

XVIII. NEW AND INTERESTING DIPTERA  
FROM THE EASTERN HIMALAYAS

By E. BRUNETTI.

(Plate xiv).

Since Lord Carmichael became Governor of Bengal he has employed several collectors to collect the insects and other smaller fauna of the country round Darjiling. His Excellency has generously arranged to distribute the specimens between several Museums in India, Australia and Great Britain, and to present sets of certain groups to the specialists who are describing them. I have been asked by Dr. Annandale of the Indian Museum, in which the types will be retained, to work out the Diptera, amongst which a number of new and rare species are represented.

Unfortunately most of the specimens have been preserved in spirit, and others in papers, so that their condition is by no means satisfactory and for this reason several which almost certainly belong to undescribed species cannot be utilized as types. The proportion of new and uncommon species, however, is sufficiently large to make further collections from the same districts eminently desirable.

Nearly a hundred species are included in all, but, mainly owing to the inferior condition of the specimens, it has been possible to determine with tolerable certainty only between thirty and forty already known, to which must be added the fourteen new ones described here.

Unless otherwise stated, the species noted simply from "Singla" were collected in April, 1913, and those noted as "Darjiling," in May, 1912; the latter at from 1000 to 3000 ft. altitude.

MYCETOPHILIDAE.

*Sciara indica*, Walk.

One from Senchal, v-13; it has the whole sides of the abdomen, except at the base, conspicuously red.

*Leia nigra*, Brun.

One ♀, Senchal, v-1913.

## BIBIONIDAE.

*Crapitula melanaspis*, Wied.

Three (♂ ♀) from Singla, iii-13, and Senchal, v-13.

It is probable that the name *Pleciomyia*, Brun., must sink in favour of *Crapitula*, Gimm., as pointed out by Prof. Bergroth recently.<sup>1</sup> In my Fauna volume I overlooked the fact of *Crapitula* having been set up for *melanaspis*, and as a reference to the generic description was not possible, I accepted it as synonymous with *Plecia* in a general sense. In a letter to me some few years ago Mr. Austin told me *melanaspis* would have to be removed from *Plecia*, and as the Kertesz catalogue ranked *Crapitula* as a synonym it was thus the oversight occurred. It certainly was not my desire to deliberately set up a new genus for a species already sufficiently provided for.

*Bibio hortulanoïdes*, Brun.

One ♂, Darjiling District, 1000-3000 ft., vi-1912.

*Bibio nigripennis*, mihi, sp. nov.

♀ Darjiling.

Long. 7 mm.

*Head* dull black, except for a little grey hair on underside; flat, with a small but conspicuous prominence bearing the ocelli. Eyes separated by more than one-third the width of the head. Antennae and palpi black.

*Thorax* black (denuded), but apparently in life with some short yellowish or yellowish-grey pubescence. Scutellum and sides of thorax black, bare or nearly so.

*Abdomen* black, the surface wrinkled, *sides* with some yellowish-grey hair, which probably in good specimens covers the dorsum also.

*Legs*.—Fore coxae bright brownish-yellow except blackish at base; remainder of legs bright brownish-yellow except posterior coxae blackish, becoming dirty yellow on apical half. Fore femora greatly incrassated; fore tibiae more or less dirty yellow; apical spines strong, long and of equal length. Last two joints of all tarsi and extreme tip of previous joint black.

*Wings* blackish, darker on anterior border; stigma black, obvious but ill defined. Halteres black.

*Described* from a single specimen from Senchal, 8000 ft., May, 1913 in inferior condition.

## TIPULIDAE.

*Pselliophora fuscipennis*, Macq.

One ♂, Darjiling, 1000-3000 ft., one ♀, Singla.

These do not altogether answer to the description, the thorax is wholly reddish-orange instead of the disc being blackish, and

<sup>1</sup> Ann. Mag. Nat. Hist. (8) ii, 584.

the small pale spot around the stigma is absent, but in this genus a wholly reddish thorax is not rare in some species normally having it partly black.

***Pselliophora gaudens*, Walk. (Pl. xiv, fig. 8).**

A ♂ from Singla is probably this species, but the wings are wholly deep brown. The first seven abdominal segments are bright orange, the 8th black, the lower sternite rather enlarged and pronouncedly V-shaped, as though supporting the conspicuous genital organs, which latter are almost bare and wholly dull black. They consist of an elongate, bilobed dorsal plate and a narrow ventral stylate plate, which is apparently fused to the large obtuse basal joints of the claspers. The remainder of the claspers seem to comprise a conical bare 2nd joint with some attendant interior appendages, but the whole organ being rather closely closed an exact description is impossible.

***Pselliophora compedita*, W.<sup>1</sup>**

One ♀, Darjiling, 1000-3000 ft. Except that the marks on the thorax are inconspicuous, though legible, and for its large size (many species vary considerably in size), 25 mm. from tip of nasus to tip of the rather short ovipositor, this specimen agrees with Wiedmann's description.

***Tipula majestica*, Brun.**

One ♂, Singla, one ♀ Darjiling, 1000-3000 ft., vi-12, one ♀ Tindharia, 3000 ft., viii-12. The expanse of the wings is no less than 90 mm.

***Tipula flava*, Brun. (Pl. xiv, fig. 7).**

One ♂, Singla, v-13, one ♀ Darjiling, 1000-3000 ft., vi-12. The species was described from a single ♂ in the Vienna Museum, from Sikkim. The ♀ has not before been seen; it is in every way identical with the ♂ except for the sexual organs.

***Tipula pulcherrima*, Brun.**

Two ♂♂, one ♀ Darjiling, 1000-3000 ft., v-13.

***Tipula carmichaeli*, mihi, sp. nov. (Pl. xiv, figs. 6, 9).**

♂ Darjiling District. Long. 38 mm.; expanse of wings 91 mm.

*Head* much flattened, upper side brownish yellow, fading nearly to whitish at the margins, and deepening in the median line to a moderately wide, distinct, dark brown band, extending from nape to between the eyes. Frons small but prominent, in the shape of a blunt cone, with a narrow median brown stripe

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<sup>1</sup> See note under *Ptecticus wulpii* concerning protective resemblance between these two species.

above, and a similar one on each side of the base of the prominence. The width of the frons just above the conical prominence about one-fourth that of the head. Proboscis brownish-yellow, dark above, below, and at the sides at the tip; labella brownish-yellow; palpi (only one joint remaining) and antennal 1st joint (remainder missing), brownish-yellow. Occiput, which is distinct in spite of the very large flattened top of the head, dark brown or brownish-yellow, a few concolorous hairs on underside.

