

classification and index of the examples of mimicry quoted (383-479). One of the notable mechanical features in the text is the copious index of 85 pp.

British lepidopterists will probably be interested in Newcomb's detailed observations on the habits of a United States *Chrysophanus* (13). Maxwell-Lefroy discusses at some length the Castor Silkworm, *Attacus ricini* (which is probably the domesticated form of *A. cynthia*). The larvæ differ from all other silk-producing Indian larvæ in that they do not feed on mulberry, but on castor leaves; the cocoon is not closed and is not reel-able in the same way as other kinds. On the other hand, the cocoons do not require to be killed to prevent the egress of the moth, as one end is closed only with converging loops of silk (14).

ON TWO NEW GENERA AND SEVEN SPECIES OF CHALCIDIDÆ (EUCCHARINÆ) FROM BORNEO.

BY P. CAMERON.

ANCYLOTROPUS, gen. nov.

♂. Antennæ twelve-jointed, the joints elongated, pilose. Parapsidal furrows distinct, complete. Scutellum large, triangular, the apex prolonged into a broad spine, two-thirds of the length of the basal part, keeled down the centre, the apex slightly incised. Thorax rugose. Abdominal petiole long, cylindrical, as long as the rest of the abdomen, flat above, the sides margined. The right mandible with four teeth, the basal not so distinct as the others; the outer tooth less, but dilated at the base. Abdomen projecting upwards. Stigmal branch short, thick. Face raised in the centre, the raised part narrowed into a keel below; the clypeus with a large fovea on either side above. The head is broader than it is long, and is a little wider than the thorax.

In the table of Ashmead (Mem. Cairn. Mus. i. 269) this genus runs to near *Psilogaster*, which has the antennæ eighteen jointed, and the apex of the scutellum is rounded. The form of the scutellum in *Ancylotropus* is pretty much as in *Saccharissa*, but that genus has the antennæ eighteen-jointed.

Ancylotropus cariniscutis, sp. nov.

Head and dilated part of abdomen black, the thorax dark blackish blue, with coppery and violaceous tints, the antennal scape, pedicle, palpi, tegulæ, and legs, except the coxæ, yellowish testaceous, the flagellum of antennæ dark testaceous at the base, the apical joints blackish; wings hyaline, the nervures testaceous. ♂. Length, 4 mm.

Kuching, Borneo (John Hewitt, B.A.).

Basal two joints of antennæ bare, the rest densely covered with long fuscous pubescence. Face and clypeus smooth, the vertex and front longitudinally striated, the striæ stout and clearly separated. Mesonotum and scutellum somewhat strongly reticulated, the scutellum more widely than the mesonotum; the centre, and, less strongly, the sides of scutellar spine keeled, the space between the keels with a few transverse striæ. Metanotum coarsely irregularly reticulated. Propleuræ coarsely reticulated, the mesopleuræ more finely obliquely reticulated; the metapleuræ strongly regularly reticulated and densely covered with white pubescence. Sides of abdominal petiole with two or three stout longitudinal striæ. The mesopleuræ less densely covered with white pubescence than the metapleuræ. Wings shortly, closely ciliated. The metapleuræ are broadly rounded at the apex.

ELTOLADA, gen. nov.

Antennæ eleven-jointed, simple in the male, the joints elongated, cylindrical, pilose; longer than the body, in female not much longer than the head and thorax united, the basal joint elongated, as long as the following two united. One mandible edentate, the other with a long apical followed by two short teeth. Parapsidal furrows distinct. Scutellum large, almost semicircular, the apex prolonged into a process which is as wide as long at the base, followed by two roundly curved forks. Abdominal petiole as long as the thorax, and longer than the rest of the abdomen in both sexes, narrow, cylindrical, of equal width; the dilated apical part is turned upwards. Marginal and post-marginal vein thickened, the latter half the length of the former and narrowed towards the apex, stigmal vein short, sessile, as long as thick.

The simple, non-flabellate antennæ might ally this genus with *Psilogaster*, which, however, may easily be known from it by the scutellum not being bidentate. The simple antennæ in the male separate it from *Stibula* and *Schizaspidia*; from the latter it may further be known by the very much longer abdominal petiole, and by the thickened marginal and post-marginal nervures, and the very short, thick, stigmal vein.

Eltolada trimaculata, sp. nov.

Head blue, the mandibles and palpi yellowish testaceous, the basal three joints of the antennæ and the apical two testaceous, the apical more rufous in tint than the basal. Thorax yellowish testaceous, a large blue and violaceous mark, almost semicircular, but longer than wide, on the basal half of the central lobe, a smaller oblique one, longer than wide, its base rounded, the apex straight and oblique on the two lateral, a line on the apex, touching the scutellum, a small triangular mark on the apex of the scutellum. Length, 5 mm.

