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“By mutual confidence and mutual aid  
Great deeds are done and great discoveries made.”

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[No. 502.

CRYPTIC FORM AND COLOURING IN *MELITÆA* LARVÆ.

By T. A. CHAPMAN, M.D.



THE larvæ of *Melitæa cinxia* and *M. athalia* when full grown are usually very conspicuous, still it has often struck me that, obvious as they are when you look for them—*i. e.* if they are not hidden away—you may easily pass by without seeing them, even though looking where they are, if not thinking of them. These larvæ considerably resemble the heads of *Plantago*; but this is still more the case with *Melitæa didyma*, whose yellow and brown markings make it very like a plantain-head with yellow stamens and brown scales.

This resemblance is brought out very well in the above reproduction of a photograph taken by Mr. H. Main of a larva of *M. didyma*—remarkably so since the assistance given by coloration is left out.

NEW SPECIES OF HYMENOPTERA (ACULEATA, ICHNEUMONIDÆ, AND BRACONIDÆ) FROM INDIA.

BY P. CAMERON.

ACULEATA.

*DIODONTUS RETICULATUS*, sp. nov.

Niger, mandibulis late flavis; geniculis, tibiis tarsisque anticis flavis; alis hyalinis, nervis stigmatæque nigris. ♀. Long. fere 5 mm.

*Hab.* Deesa (Major C. G. Nurse).

This species comes near to *D. striolatus*, Cam., from Lahore. The two may be separated thus:—

Clypeus roundly and deeply incised in the middle; the base of the mesopleuræ without stout striations; the hinder tibiæ and tarsi testaceous . . . *striolatus*, Cam.  
 Clypeus not roundly and deeply incised in the middle; the base of the mesopleuræ with some stout striations; the hinder tibiæ only testaceous at the base *reticulatus*.

Antennæ black; the flagellum with a pale microscopic pile. Head black; the front and vertex minutely and sparsely punctured; the face is thickly covered with silvery pubescence; the apex of the clypeus almost transverse. Mandibles yellow, their apical third black. Thorax shining; the base of the propleuræ with stout striations; there are two stout long oblique striæ behind the middle, and a shorter curved one behind these, almost in the middle; mesopleuræ with stout, widely separated keels on the basal half, which form irregular reticulations; the basal half coarsely aciculated, the apical smooth and shining. The base of the metapleuræ is smooth and shining; the rest bears oblique distinctly separated striæ. The base of the median segment bears stout oblique keels, which run into irregular reticulations in the middle; the apical slope is irregularly transversely striated; the fovea is large and deep. The four anterior tibiæ and the anterior tarsi are for the greater part testaceous; the base of the hinder tibiæ white; there are four longish spines on the hinder tibiæ, and there are three or four shorter spines on the apex on the outer side; the middle tibiæ are similarly but not so strongly spined. Abdomen smooth and shining; the apical half covered with a pale down.

*CERCERIS SIMLAENSIS*, sp. nov.

Black, largely marked with yellow, and thickly covered with white hair; the scape of the antennæ beneath yellow; the third joint and the base of the fourth rufous; legs yellow; the four anterior femora largely marked with black behind; the hinder pair with the apical two-thirds black; the basal area on the median segment stoutly longitudinally striated. ♂. Length, 10-11 mm.

*Hab.* Simla (Nurse).

Head black; the frontal spine, the face, the inner orbits to shortly above the base of the antennæ—the yellow line narrowed and rounded above—the clypeus, cheeks, and mandibles, except at the apex, yellow. Face strongly punctured; the clypeus is rounded at the top; its upper part convex, its lower with a semicircular depression in the middle; the apex black and transverse in the middle; the sides obliquely narrowed; both are black on the lower side. Vertex strongly punctured; the punctures distinctly separated; the front is much more closely and more minutely punctured, especially below where they run into striations. Thorax strongly and closely punctured, and thickly covered with white hair; there is a yellow mark—obliquely narrowed on the inner side—on either side of the pronotum, and the post-scutellum is yellow. The scutellum is more sparsely punctured than the mesonotum. The basal area on the metanotum is stoutly longitudinally striated; the rest of it is closely rugosely punctured, and is thickly covered with long white hair. Pleuræ closely but not deeply punctured, except the part below the hind wings, which is closely striated. Legs yellow; the four front femora above broadly at the base, slightly more than the apical half of the posterior, and a line on the outer and inner sides of the apical half of the hinder tibiæ, black; the hinder tarsi infuscated. Wings hyaline, the apex smoky; the stigma, the costa, and the basal nervures fulvous. The abdominal segments are lined with yellow on the apex; the last has an irregularly round mark on the sides. The pygidial area is strongly punctured, more sparsely in the middle than at the apex or base; the epipygium has a rounded incision in the apex; the fifth and sixth segments are, at the apex laterally, armed with bundles of stiff golden hair, the last being the thicker and longer, and looks like a stiff broad spine.

