

Ann. Rep. Dept. Geology, Indiana, for 1902, pp. 123-471 ; one coloured plate and many text-figs.). A somewhat popular account of the Orthoptera of Indiana, treated in a very full and clear manner, accompanied by notices of their natural enemies, a bibliography, and analytical keys ; the accounts of habits and geographical distribution are very interesting, especially the consideration of the life-zones of the State as exemplified by the distribution of the present order. There is a fine coloured plate of the remarkable pink variety of *Amblycorypha oblongifolia*.

ED. J. KYLE & EDWARD C. GREEN, 1903 : "The Tomato" (Bul. Texas Agric. Exp. Sta. 65, pp. 1-31). The Rhynchoton *Dicyphus saporatus*, Uhler, is noted as a new tomato insect causing serious injury in Texas.

(To be continued.)

NEW CULICIDÆ FROM THE FEDERATED MALAY STATES.

By FRED. V. THEOBALD, M.A.

A COLLECTION of twenty-three specimens of Culicidæ recently sent to me by Dr. Leicester, taken and bred by him in and near Kuala Lumpur, contains ten new species and six new genera. Two other species were sent, namely, *Stegomyia nivea*, Ludlow, and *Myzomyia albirostris*, Theobald, previously known, the former from the Philippine Islands, the latter from Malay.

The descriptions of most of these species have been sent me, drawn up by Dr. Leicester, from fresh specimens, with great care. These descriptions are reproduced here in inverted commas, showing that Dr. Leicester is the describer of the species and not myself, but I have added a few notes on each species. I have proposed six new genera, one named after Dr. Leicester. Most are jungle-living species, and this probably accounts for the novelties in the collection, as the majority of collections so far made have been in and around human habitations. Besides the six new genera, there is a new *Melanoconion*, Theob., three new *Toxorhynchites*, Theob., and a new *Catageiomyia*, Theob. I believe Dr. Leicester has notes on the larvæ of these species to be described elsewhere. I wish it clearly to be understood that the new species, except *Toxorhynchites leicesteri*, *Scutomyia albolineata*, and *Leicesteria longipalpis*, are on the authority of Dr. Leicester. The types are deposited in the British Museum (Nat. Hist.).

ANOPHELINEA.

Genus LOPHOSCELOMYIA, nov. gen.

Head with upright forked scales, and some narrow-curved ones ; palpi densely scaled in both sexes, most so in the male ; thorax with

very long curved hair-like scales. Prothoracic lobes large, with a tuft of black spatulate scales on the anterior face, and with black bristles. Abdomen with hairs only, except the last two segments, which have lanceolate scales. Hind legs with a dense tuft of outstanding scales on the apex of the femora. Wings clothed with broadish blunt lanceolate scales.

This genus approaches *Nyssorhynchus*, Theob., but differs in having long, curved hair-like scales on the thorax instead of narrow-curved and spindle-shaped ones. The dense apical tufts on the hind femora are very marked in both sexes.

So far I have seen no Anopheline approaching it in general appearance. Possibly others will be found in jungle growth.

A single species only is known, and is here described by Dr. Leicester.

The female type is, unfortunately, broken in transit.

LOPHOSCELOMYIA ASIATICA, Leicester, sp. n.

"Hind legs with the femora with a dense apical tuft of long black and white scales. Wings with two yellow costal spots. Tarsi unbanded.

"♀. Head black, frosted, when dry dark brown; the scales are arranged in tufts, and bare places are left between; it is rather lighter along the orbital margins, giving the appearance, under a hand lens, of a narrow white margin to the eyes; on the vertex is a tuft of long, silky hair-like scales, with a double curve on them which project well forwards; behind these are a few white narrow-curved scales placed on either side of a bare black line and extending but a small way back and laterally for a short distance down the orbital margins; behind these are some flat-topped white upright scales which merge behind into a dense mass of black (when dry, brown) upright scales extending laterally over the occiput to just short of the eyes, from which they are separated by a bare space. I can perceive no flat scales anywhere. There are a few black narrow-curved scales succeeding the white along the orbital margin. The eyes are a metallic bronzy-green. Antennæ with the basal joint dusky, its depression brown, some rather broadly spindle-shaped white scales on its inner face; the second joint light brown, some black spindle-shaped scales on its inner face, succeeding joints similar but without scales; all the joints except the basal one covered with short white hair; verticillate hairs pale brown. Palpi equal in length to proboscis; pallid, covered with long black scales, a few pale ones at the junction of the third and fourth joints, and some pallid hairs at the tip (best seen with a hand lens). Proboscis covered with black short scales; labellæ fawn-coloured. Mesonotum with the greater part of the upper surface of a pale fawn colour (in some lights it has a greenish tinge) with a dark brown line in the centre in front; on either side there are two dark brown patches separated by a narrow pale line. Looked at sideways these patches look lighter except for a small round dark spot at the upper part of pale line separating the two patches. In front is a rosette of fairly broad curved scales, white in colour; the rest of the mesonotum is covered with scattered pale golden hair-like curved scales (white in

some lights) and pale golden bristles. Prothoracic lobes elongated forwards but not mamillated; a tuft of black spatulate scales placed on their anterior superior face, and there are also some black bristles. Scutellum with the central part dark brown, black under a hand lens; lateral portions same colour as mesonotum; a few pallid curved hair-like scales are scattered irregularly over it, and the bristles are brown in colour. Metanotum the same colour as the mesothorax, with a dark brown central stripe. Wings with the costa black scaled, except for two yellow scaled spots involving the first longitudinal, and the second spot involves the upper branch of second longitudinal. The first spot is placed rather more than half way from base of the costa, the second just before the apex of the wing. There are two patches of black scales, one at base of second long vein, and the other at base of third and at base of the fourth. There is a light scaled area on the lower branch of second longitudinal. The first sub-marginal cell longer and narrower than the second-posterior cell with its base nearer the base of the wing (cross-veins cannot be made out). All the rest of the veins clothed with black scales. Fringe black except opposite the yellow apical spot, where it is golden yellow. Pleuræ dark brown, marked with pallid lines. Legs with coxæ pallid; fore-legs clothed with black spindle-shaped scales with a purplish hue in some lights; knee-spot pale, and a few pale scales at junction of tibia and metatarsus. Mid-legs the same as the front, except for a conspicuous patch of white scales on the dorsum of the femora just before the apex. Hind-legs have a little before the apex of femora a dense tuft of lanceolate scales which stand out on either sides conspicuously; where this ends the femora become snowy white, and similar long scales, snowy white in colour, project from either side. There is no banding of the tarsi. Fore and mid unguis equal and simple. Abdomen has the dorsum greenish-yellow except segment four, which is dark brown; there are numerous pale golden hairs; on the last two segments there are numerous golden brown and dark brown lanceolate scales. The apices of the segments are slightly darker than the bases.