*Thorax.*—The distinct neck dark brownish-yellow or dark brown, with, on each side, a narrow whitish longitudinal streak above and a broader one below it, well separated from each other. Prothorax well defined, dark chocolate-brown with the margins pale yellowish or yellowish-white, apparently variable. Dorsum of thorax brownish-yellow, two median chocolate-brown moderately narrow stripes (separated by about the width of one of them), from anterior margin almost to suture. On the outer side of each of these stripes, leaving a moderately wide brownish-yellow intervening space, is a large chocolate-brown spot irregularly triangular in shape, bounded by the lower margin of the dorsum and by the transverse suture. In this spot are two pale brownish-yellow approximately oval spots, placed longitudinally, one above the other, the lower one immediately in front of the wing base. The transverse suture is very deep, and the linear depression connecting it with the scutellum also, causing the hinder half of the dorsum to apparently consist of two rather conspicuous convex portions; brownish-yellow in colour, paler anteriorly, with silvery white shimmer on anterior corners and irregularly along the front margin, and with a chocolate-brown transverse band irregular in outline, narrowest in its middle, from the wing root to the sutural-scutellar depression, which latter is almost wholly chocolate-brown.

The scutellum, which is quite small, is dark chocolate-brown, with a brilliant white spot on each side of the dorsum; the frenulum well developed, dark chocolate-brown. Mesopleurae similarly coloured, a broad stripe on upper part, shining yellowish-white, and a short smaller central brownish-yellow elongate mark placed longitudinally. Sternopleurae yellowish-white, with a median dark brown stripe from anterior margin to middle, posterior to which is a round brown spot; the lower margin of the sternopleura also brown. The pteropleura extends from the wing root to between the 2nd and 3rd pair of legs, where it takes the form of a small globular piece, conspicuous, pale yellowish-white. Metapleurae brownish-yellow on upper third, chocolate-brown on middle third and black on lower third; the hinder part of the latter brownish-yellow. An oval, brilliant, shining white spot in middle of the lower third part. Hypopleurae shining white, and a similar silver white spot on extreme hinder part of metapleurae, adjacent to the metanotum, which latter is large and conspicuous, brownish-yellow, with the anterior part of the sides brilliantly silvery white, and a small elongate brown spot on inner side of each such white side spot.

*Abdomen.*—The 1st segment brownish-yellow, hinder part at sides dark chocolate-brown, with a large irregular oval white spot on each side, nearly or quite reaching the upper side; 2nd segment very narrow, barely wider at tip, pale yellowish, an irregular, lighter brown dorsal stripe, and at each *side* towards tip, a short dark brown stripe; tip of 2nd segment more or less white both on dorsum and at sides; 3rd and 4th segments dark chocolate-brown, with two slightly curved, narrow elongate spots (convex side inwards), from towards the sides at the base of the segment, and extending to the hind margin, where they are still widely separated. These spots are yellowish on the 3rd and chalk-white on the 4th and remaining segments but the colour may be a little variable. A couple of small whitish spots towards each hind corner of the segments. The 3rd and 4th segments are both very considerably wider at tip than base, the 5th and 6th are replicas of the 3rd and 4th, but the brown colour is lighter. The 7th segment is light brown with two nearly parallel white stripes.

Belly brownish-yellow at base, lighter chocolate-brown from 3rd segment (inclusive) to tip, with two well separated white stripes extending over the segments, the surface on the outer side of these stripes black. There is a distinct 8th sternite, lighter brown, well curved. The whole abdomen is practically bare.

Genitalia comparatively very small, mainly concealed, brown, an upper bifid oblong dorsal plate, and a pair of claspers with one or two appendages.

*Legs.*—Coxae white dusted, with a blackish spot on front side; remainder of legs brownish-yellow; femora at tip, tibiae at base and tip, and metatarsi at base, all with broad dark brown rings, but not well delimited.

*Wings* clear, very shining, absolutely bare, the whole surface transversely ribbed. The wing roots blackish, the stem of the wing considerably elongated, a distance of 9 mm. before the wing definitely widens. The 1st posterior cell extremely narrow throughout its length, the petiole of the 2nd posterior cell almost as long as the cell, and about as long as the discal cell; the 6th vein remarkably close to the 5th and taking a sudden bend at its middle.

Costal cell pale yellowish except for the clear tip; the stigmatic portion and the region around the discal cell dark brown, the colour extending uninterruptedly to hind margin of wing, embracing tip of 5th vein. This brown colour encroaches narrowly but distinctly on the apices of both basal cells, on the basal half of the submarginal cell, extending very narrowly along its upper (costal) side. The colour also fills wholly the 1st posterior cell (though here it becomes yellowish), and it borders narrowly the upper side of the 2nd posterior cell, and the basal parts more broadly of the 3rd, 4th and 5th. There is, in the brown colour filling the discal cell, a triangular clear space of moderate size and a small pale streak at tip of 1st basal cell and also just above the praefurca. The 5th longitudinal vein is rather broadly brown,

bordered on each side, except towards the tip of the 2nd basal cell, whilst a large brown spot, like a recumbent **V**, lies across the middle of both basal cells, the basal part of the **V** directed towards the wing base, and the colour continued narrowly into the costal cell where it separates the yellowish and clear areas of that cell. The very narrow anal cell dark brown throughout, except on the hinder part of its middle. The base and tip of 1st axillary cell dark brown, and a transverse dark brown band across its middle, in a line with the base of the afore-mentioned recumbent **V** and ending on the wing border at the 6th vein. The 2nd axillary cell dark brown, except the basal fourth and a large triangular space beyond the middle, adjacent to the wing border, which are clear. Halteres pale brownish-yellow.

Described from a single ♂ in good condition taken by Lord Carmichael in a bathroom at Sureil, Darjiling District, vi-13. This is the most magnificent *Tipula* it has yet been my lot to behold.

### ***Tipula imperfecta*, mihi, sp. nov.**

♀ Darjiling, 1000—3000 ft. Long. 22 mm. from tip of nasus, exclusive of 3 mm. ovipositor.

*Head* moderately dark rich brown, with traces of brownish-yellow colour on frons and face; frons forming a rather conspicuous conical prominence. The whole occiput and frons with a little black pubescence, and some longer pubescence on under side of head. Proboscis, palpi and labella concolorous brown with lighter patches here and there, all pubescent. Antennae with 1st joint long, brown, with soft black hairs, 2nd short, brownish-yellow, bare, remainder nearly black, with a whorl of four hairs at base of each segment.

*Thorax* rich dark brown; traces of three darker stripes on anterior margin; the ground colour lighter on dorsum behind the suture; the hind margin from wing roots up to and including the scutellum, lighter, and of a slightly livid grey tinge. Sides of thorax concolorous with dorsum; metapleurae well defined, lighter brown; metanotum rich dark brown (with a very narrow pale median line), a little lighter on hinder side. The whole thoracic dorsum, scutellum and metanotum with short soft black hairs, but sides of thorax practically bare.