Come nearest to *C. himalayensis*, Bingham.

#### ICHNEUMONIDÆ.

##### CRYPTUS EXCAVATUS, sp. nov.

Niger; pedibus rufis; coxis trochanteribus femoribusque anticis subtus nigris; alis hyalinis, stigmatate nervisque nigris. ♀. Long. 12, terebra 3 mm.

*Hab.* Simla (Nurse).

Antennæ entirely black. Head black; the inner orbits narrowly in the middle and the outer still more narrowly yellow. Face strongly and closely punctured, and thickly covered with white hair; the centre roundly projecting. Clypeus smooth, shining, and sparsely punctured. Front deeply depressed, smooth, closely and finely transversely striated; the part below the ocelli is coarsely irregularly transversely striated; the vertex near the ocelli is stoutly reticulated. Thorax closely rugosely punctured, more or less striated on the pleuræ and mesonotum. Scutellum shining and sparsely punctured. The median segment is more coarsely rugosely punctured than the mesonotum; the basal keel is less distinct than the apical; the teeth are broad. The mesosternal furrow is deep, curved, and does not reach beyond the middle. Legs rufous; all the coxæ and trochanters, the front femora to near the apex below and behind, the middle pair behind to near

the middle, the apex of the hinder narrowly, and of the tibiæ more broadly, black. Abdomen shining, the black with a bluish tinge. The wings have a slight fulvous tint.

A smaller and more slenderly built species than *C. luculentus*.

*CRYPTUS LUCULENTUS*, sp. nov.

Niger; pedibus rufis; coxis trochanteribusque nigris; alis hyalinis, stigmatè testaceo, nervis fuscis. ♀. Long. 17, terebra 5 mm.

*Hab.* Simla (Nurse).

Antennæ entirely black; the scape punctured and sparsely covered with short hair. Head black; the inner and outer orbits and a transverse mark on the middle of the clypeus near the apex, yellowish. Face closely and rather strongly punctured, and thickly covered with white hair; the centre is dilated broadly and roundly; the clypeus is more shining, and not quite so strongly punctured as the face. Mandibles black, rufous behind the teeth. Thorax closely and distinctly punctured; the pleuræ more strongly than the mesonotum. The punctuation on the sides and on the apical slope of the median segment run into reticulations, this being also the case with the metapleuræ. The base of the median segment is obliquely depressed in the middle; the basal transverse keel on it is interrupted in the middle, distinct on the sides, and projecting on the outer edge. Wings hyaline, with a slight but distinct fulvous tinge. Abdomen smooth; the middle segments aciculated. Legs rufous; the coxæ and trochanters black; the hinder tarsi have a yellowish tinge; they are distinctly spinose.

*SPILICHNEUMON ANNULICORNIS*, sp. nov.

Niger; pedibus, scutello abdomineque late rufis; annulo flagello antennarum, abdominisque apice albis; alis hyalinis, stigmatè nervisque nigris; apice tibiæ posticarum tarsisque posticis nigris. ♂. Long. 11 mm.

*Hab.* Simla (Nurse).

Antennæ shorter than the body, black, the flagellum brownish beneath towards the apex; there is a broad white band beyond the middle. Head black; the inner orbits and the sides of the clypeus broadly lemon-yellow; the centre of the clypeus has a rufous tinge. Face and clypeus closely punctured; the front and vertex are quite as strongly and closely punctured; the mandibles are broadly rufous near the middle. Thorax black, the scutellum yellow. Pro- and mesothorax closely and strongly punctured, and thickly covered with pale pubescence; the scutellum is not so closely punctured, and is covered with long pale hair. Median segment closely and strongly punctured, and thickly covered with longish white pubescence; the areola is twice longer than broad; the basal half is slightly but distinctly narrowed, its apex transverse; the sides are stoutly transversely striated, the centre aciculated; in the middle of the apical half is a longitudinal keel; the apical slope is closely irregularly rugose. Pleuræ closely, almost rugosely, punctured, the metapleuræ more coarsely than the rest. Legs rufous; the four anterior coxæ and the trochanters pale yellow; the hinder coxæ, the basal joint of the trochanters, the apical

third of the tibiæ, and the hinder tarsi, black. Wings hyaline, the stigma and nervures dark fuscous. Abdomen black; the post-petiole, the second and third segments, and the sides of the fourth red; a large semicircular white mark on the apex of the sixth segment and the whole of the seventh white. The post-petiole is strongly but not very closely punctured; the gastrocœli are narrow, dilated at the base; their outer side longitudinally striated.