"♂. Head muddy brown when fresh (dark brown when dry); between the eyes is a triangular space bordered on either margin by white narrow-curved and more to the front by long silky white hair-like scales, which cross and project forwards over the face; behind this space are a number of white spatulate scales standing upright like palisades; the ends are not forked; passing backwards towards the nape and also laterally is a dense tuft of upright scales which become darker and darker the further back they are placed. Antennæ with the basal joint dark brown, succeeding joints dirty white at the base, yellowish at the apex, plumes pale tawny brown. Palpi long, black scales at the base on their outer sides; dark brown scales over the whole of the apparent first joint, except for a ring of pale scales about its middle; a ring of yellowish scales at the junction of the penultimate and antepenultimate joints; upper surface of apical half of penultimate joint scaled with yellowish scales and all the terminal joint except for a patch of black scales near its base. Proboscis uniform. Thorax pale fawn brown; a median dark line and lateral dark brown patches; on the anterior margin is a rosette of long narrow-curved white scales; hair-like golden bristles arranged in

lines are distributed over it; there is a dark spot in front of scutellum. Wings with the costal spots much paler yellow than in the female; the first spot is very long, and commences fully two-thirds from the base of the costa; the second spot is small, and near the apex both involve the costa to first longitudinal, the second involving also the upper branch of second long vein. At the base of the second long vein is a distinct patch of black scales, and a few are scattered along the course of this vein. There is another patch at the base of the third vein, and another near the base of fourth, and a very few along the course of the vein. Besides these and the scaling on the costa and subcosta and first long vein there are no other dark scales on the wing. In the feathering of the hind legs and the markings of the legs generally it resembles the female. Abdomen as in the female."—(Leicester). Length 4 mm., male; 4.3 mm., female.

Observations—This species was taken in Ambang Jungle, six miles from Kuala Lumpur, on the 27th of June. It is a very distinct small Anopheline, the hind femoral tuft alone distinguishing it, and the wings have five noticeable black spots, four prominent and true distinct yellow costal spots. The specimen sent by Dr. Leicester is in the British Museum (Nat. Hist.) Collection (deposited).—F. V. T.

(To be continued.)

NOTES AND OBSERVATIONS.

IN a letter from our colleague, Mr. W. G. Kirkaldy—who holds an appointment in the Department of Agriculture and Forestry at Honolulu—he mentions having seen ten species of butterflies, among them being *Pieris rapæ*, *Pyrameis cardui*, *P. atalanta*, *Lampides boeticus*, and *Anosia archippus*. *P. rapæ* has probably been accidentally imported, and two species of *Lycænidae* have been introduced for experimental purposes.

Although the insect fauna of the Hawaiian islands has been pretty closely investigated, there still remains considerable scope for further research, especially as regards the important matters of life-histories, distribution, &c.

CROSS-PAIRING OF *ZYGÆNA TRIFOLII* AND *Z. FILIPENDULÆ*.—At the end of July last, while investigating the lepidopterous fauna of the Weybridge district, I came upon a colony of *Z. filipendulæ* on some marshy ground. Among the specimens were several fine examples of a form exactly identical with *hippocrepidis*, Steph., which occurs in May and June in meadows at Northwood, and to which reference has previously been made (Entom. xxx. 181). Flying with the *filipendulæ* were a few males of *A. trifolii*; but still more interesting was the discovery of no less than four crossed pairs of *trifolii* and *filipendulæ*, the males in each case being referable to the first named. Some little

NEW CULICIDÆ FROM THE FEDERATED MALAY STATES.

BY FRED. V. THEOBALD, M.A.

(Continued from p. 15.)

MEGARININA.

Genus TOXORHYNCHITES, Theob. (Mono. Culicid. i. p. 244, 1901).

TOXORHYNCHITES LEICESTERI, n. sp.

Thorax with metallic green scales, an azure spot over the wings. Abdomen purple, banded with pale blue. Legs unbanded in the male, banded with white in the female; last two tarsi white.

♀. Head black, covered with broad flat scales; along the orbital margin is a narrow band of scales broadening out laterally, which are peacock-blue, in some lights they show purple; the rest of the upper surface of the head is clothed with metallic golden scales. Immediately around the nape are a few upright forked scales, dark golden in colour; on the vertex are four golden-brown bristles. Eyes black. Antennæ with basal joints black, frosted, naked; remaining joints black at the nodes, brown at the internodes; verticillate hairs black. Palpi three-jointed, very short, not more than one-sixth the length of the proboscis; first joint swollen at the base and constricted, the last joint small and nipple-like; scales broad, spatulate, under a hand lens dark brown, in stronger light rich blue, except at the tip, where the scales vary from rose-purple to a mauve according to the angle at which the light strikes them. Proboscis broad at the base, long and bent, covered with purple or rose-purple broad scales; at the angle the scales are golden green and some peacock blue mixed among them. Prothoracic lobes small, oval, rather prominent; thickly clad with scales which are purple-blue or rose-purple as the position to light is varied. Mesonotum black, densely covered with broadly spindle-shaped metallic green scales; over the bases of the wings the scales are larger, longer and spatulate-shaped. (In a fresh specimen the colouring is said to be like a green bottle-fly.) If the thorax is examined through a lens, the central part looks dark coppery brown to purple, while the sides, where the light strikes at an angle, show metallic green—in other lights the scales appear bluish green or dark coppery red; at the anterior margin of the mesonotum is a band of scales which appear violet, rose-purple or purple according to the light, and below this a triangular patch of silvery scales immediately behind the prothoracic lobes, and over the roots of the wings a patch of peacock-blue scales and a row of short stout black bristles. Scutellum densely clothed with broad, long flat scales, which on the lateral lobes are of peacock blue or metallic green according to the light, and on the central lobe of a dark green fringed with lighter green posteriorly. Scutella bristles short, dark brown. Metanotum dark brown. Wings brown in colour; the costa and first longitudinal vein clad with broad, flat scales, which are peacock blue, golden green, and purple according to the light; the position of the cross-veins, the

size of the fork-cells and the scaling of the other veins is that of a typical *Toxorhynchites*. Legs with the coxæ yellowish, mid and hind clad with creamy scales on their outer face; fore legs with the upper surface of the femora clad with rose-purple scales; at the extreme apex is a tuft of long spindle-shaped scales which are white or peacock blue; just behind these are black spines placed in a semicircle; the whole of the under surface is covered with bright golden scales; tibiæ entirely covered with purple scales; a short distance from the base on the metatarsus is a ring of creamy yellow scales; third and fourth tarsals mostly covered with creamy scales, the rest of the tarsus and metatarsus with purple scales; mid legs, femora and tibia as in the fore legs; the basal half of metatarsus with creamy scales, apical half purple scaled; all the tarsal joints creamy scaled. Hind legs golden at the base and on the under surface, purple above; scales at apex similar as in the other legs; tibia purple scaled; metatarsus purple scaled except for a broad ring of creamy scales a little beyond its base; first and second tarsal joints purple scaled; third and fourth creamy scaled; unguis equal and simple on all the legs. Pleuræ dark brown, for the most part covered with silvery grey scales. Abdomen with the dorsum of the first segment covered with peacock-blue scales, in some lights a dark green; the other segments covered with rose-purple scales, basal banding of peacock-blue scales. Venter bright golden except for a patch of dark scales on the fourth segment; the last segment fringed with pale golden hairs, no caudal tuft.

♂. Head with a deep depression in the middle line; the scaling is much as in the female. Antennæ banded brown and white; plumes black; basal joint black; second joint scaled with numerous broad golden scales; the two last joints dark and elongated. Palpi 3-jointed, the first joint with a swollen base, having the appearance of a joint constricted in the middle; the second scaled with golden scales except at the apex, where there is a narrow band of purple-blue scales; in the middle there is also a band of purple scales, and towards the base there are on the upper surface purple scales. Proboscis purple scaled, green scaled at the angle. Thorax as in the female. Legs with the coxæ and under sides of femora gold scaled; knee spots peacock blue, or creamy in some lights; the remaining parts of legs purple scaled; no banding. Unguis, fore and mid, unequal; the larger tooth uniserrate. Abdomen as in female. Length 10 mm.

