis* according to Brunetti has the front broad and flat.

The sexes differ slightly: in the ♂ the antennae are slightly shorter than those of the ♀, and the costal cell is darkened, that of the ♀ being clear. There is no darkening of the cross-veins or along *Cu*, as shown in de Meijere's figure.

Genus **TRENTEPOHLIA** Big.

The four subgenera defined by Brunetti may be adopted for convenience, though the venational characters on which they are founded do not seem to be supported by any other features of the organisation. In fact it would seem that

Subgenus *Plesiomongoma* Brun.**Trentepohlia (Plesiomongoma) nigropennata** sp. n.

♀. *Head* pale ochreous, only the antennal flagellum brownish. *Thorax* and *abdomen* uniformly pale ochreous; ovipositor moderately long. *Legs* light brownish; tips of all tibiae and bases of first tarsal segments rather broadly snow-white. On the mid legs the tip of the tibia is fringed with snow-white hair, while for a rather longer area before this the tibia is fringed with longer black hair, making a bicolored "paddle" somewhat as in certain species of the Culicid genus *Sabethes*. Femora with a few short inconspicuous black spines at the base beneath. *Wings* hyaline; veins light brown. Cross-vein *r* oblique; *R*<sub>2</sub> absent; discal cell open; base of Cell *M*<sub>3</sub> much nearer the base of the wing than that of cell *M*<sub>1</sub>; *Cu 1a* only a little before the fork of *M*; *Cu 2* curved and ending in *An* a little before the tip. Close to the base of the wing on the lower margin is a rather strong black bristle, curved at the tip. Halteres pale ochreous.

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

Pahang: Kuala Tahan, 3rd February, 1923; 1 ♀, at light.

A very remarkable form, with no close resemblance to the only other described member of the subgenus. It is the only member of the whole genus known to me which has four posterior cells and an open discal cell.

**Trentepohlia (Plesiomongoma) candidipes** sp. n.

♂. *Head* light brownish. Antennae brownish, base of flagellum pale ochreous; flagellar segments about twice as long as broad. Palpi black; proboscis ochreous. *Thorax* light ochreous; pronotum, scutellum and postnotum dark brown; praescutum with three and scutum with two shining brown stripes. *Abdomen* brown, lighter at the sides and beneath. *Legs* with the coxae ochreous; femora light brownish, tips broadly white; tibiae and tarsi entirely white. Femoral spines not obvious. *Wings* hyaline, veins all blackish; stigma small but conspicuous, dark brown; very slight dark seams over the cross-veins. Cross-vein *r* nearly vertical; cell *M*<sub>3</sub> short, its base slightly nearer the wing-base than that of cell *M*<sub>1</sub>; *Cu 1a* rather less than its length before fork of *M*<sub>1</sub>; fusion of *Cu 2* and *An* very slight. Halteres black; base of stem ochreous.

Length of body, 9 mm.; wing, 7 mm.

Selangor: Kuala Lumpur, 17th mile Kanching, 22nd October, 1922, 1 ♂.

Although for convenience this is referred to Brunetti's *Plesiomongoma*, it seems probable that this is merely an artificial group; *T. candidipes* seems to have more in common with *T. (Mongoma) splendida* Brun.: than with the other two species of the subgenus *Plesiomongoma*.



Subgenus **Mongoma** Westw.

The rather numerous Oriental and Australasian species already known may be arranged as below. For completeness I have included the names of a few species which I have described in MS.; the descriptions have not appeared in print at the time of writing.

*Cu* 2 ending distinctly in the wing-margin; body and wings yellow: *flava* Brun.

*Cu* 2 ending in *An* far before the tip: *retracta* Edw. MS.

*Cu* 2 ending in *An* less than its own length from the tip.

Femora white at the tip, tarsi white or whitish.

Mid tibiae feathered: *esakii* Alex.

Mid tibiae not feathered: *australasiae* Skuse, *tenera* O.-S., *obscura* de Meij., *splendida* Brun., *samoensis* Alex., *pacifica* Alex.

Femora not white at the tip.

Mid tibiae feathered, tips of tibiae and all the tarsi white: *pennipes* O.-S., *tarsalis* Alex. (? = *pennipes*).

Mid tibiae not feathered; tips of tibiae and tarsi not pure white.

Wings with the costal cell blackish: *flavicollis* Edw. MS.

Wings with a dark streak from base to tip, chiefly on the veins.

Tips of femora black: *kempi* Brun., *fortis* Edw. MS.

Tips of femora not black: *pendleburyi* sp. n., *distigma* sp. n.

Wings with the cord conspicuously clouded *sarawakensis* Edw. MS.

Wings almost clear, at most with a distinct stigma.

Flagellar segments with one long dorsal hair: *albipennis* de Meij., *filicornis* sp. n.

Flagellar segments without a specially long dorsal hair.

Large species, legs rather stout: *cariniceps* End., *nigriceps* de Meij.

Small or moderate-sized species, legs normally slender.

Base of cell *M*3 markedly proximal to that of cell *M*1: *pallidiventris* Brun., *guamensis* Alex., *bombayensis* Edw. MS., *hendersoni* sp. n., *pallidipes* sp. n.

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

♀. *Head* light ochreous, the narrow front practically white. Antennae with the scape ochreous, flagellum brown, segments slender and cylindrical, about three times as long as broad. Proboscis ochreous; palpi brownish. *Thorax* uniformly light ochreous, except the scutellum and postnotum, which are uniformly rather dark brown, and somewhat more shining than the rest of the thorax. *Abdomen* dark brown above, with an ochreous lateral line; venter and ovipositor ochreous; cerci moderately long, curved, slender. *Legs* slender, ochreous; tips of femora not in the least darkened, but the tips of tibiae narrowly black, and last few tarsal segments brownish; front and middle femora with a few (6-8) very minute and inconspicuous spines at the base beneath (hind legs missing). *Wings* nearly hyaline, with a rather broad but faint and ill-defined greyish streak extending from the base to the tip; at the tip is a small grey spot. Costa, subcosta, *Rs* (except tip) *R*2, and termination of veins along lower margin of wing yellowish; veins in the middle area (along the course of the grey streak) mostly blackish; stigma small, dark brown. Venation: *r* nearly vertical and slightly concave outwardly; *R*2 arising immediately beyond *r*; *m* placed well beyond bases of cells *M*1 and *M*3; *Cu* 1*a* well before base of discal cell; *Mu* 2 rather strongly recurved at the tip, and ending in *An* distinctly before the tip. Halteres pale ochreous.

Length of body, 9 mm.; wing, 7.5 mm.

Pahang: Lubok Tamang, 3500 ft., 8th June, 1923; 1 ♀. at light.

This is evidently nearly related to *T. kempfi* Brun., Assam, differing in its smaller size and more slender build, as well as in the dark scutellum and postnotum and the absence of dark tips to the femora. The wing-pattern is practically the same as in *S. kempfi*, but the apical dark spot in Brunetti's species is more conspicuous.

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

♀. *Head* as in *T. pendleburyi*, but the front more conspicuously white, with the palpi black; neck blackish. *Thorax* light ochreous; a dark brown spot in the middle of the pronotum; praescutum with traces of a darker median line; scutum and scutellum somewhat darkened; postnotum brownish; a large round deep black spot on the upper part of the mesepisternum, and another on the lower part of the pleurotergite. *Abdomen* as in *T. pendleburyi*. *Legs* uniformly ochreous; mid and hind femora beneath with about 10-14 short black spiny bristles. *Wings* coloured

as in *T. pendleburyi*; but the dark tip still less distinct; *r* more oblique; *Cu*  $\bar{2}$  less recurved at tip, and ending just in the tip of *An*.

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

Perak: Batang Padang, Jor Camp, 1800 ft., 2nd June, 1923; 1 ♀, "Nocturnal."

**Trentepohlia (Mongoma) cariniceps** End.

Selangor: Kuala Lumpur, near Batu Caves, 31st October, 1921; 1 ♀.

**Trentepohlia (Mongoma) pennipes** O.-S.

Selangor: Kuala Lumpur, various dates, 4 ♂, 4 ♀.

Pahang: Gunung Tahan, 5500 ft., 20th January, 1923; 1 ♂, at light. Lubok Tamang, 3500 ft., 12th June, 1923; 1 ♂.

Perak: Batang Padang, Jor Camp, 1800 ft., 9th January, 1924. (*M. R. Henderson*), 1 ♂.

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

Sex ?—*Head* black. Antennae with the first four segments pale ochreous, remainder dark brown; flagellar segments rather elongate oval, verticils rather short. Palpi and proboscis ochreous. *Thorax* uniformly light ochreous. *Abdomen* missing. *Legs* slender, uniformly light brownish; femora without spines beneath. *Wings* rather broad, hyaline, unmarked, very slightly opaque; veins all pale brown. Venation as in *T. pennipes* (O.-S.). Halteres pale ochreous.

Length of wing, 5 mm.; breadth, 1.5 mm.

Java: Buitenzorg, 17th April, 1923; one example.