(To be continued.)

## A LIST OF THE "MACRO-LEPIDOPTERA" OF LANCASTER AND DISTRICT.

BY C. H. FORSYTHE.

IN compiling this list of our local "Macro-Lepidoptera," I have kept strictly in view the necessity of excluding any species I have had the slightest doubt about. I could have included several species on the authority of the late Mr. J. B. Hodgkinson, who marked them in Newman's 'British Butterflies and Moths' as "probably occurring in the neighbourhood"; but, as I have no record of their actual capture, I have excluded them. That the list is far from complete I know, but I hope this will stimulate collectors to record the capture of anything "new to the district," so that we may in the near future have a more complete one. I have to thank Mr. George Loxham, of Lancaster, for much valuable information; some of his records, extending over a period of forty years, are unique.

### PIERIDÆ.

*Pieris brassicæ*.—Common everywhere in June and July, and the second brood in August and September.

*P. rapæ*.—Abundant; late May and June, and the second brood in August and September. A yellow form occurs occasionally.

*P. napi*.—Abundant; late May and June, and the second brood in July, August, and September. Some of the forms about Clougha Pike are much suffused with black scales, and the veins are broadly marked, showing a tendency to melanism.

*Euchloë cardamines*.—Uncommon about Lancaster. Odd specimens near Quernmore and Torrisholme. Abundant at Witherslack and Methop in May and June.

*Leucophasia sinapis*.—Local. Fairly common at Methop and Witherslack in April and May. No second brood has been recorded.

*Colias edusa*.—Very rare generally; in "edusa years" we frequently obtain specimens. I have taken this species (in 1900) at Hest bank and near Halton, and saw a specimen the following year flying over a clover field near Lancaster. "In 1892 I took several examples near Lancaster, and in 1900 I took a few near Methop bank" (G. Loxham). The var. *helice* has not been captured, as far as I know.

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## DESCRIPTIONS OF TWO NEW BEETLES FROM ANGOLA.

BY E. A. HEATH, M.D., F.L.S.

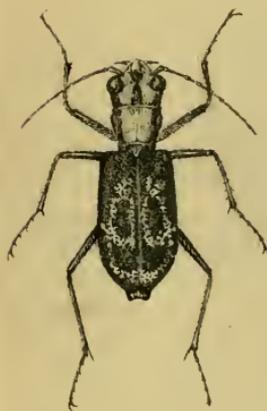


FIG. 1.

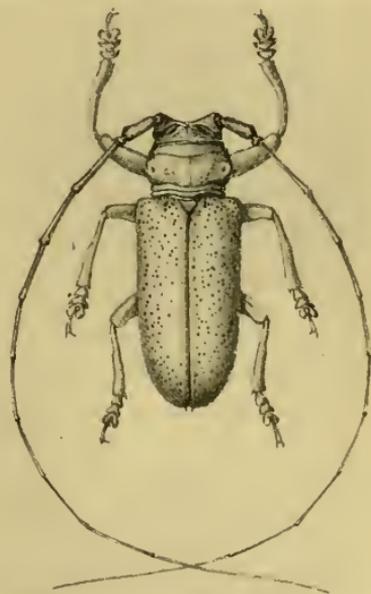


FIG. 2.

Fam. CICINDELIDÆ.

OPHRYODERA DISTANTI, sp. n. (Fig. 1.)

Head, pronotum, and elytra piceous, varying in some specimens to coppery brown; elytra coarsely punctured with very pale ochraceous irregular and indistinct marks from a little above the centre to the apex, where they form an irregular submarginal band. The head, face, pronotum, and pygidium are covered with brownish white hairs. The antennæ are piceous, except the first three joints, which are purple; the first joint is much thicker than the second, which is twice

NEW SPECIES OF HYMENOPTERA (ACULEATA, ICHNEUMONIDÆ, AND BRACONIDÆ) FROM INDIA.

BY P. CAMERON.

(Concluded from p. 86.)

*SPILICHNEUMON COXALIS*, sp. nov.

Niger; facie, clypeo, mandibulis, linea pronoti, mesosterno, scutelloque flavis; abdominis medio late rufo; apice petioli flava; pedibus rufis, coxis posticis, apice tibiaram posticarum tarsisque posticis nigris. ♂. Long. 10 mm.