*Abdomen* dark brown, but duller and less rich than thorax, slightly narrowed at base, widest at about the 4th segment, the whole dorsum with microscopic pubescence, which is longer towards sides of first two segments. Belly similar to dorsum. Ovipositor moderately long, bright ferruginous.

*Legs* only moderately long, bright reddish-brown; coxae black, femora with subapical black ring, extreme base of tibiae pale yellow; tarsi a little darker brown.

*Wings*.—*Anterior cross vein absent*, owing to the basal section of the 3rd longitudinal vein being so long as to reach the corner

of the discal cell before the vein turns horizontally. Ground colour of wing pale yellowish-grey; costal and subcostal cells brownish-yellow, the colour extending a little below the 1st longitudinal vein, and about the stigmatic region. The wing distad of the two basal and the anal cells, and of the yellow stigmatic region embracing the discal cell, is grey, except for clearer spots (showing the pale yellowish-grey ground colour of the wing) placed as follows:—A long one in the 1st posterior cell, occupying the major part of its apical half, and extending in its middle, narrowly into the 2nd submarginal cell, ending at the wing border near tip of lower branch of 2nd longitudinal vein. This latter cell also has a small oval pale spot at its tip. A small elongate pale spot towards the tips of 2nd, 3rd, 4th and 5th posterior cells, and traces of a small similar one at the base of the 3rd, 4th and 5th cells. Lower part of 1st basal, and apical part of 2nd basal, mainly, and some streaks in the anal and axillary cells also, pale. A narrow elongate *hyaline* spot lies across the vein separating the 1st basal and the discal cell; and there is a black oval spot on the costa at tip of 1st vein, extending to the forking of the 2nd vein; and another spot over base of 2nd vein. Halteres blackish-brown.

*Described* from a unique ♀ in fair condition, Darjiling, iv-1912.

There are three other apparently undescribed species of *Tipula*, one, a ♂, with blackish wings with a few small yellowish spots, taken in Government House grounds, Darjiling; the 2nd species is a ♂ from Sikkim, with pale yellowish-grey wings, and the 3rd has grey wings slightly infuscated, and comes from Senchal, represented by a ♂ and ♀. All these are in too bad condition to be set up as types.

***Dicranomyia pulchripennis*, Brun.**

One ♀, Darjiling, 1000—3000 ft.

***Eriocera nepalensis*, Westw.**

One ♂, Darjiling, 1000—3000 ft.

STRATIOMYIDAE.

***Ptilocera fastuosa*, Gerst.**

Three (♂ ♀), Darjiling, 1000—3000 ft., May and June, 1912.

**STRATIOSPHECOMYIA, mihi, gen. nov.**

(*Pachygastrinae*).

*Head* flattened, semicircular, narrower than greatest width of thorax, nearly bare; occiput not at all projecting behind eyes; ocelli on small, very distinct prominence, equidistant. Eyes in ♂ quite contiguous for a moderate distance, hinder and lower facets.

distinctly smaller than anterior and upper ones. Proboscis thick, apparently moderately long but mainly concealed within the mouth opening, probably producible; palpi elongate, a little pubescent, apparently of one joint only. Antennae elongo-cylindrical, nearly filiform, two-thirds as long as head and thorax together; 1st joint about twice as long as broad, 2nd about half this length; flagellum with eight distinct annulations, subequal, except the last which is rather longer and pointed.

*Thorax* approximately oval, widest at level of wings, only slightly arched; microscopically pubescent here and there. Scutellum of moderate size, semicircular or sub-triangular, unspined.

*Abdomen* apparently 5 jointed, the emargination between the 2nd and 3rd joints extremely indefinite, possibly these forming but a single joint. The 1st joint very short, transverse, 2nd as wide as 1st at base, thence suddenly narrowing at half its length to cylindrical form, the 3rd at base as wide as tip of 2nd, rapidly widening to tip; the abdomen widening to tip of 4th segment, thence rapidly narrowing, the tip rounded, the 2nd to the 5th segments subequal in length. Abdomen with a little soft pubescence towards sides at base. Genitalia exposed, fairly complex, consisting of a dorsal plate and a pair of two-jointed hairy claspers, with, apparently, at least one other pair of appendages.

*Legs* quite slender, moderately long, minutely pubescent; hind legs longer and slightly stouter, hind femora barely thickened towards tips, hind metatarsi distinctly incrassated, larger and longer than the remainder of the tarsus; 4th tarsal joint of all the tarsi distinctly shorter than any others.

*Wings* well developed, fairly broad, a little longer than abdomen, venation as in *Pachygaster*, distinct, halteres large.

*N.B.*—In my table of genera (Rec. Ind. Mus. I, 89) this genus will separate from *Saldua*, Walk on the following characters: the pedunculated abdomen, the different construction of the antennae, the longer wings (unless Walker by a *lapsus calami* has written thorax instead of abdomen, which seems probable), and lastly on the greater breadth of wing. The differences in the abdomen and antennae alone are sufficient to require a new genus.

The ♀ unknown.

### *Stratiosphecomyia variegata*, mihi, sp. nov.

(Pl. xiv, figs. 14, 17).

♂ Darjiling, 1000—3000 ft.

Long. 11—12 mm.

*Head*.—Eyes contiguous for one-fourth the distance from vertex to antennae, vertex rather depressed, with conspicuous ocellar prominence, wholly black. Frontal triangle brownish-yellow, bare, shining, flush with eyes. Face lighter brownish-yellow, with almost microscopic whitish pubescence, and two large circular black spots below base of antennae. The hinder part of the lower part of the head black. Proboscis and palpi brownish-yellow, withdrawn, with a little pale pubescence. Antennae

cylindrical, nearly filiform, scape brownish-yellow, bare, 1st joint twice as long as 2nd, flagellum black with 8 annulations, subequal, except that the last one is a little longer and pointed.

*Thorax* black, microscopically pubescent, with bright lemon-yellow markings as follows:—On anterior margin of prothorax; the humeral calli; a large triangular mark at each end of the transverse suture, in front of root of wing; a broad band from shoulder to wing base; the posterior margin of dorsum of thorax broadly yellow, in the form of four contiguous triangles, the outer ones approximate to wing bases; a large spot placed diagonally on the sternopleura; a curved one between it and the wing base and a last one behind the wing, almost contiguous to the metanotum. Sides of thorax with extremely short and rather sparse pubescence, which is black or yellow in accordance with the colour of the surface.

*Abdomen*.—Basal segment reddish-brown, 2nd, except perhaps at extreme tip, black; remainder of abdomen reddish-brown, with a narrow indistinct transverse blackish streak at base of 4th, and a similarly coloured subquadrate large spot on base of 5th, filling the major part of the segment.