Habitat.—Kuala Lumpur.

Observations.—Described from two perfect specimens sent by Dr. Leicester. The beautifully adorned abdomen, metallic green thorax, with azure wing root-spots, and the last two white hind tarsals of the female, are very characteristic.

TOXORHYNCHITES METALLICUS, n. sp. (Leicester.)

“Thorax brilliant metallic green; abdomen deep rose-purple, with basal creamy yellow bands, no caudal tuft. Legs in the male unbanded, in the female the mid legs have a basal creamy white band; fore and mid unbanded. Male palpi with the second and third joints mostly golden yellow.

“ ♀ . Head black ; a narrow band of creamy yellow scales along the orbital margin, which laterally broadens into a distinct patch ; the rest of the upper surface of head is covered with broad flat scales which vary in colour. If looked at from behind, the central patch looks bronze-green and the scales at the sides blue-green. In one specimen the whole patch is a deep rich blue, while the marginal scales are silver. Immediately above the occipital foramen are a few fawn-coloured upright scales scarcely notched ; a few small bristles are placed on the vertex which look black or purple or even golden brown according to the light. Antennæ with the basal joint black, with a silvery tomentum, naked save for a few short white hairs ; the second joint scarcely swollen, light yellow in colour, with a few black spatulate scales on its upper face ; the succeeding joints black with white pubescence ; the verticillate hairs black. Clypeus black, with silvery sheen, notched on either side. Palpi short, not more than one-fifth the length of the proboscis, 4-jointed (?) ; last joint small and nipple-like. First two joints with golden scales at the sides and beneath ; the two last joints are covered with scales which are coppery or rose-purple according to the angle the light strikes them. The proboscis is long, swollen at the base ; the scales are purple or coppery. Prothoracic lobes small, thickly covered with broad, flat racquet-shaped scales of a creamy yellow colour, with some light brown bristles. Mesonotum black, thickly clad with spindle-shaped flat scales, which laterally become very broad and blunt-ended, and which in a good light appear of a brilliant metallic green to the naked eye in a fresh specimen. Under a lens the colour varies, peacock blue, bronzy purple and metallic green appearing intermixed, now one colour predominating, now another, as the fly is shifted to different angles. On the anterior margin are some golden scales and numerous golden bristles, and laterally in front, immediately behind the prothoracic lobes, there is a band of metallic rose-purple scales, and beneath this is a triangular patch of creamy yellow scales. The two patches meet in a straight line, but the external edges are convex ; hence with the prothoracic lobe they form a rough ellipse. The upper band is to be seen when looking down upon the mesonotum, and is very ornamental. The scutellum is clad with rather long, flat spatulate scales, which are coppery, bronzy or purple-bronze as the direction of the light varies. There is a tuft of bristles over the root of each wing. Scutellar bristles are brown in colour. The pleuræ are a dark, glistening chestnut brown, naked in parts, scaled in other parts with creamy yellow scales. The wings are quite typical ; the costa and first longitudinal vein are scaled with metallic rose-purple scales. Legs with the coxæ and femora light yellow ; tibia and tarsi much darker ; the coxæ, bases and under surface of femora clad with metallic golden scales ; the upper and lateral surfaces of femora and the whole tibia and tarsi of fore leg covered with brilliant metallic scales, varying from coppery-bronze to rose-purple or bronze-purple ; there are creamy scales at the apices of all the femora. Mid leg as the fore, except for a band of golden scales at the base of the metatarsus and golden scales covering the penultimate tarsal joint ; tibia and tarsi of hind legs the same as the fore. Ungues equal and simple. Metanotum black. Halteres with pale yellow stems and dark scaled knobs.

Abdomen with the first segment scaled creamy yellow laterally, rose-purple centrally; the other segments brilliant rose-purple, with creamy yellow banding expanding laterally into triangular patches; venter scaled with metallic golden scales, except segment four, which has a patch of dark purple scales.

“♂. Head black, with a deep furrow in the centre; there is a large central patch of flat scales of a bronze green or golden green colour; the scales along the orbital margins are peacock blue, laterally there is a patch of scales peacock blue or rose-purple according to the light in which they are seen. Antennæ with the basal joint black, nude; remaining joints creamy, growing darker towards the apex; the second joint scaled with spatulate and elongated scales of a dark brown colour; a few scales show metallic colouring. There are numerous dark brown hairs on the joints; the verticillate hairs dark brown, almost black, neither very dense nor very long. The antennæ are not nearly so marked a feature as they are in a *Megarhinus*. Palpi, 3-jointed; first joint shows a slight swelling at the base, and there is a thinning of the chitin which looks like a joint but is not; there is also a second thinning, and the chitin is folded in more basally; the whole joint is very long. The second joint is about half the length of first; the third is long and pointed, almost as long as the first joint, which is almost entirely golden scaled except on its upper surface near its base, where there is a patch of rose-purple scales and a band of the same about its middle and a few dark scales dorsally at the apex; the second joint golden scaled beneath and also the sides, except apically; the upper surface is purple scaled; the third joint is entirely purple scaled. Proboscis scaled with purple scales to the angle, then green scaled. The markings of both proboscis and palpi vary. In one specimen I have the first joint of the palpus is entirely gold scaled save for a ring of purple scales on the middle and apex. The thorax is similar to the female. Legs with the coxæ and under sides of femora golden scaled. The upper surfaces of the femora and the rest of all the legs are clad with purple scales; a few pale scales are inserted at the apices of the femora; fore and mid unguis unequal, the larger uniserrate. Abdomen scaled as in the female. No caudal tuft. A few rather long golden hairs inserted on the two last segments.”—(Leicester). Length 10 mm., male and female.

Habitat.—Kuala Lumpur.

Observations.—This is a very distinct species. The most striking features are the honey yellow and purple male palpi and the single creamy band on the mid legs of the female. Had this species been described from the dried types sent me by Dr. Leicester, I should have described the abdomen as unbanded, for in the female it is evidently shrunken, and no trace of the bands seen in the fresh specimen can now be noticed.—(F. V. T.)

(To be continued.)

Deilephila galii. Six; Mr. Pearson's garden.—*D. livornica*. One; Humshaugh, near Hexham.

Chærocampa porcellus. One; Mr. Pearson's garden.

Macroglossa stellatarum. Numerous; Wallington.

Lasiocampa quercus. Numerous; moorland; one a fine dark female.

Saturnia carpini. Numerous, and very fine; moorland.

Spilosoma mendica. Numerous.

Plusia bractea, *P. festuæ*, and *P. iota*.—*P. pulchrina*. Numerous, and very dark.

Xylophasia rurea. Ground colour of upper wings pale grey; markings as usual, and distinct; a fine form.

Euclidia mi and *E. glyphica*. Numerous.

Uropteryx sambucaria. A few.

Anaitis plagiata. Numerous; typical.

NEW CULICIDÆ FROM THE FEDERATED MALAY STATES.

BY FRED. V. THEOBALD, M.A.

(Continued from p. 39.)

CULICINA.

Genus SCUTOMYIA, nov. gen.

Head covered with flat scales except in the mid region, where there are narrow-curved ones. Scutellum with all flat scales. Other characters as in *Macleaya*.

One species, so far, has only been observed.