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

♀. *Head* dark brown. Antennae black; flagellar segments rather elongate oval, about twice as long as broad, verticils moderately long. Palpi and proboscis blackish. *Thorax* dull rather dark brown; pronotum and an indistinct median stripe on the praescutum darker; pleurae and postnotum rather lighter and somewhat shining. *Abdomen* dark brown, last segment and ovipositor ochreous; cerci shorter and stouter than usual in the subgenus. *Legs* rather shorter than usual; dark brown, tips of tibiae in some specimens dull whitish; tarsi obscurely ochreous, becoming slightly paler apically; hind tarsi not noticeably darkened at base. Front femora without spines beneath. *Wings* uniformly greyish tinged; stigma scarcely darker, veins all dark brown. *R* $\bar{2}$  rather long placed well beyond *r*; discal

Pahang: Cameron's Highlands, No. 4 Camp, 4800 ft., 20th June, 1923; 1 ♀, at light; No. 5 Camp, 29th January, 1924. (*M. R. Henderson*); 1 ♂; 13th–20th October, 1923; 4 ♂, 7 ♀; 15th March, 1924; 1 ♂; Rhododendron Hill, 5200 ft., 21st June, 1923; 1 ♂.

Of previously described species, this most nearly resembles *T. guamensis* (Alex.) (Guam I.) and *T. brevicellula* Alex. (Fiji), differing in details of venation.

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

♀. Differs from *T. (M.) parvicellula* as follows:—*Head* black. Antennae distinctly longer, the flagellar segments about three times as long as broad. *Thorax* much darker, without definite praescutal stripe. Tips of tibiae and tarsi more distinctly yellowish, but the tarsi with a narrow dark ring at the base, ill-defined on the anterior legs, rather well-marked on the hind legs. Discal cell larger.

Pahang: Cameron's Highlands, No. 4 Camp, 4800 ft., 12th October, 1923; 1 ♀, at light.

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

♀. *Head* blackish. Antennae and mouth-parts blackish; flagellar segments oval, twice as long as broad, short-haired. *Thorax* distinctly and uniformly shining, rather light ochreous brown. Praescutum with a median dark brown stripe running the whole length and broadening out posteriorly; scutum with two dark areas; scutellum and postnotum dark brown. *Abdomen* dark brown. *Legs* rather dark brown, tarsi indistinctly pale. *Femora* without spines beneath. *Wings* clear, except for the brownish stigma. Venation practically as in *T. (M.) pennipes*. Halteres with ochreous stem and dark brown knob.

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

Pahang: Cameron's Highlands, Tanah Rata, 4800 ft., 17th January, 1924. (*M. R. Henderson*); 1 ♀, at light.

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

♀. *Head* pale ochreous. Antennae with the first segment pale ochreous, remainder dark brown; flagellar segments slender, cylindrical, quite five times as long as broad, each (except the first two or three) with one very long dorsal hair, about twice as long as the segment. Palpi dark brown, proboscis ochreous. *Thorax* uniformly light ochreous. *Abdomen* light ochreous, last two segments black, valves of ovipositor ochreous, moderately short and stout. *Legs* (front pair only left) uniformly light brownish, very long and slender. *Wings* hyaline, stigma scarcely darker veins all light brown. Venation almost as in *T. pennipes* O.-S., but discal cell rather longer, and *Cu 1a* almost its own length before the fork of *M*. Halteres light ochreous.

Length of body, 6–7 mm.; wing, 6 mm.

Perak: Batang Padang, Jor Camp, 1800 ft., 31st May, 1923; 1 ♀.

The rather remarkable structure of the antennae will distinguish this species from all the other members of the genus, except *T. (M.) albipennis* de Meij. (Java), which shows a similar structure; it is evidently nearly related to the new species, differing in the black tips of the femora.

Subgenus **Trentepohlia** s. str.

The Oriental and Australasian species of this subgenus may be arranged as follows:—

*Cu* 2 ending in *An* far before the tip: *nigroapicalis* Brun., *septentrionalis* Alex.

*Cu* 2 ending in *An* less than its own length from the tip.

Wings with dark ground-colour and white spots along the costa: *ornatipennis* Brun., *venustipennis* Edw. MS., *festivipennis* sp. n.

Wings with three or more dark bands: *marmorata* Brun., *pulchripennis* Alex.

Wings with a dark band at the cord, and another at the tip: *speiseri* Edw., *pictipennis* Bezzi, *saucia* Alex., *bifasciata* sp. n.

Wings with a conspicuous dark tip: *trentepohli* Wied.

Wings nearly clear: *fijiensis* Alex., *doddi* Alex., *nigrogeniculata* sp. n., *christophersi* Edw. MS., *obsoleta* Edw. MS.

**Trentepohlia (Trentepohlia) festivipennis** sp. n. (Pl. I, fig. 9).

♀. Nearly related to *T. ornatipennis* Brun. (India), differing as follows:—*Thorax* uniformly light brown. *Wings* with the ground-colour more uniformly dark; spots on either side of R2 larger and yellower, though the spot at the tip of wing is smaller; no distinct white spots in cells R3 or M1; dark borders of cross-veins almost black.

Perak: Batang Padang, Jor Camp, 1800 ft., 6th June, 1923; 1 ♀.

**Trentepohlia (Trentepohlia) trentepohli** (Wied.).

Peninsular Siam: Nakon Sri Tamarat, Khao Luang, 2000 ft., 27th March, 1922; 1 ♂, at light.

Java: Buitenzorg, 17th April, 1923; 1 ♂, 1 ♀.

**Trentepohlia (Trentepohlia) bifasciata** sp. n. (Pl. I, fig. 10).

♂. *Head* dull black. Antennae black; flagellar segments rather elongate oval. Palpi and proboscis black. *Thorax* rather short and broad for a member of this genus, shining black, only the shoulders dark brown. *Abdomen* uniformly blackish, scarcely shining; hypopygium short, of the usual structure. *Legs* with the front coxae shining black, mid coxae brownish, otherwise entirely yellowish. Femoral spines microscopic. *Wings* with pale yellowish ground-colour; the apex broadly blackish, cell *R*<sub>2</sub> uniformly dark; a second blackish band across the middle, most distinct on the anterior half; a dark seam along *Cu*; cell *A*<sub>1</sub> dark. *Costa* yellow in the pale areas. *R*<sub>2</sub> strongly oblique; venation otherwise as in *T. saucia* (Alex.). Halteres yellowish.

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

Pahang: Lubok Tamang, 3500 ft., 8th June, 1923; type, 1 ♂; 10th March, 1924; 1 ♂, 1 ♀. Nearly allied to *T. speiseri* Edw. (Ceylon), *T. saucia* (Alex.) (Java), and *T. pictipennis* Bezzi (Philippines).

**Trentepohlia (Trentepohlia) nigrogeniculata** sp. n. (Pl. I, fig. 11).

♂. *Head* black. Antennae brownish, darker apically; flagellar segments shortly oval, verticils short. Palpi brownish, last segment darker brown. *Thorax* and *abdomen* uniformly bright ochreous, the former considerably shining; claspers black, of the usual form. *Legs* ochreous; tips of femora rather broadly and conspicuously black; bases of tibiae also blackened, and the tips narrowly so. *Wings* with a slight yellowish tinge, veins brownish; a rather broad dark grey seam over *R*<sub>2</sub>, and narrower dark seams over the cord and the base of cell *M*<sub>1</sub>. Venation as in *T. trentepohli* (Wied.). Halteres ochreous.

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

Java: Buitenzorg, 800 ft., April 1923; 1 ♂, at light.

Although this bears a considerable resemblance to the Indian *T. nigroapicalis* (Brun.) in coloration, the venation is quite different and the body much less elongate.

**Gnophomyia fraterna** Edw.

Perak: Batang Padang, Jor Camp, 1800 ft., 27th May—5th June, 1923; 1 ♂, 2 ♀ (1 ♀ labelled "nocturnal").

Pahang: Lubok Tamang, 3500 ft., 24th June, 1923; 1 ♀.

**Gnophomyia maculipleura** Edw.

Perak: Batang Padang, Jor Camp, 1800 ft., 29th May, 1923; ♀.

Pahang: Fraser's Hill, 4000 ft., 27th August, 1923. (*M. R. Henderson*); 1 ♀, at light.

**Rhodomastix trochanterata** sp. n.

♂. *Head* brownish above, ochreous below. Front very broad, flat, considerably broader than one of the small eyes. Lower part of head very much swollen below the mouth-opening, which is comparatively small. Antennae extremely long and slender, over four times as long as the body; colour ochreous at the base, darkening to brownish. First scapal segment short but very much swollen, second small and rounded; middle flagellar segments the longest; flagellum practically bare except for the last segment which bears some longish pubescence and is slightly swollen at the tip (as in several other Dipterous genera with elongate male antennae, e.g. *Macrocera* and *Deuterophlebia*). Palpi short, black, apparently of three sub-equal segments. *Thorax* uniformly brownish, slightly pruinose; foveae transverse, black. *Abdomen* dark brownish, lighter beneath and at the base of the hypopygium. The two pairs of claspers are rather slender, gently curved and slightly pubescent. Parameres long, slender and pointed. *Legs* rather short; coxae, trochanters and bases of femora ochreous, the rest dark brown. Front and middle trochanters elongate, enlarged apically, over three times as long as their greatest breadth. Middle femora distinctly shorter than the others, as usual in the Eriopterini. Tibial spurs represented by a pair of short black bristles very little stouter than the ordinary surface hairs. *Wings* greyish; stigma distinct dark brown. Venation much as in the type species, except that *Sc* is longer, cell *M3* is pointed at the base, and vein *Ax* is rather conspicuously waved. Halteres brownish.

Length of body, 5 mm.; wing, 6 mm.; antenna, 23 mm.

Pahang: Tahan River, 350 ft., 21st November, 1922;  
1 ♂.