Kuching, Borneo; May (John Hewitt).

Sides of the head, from the base of the ocelli to the middle of the front, longitudinally striated, the striæ strong and clearly separated, the centre, immediately under the antennæ, with three curved transverse striæ. Malar space to near the bottom stoutly obliquely

striated. Clypeus triangular, bordered by wide deep furrows. There are some striæ between the ocelli. Thorax coarsely reticulated, the metanotum more widely than the rest. Mesopleuræ smooth, with a broad band of stout longitudinal striæ at the base. The reticulations on the metapleuræ are long and narrow, and, at the base, are in three rows, the basal having the reticulations longer than the others. There is a crenulated furrow, with stout raised edges, down the centre of the scutellum. The apical forks of the scutellum are straight, obliquely diverging, and are as long as the basal part.

Eltolada leucopoda, sp. nov.

Head and thorax blue, the blue on the mesonotum tinged with green and darker coloured, the blue on the pleuræ slightly tinged with violaceous, the scutellum black, tinged with green. Abdomen black, the ventral surface brown. Antennæ testaceous, tinged slightly with rufous; the legs whitish yellow, the coxæ blackish to near the apex. Scutellum large, the basal part forming a semicircle; the basal part of the spine longer than the apical forks, which are roundly curved, and are for the greater part brownish. Wings hyaline, with a fuscous cloud, longer than wide and rounded at the apex, at the stigma, the apex is faintly clouded, the nervures black. ♂. Length, 4-5 mm.

Kuching, Borneo (John Hewitt, B.A.).

Antennæ densely covered with longish fuscous pubescence. Sides of the face to below the middle obliquely striated; the depressions at the sides of the clypeus large, deep. The face in the centre above with curved, transverse striæ; malar space stoutly closely obliquely striated. Ocellar region longitudinally, the occiput transversely, striated. Thorax, except the centre of mesopleuræ, reticulated; the metathorax more and the mesopleuræ less strongly than the rest, the scutellum not so strongly as the mesonotum. Abdominal petiole longer than the rest of the abdomen.

Schizaspidia cæruleiceps, sp. nov.

Dark green, the head and the dilated part of the abdomen blue, the occiput green, the antennæ and legs testaceous, the femora and hind tibiæ infuscated; wings hyaline, the nervures testaceous. Scutellum larger, longer than it is wide at the base, narrowed towards the apex, which is not quite half the width of the base; the apical forks wide, curved, narrowed towards the apex, which reaches close to the base of the apical fourth of the abdomen; it is longitudinally reticulated, the transverse keels finer than the longitudinal, the reticulations on the apical forks finer and more irregular than on the basal part. Mandibles testaceous. ♂. Length, 4.5 mm.

Kuching, Borneo (John Hewitt, B.A.).

Head smooth, the sides of vertex widely, weakly striated, the malar space finely, irregularly striated. Pro- and mesonotum transversely reticulated, the transverse striæ stronger than the lateral. There is a transverse furrow at the apex of the mesonotum; a deep curved depression at the base of the scutellum. The lower part of the projecting apex of the scutellum reticulated; the metanotum is more

strongly and closely reticulated. Propleuræ with large irregular reticulations; the meso- and metapleuræ more closely and strongly reticulated. Abdominal petiole weakly, irregularly striated; the apical segments brown. Thorax covered with short white pubescence, which is longer on the metanotum.

Eucharis leviceps, sp. nov.

Dark blue, the dilated part of the abdomen almost black; antennal scape yellowish testaceous, the flagellum densely pilose, fuscous, the basal joints testaceous. Mandibles testaceous; palpi pallid yellow. Prothorax smooth. Basal slope of mesonotum closely, rather strongly, transversely striated, the rest closely reticulated, the scutellum more coarsely, irregularly reticulated. Metathorax smooth, the base with a crenulated furrow. Propleuræ and base of mesopleuræ smooth, the raised central part of mesopleuræ closely reticulated. Legs pallid yellow, the femora and the hind coxæ black, the base of the four anterior coxæ infuscated. Wings hyaline, the nervures pallid testaceous. ♂. Length, 4 mm.

Kuching, Borneo (John Hewitt, B.A.).

The central part of the face is raised, and is bordered by distinct curved furrows.

Eucharis purpureoventris, sp. nov.