*Legs*.—Coxae black, tips sometimes a little paler; anterior legs yellowish, tibiae indistinctly a little darker, fore tarsi black, except metatarsus, middle metatarsi yellowish-white, rest of tarsus brownish-yellow. Hind legs brownish-yellow, with indistinct traces of brown here and there, base of femora narrowly pale yellow; tibiae rather flattened at base and slightly pinched beyond the middle, with two indistinct though fairly obvious moderately broad blackish rings, one just beyond base, the 2nd sub-apical; tarsi brownish-yellow, last two or three joints black; the 4th joint in all the tarsi much shorter than any of the others.

*Wings* pale grey, gradually darker on apical half, stigmatic region moderately dark brown, ill defined; halteres large, yellow. Venation as in *Pachygaster*.

*Described* from five ♂♂, Darjiling, 1000—3000 ft., May, 1912. All have been in papers (not in spirit) and are more or less compressed, especially the thorax.

#### ***Craspedometopon frontale*, Kert.**

A ♂ from Darjiling, 1000—3000 ft., agreeing exactly with specimens in the Indian Museum supplied by Prof. Kertesz, in which collection are also two others from Tenasserim.

#### **? Gen. nov. near *Acanthina*, W.**

A single ♀ from Darjiling 1000—3000 ft., apparently represents an undescribed genus near *Acanthina*, but is in too bad condition to describe.

#### ***Ptecticus wulpii*, Brun.**

Several specimens from Darjiling, 1000—3000 ft., v-1912, and Singla, iv-1913, of this rather common Sargid. The extraordinary

resemblance in colour, size, and amount of infuscation of the wing tip between this species and the Tipulid *Pselliophora compedita*, *W* seems more than coincidental. Possibly one is distasteful to the birds and the mimicry of the other is protective.

***Eudmeta marginata*, F.**

Five ♂♂ from Darjiling, 1000—3000 ft., June, 1912.

***Ampsalis longispinus*, mihi, sp. nov.** (Pl. xiv, figs. 2, 4, 16).

♂ ♀ Darjiling, 1000—3000 ft. Long. 10—13 mm.

*Head* twice as broad as long. Eyes in ♂ contiguous for the greater part of the distance from vertex to antennae; frons shining black in ♂, in ♀ from one-fourth to one-fifth the width of the head, less shining, bare. Ocelli on a distinct prominence, yellowish. Antennae black, 1st and 2nd joints subequal, cylindrical, barely broader at the narrowly brown tips, minutely spinose; 3rd joint cylindrical, almost filiform, pointed, with 8 annulations. Occiput black, minutely pubescent.

*Thorax* dull black, with microscopic pubescence which in perfect examples is probably blackish or dark grey. Traces of a little brownish-yellow colour behind the wings, and the hind corners of the dorsum distinctly so coloured. Scutellum conspicuous, though of normal size; shining aeneous or blue-black, with some soft (? pale) hairs, and two apical very long and powerful reddish-brown spines, half as long as the abdomen, diverging and directed slightly upwards.

*Abdomen* brownish-yellow; 1st and 2nd segments mainly black, hind border of latter brownish-yellow, 3rd and 4th each with a rounded or subquadrate blackish spot of considerable size towards each side of the dorsum, but clear of the margins. In the ♀ these four spots are much larger and nearly fill the surface of these segments. The 5th and 6th segments in both sexes mainly black, but sides and hind margins brownish-yellow. Belly with 1st, 2nd, 4th and 5th segments mainly black, remainder brownish-yellow. In the ♀ the black colour is a little more extended; in both ♂ and ♀ the belly has very short yellowish pubescence over its whole surface. Genitalia in ♂ concealed, in ♀ a narrow, cylindrical tube, with a pair of rather long brownish-yellow hairy filamentous appendages.

*Legs* yellow; hind tibiae incrassated on apical two-thirds, black; hind tarsi longer than tibiae, the hind metatarsus black for two-thirds of its length, and being as long as the remaining joints taken together.

*Wings* distinctly yellowish, very shining, apical third and hind margin grey; stigma black or blackish-brown, veins blackish; halteres yellow.

*Described* from 3 ♂♂ and 4 ♀♀ from Darjiling, 1000—3000 ft. v, vi-1912 and Singla, iv-1913, in fair condition.

*N.B.*—There is nothing to materially prevent this species coming in *Ampsalis*. The head is barely as wide as the thorax at its widest part, and Walker says the scutellum is armed with two oblique ascending spines, but does not mention their great length. The only apparent discrepancy is that he says the flagellum is about twice the length of the scape, whereas in the present species it is fully three times as long, but this difference would not be generic.

***Odontomyia rufoabdominalis*, mihi, sp. nov.**

♂ Darjiling, 1000—3000 ft.

Long. 17 mm.

*Head* black, a little shining. Eyes absolutely contiguous for a short space, leaving a very elongate narrow vertical triangle. Vertex considerably prominent, with a few black hairs; ocelli pale yellowish. Face but little prominent, with short black and grey hairs. Antennae black, 1st and 2nd joints normal, 1st black, 2nd dull brownish (3rd missing). Two small tufts of grey hairs immediately above antennae, and a trace of grey hairs along the sides of the face.

*Thorax* black, slightly shining, dorsum and sides with moderately thick, not long, black and grey hairs, set in minute black sockets which give the dorsum a granulated appearance, often two or three hairs emerging from the same socket. Small patches or bunches of grey hairs occur around the base of the wing and on the pleurae. Scutellum similarly clothed to the thorax, with a fringe of rather ragged grey hair on posterior border and a short blunt spine at each hind corner.

*Abdomen.*—Ground colour of 1st and 2nd segments and major portion of 3rd, 4th and 5th black, a little shining, the sides of the dorsum, nearly from the shoulders to the extreme tip, and the hind margins of the 3rd, 4th and 5th and the bulk of the 6th segment all bright reddish-orange, covered with similarly coloured pubescence. The black parts are clothed with sparse black pubescence, a small patch of greyish hairs on hind corners of 2nd segment, and some yellow hairs extend along the narrow red side edges of the abdomen, nearly or quite to the shoulders. Belly dull reddish-orange, becoming brighter towards tip, the central part of most of the segments more or less black. Pubescence of belly wholly reddish-orange, short and depressed.

*Legs* black, with a little short greyish hair; under and inner sides of tibiae towards tips and about the apical half of the anterior and the whole of the hind tarsi (the latter lengthened) orange yellow, with short gold pubescence.

*Wings* yellowish-grey stigmatic region black; the major portion of the middle of the wing from anterior margin nearly to posterior border darker brown, the colour fading away gradually. Halteres buff; thoracic squamae milk-white with similarly coloured soft hair.

*Described* from a single ♂ in good condition, Darjiling, 1000—3000 ft., June, 1912. A very handsome species and totally unlike anything described from the East.