This is the first species of the genus to be found in the Oriental region and the first with elongate male antennae to be discovered outside Australia. Skuse does not mention elongate trochanters in his type, and describes both the scapal segments as small; his insect must therefore bear rather a close resemblance to the Linnophiline genus *Ischnothrix*, and it is not impossible that further study of the Australian insect might prove it actually to belong there. On the other hand the new form shows obvious relations with the species of Alexander's subgenus *Sacandaga*, in spite of the elongate antennae. Of the two species of this subgenus which I have examined, *R. flava* Alex., has het trochanters elongate (though less so than in the new species) and *R. bacalis* Alex. though with short trochanters has

The legs (not described by Enderlein) are ochreous, except for the tips of the tarsi and a narrow pre-apical ring on the femora, which are dark brown. The femora and tibiae and first tarsal segments bear long erect pubescence, much as in many species of the closely allied genus *Lecteria* O.-S.

**Conosia irrorata** Weid.

Selangor: Kuala Lumpur, 9th September, 1923. (*C. B. Kloss*); 1 ♀, at light; 18th February, 1924; 1 ♀, at light.

Negri Sembilan: Kuala Pilah, 28th December, 1923; 1 ♀, at light.

Tribe **Limnophilini.**

**Epiphragma pendleburyi** sp. n. (Plate I, fig. 12).

♂. Nearly allied to *E. kempfi* Brun., differing as follows:—*Head* with a conspicuous median longitudinal dark line. Segments two and three of palpi rather bright orange (Brunetti describes the palpi of *E. kempfi* as brownish-yellow, but in specimens I have examined from Ceylon and Formosa they are entirely blackish). Thoracic markings much as described by Brunetti for *E. klossi*. Femora moderately dark brownish except for the ochreous tip; pre-apical darker ring scarcely indicated. Tibiae with an ochreous ring at the base, then rather broadly dark brownish, especially on the front legs. Wing-markings slightly different, especially by the basal markings being quite separate from those over the cord. The two little points on the ninth abdominal tergite very short and blunt, instead of long and pointed.

Pahang: Lubok Tamang, 3500 ft., 4th March, 1924, type ♂, and 12th June, 1923, 1 ♂. Cameron's Highlands, No. 4 Camp, 4800 ft., 15th October, 1923, 1 ♂.

This species also much resembles *E. klossi* Brun., which however is described as having the femora entirely black, and the palpi blackish-grey. Further material may prove the identity of these two.

**Limnophila (Ephelia) granulata** Edw.

Pahang: Lobuk Tamang, 3500 ft., 10th March, 1924; 1 ♂, at light.

**Limnophila (Dicranophragma) maculithorax** Edw.

Pahang: Cameron's Highlands, No. 4 Camp, 4800 ft., 15th–18th October, 1923 and 11th–14th March, 1924; 4 ♂, 4 ♀, at light. Tanah Rata, 4800 ft., 17th January, 1924. (*M. R. Henderson*); 1 ♀, at light.

**Limnophila (Dicranophragma) distans** sp. n. (Pl. I, fig. 13).

Nearly allied to *L. (D.) remota* de Meij., differing as follows:—*Thorax* rather heavily pruinose, without markings. A rather large dark spot at the tip of vein *Ax*.



Margins of dark costal blotches not further darkened. Accessory cross-vein much nearer the tip of *R1* (less than its own length distant).

Pahang: Cameron's Highlands, 4800 ft., 18th October, 1923; 1 ♂, and 12th March, 1924; 3 ♂, at light (including type). Tanah Rata, 4800 ft., 24th January, 1924. (*M. R. Henderson*); 1 ♂, at light.

This species is also similar to *L. (D.) multipunctipennis* Brun., but the distance between the tips of *An* and *Ax* is much greater, the wing-spots have no tendency to transverse appearance, etc. From *L. (D.) pallidithorax* Edw., an obvious difference is that *Ax* is shorter, ending nearly opposite the base of *Rs*.

***Limnophila (Diceranophragma) nubiplena*** sp. n. (Pl. I, fig. 14).

♂. *Head* dull dark greyish brown, front moderately broad. Antennae dark brown, flagellar segments gradually becoming more slender but all of approximately equal length. Palpi black. *Thorax* dark brown, somewhat shining, without definite markings; anterior and foveal pits distinct, the latter placed rather far forward. *Abdomen* dark brown, posterior margins of tergites indistinctly lighter. Hypopygium with both pairs of claspers rather long and slender, the outer bare, the inner pubescent. *Legs* with the coxae and trochanters brownish ochreous, the rest dark brown. Tibial spurs short. *Wings* with the membrane almost completely covered with small dark clouds, as in the figure. *Sc 2* well before the tip of *Sc 1*; tip of *R1* hardly longer than *r*; arcular cross-vein absent or scarcely discernible. On one wing there is an additional cross-vein in cell *R3*. Halteres brownish.

Length of body, 4.5 mm.; wing, 5.5 mm.

Pahang: Gunong Tahan, 5500 ft., 2nd December, 1922; 1 ♂.

Among previously described Oriental species this appears to come nearest to *L. (D.) remota* de Meij., but the resemblance is not very close.

***Limnophila (Poecilostola) pendleburyi*** sp. n. (Pl. I, fig. 15).

*Head* dark grey; front very broad. Antennae with the scape blackish; in the male the first five or six flagellar segments are ochreous, rounded to shortly oval, pubescent beneath and with a moderately long dorsal hair; the remaining segments darker and more slender. *Thorax* dark brown, shining, with a few small dark spots on the sides. *Abdomen* dark brown, shining, with a few small dark spots on the sides. *Legs* with the coxae and trochanters brownish ochreous, the rest dark brown. Tibial spurs short. *Wings* with the membrane almost completely covered with small dark clouds, as in the figure. *Sc 2* well before the tip of *Sc 1*; tip of *R1* hardly longer than *r*; arcular cross-vein absent or scarcely discernible. On one wing there is an additional cross-vein in cell *R3*. Halteres brownish.

darker and more shining, but not conspicuous. Hypopygium with the outer claspers strong, blackened, bare, hooked at the tip; inner claspers short, broad, pubescent, tip somewhat curved; penis long and curved; parameres rather long, narrow, straight, with rounded tips; margin of ninth tergite straight. *Legs* with the coxae dark brown, trochanters lighter; femora yellow, the somewhat swollen tips broadly black; tibiae yellow, tips narrowly black; spurs black, as long as the diameter of the tibiae; tarsi brownish-yellow, tips of segments very narrowly black. *Wings* with an elaborate pattern as in the figure, the markings tending to form several ocellate spots. Arcular cross-vein present; *Sc* 2 close to tip of *Sc*; tip of *R1* about as long as *r*. Halteres dark brown, base of knob pale.

Length of body, 5 mm.; wing, 6 mm.

Pahang: Gunong Tahan, 5500-6000 ft., 12th December, 1921; 1 ♂; 15th December, 1922; 1 ♀.

***Limnophila bivittata* sp. n.** (Plate I, fig. 16).

♂. Superficially very similar to *L. pendleburyi*, differing as follows:—Front distinctly narrower; a dark area in the middle of the vertex. Antennae and palpi rather shorter. Praescutum without any trace either of anterior or foveal pits, and with a distinct pair of posterior lateral stripes which extend over the scutum. Hypopygium with the outer claspers not blackened, more pointed and hairy; inner claspers smaller; penis and parameres much shorter, the latter clubbed at the tips; ninth tergite with a deep V-shaped notch. Tips of femora not swollen and less broadly black. *Wings* with the pale ground-colour more extensive and yellowish, the dark markings not tending to form ocellate spots. Tip of *R1* rather longer. Halteres yellowish, base of knob darker.

Length of body, 5 mm.; wing, 6 mm.

Pahang: Gunong Tahan, 5500-6000 ft., 12th December, 1921; 1 ♂.

It is doubtful whether this should be referred to the same subgenus as *L. pendleburyi* owing to the absence of the thoracic pits and the different hypopygium. On the other hand it is evidently very close to *L. multipunctipennis* White (Assam), differing most obviously in the absence of the admedian praescutal stripes. The wing-markings of both these species are extremely similar to those of *Ephelia fascipennis* Brum., but apart from other differences there is no cross-vein in cell *M* and *M1* has a longer stem.

***Limnophila subpilosa* sp. n.**

♂. *Head* dark greyish-brown, face lighter; front moderately broad. Antennae with the first and third segments light brown, the rest darker brown, total length slightly greater than the head and thorax together. Scapal segments about equal in size and shape; flagellar segments

apparently only thirteen in number, slender, almost cylindrical, about equal in length and about four times as long as broad, clothed with rather long and regular but not very dense pubescence; no differentiated hairs. Palpi blackish. *Thorax* ochreous-brown, unmarked. *Abdomen* dark brown. Hypopygium small, side pieces not much longer than broad; outer claspers blackened, bare, ending in a pair of small points; parameres slender, curved downwards, pointed; penis with two rather long points. *Legs* dark brownish, coxae lighter. Tibial spurs minute, apparently absent from the middle legs (front legs missing). *Wings* hyaline, veins dark, the setae on the apical half unusually long for a member of this genus. *Sc* ending just beyond the apex of *Rs*; *Sc* 2 close to its tip; tip of *R1* several times longer than *r*, which is placed about twice its length beyond the base of *R2*; discal cell pointed at the base and rather long; cell *M1* very small and triangular; *Cu 1a* near base of discal cell; arcular cross-vein present. Halteres pale ochreous.