The genus differs from *Stegomyia* in having narrow-curved scales on the head, and from *Macleaya* in having the scutellum entirely clothed with flat scales. From the new allied genus (*Leiccesteria*), described here, it differs in having all flat scutellar scales.

SCUTOMYIA ALBOLINEATA, n. sp.

Thorax black, with a broad median silvery white line in front and a median silvery spot on the scutellum. Abdomen black, with basal silvery white lateral spots, the last two segments with basal silvery white bands. Fore and mid legs black, unbanded, the hind with the metatarsi and the first two tarsals with basal white dorsal patches.

♀. Head clothed with black flat scales except in the middle, where there is a median broad area of white, narrow-curved scales; palpi, clypeus, proboscis and antennæ black, the basal joint of the latter with white scales inside; proboscis long, nearly as long as the whole body. Thorax black, with long narrow-curved bronzy black scales and with a broad median silvery white line running from the front of the mesothorax to about its middle; numerous long black bristles project in front and over the roots of the wings; scutellum black, very

deeply trilobed, the mid lobe with dense flat silvery white scales, the lateral lobes with black flat scales; there are also a few black ones bordering the posterior edge of the mid lobe, which has five brown bristles; metanotum black and shiny; pleuræ brown, with silvery white spots. Abdomen narrow, basally broadening to the apex, which is truncated, smoky black, with triangular silvery white lateral basal spots, the two last segments with basal white bands (under the microscope the lateral spots look pale blue). border-bristles black; the first segment densely black scaled, large, with black scales forming two backwardly projecting patches, and with black bristles; venter with broadish basal white bands. Legs black, the fore and mid pairs unbanded, the hind with the base and venter of the femora yellowish-white, a small snowy white apical spot; the metatarsi and first two tarsi with a basal streak of white on the dorsal sides, giving a banded appearance when viewed from above; ungues all equal and simple. Wings with brown scaled veins, the costa dark, fork-cells small, the first submarginal longer and narrower than the second posterior, its stem nearly as long as the cell; stem of the second posterior as long as the cell; the bases of the fork-cells nearly level; posterior cross-vein rather more than its own length distant from the mid; median vein-scales small and spatulate, dark; lateral ones short and rather thick on the first and second veins, others longer and thinner. Halteres short and with contorted yellow stems, the knobs broadly expanded, with black scales. Length 4 mm.

Time of capture.—June.

Habitat.—Kuala Lumpur (in jungle, six miles away).

Observations.—Described from a single female. It bears at first sight a close resemblance to *Stegomyia scutellaris*, Wlk., but the median white thoracic stripe is wider, and the markings of the abdomen and legs are different; moreover it cannot be placed in the genus *Stegomyia*. I am not sure if the narrow waist of the abdomen is natural or due to subsequent contraction in drying. The fact that the white abdominal lateral patches appear blue under the microscope and yet not under a hand lens is peculiar. I have not observed the same in any specimen before.

Genus DANIELSIA, nov. gen.

Head covered with small flat scales, with truncated ends, loosely and rather raggedly placed on the head, a few long narrow-curved ones behind, and small upright forked ones with them. Scutellum with small narrow-curved scales; mesothorax with narrow-curved scales. Palpi short in female, densely scaled; in the male as long as the proboscis, the two apical joints short, the apical rather shorter than the penultimate, hair-tufts scanty; fork-cells rather short.

A single species only occurs at present. It comes near *Macleana* and the former genus, but can at once be told by the narrow-curved scutellar scales, and from *Catageiomyia* by the long male palpi.

(To be continued.)

the femora and tibiæ, red; the four anterior legs black, the apex of the femora, the base and apex of the tibiæ, and the tarsi rufo-testaceous; the wings hyaline, the nervures black; the tegulæ red. ♂. Length, 4 mm.

Hab. Sikkim.

The antennal tubercles and the scape smooth and shining; the flagellum opaque. Face roundly convex, smooth and shining; the malar space opaque, closely punctured, margined in front and behind. Centre of the frontal depression closely, transversely striated. Pro-, mesonotum, and scutellum closely, uniformly punctured. Metanotum irregularly reticulated and striated on the sides of the central area. The depressed base of the mesopleuræ striated; the rest irregularly, coarsely rugose; the metapleuræ irregularly reticulated. Third and following segments of the abdomen thickly covered with white pubescence.

(To be continued.)

NEW CULICIDÆ FROM THE FEDERATED MALAY STATES.

BY FRED. V. THEOBALD, M.A.

(Continued from p. 78.)

DANIELSIA ALBOTÆNIATA, Leicester, n. sp.

“Thorax with the anterior half scaled shiny silvery white, remainder brown, a lateral brown spot on each side of the silvery anterior area. Abdomen brown, with basal white bands. Hind legs broadly pale-banded basally; fore and mid with indistinct pale bands to metatarsi and first tarsals.

“♀. Head black, with frosty tomentum; there is a bare line down the centre, with a few narrow-curved scales on either side of it; outside this behind, and in front between the eyes, the head is thickly clad with broad spatulate scales slightly brown-tinged; there is an oblong spot, parallel with the orbital margin, of broad black scales, laterally white flat scales, then another small spot of black scales; behind these are numerous upright forked scales, mostly black, with a few light brown ones. On the apex, between the eyes on either side, three bristles, light brown at the base, black at the apex, project forwards, more laterally there are three other bristles and then two. Antennæ with the basal joint muddy with a dusky hue, clad with white scales on its inner surface; second joint muddy at its base, black at the apex, clad with longish black scales; remaining joints black, pale at the nodes, verticillate hairs black; silky white hairs on the internodes. Palpi four-jointed; the two first joints round and small; the third joint somewhat swollen; the fourth longer than the third; fifth very minute and nipple-like, thickly covered with black scales with a few long black bristles. Proboscis covered with black scales, except for one-fourth its length in the middle, clad with creamy scales.

Clypeus rounded and black. Prothoracic lobes prominent, upper surface covered with broad white scales. Mesonotum dark brown; in front of the wing bases the mesonotum is entirely clad with long silky white scales, except for a small notch of bronzy scales on either side; the white scaling has much the appearance of an inverted Y with a very thick stem, and there are white scales on the lateral margin; at the root of the scutellum is a bare patch. On either side there are a few white narrow scales. The rest of the mesonotum is clad with bronzy narrow-curved scales. There are a row of bristles along the anterior margin of the mesonotum and over the roots of the wings. Scutellum yellowish-brown; central lobe clad with white and black narrow-curved scales; lateral lobes with white-curved scales. Scutellum bristles ochraceous. Metanotum dark brown. Wings of *Culex* type, clad with dark brown scales; the median scales rather long and narrow, lateral scales long and narrow with square ends. Fork-cells moderately long; first submarginal longer but scarcely narrower than second posterior, its base nearer base of wing; the stem about two-thirds the length of the cell. Supernumerary and mid cross-veins meet at an angle. Posterior cross-vein about three times its own length from mid cross-vein; fringe scales black. Pleuræ with seven patches of silvery white broad scales, arranged in two rows of three and one patch above the middle coxa. Metanotum dark umber brown. Legs with the coxæ creamy, fore and mid legs pale yellowish covered with black spatulate scales, except the under surface of the femora which shows a line of white scales, the under side of the base of the tibia, the apex of the tibia, which is ringed with creamy yellow scales in the fore leg, and the base of the metatarsus, and the first tarsal joint which in both legs show a white band; hind femora covered with black scales; a ring of white scales, about one-third of the total length, extends round the whole circumference save for a narrow line on the dorsum; on the under surface of the apex some creamy yellow scale and a minute ring of the same placed just before the apex. Knee spot and under surface of tibia white scaled; a broad white band at the base of the metatarsus and first three tarsal joints. Fore and mid ungues equal and uniserrate. There are some pale golden bristles on all the tibiæ. Abdomen covered with black scales with basal white bands which expand laterally into broad spots, especially large on the seventh and eighth segments. Segments beneath brown scaled, basally white banded.