#### TABANIDAE.

All the specimens of this family are in bad condition through immersion in spirit, three species being present, one, which though I cannot identify it, appears to fall in Miss Ricardo's "group IX," represented by a short series of examples in less inferior condition than the remainder.

#### BOMBYLIDAE.

##### *Hyperalonia tantalus*, F.

Several from Darjiling, 1000—3000 ft.

##### *H. flaviventris*, Dol. or *oenomaus*, Rond.

One ♂ from Darjiling, 1000—3000 ft., July, 1912, is probably one or other of these species.

##### *Argyramoeba distigma*, W.

Three from Darjiling, 1000—3000 ft., and Singla.

#### MYDASIDAE.

##### *Mydas carmichaeli*, mihi, sp. nov.

♂ ♀ Darjiling District. Long. ♂ 25, ♀ 27 mm.

*Head* black, frons slightly wider than one-third of the head, slightly wrinkled, with a moderate amount of blackish-brown pubescence; a small tuft of greyish hairs on each side of the mouth opening. Proboscis rather less than the height of the head, dark brown; palpi slender, black, reaching as far forward as a vertical line drawn through the antennal prominence, which latter is small and black. Antennae normal, black, bare, about as long as from the vertex to the tip of the proboscis. Occiput black, shortly pubescent; a little grey tomentum behind the eye border.

*Thorax* wholly dull velvet black with very short sparse black pubescence, which is a little longer below the wings.

*Abdomen* shining black with a slight indigo-blue tinge, and very short pubescence; in ♂ subcylindrical, as long as head and thorax together and barely as wide; in ♀ a little broader and longer and much more bulky. The ♂ genitalia consist of a hollow triangular piece, hairy above, with a deep keel, a pair of dark reddish-brown, nearly bare, moderately long, narrow, finger-like claspers (only one joint being visible, the organs being somewhat withdrawn), and a curved ventral plate, with black pubescence on its lower side. The ♀ genitalia appear to consist

of two telescopic cylindrical shells, the inner one ending in two small (probably) retractile lamellae.

*Legs* wholly black; coxae with a little short black pubescence; hind femora with two rows of spines on under side, an inner-one of about a dozen and an outer one of a few only. Hind tibiae with a row of reddish spines on under side (not at all conspicuous), and 5 or 6 such spines at the tip on the under side only. Fore tibiae with some inconspicuous spines at tip, which appear to be only the terminal ones of a row on the under side: nearly hidden by the thick though short black pubescence which clothes all the tibiae. A row of spines including the apical ones is apparently present on the middle tibiae also, though certainly much less conspicuous. Claws distinct, pulvilli pale brownish-yellow.

*Wings* dark blackish-brown, a little paler towards tip and hind margin, and with a strong violet tinge. Halteres and squamae black, the latter with a narrow fringe of dark brown hair.

*Described* from a single pair, the ♂ from Darjiling, v-1912, the ♀ from Singla, iv-1913. Both are perfect specimens and the ♂ has not been immersed in spirit.

#### ASILIDAE.

There are a good many specimens of this family, but nearly all are valueless from immersion in spirit. About 15 examples are fairly or quite good, representing about half that number of species, but I am at present unable to identify oriental species in this family.

#### SYRPHIDAE.

##### *Baccha robusta*, Brun.

Four specimens, ♂ ♀, Darjiling, 1000—3000 ft.

##### *Didea ovata*, Brun.

One ♂, Darjiling, 1000—3000 ft.

##### *Syrphus* spp.

Several specimens; two species, of which one is either *ribesii*, L., or allied to it.

##### *Asarcina aegrotus*, F.

One from Darjiling, 1000—3000 ft. The head being crushed, the sex is indeterminable.

##### *Milesia gigas*, Macq.

Three, ♂ ♀, Darjiling, 1000—3000 ft., and Singla, v-1913.

**Milesia balteata, Kert.***(M. himalayensis, Brun.)*

A good series of both sexes in bad condition, Darjeeling, 1000—3000 ft., Singla and Sevook, 1000 ft., Darjiling District, iv-1913.

**Milesia variegata, Brun.**

Several of both sexes in bad condition from Darjiling 1000—3000 ft., and Singla.

**Milesia ? macularis, W., var.**

A single ♀ from Singla is near this species but there are several discrepancies, as for instance a second, smaller pair of yellow spots on the 2nd to 4th segments, whilst the colouration of the antennae and legs is different. The specimen is not sufficiently well preserved to describe as new, but a figure is given of it.

**Milesia ferruginosa, mihi, sp. nov.** (Pl. xiv, fig. 12).

♀ Darjiling, 1000—3000 ft.

Long. 10—17 mm.

*Head* rich shining yellowish-brown, a large, approximately oval, bright yellow-dusted spot on each side of middle of frons contiguous to eyes. Traces of yellow dust on cheeks and above mouth opening, where are also a few short yellow hairs. Vertex with some short stiff black hairs. Frons just above antennae one-third the width of the head, diminishing to half that width at vertex, with a few scattered black hairs. Proboscis, palpi and labella blackish, the latter rather large, antennae wholly shining yellowish-brown, 3rd joint deeper than long, the anterior edge straight, arista concolorous. Occiput bright yellow-dusted.

*Thorax* brownish-yellow; dorsum mainly filled by three nearly or quite contiguous black stripes of equal width, not attaining anterior margin, but the two outer stripes reaching posterior margin. The spaces between the stripes on anterior part occupied by two narrow gold dust lines, broadest in front, and extending posteriorly to just beyond the suture. Humeral calli distinct, a little brighter yellow. Whole dorsum with minute black or yellow pubescence, following the ground colour. Scutellum deep reddish, broadly black at base, whole surface with moderately long black softer pubescence and numerous isolated longer hairs. Posterior border with sparse fringe of very short golden yellow hairs. Sides of thorax black; mesopleura wholly, and the adjacent margins broadly of the pteropleura and sternopleura, with a space below the shoulders brownish-yellow.

*Abdomen.*—The 1st segment all black, 2nd black, with a very narrow but well defined lemon-yellow band a little beyond the base, tip of segment with short yellow hairs; 3rd and 4th segments with a moderately broad chrome-yellow band at base, followed by a narrow, not well defined, though distinct, black

band, more or less emarginate in the middle, the remainder of each segment rather bright reddish-yellow. The whole dorsum of abdomen with short recumbent yellow hairs, which are nearly whitish on the 1st segment and become more reddish-yellow on the 3rd and 4th segments. Genitalia withdrawn, apparently fairly large, reddish-yellow with black hairs. Belly black, yellow haired, posterior margins of segments narrowly yellow.

*Legs.*—Femora reddish-yellow or orange; basal half of posterior pairs black, front sides of anterior femora with black stiff pubescence, hinder sides with longer and softer hairs, especially on apical half. Hind femora with a small yellowish tooth just beyond two-thirds of its length, pubescence covering most of the limb yellowish, but some longer black hairs on underside. Tibiae yellow, posterior pairs paler, all with short and rather close pale yellow pubescence. Tarsi pale yellow with concolorous pubescence, fore pair with traces of blackish here and there.