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

Perak: Batang Padang, Jor Camp, 2000 ft., 2nd June, 1923; 1 ♂.

On account of its small size and distinctly hairy veins, this insect has very much the appearance of an *Erioptera*, but that it is really a *Limnophila* is indicated by the occurrence of minute spurs on at least the hind legs, and the structure of the hypopygium, which is not unlike that of the European *L. nemoralis* Mg. *L. inconsequens* Brun., is similar in many respects but has a different antennal structure.

#### Tribe Hexatomini.

##### *Hexatoma microstoma* sp. n.

♀. Colour uniformly dull greyish-brown, head and thorax rather strongly pruinose. Frontal tubercle large, with a median longitudinal furrow in front. Mouth-parts much reduced, only the small palpi visible externally, and these composed of a single segment which is not much longer than broad, and slightly hairy at the tip. Antennae barely twice as long as the head, the segments of the flagellum successively shorter, the last (fourth) shortly oval. Ovipositor short and fleshy as usual in this genus, but the last sternite large. Tibial spurs very small. *Wings* greyish, somewhat opaque. *R1* turned sharply up at *r*, which is placed on *R2* - 3 slightly before the fork; *R2* more than half as long as *R2* + 3; *Cu 1a* in a line with *r-m* and the basal section of *M1* + 2, these three pieces of about equal length. *Cu 2* turned downwards.

Length of body, 4.8 mm.; wing, 5.2 mm.

Selangor: Kuala Lumpur, 27th January, 1924; 1 ♀, at light.

This species is of special interest as it adds one more to the growing list of those (in various unrelated genera) which have undergone extreme reduction of the palpi.

***Eriocera mutica* sp. n.**

♂. Nearly resembles *E. verticalis* (Wied.), differing as follows:—Frontal tubercle ashy-grey, without ochreous tinge. Antennal flagellum devoid of bristly spines on the under side. Vein *R1* strongly turned up at the tip, which is not longer than *r*. *Cu 1a* further from base of discal cell.

Length of body, 7 mm.; wing, 9 mm.; antennae, 26 mm.

Pahang: Cameron's Highlands, 4800 ft., 12th March, 1924, type ♂ near stream; February–March 1924; 2 ♂, at light.

***Eriocera rufiventris* Brun.**

Selangor: Kuala Lumpur, 7th mile, Cheras Road, 19th January, 1924; 1 ♂, 22nd February, 1924; 1 ♀; 8th March, 1924; 1 ♂.

***Eriocera punctigera* sp. n.**

*Head* blackish-grey, scarcely shining; frontal tubercle small and simple. Antennae blackish, short in both sexes, segmentation of flagellum indistinct. Proboscis ochreous, palpi black. *Thorax* ochreous brown, slightly shining; praescutum with three obscure subconfluent stripes, a roundish dull black spot at each side on the pseudosuture. Scutum, scutellum and postnotum dark brown. *Abdomen* dark brown, lighter at the sides and beneath. Hypopygium and ovipositor ochreous. *Legs* dark brown; coxae, trochanters and bases of femora ochreous. *Wings* long and narrow, uniformly brownish except for the faintly darker stigma. Tip of *R1* as long as *r*, which is placed rather more than its own length from the base of *k2*; *r-m* at tip of *Rs*; cell *M1* present, rather longer than its stem; *Cu 1a* about middle of discal cell. Halteres blackish.

Length of body, ♂ 10.5 mm., ♀ 12 mm.; wing, ♂ 16 mm., ♀ 13 mm.

Peninsular Siam: Nakon Sri Tamarat, Khao Luang, 2000 ft., 19th March, 1922; 1 ♂, 1 ♀.

Perak: Jor to Pahang border, 2300 ft., 10th March, 1925, one broken specimen.

Allied to *E. angustipennis* (End.) (Sumatra), differing in the black spots on the praescutum and in other details.

The Perak specimen resembles the type except in having cell *M1* shorter.

***Eriocera paenulata* End.**

Perak: Batang Padang, Jor Camp, 1800 ft., 15th June, 1923; 1 ♂.

This specimen shows the following differences from Enderlein's description:—

Antennae blackish, only the base of the first flagellar segment yellowish. *Thorax* rather dark brownish, heavily dusted with bluish grey; in addition to the two black spots mentioned by Enderlein there is a third smaller one on the pseudosuture. First segment of abdomen dark, the tergite with a velvet-black posterior border. Front coxae entirely blackish, the posterior pairs dark at the base only. Tibiae rather dark on the basal three-quarters having the tip yellowish, as well as the whole of the tarsi. A specimen in the British Museum from Sumatra agrees in all these points with the one before me, hence I identify it with Enderlein's species (also from Sumatra) rather than treat it as new.

***Eriocera albifrons* sp. n.**

*Head* dull black, the space between the eyes shining whitish-grey owing to heavy surface dusting. Front fully as broad as one eye, without distinct tubercle. Antennae short, black, the usual six flagellar segments indistinctly separated. Palpi and proboscis black. *Thorax* wholly black; praescutum and scutum brightly shining except on the margins, which are velvety; scutellum velvety; post-notum shining with a large + shaped velvety mark; pleuro-tergites velvety; pleurae rather heavily dusted with grey. *Abdomen* with the first segment orange; segments 2-5 orange, each with a black apical band; 6 and 7 black, 8, 9 and hypopygium orange. *Legs* black, except the trochanters and bases of femora, which are ochreous. *Wings* uniformly brown. Cross-vein *r* slightly oblique about twice its length from the tip of *R1* and rather more than its length from the base of *R2*; *r-m* well beyond apex, of *Rs*; cell *M1* from two to three times as long as its stem; *Cu 1a* about middle of discal cell. Halteres blackish.

Length of body, 8.5 mm.; wing, 9 mm.

Pahang: Gunong Tahan, 5500-6000 ft., 12th October, 1922; 1 ♂. Padang Sebrang, 5000 ft., 15th December, 1922; 1 ♀.

A very distinct species of the *rubescens* group, with some resemblance to *E. karnyi* Edw.

***Eriocera tahanensis* sp. n.**

♂. *Head* dull blackish grey. Front nearly as broad as one eye, without distinct tubercle. Antennae short, scape and first flagellar segment ochreous, remainder blackish, segmentation indistinct. Proboscis and palpi black. *Thorax* very slightly shining, blackish brown except for the praescutum, which is dull ochreous brown, darker laterally without definite markings. *Abdomen* with the second tergite, the venter, and the hypopygium obscurely

ochreous, remainder mostly dark brownish. *Legs* slender with the coxae blackish; trochanters ochreous; femora dark brown, ochreous towards the base, tibiae and tarsi black. *Wings* rather short, uniformly dark brownish, except for a faintly darker cloud over *r-m*. Tip of *R1* about twice as long as *r*, which is oblique (making an angle of about 60° with the tip of *R1*) and placed rather more than its own length from the base of *R2*; *r-m* its own length beyond tip of *Rs*; cell *M1* present, over twice as long as its stem; *Cu 1a* just beyond middle of the rather short discal cell. Halteres blackish.

Length of body, 8 mm.; wing, 9 mm.

Pahang: Gunung Tahan, 5500 ft., 5th and 12th December, 1922; 2 ♂.

Apparently nearly allied to *E. aurantia* Brun., but with very different coloration.

***Eriocera biflava* sp. n.**

♀. *Head* black, with a very slight grey dusting. Front almost as broad as one eye, without distinct tubercle. Antennae black; flagellum with eight segments, the last four short and not distinctly separated. Palpi and proboscis black. *Thorax* entirely velvet black, practically bare. *Abdomen* with segments 1 and 4-9 velvet black, 2 and 3 bright yellow; 4-6 much broadened; valves of ovipositor reddish. *Legs* with the coxae velvet black; trochanters dark brown; femora yellow with black tips; tibiae brown with black tips; tarsi blackish. *Wings* uniformly blackish. Tip of *R1* about three times as long as *r*, which is placed about its own length from the base of *R2*; *R2* + 3 more than half as long as *R2*; *r-m* placed far beyond apex of *R3*; cell *M1* absent, *Cu 1a* placed beyond middle of discal cell. Halteres black.

Length of body, 16 mm.; wing, 13 mm.

Selangor: Kuala Lumpur, 6<sup>3</sup>/<sub>4</sub> miles, Cheras Road, 13th April, 1923; 1 ♀.

Near *E. caliginosa* Brun., which however has a largely shining thorax and differs in other respects.

***Eriocera umbripennis* Edw.**

Peninsular Siam: Nakon Sri Tamarat, Khao Luang, 2000 ft., 14th March, 1922; 1 ♂.

Agrees quite well with the type ♀ from Penang, except that cell *M1* is shorter. The legs (missing in the type) are entirely black, an easy distinction from the otherwise rather similar *E. dichroa*.

***Eriocera dichroa* Walk.**

Johore: Lubok Kedondong, foot of Mt. Ophir, 9th October, 1920. (*H. v. Abraham*); 1 ♀ ovipositing on wet sand. Agrees well with Walker's type which was also from Mt. Ophir.

**Eriocera nepalensis** Westw.

Perak: Batang Padang, Jor Camp, 1800 ft., 29th May, 1923; 1 ♀.

