

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 saparatus*, 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.).

ANOPHELINA.

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 ungues 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



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