Bright blue, the dilated apical part of the abdomen purple-violaceous, the antennal scape, mandibles, palpi, four front legs, and the hind tibiæ and tarsi and trochanters, pallid yellow; the hind coxæ and femora dark blue. Flagellum of antennæ densely pilose, fuscous, darker towards the apex. Wings clear hyaline, the nervures pale. ♂. Length, 3 mm.

Kuching, Borneo (John Hewitt, B.A.).

Head smooth and shining, the centre of the face and the sides of the clypeus margined by deep, wide furrows, the furrows at the face converging, at the clypeus diverging, below. Pro- and mesonotum with scutellum closely reticulated. Metanotum smooth, the centre bordered by wide, converging, crenulated furrows, the centre being thus narrowed towards the apex. Propleuræ smooth, the centre with a curved, weakly crenulated furrow. Mesopleuræ smooth, the centre with a wide furrow, which turns up obliquely at the apex; the base is composed of a large oblique and a smaller oval fovea, the rest is irregularly striated; the apex is bordered by a weakly crenulated furrow, curved and dilated above. Metapleuræ smooth, the furrow shallow, wide, weakly crenulated. Abdominal petiole not much longer than the rest of the abdomen.

Eucharis pallidipes, sp. nov.

Dark blue, the pleuræ with violaceous tints, the abdomen black, the antennal scape, palpi, and legs pallid yellow, the basal half of the femora infuscated; flagellum of antennæ blackish fuscous; wings hyaline, the nervures fuscous. ♂. Length, 3 mm.

Kuching, Borneo (John Hewitt, B.A.).

Front and vertex aciculated, the rest of the head smooth and shining. Mesonotum irregularly longitudinally rugosely punctured. Scutellar depression wide, the middle more finely rugosely punctured than the mesonotum itself, the sides with stout, clearly separated striæ. Scutellum large, broadly rounded, rugosely punctured, the basal slope irregularly longitudinally striated. Metanotum closely, irregularly reticulated. Propleuræ, except at the base, irregularly longitudinally striated. Middle of mesopleuræ reticulated, the upper basal part closely longitudinally striated, this striated part being raised and light blue. Hind coxæ blue, and finely, closely striated. Abdominal petiole about one-quarter longer than the rest of the abdomen.

NOTES AND OBSERVATIONS.

ABRAXAS GROSSULARIATA ab. LACTICOLOR IN WARWICKSHIRE.—As the distribution of varieties in this county seems very little worked, it might be well to record that on July 23rd a specimen of *A. grossulariata* ab. *lacticolor* emerged in my breeding-cage. The specimen, which was unfortunately a cripple in one wing, differed from the example figured in "South" in having the black markings on the costa and fringe slightly less obsolete. The insect was bred from a larva found at Rugby, fed on hawthorn.—P. W. WHITLEY; Brantwood, Halifax.

EUPITHECIA TOGATA GOING OVER TWO SEASONS IN PUPAL STAGE.—I had a similar experience to that of Professor Meldola (*antea*, p. 182) with pupæ of *E. togata*, obtained, I expect, from the same source. Out of twelve pupæ, five emerged last year, and six in the early part of June, 1909. They were exceptionally fine specimens. I had concluded that the pupæ were dried up, as they were exposed to strong sunlight, whenever this somewhat rare phenomenon took place.—G. BERTRAM KERSHAYS; West Wickham, Kent, July 27th, 1909.

SPANISH CHESTNUT AS A FOOD-PLANT OF THECLA QUERCUS.—On May 31st (Whit Monday) of the present year I found a larva of *T. quercus* on a stub of Spanish chestnut. The larva was about three-parts grown and fed up well, in due course turning into a pupa, whence emerged a fine female butterfly on July 21st. I have never heard of this tree as a food-plant of *T. quercus*; in fact, in my experience, very few larvæ seem to take a fancy to it.—GEOFFREY MEADE-WALDO; 17, Douglas Mansions, Cromwell Road, S.W.

REARING CHRYSOPHANUS RUTILUS IN ENGLAND.—With reference to the note on *Chrysophanus dispar* in the 'Entomologist' for July, the following experiment, conducted by Mr. Newnham (since dead, I believe) at Church Stretton, may be of interest. Mr. Newnham procured a large frame, and in this he grew the food-plant of *C. dispar*. He then placed within the frame some larvæ of *C. rutilus*; the imagines resulting were allowed to breed in a moist atmosphere. At the end of two or three years, a form much nearer *dispar* than



Cameron, Peter. 1909. "On two new genera and seven species of Chalcididae (Eucharinae) from Borneo." *The Entomologist* 42, 229–233.

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