**Eriocera pendleburyi** sp. n.

*Head* blackish grey; front moderately broad with small tubercle. *Antennae* with the scape blackish, flagellum with the first three segments yellow, remainder dark, seven or eight distinct flagellar segments in the female, apparently only five in the male. *Palpi* black. *Thorax* dull red dorsally, pleurae darker and with a more distinct bluish-grey dusting; hair inconspicuous. *Abdomen* shining black, the tergites with narrow dull black apical borders; genitalia reddish. *Legs* dark brown, all the segments blackened towards the tips. *Wings* blackish, and cells lighter; a large broadly crescent-shaped white mark in the middle; a second somewhat crescent-shaped white mark at the tip, reaching from before the tip of *R1* to beyond the tip of *R4* + *5*. Tip of *R1* about twice as long as *r*, which is oblique and placed about its own length beyond the base of *R2*; *R2* quite three times as long as *R2* + *3*. Cell *M1* about three times as long as its stem. *Cu 1a* placed near tip of discal cell. Halteres black.

Length of body, 13–18 mm.; wing, 10.5–12 mm.

Pahang: Lubok Tamang, 3500 ft., 7th June, 1923; type ♂, at light.

Perak: Batang Padang, Jor Camp, 1200 ft., 26th May, 1923; 1 ♀.

Peninsular Siam: Nakon Sri Tamarat, Khao Ram, 750–1200 ft., 23rd February, 1922; 1 ♀.

Allied to *E. brunetti* Edw. (Assam), differing in the partly yellow flagellum, absence of a white spot in cell *R1*, and oblique cross-vein *r*. In the Siamese specimen the whole of the thorax is dull red.

**Eriocera dileuca** sp. n.

Nearly allied to *E. pendleburyi*, and possibly a variety of it, but differing as follows:—*Thorax* dull black, only slightly reddish-tinged in the middle of the scutum. *Hypopygium* black, the two projections of the ninth tergite smaller and more rounded at the tips. Central white spot of the wings smaller and transversely oval rather than crescent shaped, with a creamy tinge.

Pahang: Gunong Tahan, Padang, 5500 ft., 12th–19th December, 1921; 2 ♂ (including type). Gunong Tahan, 5550 ft., 13th December, 1921; 1 ♂.

**Eriocera hendersoni** sp. n.

♀. Nearly allied to *E. pendleburyi*, and perhaps a variety of it, but differing as follows:—*Thorax* uniformly orange, without reddish tinge. *Abdomen* brownish orange.

Coxae orange. Wing-spots smaller, especially the one at the tip, which extends only from a short distance before the tip of  $R3$  to the tip of  $R4 + 5$ . Cell  $M1$  not much longer than its stem; discal cell much shorter.

Length of body, 16 mm.; wing, 13 mm.

Perak: Taiping Hills, 500-1500 ft., 11th December, 1923. (*M. R. Henderson*); 1 ♀.

*Eriocera seimundi* sp. n. (Plate I, fig. 17).

♀. *Head* dull black. Frontal tubercle moderate, distinctly divided. Scape of antennae black; flagellum dull ochreous, darker apically, with seven segments, the last three subequal. Palpi black. *Thorax* dull red dorsally, practically bare, pleurae darker. *Abdomen* with the first three segments entirely dull orange, following segments shining brownish-orange with dull orange posterior borders; ovipositor orange, valves very elongate. *Legs* with the coxae brown, trochanters lighter, femora yellow with black tips; tibiae brownish tarsi blackish. *Wings* dark brown, costal, anal and axillary cells lighter. A large lunate white mark extends from  $R1$  across the end of  $R_s$  to  $Cu$ ; a narrow straight white fascia extends from the costa just beyond the tip of  $R1$  to the hind margin in cell  $M1$ , narrowed but not interrupted on  $R4 + 5$ . Tip of  $R1$  long;  $r$  oblique, on  $R2$  about its own length distant from the end of  $R2 + 3$ , which is about one-third as long as  $R2$ ; cell  $M1$  present, longer than its stem;  $Cu 1a$  close to outer end of discal cell. Halteres blackish.

Length of body, about 20 mm.; wing, 13 mm.

Perak: Batang Padang, Jor Camp, 1800 ft., 10th March, 1924; 1 ♀.

Evidently allied to *E. pendleburyi*, but quite distinct from this and related species by the subapical position of the second white fascia, as well as by the colour of the legs and abdomen.

Named after Mr. E. Seimund, who has collected several interesting craneflies, reported upon in this paper.

*Eriocera albovittata* sp. n.

♀. *Head* black; front moderately broad, with a conspicuously bifid tubercle. Antennae with the scape black, flagellum dark brown; seven flagellar segments, the second about two-thirds as long as the first. Palpi black. *Thorax* uniformly dull orange, practically bare. *Abdomen* with the first two segments dull orange, remainder shining black. *Legs* with the coxae and trochanters orange; femora yellow with black tips; tibiae brownish with black tips; tarsi blackish. *Wings* with the ground colour blackish; a large roundish white spot across the middle of the basal cells, almost connected with a smaller white spot just beyond it in cell  $R1$ ; a narrow white streak commencing at the tip



of cell *R2* and running inwards to just above the apex of the discal cell, where it is somewhat broader. Tip of *R1* several times longer than *r*, which is somewhat oblique, placed more than its length beyond the base of *R2*, and provided with an inwardly-projecting spur at its middle. *R2* about three times as long as *R2* + 3. Cell *M1* present, about as long as its stem. *Cu 1a* about middle of discal cell. Halteres black.

Length of body, 17 mm.; wing, 12.5 mm.

Singapore Island: Bt. Mandai, 400 ft., 28th February, 1923. (*H. C. Abraham*); 1 ♀.

A very distinct species, easily recognisable by the wing markings and the largely shining abdomen.

***Eriocera flavitarsis***, sp. n. (Plate I, fig. 18).

*Head* blackish, dusted with grey. Front moderately broad, tubercle small but distinct. Antennae black, unusually short; flagellum in both sexes with only five segments, the first considerably swollen towards the base, second only half as long as the first. Palpi black, unusually long, the last segment being fully as long as the first three together. *Thorax* entirely black, somewhat dusted with grey, especially on the praescutum; praescutum interspaces with longish black hair. *Abdomen* black, somewhat shining, the second and third tergites with velvet-black apical bands, more distinct in the female than the male. Middle segments not much enlarged. *Legs* shining black, except the first two segments of the tarsi, which are yellowish with narrow black tips. *Wings* with the ground-colour black, but the centres of most of the cells lighter; narrow white seams over the arculus, *Sc 2*, tip of *R1* and *r*; a narrow white mark across cell *R* just before the base of *Rs*; a large irregularly crescent-shaped mark over the outer part of cells *R1*, *R* and *M*, divided into two by a dark seam along *Rs*; a double whitish curved fascia close to the tip, commencing at the hind margin and not quite reaching the costa. Venation: *Sc 1* ending just before the tip of *R2* + 3. Tip of *R1* short, not, or very little longer than *r*, which is placed about its own length from the base of *R2*. *Rs* shorter than *R*. *R2* strongly curved upwards at the tip. Cell *R* very broad, nearly twice as broad as cell *M*; *r-m* in a line with the base of the discal cell, and placed about its own length from the base of *R*<sup>1</sup> + 5. Cell *M1* absent. *Cu 1a* curved, outwardly convex, placed near the tip of the rather short discal cell. *Ax* slightly concave above as usual. Halteres black.

Length of body, 8–11 mm.; wing, 8.5–10 mm.

Pahang: Lubok Tamang, 3500 ft., 8th–11th June, 1923; 1 ♂, 1 ♀ (types); 4000 ft., 8th September, 1922. (*E. Seimund*); 1 ♀.

Perak: Batang Padang, Jor Camp, 1800 ft., 21st January, 1925; 3 ♂.

Although with some resemblance to *E. basilaris* Wied., this interesting species is very distinct by many details of both colour and structure, such as the yellow tarsi, the shorter, stouter antennae and the shortened tip of *R1*.

*Eriocera nitidula* sp. n. (Plate I, fig. 19).

Nearly allied to *E. flavitarsis*, differing as follows:—Antennae with the first flagellar segment less swollen towards the base, second hardly more than a third as long as the first. *Thorax* more shining, the praescutum without grey dusting. *Abdomen* uniformly shining. Tarsi less conspicuously yellowish. *Wings* without any white seam on the arculus, but with a squarish white spot mid-way between this and the base of *Rs*. Central white mark more regular, transversely oval, not interrupted by a dark seam along *Rs*. *Rs* as long as *R* or a little longer. Cell *R* not quite so broad. *Cu 1a* straight and placed nearer middle of discal cell.

Length of body, 7–9 mm.; wing, 7.5–8.5 mm.

Pahang: Gunong Tahan, 5500 ft., 1st December, 1922; 1 ♂, 1 ♀ (types). Summit of Gunong Tahan, 7186 ft., 22nd January, 1923; 1 ♂.

#### Tribe Tricyphonini.

*Tricyphona* (*Amalopina*) *elegantula* Brun.

Pahang: Cameron's Highlands, 4800 ft., 13th March, 1924; 1 ♀, at light.

Assam: Cherrapunji, 18th October, 1920. (*R. Senior-White*); 1 ♂.

The female differs from Brunetti's type in having the dark median line on the praescutum only faintly perceptible, and in the absence of a supernumerary cross-vein in the wing. The head is dark, not yellow as stated by Brunetti, and the cross-veins and bases of the fork-cells and of *Rs* are faintly clouded, this being the case also in the type. The male from Assam is similar to the Malayan female, except that the wings are much broader across the middle, this being a sexual difference which is not infrequently seen in several other groups (*Conosia*, *Ephelia*, *Dicranophragma*). The two males examined have lost their antennae, but the female has them perfect and evidently 16-segmented.