*Wings* pale grey; yellowish-brown from costa to spurious vein, the colour extending just behind the apical half of the 3rd longitudinal vein. Halteres small, black.

*Described* from three ♀♀ from Darjiling, 1000–3000 ft., and Singla, also from three ♀♀ sent me for identification by Dr. Imms, taken by him in the Kumaon district, 13-v; 18-v; 18-vi-12. The species seems remarkably constant in its markings and colouration but varies considerably in size. It seems to come near *M. doriae*, Rond., described from Borneo.

***Eumerus rufoscutellatus*, mihi, sp. nov.** (Pl. xiv, fig. 13).

♂ Darjiling.

Long. 12 mm.

*Head.*—Eyes contiguous for only one-fourth the distance from vertex to antennae, rather suddenly separated above this space, forming a moderately wide frons which is black, with black hairs in the middle and bright yellow hairs on vertex and lowest part; facets of uniform size throughout except those immediately in front. Frons flat, not at all prominent, yellowish-grey with bright yellow hair. Antennae large, rather dark brown, first two joints normally bristly; 3rd joint a little lighter on upper side, with microscopic grey tomentum, rounded above to tip, straight on lower side, a long dorsal arista.

*Thorax* violet-aeneous, moderately shining, with moderately dense short brownish-yellow pubescence, and two widely separated grey tomentose longitudinal stripes from anterior margin to scutellum, and a stripe along the transverse suture, but interrupted between the two longitudinal stripes. Humeral calli aeneous, with a little yellow pubescence. Sides of thorax blackish-aeneous with a considerable amount of bright yellow hair on pleurae. Scutellum broad, violet-aeneous, covered with copious long bright yellow hair.

*Abdomen* dark aeneous black, not very shining, basal corners a little steel coloured viewed from certain angles; a pair of diverg-

ing, narrow, elongate, grey tomentose stripes on 2nd, 3rd and 4th segments, beginning approximately near base of segment and extending nearly to posterior corners. Surface of the abdomen with microscopic pale yellow pubescence, which is brighter and longer on hind margins of segments, and there is a patch of bright reddish-orange pubescence at basal corners of 2nd segment. Tip of abdomen with black hairs. Belly blackish, with a little sparse yellow pubescence.

*Legs* black; basal half and tips of anterior tibiae and the anterior tarsi brownish-yellow; hind legs black, except knees, tips of tibiae and apical part of each tarsal joint. All legs with yellow pubescence, rather long on femora and tibiae, especially on hinder and under sides; hind tarsi considerably incrassate, with bright reddish-brown pubescence.

*Wings* grey, stigma small, blackish; anterior cross vein at two-thirds of the discal cell, very sloping; halteres yellow.

*Described* from one ♂, in inferior condition from immersion in spirit, from Singla.

***Xylota annulata*, mihi, sp. nov. (Pl. xiv, figs. 11, 15).**

♂ ♀ Darjiling District.

Long. 11 mm.

*Head*.—♂ Eyes contiguous for half the distance from the black vertex to the face; frons a small triangle, with very short grey pubescence below the space occupied by the reddish ocelli. Face black on upper part, yellow on lower part, wholly covered with yellow tomentum except the shining black upper side of the antennal prominence. Antennae rather dark brown, shining, bare of pubescence, but with a few short bristles on two basal segments; mouth parts blackish-brown. Occiput blackish, with a little sparse yellowish-grey hair behind the eye borders. In the ♀ the frons less than one-fifth of the head at the vertex, widening distinctly down to the antennae, all black, with a little very short bright yellow pubescence which may (apparently) extend over the whole frons except perhaps towards the vertex.

*Thorax* aeneous, a little bronze reflection viewed from certain angles; two median well separated stripes of bright minute golden yellow hairs from anterior margin nearly to scutellum; a little similar hair on shoulders, hind corners of dorsum and at each end of the transverse suture; shoulders a little yellowish. Sides of thorax black, with a yellowish tinge to the mesopleurae, which bear a little bright yellow hair. Scutellum dull aeneous black with a little very short yellow pubescence around the margin.

*Abdomen*.—The 1st segment mainly yellowish, rest of dorsum black with, on each side of the 2nd and 3rd segments, a subtriangular or semicircular yellow spot, extending nearly the length of the side margins and spreading inwards until only a rather narrow median black intervening space is left. The 4th segment in ♂ and ♀ shining aeneous, brighter in ♀ (this may be mere individual variation), 5th segment in ♂ yellow; both 4th and 5th segments

in both sexes with a little short bright yellow pubescence, of which there is also a little at the basal angles of the abdomen. The whole yellow part of the dorsum with minute yellow pubescence, of which a little occurs on the belly.

*Legs* bright yellow, hind femora exceedingly incrassated (as in *Syritta*), with a broad black median band, widest on upper side, and a narrow black apical band. Hind tibiae and tarsi and anterior tarsi tips black.

*Wings* pale grey, anterior cross vein just beyond middle of discal cell and distinctly sloping; stigma pale yellow, halteres yellow, squamae yellow with yellow fringe.

*Described* from a ♂ from Singla, iv-13, and a ♀ from Darjiling, 1000-3000 ft., v-12.

*N.B.*—The hind femora are much more incrassated than is normal in *Xylota*, but the species fits into this genus better than elsewhere. It might be placed in *Syritta*, to which its general resemblance is striking, but for the position of the anterior cross vein.

### *Mallota rufipes*, mihi, sp. nov.

♂ Darjiling District.

Long. 12 mm.

*Head.*—Frons at vertex one-fifth total width of head, considerably wider at level of antennae; black, a little shining, with some black hairs, which apparently do not continue as far as the antennae; ocelli at vertex on the barely perceptibly raised surface. Face moderately produced, wholly black, bare, but for a little whitish-yellow pubescence. Antennae bright yellowish-brown, on a distinct, shining black prominence, the tip of which is bright yellowish-brown; 3rd joint grey-dusted, arista bright yellowish-brown, bare.

*Thorax* wholly dull black, with thick long black pubescence; scutellum dull reddish-brown with thick black pubescence.

*Abdomen* rather curved, dull black, with thick black pubescence; apical part of 4th segment and whole of 5th with a little grey tomentum. A bunch of very bright orange-yellow hairs towards sides of 2nd segment. Belly dull black, pubescent.

*Legs.*—Coxae and about basal half of femora black, with black pubescence; remainder bright reddish-orange, with thick dense concolorous pubescence. Hind femora almost straight, considerably deepened, with numerous small spines below towards tip; hind tibiae distinctly but not greatly curved, considerably flattened and moderately deepened. Pulvilli orange, claws orange on basal half, remainder black.