“♂. Head black, frosted, clad almost entirely with broad white flat scales parted in the centre over the occiput, leaving a bare line of the black head showing broadest in front; laterally there is an oblong patch of black scales which may almost disappear if the head shrinks much in drying; more laterally still a round patch of black scales. Between the edge of the first patch and the orbital margin is a row of white narrow-curved scales; there are other narrow-curved scales on either side of the middle line just above the occipital foramen and a few on the vertex between the eyes. There are a moderate number of upright forked scales behind and a few inserted among the black scales of the most median of the two black patches; they are dark brown in colour; there are five brown bristles on either side projecting forwards; in some specimens the median bristles are pale

golden and white, and inwards more laterally there are three to five others. Antennæ 15-jointed; the two last joints long and thin; basal joint dusky dark brown in the depression; a few narrow-white scales on its internal face; remaining joints banded dark brown and white; the plumes dark silky brown tipped with white, except on segments seven to ten, where the plumes are pale yellowish brown. Proboscis black scaled. Palpi scarcely longer than the proboscis, black scaled, the two last joints clad with pale glistening white hairs; the brown lateral spots on the thorax smaller than the female. Wings scaly, less dense lateral scales being very few in number. Markings on the legs are similar to the female. Fore and mid unguis unequal, larger tooth biserrate. Dorsum of the eighth segment of the abdomen covered with pearly white scales, pale golden hairs dense laterally on all the segments."—(Leicester). Length 4.5 mm.

Time of capture.—April.

Habitat.—Kuala Lumpur, in bamboo jungle, Chang Road, five and three-quarter miles from town. Bred from larvæ.

Observations.—This species resembles *Stegomyia nivea*, Ludlow, but can be at once told by the leg banding and by the squamose characters as not being a *Stegomyia*. The female specimen has three border-bristles to the mid lobe of the scutellum, a character chiefly noticeable in *Ædinæ*.—F. V. T.

(To be continued.)

NOTES AND OBSERVATIONS.

Nymphs of *CORDULEGASTER ANNULATUS*.—The Rev. J. E. Tarbat has sent me an empty nymph-case of the dragonfly *Cordulegaster annulatus*, of which he found a number last summer about one hundred feet above Lake Derwentwater. They were by the side of the road next to the fell, which rose steeply. The nymph-cases were on the earth at the bottom of the hill—not on rushes or grass. The nymphs must have travelled some distance before disclosing the imago, for the nearest water was a small pond some one hundred yards away, on the other side of the road.—W. J. LUCAS; Kingston-on-Thames.

BUTTERFLIES OF FRANCE.—I should be much obliged if collectors who have visited districts in France other than Alps (Savoy, Basses, and Maritimes), Pyrenees, and Riviera, would send me lists of butterflies (only), and dates if possible; or refer me to local lists, other than British. Any such information will be most acceptable, and I will willingly pay postage, and take care of and return any books or records submitted to me.—H. ROWLAND-BROWN; Oxhey Grove, Harrow Weald.

EPINEPHELE IDA var. ALBOMARGINATA, Fallou.—Mr. Verity's reference (*ante*, p. 56) to the aberrant example of *E. ida*, taken at Roquefavour in July, 1878, and described and figured by M. Fallou (Ann. Soc. Ent. Fr. 1883, p. 21, pl. i. figs. 2, a, b) reminds one of the parallel aberration

broadly transverse. Labrum hidden. The upper tooth of mandibles much longer than the lower. Palpi longer than usual. Areolet 4-angled, the nervures uniting above; there is a short stump of a nervure on the disco-cubital; the transverse basal nervure is interstitial. Petiole long, the post-petiole not much widened. Gastrocœli shallow, widely separated. Legs moderately long; the tarsi much longer than the tibiæ and sparsely spined. Antennæ long, distinctly dilated towards the apex. Eyes large, parallel, reaching below the middle of the face, the malar space being less than the length of the scape of the antennæ.

Comes near to *Charitojoppa* and *Xenajoppa*.

(To be continued.)

NEW CULICIDÆ FROM THE FEDERATED MALAY STATES.

By FRED. V. THEOBALD, M.A.

(Continued from p. 113.)

Genus HULECOETOMYIA, n. gen.

Head mostly covered with flat scales, but there is a pronounced median area of narrow-curved scales, which also exist along the nape and around the eyes. Palpi short in the female; in the male the palpi are long, but *shorter than the proboscis*, thin and devoid of hair-tufts; the apical joint about half the length of the penultimate. Scutellum with a rosette of flat and somewhat spindle-shaped scales to mid-lobe, scattered ones of similar form on lateral lobes; prothoracic lobes with small flat scales; fork-cells small.

This genus can at once be told by the cephalic characters, and by the scutellar scales, which, as pointed out by Dr. Leicester, differ entirely from those in *Stegomyia*. I have not yet detected any scales in the *Culicina* like those of the scutellum in this genus; they are somewhat difficult to make out in form, but apparently are all rounded apically, not pointed as in true spindle-shaped scales.

A single species has so far only been taken. They might easily be mistaken for *Stegomyias* unless microscopically examined.

HULECOETOMYIA TRILINEATA, Leicester, n. sp.

"Thorax rich brown, with three narrow golden lines, the median one entire, the lateral broken before the roots of the wings. Abdomen black, with pearly white lateral basal spots in the female, with narrow white bands in the male. Legs black, basally pale-banded, most prominently on the hind legs. Fork-cells short. Male palpi about four-fifths the length of the proboscis.

"♀. Head black, clothed with flat black scales and numerous upright black forked scales; there is a line of narrow-curved scales,