Alexander's *Rhaphidolabina gibbera* from Japan is evidently very closely related to the present species, but is stated to have only 15-segmented antennae, dark brown wing-markings, and the two dark lines of the scutum extending across the postnotum, whereas in *T. elegantula* the whole of the median area of the postnotum is somewhat darkened.

## Sub-family TIPULINAE.

**Pselliophora penicillata** sp. n.

♂. *Head* orange; the very short rostrum brownish. Antennae with the first three segments brown, the rest black. Palpi with the first two segments ochreous, the rest dark brown. *Thorax* with the dorsum entirely orange, also the front part of the pleurae, the remainder of the pleurae mostly dark brown. On the posterior lateral corners of the scutum are small dense patches of short black hair; scutellum and postnotum with golden hair. *Abdomen* orange; first tergite black; second and third tergites and sternites broadly black apically, the black extending more towards the base of the segment in the middle; second tergite also with a black spot in the middle at the base; eighth segment and hypopygium black. Eighth sternite very large and prominent, bifid and densely pubescent at the tip. *Legs* with the coxae and trochanters mostly dark brown, the front and middle coxae largely orange on their outer and posterior surfaces. Femora blackish, the front pair lighter towards the base, the hind pair with a broad orange ring which leaves the tip rather narrowly black. Hind femora with longish black hair in the middle beneath. Front and middle tibiae blackish, obscurely lighter near the tips; hind tibiae orange, narrowly black at the base and tip. Tarsi black, the basal half or so of the first segment of the hind tarsi orange. *Wings* black, with narrow white streaks in the centres of cells *R*, *M*, *Cu 1*, *Cu 2*, *An* and *Ar*. Cell *M1* just sessile; *Cu 1a* very oblique; cell *Cu 1* much narrowed apically. At the extreme base of the wing on the lower margin is a small brush of black hair, which when the wing is raised comes into contact with the similar brush on the scutum. Halteres black.

Length of body, about 16 mm.; wing, 16 mm.

Peninsular Siam: Nakon Sri Tamarat, Khao Luang, 2000 ft., 24th March, 1922; 1 ♂.

A very strikingly coloured species, distinct from all others known to me by the black brush on the scutum. In *P. stigmosa* Edw. (Indo-China), which possesses a similar pair of brushes, one is placed on the wing itself (as in the present species) and the other on the squama.

**Pselliophora pendleburyi** sp. n.

♀. *Head*, *thorax* and *abdomen* coloured as in *P. penicillata*, except that the antennae are entirely orange. Scutum with a dark brown patch but no brush on each posterior corner. *Legs* with the coxae as in *P. penicillata*. Front femora and all the tibiae entirely orange; hind femora black on the basal third, the rest orange. Front and mid tarsi black, the first segment mostly brownish; hind tarsi missing. *Wings* mostly bright yellow; base of cell *Ar* black; tip of wing also broadly black as far back as the

cord, but leaving the base of the discal cell yellow. Cell *M1* shortly stalked. Halteres black.

Length of body, about 19 mm.; wing, 17 mm.

Peninsular Siam: Nakon Sri Tamarat, Khao Luang, 2000 ft., 25th March, 1922; 1 ♀.

In spite of the striking differences in the coloration of the wings and legs, it is not at all improbable that this may eventually prove to be the female of *P. penicillata*; but as such strong sexual dimorphism is not hitherto known in the genus I have not felt justified in making the assumption.

***Sphaerionotus fasciatus* sp. n.**

♂. *Head* orange. Antennae with the scape orange, flagellum blackish. Palpi black, of three distinct segments, each slightly longer than broad. *Thorax* entirely dull; brownish ochreous. Praescutum with three darker brown stripes; scutum with only two stripes, which are blackish. Sternopleura and the front margin of the mesepisternum dark brown. *Abdomen* with the first segment ochreous, the tergite narrowly black at the base and sides; tergites and sternites 2-7 ochreous at the base, dark brown apically, the dark colour gradually increasing from about a third (on segment two) to about two-thirds of the segment (on segment seven). Hypopygium long, dark brown, the claspers large, black, folded in; ninth tergite emarginate apically. *Legs* black; trochanters and bases of femora ochreous; front coxae dark brown, posterior coxae lighter brown. *Wings* rather dark brownish-grey, rather darker in the region of the stigma and the fork of *RS*. *Rs* shorter than *R2* + 3, but over twice as long as the short *R2*. Cell *M1* present, about twice as long as its stem. Halteres with the stem-brownish, knob lighter.

Length of body, 22 mm.; wing, 16 mm.

Pahang: Gunong Tahan, 5500 ft., 26th January, 1923; 1 ♂ near stream.

This interesting species, the second of the genus to be discovered, agrees rather closely with the genotype (*S. curtispennis* de Meij., Sumatra) in its structural characters, except as to the quite distinct segmentation of the palpi; it is however quite distinct on account of the dull thorax, banded abdomen and long cell *M1*. The genus *Sphaerionotus* is evidently very closely allied to *Longurio*, having the same antennal and hypopygial structure, and differing almost solely in the absence of a rostrum and the rudimentary mouthparts.

***Mitopeza nigromaculata* sp. n.**

♀. Closely related to the genotype (*M. nitidirostris* Edw., from Kedah Peak), differing as follows:—*Head* much

darker in colour, almost black. *Thorax* more brightly shining dorsally; pronotum velvety-black; praescutum with a pair of velvety-black triangles on the front margin and a small velvety-black spot in front of each wing; pleurae with a large velvety-black spot below the wing-root. *Cu 1* leaving *M* exactly at the fork; discal cell rather longer (on one wing confluent with cell M1). The ovipositor is constructed as in the genotype. In both species there are a few microtrichia on the membrane at the extreme tip of the wing.

Perak: Batang Padang, Jor Camp, 1800 ft., 5th June, 1923; 1 ♀.

This is only the second species described in this interesting genus, though it is possible that Brunetti's *Dolichopeza postica* also belongs here; it differs from the other two in having *Rs* much shorter.

The wing of *M. nitidirostris* is shown in Plate I, fig. 20.

#### *Dolichopeza fulvithorax* sp. n.

♂. Head reddish brown; frontal tubercle small, ochreous; rostrum very short, dark brown above, ochreous at the sides, without nasus. Antennae with the scape ochreous, flagellum blackish, nearly twice as long as the head and thorax together, with short dense pubescence below and longer, scantier and more bristly pubescence above; segments gradually diminishing in length. Palpi ochreous. *Thorax* dull reddish-brown, praescutum with four faintly darker stripes; middle of scutum and scutellum lighter. *Abdomen* blackish, with narrow obscurely ochreous rings before the middle of segment two and about the middle of each of segments 3-6. Hypopygium rather large, brownish; outer claspers short, straight and simple; eighth sternite deeply excised in middle; ninth tergite simple, not emarginate. *Legs* black; coxae, trochanters and bases of femora ochreous; tarsi whitish except towards the base. *Wings* nearly hyaline; veins dark; stigma conspicuous, dark brown; tip of wing not darkened and without macrotrichia on membrane. Venation as in *D. pallidothorax* de Meij., *Rs* being moderately long. Halteres with ochreous stem and black knob.

Length of body, 10 mm.; wing, 11.5 mm.

Pahang: Gunong Tahan, 5500 ft., 6th December, 1922, type ♂; 6500-7000 ft., 16th December, 1921; 1 ♀.

From *D. pallidothorax* de Meij., which it most nearly resembles, this differs in the absence of a dark wing-tip, and the absence of macrotrichia on the membrane in cell *Rs*. *D. orientalis* Brun., belongs to the same group, but according to a male in the British Museum determined by Brunetti has a quite different hypopygium.

**Dolichopeza cuneata** Edw. var. **augusta** var. n.

Closely allied to *D. cuneata* Edw. (Borneo), differing as follows:—Coxae dark. Front tarsi with the black area of the first segment much less extensive; hind tarsi all white (middle legs missing). *Cu 1* only in punctiform contact with *M*.

Length of body, 12 mm.; wing, 12 mm.

**Megistocera fuscana** Wied.

Peninsular Siam: Nakon Sri Tamarat, Khao Ram, 1500–3000 ft., 2nd March, 1922; 1 ♂.

**Ctenacroscelis rector** sp. n.

*Head* including rostrum rather dark ochreous-brown. Frontal tubercle moderate, rounded. Antennae ochreous-brown; flagellum somewhat darker apically. Flagellar segments almost cylindrical, not enlarged beneath, first about half as long again as the second, last two (9th and 10th), subequal, rather more slender and bristly than the others. Palpi and labella blackish. *Thorax* nearly bare, ochreous brown, pleurae quite unmarked. Pronotum somewhat darkened above. Praescutum with three broad but separate dark brown stripes, the middle one rather lighter anteriorly, but reaching the front margin and with an indistinctly darker median line. Scutal lobes mostly dark brown, but scutellum scarcely darkened. Postnotum with a large dark brown patch occupying most of the dorsal surface, with indications of a paler median line at the base only. *Abdomen* almost uniformly dark brown, first tergite ochreous-brown at the sides; claspers also lighter. Hypopygium small, of the ordinary structure; ninth tergite with short dark hair only; eighth and ninth sternites without yellow tufts. *Legs* ochreous-brown the tips of the femora broadly, of the tibiae narrowly dark; tarsi darker apically. Hind tibiae not swollen at the tip in either sex. *Wings* deep brown; stigma hardly traceable; a narrow darker brown seam at the arculus and along *Cu 1a*; a not very conspicuous ochreous-brown seam extending along the lower margin of the discal cell and vein *M1*; obliterative streak inconspicuous. Cross-vein *r* just before the fork of *R2 + 3*; cell *M1* with a short stalk; *m-cu* fusion very short. Halteres blackish.