*Wings* pale yellowish-grey, apical half a little infuscated, embracing loop of 3rd longitudinal vein; marginal cell obviously but not widely open; anterior cross vein exactly at middle of discal cell, slightly sloping; anal vein continued straight, almost to the wing border. Halteres dull brownish-yellow.

*Described* from a single ♂, Singla.

*N.B.*—The pubescence is considerably matted in this specimen through it having been immersed in spirit, and though the colours may not have altered, they are probably brighter in fresh specimens and the black parts of the surface more shining.

***Eristalis tenax*, L.**

A ♀ from Senchal, 8000 ft., v-1913.

***Eristalis orientalis*, W**

Three ♂♂ from Singla.

*N.B.*—Two other species, a ♂ of each, are present, which cannot be identified with certainty.

***Megaspis crassus*, F.**

One ♀, Darjiling, 1000-3000 ft

***Megaspis zonalis*, F.**

Two ♀♀, Darjiling, 1000-3000 ft.

***Axona cyanea*, mihi, sp. nov.<sup>1</sup> (Pl. xiv, fig. 3).**

♂ Darjiling District.

Long. 11 mm.

*Head* set closely on the thorax. Eyes touching for a considerable space, chocolate-brown, upper facets distinctly larger than lower ones. Vertical triangle small, black, with a little black pubescence; ocelli red. Frons rather prominent, brilliantly shining violet, with soft black hairs. Face brilliantly shining violet, distinctly prominent, cut away below antennae and produced over mouth opening, provided on each side of the latter with a small blunt point. Mouth parts concealed, blackish. Antennae blackish-brown, 1st and 2nd joints short, normal, with a few short bristles, 3rd rounded, dull, with basal brownish-yellow bare arista (the latter under high microscopic power being seen to bear a few pale hairs towards the base). Occiput black, hind border of eyes narrowly margined with grey tomentum.

*Thorax*, scutellum and abdomen shining violet-blue, all covered with short stiff black hairs. Belly dark with black pubescence.

*Legs* black with violet-blue tinge; hind femora rather flattened and considerably deepened until just before the tip; no bristles or spines are obvious. Hind tibiae barely curved and with a slight peculiar thickening in the middle. All the legs with short soft black pubescence, tarsi with a little golden brown pubescence on underside; claws and pulvilli well developed.

*Wings* clear, rather pointed, marginal cell almost closed on the border; anterior cross vein immediately beyond the exact middle of the discal cell, slightly sloping; 6th longitudinal (anal) vein

<sup>1</sup> See addendum, p. 277.

continued almost to the wing margin, nearly straight. Alulae large, thoracic squamae rather large, dirty white with rather thick dark fringe; halteres very small, bright yellow.

*Described* from a single perfect ♂, Singla, April, 1913

*N.B.*—This species has every appearance of a large *Calliphora*. There can be little doubt of it belonging here. The head, thorax and abdomen are closely applied to one another, answering to Walker's expression "body subfusiform"; his "wings acute" is another point of resemblance, and the purplish-blue colour of the only species previously known, *chalcopyga*, W., is a final similarity.

### *Ceria javana*, W.

Four ♀ ♀, Darjiling, 1000–3000 ft.

### *Ceria trinotata*, Meij

A good series of both sexes in inferior condition from Darjiling, 1000–3000 ft., and Singla.

### *Ceria triangulifera*, mihi, sp. nov. (Pl. xiv, fig. 10).

♂ ♀ Darjiling, 1000–3000 ft.

Long. 12–13 mm.

*Head.*—Eyes in ♂ contiguous for a very short space only, ocellar prominence occupying the whole of the vertical surface; a little gold hair immediately above the point of junction of the eyes. Frons wholly black, remainder of front part of head down to the mouth opening rather bright lemon-yellow. A large semicircular black spot (convex side uppermost) embracing the antennal prominence, joined to the upper black part of the frons by a somewhat narrow black stripe, and also joined by a black stripe below the antennae to an irregular elongate-triangular spot on the face (apex downwards), with rounded angles and incurved on the two sides. The lowest part of this triangle does not quite reach the mouth opening. Cheeks lemon-yellow with a broad black stripe from lower corner of eye to lower corner of cheek. Mouth parts blackish. Antennal prominence ferruginous brown; basal half of 1st joint, apical half of 2nd and the 3rd joint black, the three joints forming an elongated club. A broad, bright yellow band behind the vertex and upper part of hind margin of eyes. Occiput black, yellowish towards sides.

*Thorax* dull black with just perceptible black pubescence and lemon-yellow more or less oval spots placed as follows: on humeral calli, at each end of transverse suture, on mesopleurae and one placed transversely on the sternopleurae. There is also a faint yellow line extending indistinctly along the suture. Scutellum yellow, with a basal, rather small, black, semicircular spot; metanotum black.

*Abdomen* black; 2nd segment often with a narrow dull reddish-brown tinge at base and tip. A large yellow spot at sides of 1st

segment, and the hind margins of 2nd, 3rd and 4th segments yellow; a little yellow tomentum on hind part of 4th segment.

*Legs*.—Coxae black; femora lemon-yellow, anterior pairs a little brown on apical half, and with a black irregular streak on underside; hind pair lemon-yellow on basal half, brownish-yellow on apical half, with an intermediate black band, which is considerably wider on the underside. Tibiae brownish-yellow, a little darker towards tips, hind pair moderately curved. Tarsi light brown.

*Wings* grey, anterior part as far as spurious vein on basal half, and as far as 3rd vein on apical half, rather dark brown. Halteres yellow.

*Described* from one ♂ and several ♀ ♀, Darjiling District, 1000–3000 ft., May, 1912.

*N.B.*—Three other species of *Ceria* are present, all apparently undescribed. The first is near *fruhstorferi*, represented by a good series of both sexes from Darjiling District and Singla; of the second three specimens (♂ ♀) from Singla are present; of the third, which is near *apicata*, four specimens (♂ ♀) are present from Singla.

#### CONOPIDAE.

*Physocephala quadrata*, mihi, sp. nov. (Pl. xiv, fig. 5).

♂ ♀ Darjiling.

Long.  $7\frac{1}{2}$ –9 mm.

*Head* yellow or brownish-yellow. Frons just over one-third the width of the head, barely wider on its upper part, dull yellow, more or less irregularly infuscated with black, sometimes nearly wholly black. Mouth opening more or less blackish, proboscis black, twice as long as the head. Antennal 1st joint reddish-brown, 2nd black above, reddish-brown below, brighter on apical fourth, the colour at the tip often encroaching on upper side also; 3rd joint black above, reddish-brown at least on basal part of underside. In some examples the whole tip of the 2nd and base of the 3rd are reddish-brown above as well as below. Occiput blackish, more or less black infuscated here and there.