creamy yellow in colour, running down the centre and along the orbital margins, and behind over the nape, scattered among the flat black scales, are a few white narrow-curved ones; laterally there is a patch of white flat scales succeeded by black scales, which are followed again by white scales; on the vertex, projecting forwards between the eyes, is a tuft of pale golden bristles; there are other bristles along the orbital margins which are black at the base and pale at the tip. Antennæ with the basal joint dusky black, with small black spindle-shaped scales on its inner face (in some specimens this joint is ferruginous), remaining joints black; second joint black-scaled; verticillate hairs black; all the joints after second clothed with short silky white hairs. Clypeus black, frosted. Palpi yellowish-brown, four-jointed; first joint constricted in the middle; fourth joint very small, clothed with black spatulate scales except towards the tip, which is white-scaled. The amount of this white scaling varies. In one specimen it includes little more than the last joint, in another one it includes half the penultimate joint. Proboscis yellowish-brown, black-scaled dorsally and laterally; beneath it is white-scaled; about half way white scales appear laterally, and may even go right round, forming a complete band. Prothoracic lobes simple, prominent, white-scaled. Mesonotum dark brown, clothed with narrow-curved scales, black under a hand lens, but under a two-thirds power the tips appear pale golden; there is a central line of pale golden scales which forks in front of the scutellum, enclosing an unscaled area; on either side there is another line which runs back about one-third the total distance; placed a little further out is another line running forwards from the scutellum and ending just a little to one side of the anterior lateral line; there is another golden line over the roots of the wings, and on the anterior margin, just above the prothoracic lobes, are scattered white scales; there are numerous black bristles arranged in lines. The scutellum is fawny brown; on the central lobe there is a patch of black almost spindle-shaped scales arranged in a rosette, with a central line of creamy white scales which become narrow-curved scales at the apex of the scutellum; the lateral lobes have a few black narrow-curved scales. The scutellum is not heavily scaled, and the scales are quite unlike those of an ordinary *Stegomyia*; there are four to six bristles on the central lobe, two of which are pale golden, four black. Pleuræ dark brown, with patches of broad white scales. Wings clad with black scales; median scales rather long and narrow spatulate-shaped; lateral scales lanceolate; some white scales on the costa at its base. Fork-cells of moderate length; first submarginal longer and narrower than second posterior, its base nearer the base of the wing, the cell longer than its stem. Supernumerary and mid cross-veins meeting at an angle; posterior cross-vein twice its own length from mid cross-vein. Legs with the coxæ creamy yellow; femora of fore and mid legs black-scaled dorsally and laterally, white-scaled beneath; a ring of golden brown spines around the apex; tibiæ the same as femora minus the spines, except that the extreme apex is clothed with a few creamy yellow scales; metatarsus and first tarsal joint basally banded with creamy yellow, the remainder black-scaled; ungues equal and uniserrate; hind femora scaled as the others, except for a patch of white scales about the middle of the anterior and posterior surfaces;

knee spot creamy; tibia entirely black-scaled, with four lines of short white spines running down its whole length; metatarsus basally banded; first two tarsal joints very broadly basally banded with creamy white. Ungues equal and simple. Metanotum dark chestnut-brown. Halteres with black-scaled stems and white-scaled knobs. Abdomen black-scaled; a few white scales at the bases of the segments after the second, but scarcely amounting to basal banding in some specimens; laterally there are triangular patches of white scales, and ventrally the segments are basally banded white.

"♂. Head as in the female; the antennæ have pale internodes and dark nodes; the two last joints are very long; verticillate hairs long and black; palpi about four-fifths the length of the proboscis, dirty white, black-scaled; a naked area in the middle of second joint which shows white under a lens; white scales, which may or may not form a complete band, at the apex of the second and third joints; these scales may involve both sides of the joint—they are variable. Proboscis long, black-scaled, with a narrow band of white scales about its centre. The thoracic scaling is the same as in the female, and the leg scaling also. Wing scaling similar but not so heavy. Abdominal banding more marked, all the segments showing fairly broad basal white bands and large lateral spots. The penultimate segment shows a dorsal patch of white scales with a pearly lustre. The fore and mid unguis large, unequal, larger tooth biserrate. Length, female, 5 mm.; male, 4 mm."

Time of capture.—April.

Habitat.—Kuala Lumpur.

(To be continued.)

NOTES AND OBSERVATIONS.

BRITISH DIPTERA WANTED.—I should be much obliged if anybody would send me fresh or recent specimens, for examination and description, of:—

Xylomyia varia, Meig. (male and female), and *X. marginata*, Meig. (female).

Beris geniculata, Hal. I know the female of the species, which is distinct from *B. fuscipes*, but I have not seen a male.

Sargus. Any yellow-legged species except *S. flavipes*; also *S. nubilosus* (male), if such a thing exists.

Pachygaster minutissima, Zett.

Stratiomys furcata, Fall. I cannot distinguish what I have seen from *S. riparia*.

Odontomyia. Any species except *O. ornata*, *tigrina*, and *viridula*. I expect three or four species unknown to me occur in Britain.

Orycera dives, Lw. (female), and *O. falleni*, Staeg.

Nemotelus brevirostris, Meig. I fear all ours are *N. nototus*, Zett.

Leptis conspicua, Meig. Said to be common in some places, but although I can distinguish *Syrphus ribesii* and *vitripennis* by the naked

NEW CULICIDÆ FROM THE FEDERATED MALAY STATES.

By FRED. V. THEOBALD, M.A.

(Continued from p. 165.)

Observations.—The two types sent by Dr. Leicester are not quite perfect, having been slightly damaged in transit. They were bred from larvæ taken in bamboo jungle on the Pahang Road, about five and three-quarter miles from Kuala Lumpur. The thoracic adornment is so very marked the species cannot well be mistaken, for in *M. tremula*, which it resembles, the golden scales of the mesothorax form but very indistinct lines, not clear narrow ones as in this species. Dr. Leicester's description of the scutellum must be modified, for the scales are certainly not of the usual spindle-shape, but flattened on the mid lobe, much smaller and more irregular than in *Stegomyia*, and with more rounded apices.—(F. V. T.)

Genus LEICESTERIA, nov. gen.

Head covered with flat scales, upright forked scales, and a row of spindle-shaped creamy ones around the eyes. Palpi in the female four-jointed, long, being fully one-half the length of the proboscis; in the male the palpi are longer than the proboscis and slender, no hair-tufts. Proboscis swollen apically. Mesothorax with narrow and broad-curved scales; scutellum with flat scales; prothoracic lobes with flat scales. Venation and wing scales much as in *Stegomyia*.

This genus comes near *Eretmapodites*, from which it differs in (1), having a narrow-scaled border around the eyes; (2), the great length of the palpi, in the female, the long palpi also separating it from the other allied genera (*Macleania*, *Scutomyia*, &c.). A single species only is known, which is here described by Dr. Leicester.

LEICESTERIA LONGIPALPIS, Leicester, n. sp.

"Head black in the middle, creamy at the sides; palpi half the length of the proboscis, both black. Thorax yellowish brown, with bronze scales and a creamy line on each side as far as the base of the wings. Abdomen with apical white lateral spots. Legs unbanded.

"♀. Head black; the vertex, occiput and nape covered with broad flat black scales; along the orbital margin is a narrow row of spindle-shaped creamy scales; laterally, where the black scales end, is a band of creamy scales, and then black scales again; there are a moderate number of black upright forked scales confined to the nape. Antennæ with the basal joint pale dirty yellow; the inner face is rather thickly clad with small flat scales with a few dark ones interspersed; the basal half of second joint is similar in colour to the basal joint; the apical half and the succeeding joints of the antennæ