Length of body, type ♂ 36 mm.; wing, type ♂ 49 × 8 mm.

Length of body, type ♀ 42 mm.; wing, type ♀ 46 × 7.8 mm.

Pahang: Lubok Tamang, 3500 ft., 8th June, 1923; type ♂.

Perak: Batang Padang, Jor Camp, 1800 ft., 28th May, 1923, evening; type ♀.

Peninsular Siam: Nakon Sri Tamarat, Khao Luang, 2000 ft., 14th March, 1923; 1 ♂, crepuscular. Khao Ram, 750–1200 ft., 23rd February, 1923; 1 ♀.

This large species is very similar to several others of the genus, and has no striking specific characters. It is perhaps most nearly allied to *C. majesticus* (Brun.) from which it differs in the absence of yellow hairs on the hypopygium and in other details. Brunetti's record of *C. majesticus* from the Selangor-Pahang border probably refers to *C. rector*.

**Ctenacroscelis umbrinus** (Wied.).

Perak: Batang Padang, Jor Camp, 1800 ft., 28th–29th May, 1923; 2 ♂, evening; 6th–10th March, 1924; 2 ♂, at light.

Pahang: The Gap, 2700 ft., March 1921; 1 ♀ ex. coll. Agr. Dept. F.M.S.

**Tipula anastomosa** sp. n.

♀. Closely allied to *T. pulcherrima* Brun., differing mainly in the markings of the thorax and wings, as follows:—Thoracic stripes of uniform colour, and hardly darker than the ground-colour. Stigma paler in the centre, dark brown round the margin. The outer two-thirds or more of cell *R*<sub>2</sub> entirely dark. No distinct dark area in the middle of cell *R*.

Length of body, 35–40 mm.; wing, 21–23 mm.

Kedah: Kedah Peak, 3200 ft., December 1915. (*C. Boden Kloss*); type ♀ in British Museum. Also 1 ♀, locality not stated, in Kuala Lumpur Museum.

This species, with its near ally *T. pulcherrima* Brun., occupies a rather isolated position in the genus, though the combination of a number of somewhat unusual characters: the absence of a nasus and neck, the short and stout antennae and legs, the very long abdomen and comparatively short wings, and especially the remarkably long medio-cubital fusion. It shows many points of resemblance to the Japanese *T. nubifera* Coq.

**Tipula pedata** Wied. var ?

Selangor: Kuala Lumpur, 21st mile, Gombak Valley, 12th October, 1921; 1 ♀.

**Tipula simillima** Brun. var ?

Selangor: Kuala Lumpur, 21st mile, Gombak Valley, 16th October, 1921; 2 ♀.

**Tipula contigua** Brun.

Peninsular Siam: Nakon Sri Tamarat, Khao Luang, 2000 ft., 14th March, 1922; 1 ♀ (?), at light.

**Tipula quasimarmoratipennis** Brun.

Java: Papandajan, 6000–7000 ft., 23rd April, 1923; 1 ♂.

**Tipula gedehicola** Alex. ?

Perak: Batang Padang, Jor Camp, 1800 ft., 30th May, 1923; 1 ♀. Tapah, 4th March, 1925; 1 ♂.

**Tipula quadrinotata** Brun.

Pahang: Cameron's Highlands, Gunong Berumban, 5000 ft., 14th March, 1924; 1 ♀.

**Tipula cinereifrons** de Meij.

Selangor: Selmangko, 2700 ft., 14th April, 1902. (*Robinson and Annandale*); 1 ♂. at light.

**Nephrotoma metallescens** sp. n.

♀. *Head* mostly pale dull yellow; a small brown spot adjoining each eye, and a small blackish area in the nape, under side largely dark brown. Rostrum very short, dark brown, with a pale yellow area on each side; nasus long and black. Antennae short, entirely black. Palpi black. *Thorax* with the pronotum dull pale yellow in the middle, black at the sides. Praescutal stripes completely confluent, shining blue-black, narrowly bordered with velvet black; a velvet black area below the ends of the lateral stripes, connecting them with the lateral margin, and a rather extensive velvet-black area across the suture; a pair of humeral spots and a smaller pair of pre-alar spots dull pale yellow. Scutum shining blue-black with a pair of yellowish posterior lateral spots. Scutellum shining blue-black. Postnotum black, with a pair of large pale yellowish spots close to the base. Pleurae mostly blackish; a yellowish area round the anterior spiracle; pleurotergites yellowish anteriorly. *Abdomen* with segment one dull black, narrowly yellow at the base; 2-4 orange, the tergite of each with a narrow black apical band; 5-8 black, with slight bluish reflections; ovipositor orange. *Legs* with the coxae and trochanters black; femora yellow with black tips; tibiae black, brownish at the base; tarsi black. *Wings* with a uniform brown tinge; stigma distinct, dark brown. Venation normal; cell *M* 1 shortly stalked or just sessile; discal cell not very small. Halteres with the stem black; knob yellowish above.

Length of body, 13 mm.; wing, 10 mm.

Peninsular Siam: Nakon Sri Tamarat, Khao Luang, 2000 ft., 25th March, 1922; 1 ♀.

**Nephrotoma fuscapex** sp. n.

♀. *Head* orange, more yellowish posteriorly, except for the large black occipital triangle. Rostrum orange, the very short nasus black. Antennae rather long for this sex, with very long verticils; first segment orange, the rest dark brown to blackish. Palpi dark brown. *Thorax* with the pronotum dull orange, the whole of the rest of the dorsum



distinctly shining. Praescutal stripes separate, brownish black, the middle one reaching the front margin, the lateral pair curved down in front and reaching the lateral margins. Scutum with the usual black areas. Scutellum blackish. Postnotum yellow, with a large black apical patch. Pleurae yellow, the propleura, large patches on the pteropleura and sternopleura, and most of the pleurotergites shining black. *Abdomen* orange; the first tergite dull black, the rest each with a narrow black lateral line and a large black apical triangle, which on segments 7 and 8 occupies most of the tergite. Ovipositor reddish; cerci broad and blunt-tipped. *Legs* with the coxae, trochanters and bases of femora ochreous, rest blackish. *Wings* with a slight brown tinge, stigma dark brown; a very slight dark seam along the cord and *Cu* 2; a conspicuous brown cloud at the tip towards the costa. Discal cell moderately large; cell *M* 1 with a rather long stalk. Halteres orange; stem brownish except at base.

Length of body, 13 mm.; wing, 11 mm.

Perak: Batang Padang, Jor Camp, 2000 ft., 2nd June, 1923; 1 ♀.

***Nephrotoma siamensis* sp. n.**

♀. *Head* orange, with a small black occipital triangle. Nasus short, black. Antennae with the first segment orange, second brownish, flagellum black, of moderate length, with moderately long verticils. Palpi black. *Thorax* with the ground colour dull orange. Praescutum with three separate shining black stripes, narrowly bordered with dull black, the median stripe reaching the front margin and divided by a dull black line; lateral stripes straight, without black spot below their tips. Scutal stripes broad, shining black, bordered with dull black. Scutellum dull black, but with the basal third conspicuously orange. Postnotum orange with a large black apical spot. Pleurae orange, with a blackish area on the pteropleura and a less distinct one on the sternopleura; upper part of pleurotergites black. *Abdomen* orange; first tergite black; tergites 2-6 each with a moderately large black apical triangle; seven nearly all black; eight and ovipositor orange. *Legs* with the coxae and trochanters orange; femora brownish, darker apically, tibiae and tarsi dark brown. *Wings* slightly brownish; stigma rather dark brown; a slight brown suffusion at the apex. Discal cell moderate; cell *M* 1 just sessile. Halteres brownish, knob lighter.

Length of body, 14 mm.; wing, 12 mm.

Peninsular Siam: Bukit Besar. (*H. C. Robinson* and *N. Annandale*); type and one other ♀, in the British Museum. Nakon Sri Tamarat, Khao Luang, 1500-2000 ft., 20th March, 1922; 1 ♀.

***Nephrotoma javensis* Dol.**

Java: Tjisoeroepan, 4200–4300 ft., 19th–24th April, 1923; 1 ♂, 3 ♀, at light.

Selangor: Kuala Lumpur, various dates; 3 ♂, 4 ♀.

Perak: Batang Padang, Tapah, 25th May, 1923; 1 ♀.

***Nephrotoma virgata* Coq.**

Java: Tjisoeroepan, 4200 ft., 22nd April, 1923; 1 ♂, 1 ♀.

***Nephrotoma immaculata* v.d. Wulp.**

♂. *Pachyrrhina immaculata* v.d. Wulp.

♀. *P. ochripleuris* de Meij.

Java: Papandajan, 5500–7000 ft., 23rd April, 1923; 1 ♂, 1 ♀.

The praescutal stripes in the male are less distinct than those of the female, and the middle one has a single dark median line instead of two, but the sexes agree in most other respects, and there can be no doubt about them being one species, hence the synonymy given above. Van der Wulp's description agrees much better with these than with Alexander's var. *pangerangensis* which in my opinion should be regarded as a distinct species, differing from *N. immaculata* not only its larger size but in the largely darkened scape of the antennae, darker palpi, entire absence of dark praescutal stripes, larger hypopygium with shorter and broader claspers, and broader wings.