*Thorax* wholly brownish-yellow; a quadrate dull black spot nearly filling the dorsum, but not attaining the margin, although connected with the anterior margin by a short broad black stripe. Scutellum and metanotum probably reddish-brown normally, the latter with a little gold tomentum at the actual sides. Sternopleurae and mesopleurae with a little silvery-white shimmer.

*Abdomen* brownish-yellow or reddish-yellow; 1st joint black, 2nd with a black streak on dorsum at base, 3rd with about the middle third or more black, 4th, 5th and 6th with more than basal half black, a broad band of bright gold tomentum on hind margin of 3rd and 4th segments; apical half of 5th and about the same of the 6th in ♂ (and nearly whole of 6th in ♀) similarly dusted with gold tomentum, which is, however, less bright. The 5th segment is very short in the ♂ and the 6th considerably lengthened, although in the ♀ both are normally shaped.

Genitalia in ♂ large, ellipsoid in shape, reddish-brown, smooth, shining, with a small shining bare, black 2nd joint at tip, and the usual triangular hollow appendage below 5th segment. Genitalia in ♀ small, black. The degree of slenderness of the basal part of the abdomen is slightly though distinctly variable.

*Legs* brownish-yellow. Coxae black, hind pair with silvery-white dust; hind femora with a broad black ring situated so that the limb is broadly brownish-yellow at base and rather narrowly so at tip. All tibiae with a silvery-white shimmer, with a tinge of pale lemon-yellow on basal part; hind pair black towards tips on inner sides. Tarsi more or less blackish above; pubescence brownish-yellow.

*Wings* pale grey. Anterior part moderately dark blackish-brown from costa to 3rd longitudinal vein, the colour sharply demarcated, and extending distally to level with about the middle of the 1st posterior cell, but without any sharp demarcation. Costal cell often a little paler. Halteres yellow.

*Described* from several of both sexes from Singla

*N.B.*—These specimens have all been immersed in spirit and the finer points are therefore indefinite. The characters depicted, however, appear constant, except of course those stated to be variable. The species is probably bare on the head and thorax, though this is not certain; a limited amount of very short black pubescence on the abdomen. It must bear some resemblance to *P. testacea*, Macq., *calopa*, *tenella* and *nubeculosa*, Bigot.

### Conops sp.

One ♀ from Darjiling, 1000–3000 ft., in too indifferent condition to identify.

### MUSCIDAE.

Of the *Muscidae* most of the calyptrates are valueless from immersion in spirit, but they include several specimens of a large Tachinid, which has a general resemblance to the common European Muscinid *Mesembrina meridiana*, except that it has a dull reddish-brown abdomen; one or two *Sarcophagae*, a *Calliphora*, a *Rutilia* and some others.

Amongst the acalyptrata there is a *Calobata*, a Trypetid, an Ortalid and one or two others, all represented with one exception by single specimens, and in addition the two following species.

### *Xenaspis vespoides*, Meij.

Five of this very large handsome species, agreeing very well with Meijere's description and figure, from Darjiling, 1000–3000 ft.

*Loxoneura ornata*, mihi, sp. nov. (Pl. xiv, fig. 1).

Darjiling, 1000–3000 ft.; Dehra Dun. Long. 10–11 mm.

*Head.*—Frons and face to lowermost point of head almost of uniform width, one-third of the head, but slightly narrowed just

below antennae. Frons rich brownish-orange, vertex with a little more yellowish tinge, both with minute black hairs; ocellar triangle exceedingly small, barely raised above the surface. Facial triangle quite prominent and flat, pale yellowish, blackish towards tip. A narrow tomentose stripe on inner side of eyes from vertex to lower corner of eye, gradually widening from top to bottom, but when viewed from behind the whole of the sides of the face appear uniformly yellowish; the space between this stripe and the facial triangle brownish-orange as the frons. Mouth border narrowly black. Proboscis large, completely filling mouth opening, much swollen at tip, side view triangular, yellowish, labella and palpi concolorous; former with a little yellow pubescence, latter two-jointed, about as long as the 3rd antennal joint, elongo-cylindrical, with a few hairs. Antennal 1st joint very short, 2nd distinctly longer than wide, both reddish-brown, with some small black bristles on upper side; 3rd joint ovate-conical with narrower rounded tip, bare, blackish, reddish-brown at base, arista rather long, basal, black, apical half plumose above and below.

Eyes oblong, twice as high as wide; occiput flush with vertex on upper half, much swollen posteriorly on lower half, almost equal in width to the eye; wholly brownish-yellow.

A single pair of post-vertical strong bristles towards corners of eyes, and a pair of oral vibrissae.

*Thorax* deep metallic indigo-blue, the surface studded with almost microscopic tubercles, from each of which two or three short stiff brownish-yellow hairs emerge. Sides of thorax and scutellum of a similar nature, latter with a row of several bristles on posterior margin. Humeral calli yellowish-brown, bare, a small similar dark brown callus bearing a single spine, at each end of the transverse suture.

*Abdomen* much curved downwards; shining metallic deep blue, studded with hair-bearing tubercles as the thorax. Belly mainly yellowish in centre. Genitalia deep blue, small, cylindrical, with a telescopic yellow interior piece.

*Legs*.—Fore coxae long, slender, smooth, shining, twice as long as posterior ones, the latter a little pubescent; fore femora with a row of 8 or 10 small spines on underside, extending nearly its entire length. Legs all blue-black, microscopically pubescent; pulvilli yellow.

*Wings*.—Ground colour pale grey; dark brown from anterior border to 5th longitudinal vein, and distally from base to the upturned section of the 5th vein, the colour thence rather sharply delimited in an oblique line to the anterior margin; the costa broadly brown to the tip, but sometimes this apical section of the brown colour is cut off from the remainder by a very narrow clear space. Beyond the middle of the wing a large semicircular spot on costa, extending nearly as far backwards as the 4th longitudinal vein, and more yellowish in front. Halteres blackish.

*Described* from a single specimen in good condition amongst Lord Carmichael's Diptera from Ghumti, 4000 ft., August, 1912,

and also from four other specimens of the species in the Indian Museum from Sikkim and Dehra Dun. One of these bears a label with the present name in Bigot's handwriting, and as it is in all probability a *nomen nudum* it is allowed to stand.

HIPPOBOSCIDAE.

**Hippobosca capensis**, Olfers.

Five specimens from Singla.

ADDENDUM.

**Axona cyanea**, ♀

Since describing the ♂, a ♀ has been found amongst the same Diptera, from Darjiling District, June, 1913. It is similar to the ♂, the frons being one-fourth the width of the head, barely wider at level of antennae; face moderately projecting with two equal-sized bumps, not extending beyond the antennal protuberance; both frons and face being shining violet-blue.