are black, covered with numerous short white hairs; verticillate hairs black; last joints of antennæ not elongated. Clypeus dark brown, a few narrow white scales on its anterior margin. *Palpi black-scaled, four-jointed; third joint very long—longer than all the other joints put together; fourth joint minute. The palpi in this species are unusually long, being fully half the length of the proboscis.* Proboscis thick, entirely black-scaled. Prothoracic lobes thickly clad with flat spatulate scales, white on the lower half, black above, and from the apex a tuft of stout dark brown bristles projects. Mesonotum yellowish-brown; running round the margin anteriorly and laterally as far as the wing bases is a creamy line, composed of broad-curved scales; the rest of the mesonotum is densely clad with long narrow-curved bronzy scales, which are specially dense and long over the roots of the wings, where they form dense tufts; the colour of these scales under a hand lens is metallic bronze, but under a two-thirds power many appear pale brown; in some lights they appear purple, as do the dark scales on the head and proboscis, indeed the scales on this mosquito show a play of colours on every part as the angle of the light changes. Pleuræ brownish, clothed with tufts of white elliptical scales. Scutellum clad with flat black scales, purple or rose-purple in a good light, on all the lobes, border-bristles brown. Wings clouded, covered with dark brown scales, the lateral linear with square ends, the median also rather narrow; fork-cells moderately long; the stem of first submarginal cell about two-thirds length of cell; the base of the cell nearer the base of the wing than that of second; the second posterior cell is a little broader than first submarginal; median and supernumerary cross-veins meeting at an angle; posterior cross-vein rather short, distant about twice its length from the median. Legs with coxæ pale; fore and mid coxæ with brown and white scales, the hind with only white scales; femora pale scaled beneath, though on the fore legs there are dark brown scales intermingled; the rest of the legs and the upper surface of femora clad with dark brown or purple scales, according to the direction of the light; there is no banding of the legs nor any suggestion of it. On the fore legs there are a few yellow scales at the apex of the tibiæ. The fore and mid ungues equal and uniserrate. Metanotum yellowish-brown. Halteres with pale stems and black and white scales on the knob. Abdomen covered with broad purple-brown scales; no dorsal banding, though the white lateral bands almost meet over the apices of the segments; laterally there are conspicuous white bands passing from beneath upwards and backwards; these bands are shaped something like the mesial vertical section of an arm-chair; the scales forming them are bluish-white (in the dried specimen they may change to a dirty yellow).

“♂. The lateral band of creamy scales on the head is broader than in the female. The vertical bristles are pale golden. Antennæ pale brown, two last joints black and elongated. Plumes long, dense and purple-brown. Proboscis distinctly enlarged for about one-third its length at the apex, black scaled. Palpi slender, longer than the proboscis, scaled entirely save for a few white scales about the centre of the first apparent joint with dark purple-brown scales. Fore and mid ungues unequal, the larger uniserrated. Length 4.5 mm.”

“*Habitat.*—Kuala Lumpur.”

Observations.—This species can easily be told by the great length of the female palpi. I know of nothing approaching it. The pale apical abdominal spots often spread out to form nearly complete bands. The type sent over does not show the pale scaled line up to the base of the wing on the mesothorax, as Dr. Leicester describes; probably the specimen has been slightly rubbed.—(F. V. T.)

(To be continued.)

NOTES AND OBSERVATIONS.

NATIONAL COLLECTION OF BRITISH LEPIDOPTERA.—Mr. William M. Christy, of Watergate, Emsworth, Hants, has presented a very useful assortment of Lepidoptera from the Woodforde Collection. All the specimens are in fine condition, and have full data attached. He has also given a nice series of *Boarmia consortaria*, reared from Sussex larvæ, and an exceedingly interesting series of *Melanippe galiata*, bred from ova deposited by a female specimen taken at Arundel. These latter have the ground colour unusually white, and the band is black.

EARWIG ATTACKED BY ACARI.—Near Ashted, on July 9th, I took an immature earwig about 8 mm. long to which were attached six large *Acari* of a brilliant vermilion tint and about 1 mm. in length. The earwig was probably *Forficula auricularia*, but as the locality was suitable for *F. lesnei*, and immature earwigs are not easily distinguished, it might possibly belong to the latter species.—W. J. LUCAS; Kingston-on-Thames.

A NEW FORM OF GNOPHÆLA.—The mountains and mountain-ranges of New Mexico are more or less isolated from one another by dry plains, and consequently present biotæ (= faunæ and floræ) largely comparable to those of islands. The "insular" races or species found are of various degrees of diversity, while, of course, in numerous instances, no obvious differences can be detected between specimens from different ranges. At Beulah, New Mexico, in the Canadian zone, the beautiful Pericopid moth *Gnophala clappiana*, Holland, is very common. It goes north into Colorado practically unchanged. In the White Mountains of Southern New Mexico, on the Rio Ruidoso at about 7600 ft. altitude, on August 3rd, Prof. C. H. T. Townsend collected a male *Gnophala* which is clearly different from the numerous examples of *clappiana* seen, and is, no doubt, one of the "insular" forms just mentioned. It differs from *clappiana* in having two small white spots below the large median spot of the anterior wings; three spots (separated only by black nervures) on the hind wings comparable to those of the subapical area of the anterior wings; a small round white spot in the cell of the hind wings; and the hind wings not so blue. Such forms, which are not subspecies because not connected with the type by intermediates (owing to the break in the distribution), and are hardly distinct enough to be accepted as species in the ordinary sense, I have thought to call idiomorphs. In this case, the Rio Ruidoso *Gnophala* may stand as *G. (clappiana id.) ruidosensis*.—T. D. A. COCKERELL; Colorado Springs, Colorado.

(4.) There is no sign of the oval pit at the base of the metathorax, which is found in *Hypomacrotera*.

(5.) The labrum has very large punctures and numerous stout bristles below the strong transverse ridge.

(6.) The mandibles are simple, and the maxillary palpi quite ordinary, 6-jointed. Type *G. beardasleyi*.

Greeleyella beardasleyi, n. sp.

♀. Length nearly 9 mm.; black, the pubescence pale ochraceous or dirty yellowish white, nowhere clear white; head brown, facial quadrangle much broader than long; mandibles black, labrum broadly rounded, the apex truncate; clypeus shining, very sparsely punctured; vertex with punctures of two sizes; flagellum dark brown above, ferruginous beneath; third antennal joint comparatively short; disc of mesothorax nude, very shiny, with sparse punctures of two sizes; metathorax truncate, with a narrow dull roughened basal area; tegulae shining, reddish testaceous, dark in front; wings clear, faintly dusky in apical field; stigma and nervures reddish testaceous; marginal cell obliquely truncate, with an appended nervure; second submarginal cell narrowed more than half to marginal; *first recurrent nervure meeting first transverso-cubital*; second recurrent joining second submarginal a little before its end; femora black, with a reddish apical spot beneath; tibiae and tarsi very dark reddish (anterior tibiae pale in front), with pale orange hair; all the claws very deeply cleft; abdomen broad, shining, hind margins of segments testaceous; first segment impunctate, the others with scattered very minute punctures; apical fimbria pale reddish ochreous; ventral segments with a small ferruginous cloud in the middle.

Hab. Collected by Professor Beardsley, of the Colorado Normal School, at Greeley, Colorado, June 3rd, 1900. The insect looks not unlike *Panurginus perlævis*, which, however, has a quite different venation.

NEW CULICIDÆ FROM THE FEDERATED MALAY STATES.

BY FRED. V. THEOBALD, M.A.

(Continued from p. 213.)

Genus ORTHOPODOMYIA, nov. gen.

Head clothed with narrow-curved and forked upright scales; flat ones are at the sides. Palpi 5-jointed in the female; long, as long as half the proboscis; in the male 4-jointed, three-fourths the length of the proboscis. Thorax with narrow-curved scales on the prothoracic lobes, mesothorax, and scutellum. Wings spotted.

Allied to *Finlaya*, but differs in the squamose structure of the head and scutellum. The female palpi are noticeably

very long. The hind legs, when the insect is resting, are held straight out, close together and quite close to the surface upon which the fly rests, an abnormal attitude in the Culicinæ.

ORTHOPODOMYIA ALBIPES, Leicester, n. sp.

"A medium-sized species much speckled with yellow and grey, and with the last three hind tarsi with conspicuous creamy yellow, others with narrow, basal bands. Wings with four prominent white costal spots and three small ones at the base. Proboscis with two white bands. Palpi of female more than half as long as the proboscis.