***Nephrotoma concolorithorax* Brun.**

Selangor: Kuala Lumpur, 20th August, 1922; 1 ♀.

Easily separable from *N. immaculata* (v.d. Wulp) and *N. pangerangensis* (Alex.) by the black clubs of the halteres and other details.

***Nephrotoma nigrirostris* sp. n.**

*Head* dull orange, vertex unmarked; rostrum short, shining black, nasus distinct. Antennae with the scape orange, flagellum black; in ♂ hardly longer than head and thorax together. Palpi black. *Thorax* either entirely dull orange (1 ♂, 2 ♀) with faint traces of dark mesonotal stripes, or these stripes distinct, dull dark brown (1 ♂), lateral stripes not turned down in front; scutellum, postnotum and pleurae unicolorous orange. *Abdomen* entirely dull orange (♀) or with the last few segments darkened (♂). Eighth sternite of ♂ simple; outer clasper moderately long, not sharply pointed, brownish ochreous. *Legs* blackish, coxae, trochanters and bases of femora orange. *Wings* nearly hyaline; stigma pale brown, inconspicuous. Discal cell small. Cell *M 1* with very short stalk. Knob of halteres blackish, stem lighter.

Length of body, ♂ 10 mm., ♀ 14 mm.; wing, 11–13 mm.

Pahang: Cameron's Highlands, Tanah Rata, 4800 ft., 15th–24th January, 1924. (*M. R. Henderson*); 2 ♂, 1 ♀, at light.

Differs from *N. concolorithorax* Brun., in the black rostrum, unbanded abdomen, and lighter stigma.

***Nephrotoma nigrithorax*** de Meij.

Pahang: Cameron's Highlands, 4800 ft., 11th March, 1924, 1 ♂, and 18th October, 1923; 1 ♀.

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## PLATE I.

## Wings of Malayan Nematocera.

(Various magnifications).

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## PLATE II.

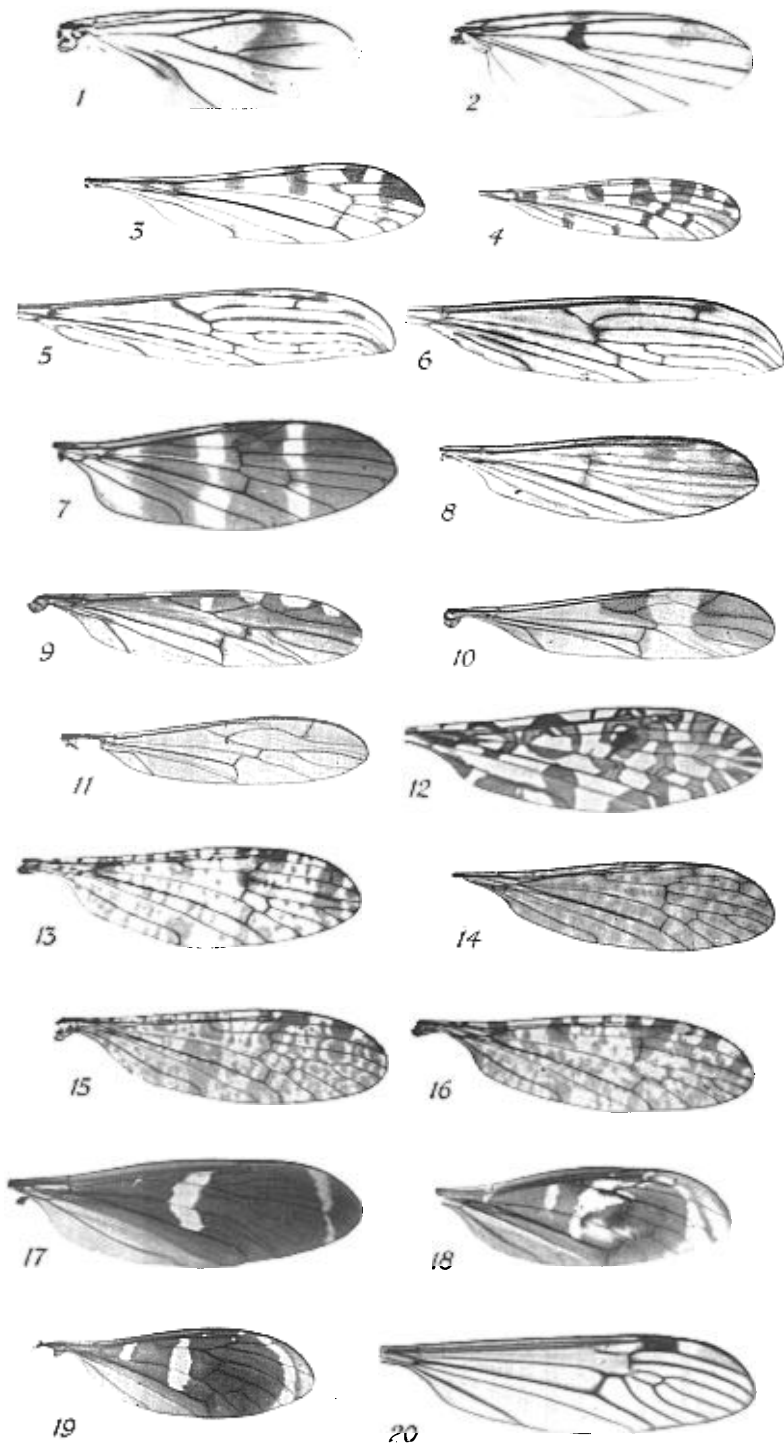
## Details of hypopygia of Malayan Nematocera.

(Figs. 27-37 all to same scale, the rest various).

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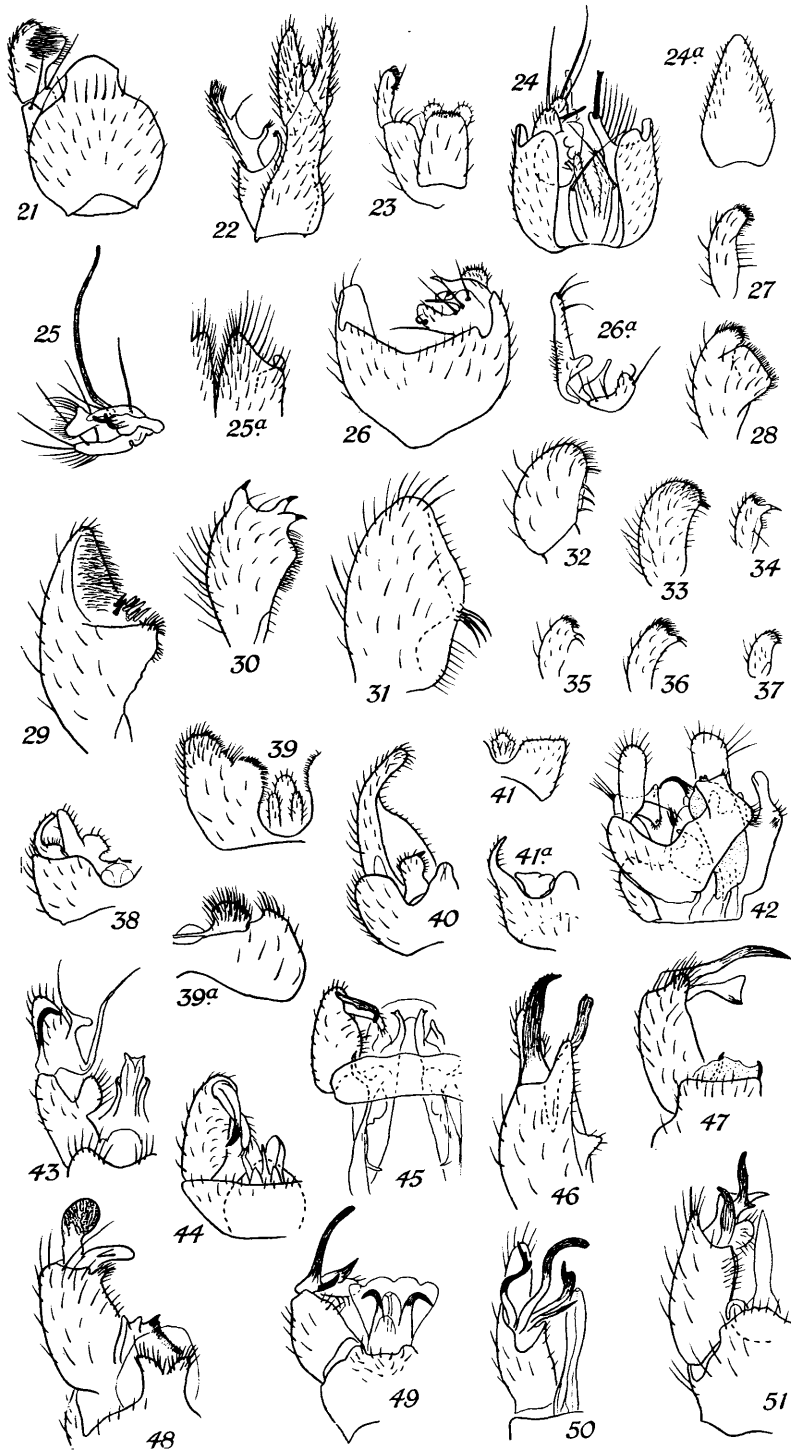
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