"♀. Head broad transversely, set close to the thorax, dark grey, in a poor light almost black, densely clad with white narrow-curved scales and upright forked scales which are white in front and dark brown behind; the fork-scales are very numerous, broad-topped, the free forked edge with numerous serrations; there is a small patch of broad, white flat scales, laterally on either side, very difficult to see; there are two vertical bristles, dark brown in colour, projecting forwards, and three or four post-orbitals. Antennæ with the basal joint brown, the inner and upper faces rather densely clad with creamy spindle-shaped scales; the second joint is a dirty white at either end and black in the middle; the verticillate hairs are inserted about the middle, and are very short except on the inner face; there is a tuft of long creamy yellow scales on the inner face; other hairs are inserted near the base, and there is a whorl of short stiff bristles inserted at the end of the joint; the succeeding joints are black at the apices and at the insertion of the verticillate hairs, and dirty white between their immediate bases; at the apex of each joint except the last there is a whorl of short stiff hairs. Clypeus naked, dark brown. Palpi 5-jointed; first joint short, swollen and constricted in the middle; second joint longer, linear; third about as long as the first two, rather swollen at the apex; fourth joint about one-third the length of third; fifth joint minute, but quite distinct. The whole palp is about two-thirds the length of the proboscis, but when dry it shrinks to about half the length of the proboscis; it is black scaled except for some white scales on the upper surface of the first joint, a ring of white scales at the apex of the second, third and fourth joints, and white scales over the whole of the fifth joint. Proboscis long, black scaled over the first half, then there is a band of creamy scales extending about twice as far on the under surface as it does above; beyond this above are black scales, and white and black again at the immediate apex. The labellæ are creamy yellow. Prothoracic lobes black, not prominent, covered with white narrow-curved scales above and with broader almost spindle-shaped white scales below. Metanotum dark grey, almost black, covered with narrow-curved scales, black, tawny and white in colour, arranged in a sort of pattern. The anterior margin is covered with white scales, followed laterally by tawny scales; dorsally in the centre is a line of white scales running about half way across the metanotum and ending opposite a diamond-shaped patch of tawny scales edged with a few black scales

set in a bare space which appears as a black margin; flanking the median line of white scales on either side is a line of tawny scales, and outside this line is a patch of white scales anteriorly and a bare space having the appearance of a black spot owing to the dark colour of the metanotum; the posterior part of the thorax is chiefly occupied with a diamond-shaped patch of tawny scales edged with a few black scales and a bare space; outside this are white and tawny scales arranged somewhat irregularly. The arrangement of the scales varies considerably. Another specimen I have seen shows a central line of white, black and tawny scales from the front backwards, and flanking this is a bare line, and then a large patch of purple-black scales. In a dry specimen the scales have a very ragged appearance, and, being twisted this way and that, have not the same appearance of a definite arrangement as in a fresh specimen. Scutellum dingy yellow, clouded with black; all three lobes clad with rather long white narrow-curved scales. Scutellar bristles brown. Wings covered with black and white, broad spatulate in some specimens, almost spindle-shaped scales in others. Costa black scaled with white spots; the first spot close to the base and involving the base of all the long veins; the second involves the costal, sub-costal and first long vein; the third involves the veins as far as the fourth long vein. The fourth passes on to the base of the first fork-cell, and the fifth spot is very narrow and involves the lower branch of first fork-cell; there is a spot on the wing field at the base of the second long vein, and another on the upper branch of the fifth vein near its base, and one at its apex and another spot at the base of the second fork-cell. Supernumerary and mid cross-veins form an obtuse angle towards the base. Posterior cross-vein distant about four times its length from the mid cross-veins. Pleuræ dark brown, thickly covered with broad flat white scales. Legs with the fore coxæ pale, with creamy scales in the front legs, and hind and mid dark brown, with a few white scales; femoræ clad with purple scales freely mottled with golden; on the fore legs is a ring of golden scales a little before the apex which does not include the upper face; on the mid and hind legs the scales at the apices of the femora are elongated, and give an ill-marked feathered appearance to the legs; the tibiæ are mottled purple and golden, and at the apices of all the tibiæ is a band of creamy yellow scales; the base of the metatarsus and first two tarsal joints on the fore and mid legs are banded with creamy scales; in the hind legs the base of the metatarsus and first tarsal joint are banded, and the last three tarsal joints are creamy white. Ungues equal and simple on all the legs. Abdomen covered with purple-brown scales; each segment bears on the dorsum two spots of white scales placed on either side of the middle line and rather nearer the apex than the base; laterally there is a basal patch of white, apically a band of white scales. Some specimens bear numerous golden hairs on the apex of the segments dorsally; ventrally each segment is basally banded, and some of the segments have a median white spot.

“♂. Head brown; the narrow-curved scales form a dense tuft between the eyes and a more definite margin to them than in the female. There are more white upright forked scales, the brown comprising

about three or four rows on the nape. Antennæ with the basal joint dark brown, sparsely clad with small flat white scales; succeeding joints white, with black bands at the insertion of the verticillate hairs; last two joints much elongated; first five joints with numerous linear silky white scales with blunt rounded ends; verticillate hairs pale ochre-yellow. Palpi four-jointed, about three-fourths the length of the proboscis; there are a few white scales on the upper surface immediately in front of the clypeus, a ring of white scales at the middle of the second joint, another ring at the apex of third joint, and the fourth joint is completely white scaled; the rest scaled with dark brown scales; the first joint is very short, second joint is very long and in the middle shows a false joint, the third joint is about one-third the length of the second, and the fourth joint is short and always carried bent down towards the proboscis. Proboscis scaled dark brown for about half its length, then there is an incomplete ring of creamy yellow scales, followed by a band of dark brown scales; the apical fourth is swollen and scaled with creamy yellow scales. Thorax as in the female. Wings with an additional costal spot of white scales between the basal and second spots. Legs with more pale scales on the tibiæ; the banding of fore and mid legs is rather more evident; fore and mid unguis unequal, larger uniserrate. Abdomen with a distinct basal white band to the hinder segment in addition to the dorsal white spots. Length of female, 5 mm.; of male, 5.3 mm.

“*Habitat*.—Kuala Lumpur (in jungle five miles away).

“*Time of capture*.—April.”

Observations.—Described by Doctor Leicester from specimens bred from larvæ taken in bamboo jungle. It is a very distinct species, told at once by the last three hind tarsi being white. It resembles the *Finlayas*, and can only be separated from them by scale examination.—(F. V. T.)

(To be continued.)

NOTES AND OBSERVATIONS.

NOTHOCHRYSA CAPITATA.—I do not consider *N. capitata* quite so rare an insect as my friend Mr. Lucas's note (*ante*, p. 214), would lead one to infer; but perhaps it occurs more frequently in Yorkshire than in the southern counties. I have Yorkshire specimens in my cabinet from Castle Howard, Doncaster, Huddersfield, Selby, Skipwith, and York, I also have it from Lincolnshire. Still it seems never to be common anywhere, and I have only on one occasion taken as many as three on the same day. The other British species of the genus, *N. fulviceps*, is apparently much rarer.—Geo. T. PORRITT; Huddersfield, Aug. 17th, 1904.

NOTE ON THE DRAGONFLY *ÆSCHNA CYANEA*.—The nymphs refused food a few days before emergence, and became very restless. They