*Hab.* Simla (Nurse).

Antennæ black; the under side of the scape yellow, of the flagellum brownish; they are hardly longer than the body, and taper perceptibly towards the apex, where they are serrate. Head black; the face, clypeus, mandibles, the inner orbits to the occiput narrowly, and the outer from near the top broadly, yellow. Face and clypeus closely, uniformly, and distinctly punctured; the front and vertex are more closely punctured. Mandibles yellow, their teeth black, the part behind them rufous; palpi pale yellow. Thorax black, shining; the edge of the pronotum, the scutellum, the apex of the post-scutellum, the tegulæ, and the tubercles pale yellow. Mesonotum closely and uniformly punctured, the scutellum flat and less closely punctured. Post-scutellum smooth; its sides at the base largely depressed. Median segment closely and distinctly punctured, the base and the areola smooth and shining; the apical slope is thickly covered with white hair; the areola is twice longer than wide; the basal keel is flat, wide, and broken in the middle; the apex is transverse; the inner side is bordered by a wide furrow; in the centre of the apex is a small triangular projection; the surface is finely shagreened. Pleuræ closely punctured; the apex of the pro-irregularly striated. Wings clear hyaline, the stigma and nervures black. The four anterior legs are reddish fulvous; the coxæ and trochanters pale yellow, the hinder coxæ black, their apex yellow all round, the basal joint of the trochanters black, as is also the apex of the hinder femora narrowly, the apical two-thirds of the tibiæ, and the tarsi entirely; the calcaria pale yellow. Petiole black; the apex with a yellow band, which is narrowed in the middle; the second, third, and basal half of the fourth segment rufous; the rufous band on the fourth extends to the apex; there is a narrow yellow band on the apex of the fifth, a large one on the apex of the sixth, and the seventh segment is entirely yellow. The segments and the post-petiole are thickly covered with short white pubescence, and closely punctured; the gastrocœli are small, deep, and smooth.

*CRATICHNEUMON ERYTHROZONUS*, sp. nov.

Niger; abdomine late femoribusque posticis rufis; alis hyalinis, nervis stigmatæque nigris. ♂. Long. 11 mm.

*Hab.* Simla (Nurse).

Antennæ as long as the body; the flagellum brownish beneath.

Head black, the inner orbits from the middle to shortly below the eyes lemon-yellow, the band becoming wider below; the face and clypeus, except at the apex, closely and rather strongly punctured, and thickly covered with white pubescence; the apex of the clypeus is slightly obliquely depressed and impunctate; the front and vertex are closely and distinctly punctured. Mandibles black, dark rufous near the apex; the palpi fuscous. Thorax entirely black, and thickly covered with short white pubescence; the scutellum is less closely punctured; the basal half of the post-scutellum is smooth, the apical closely punctured. The base of the median segment is closely and somewhat strongly punctured; the sides of the areæ are irregularly striated. Pleuræ uniformly and distinctly punctured. Mesosternum thickly covered with white pubescence. The four anterior tibiæ in front and the anterior femora above in front are pale testaceous; the hinder femora, except at the apex, are bright red; the calcaria are black. Wings clear hyaline, the nervures and stigma black; the stigma fuscous on the lower side; the disco-cubital nervure is largely bullated in front of the stump of a nervure; the recurrent nervure bullated above and below the stump. Petiole closely punctured; the middle of the post-petiole smooth; the sides sparsely punctured; the other segments are closely punctured and thickly covered with short white pubescence; the gastrocœli are shallow and stoutly striated at the base; the apex deep, wide, and aciculated.

#### ANOMALON APICATE, sp. nov.

Nigrum; abdomine rufo, apice nigro; facie, clypeo, scutello, post-scutelloque flavis; pedibus anterioribus flavis, posticis rufis; alis hyalinis, stigmatibus fuscis, nervis nigris. ♂. Long. 16 mm.

*Hab.* Simla (Nurse).

Antennæ testaceous, the second and the greater part of the fourth joints black. Head black, below the antennæ pale yellow; the vertex closely punctured; the front with eight irregular keels on the central part, which is also closely transversely striated; the face closely and distinctly punctured, and thickly covered with white pubescence; the base of the clypeus closely punctured, the apex almost impunctate. Mandibles pallid yellow, their teeth black; the palpi pallid yellow. Thorax black; the scutellum, post-scutellum, and tegulæ yellow. Mesonotum closely and rather strongly punctured, its centre at the base raised; the apex in the middle transversely irregularly striated. Scutellum and post-scutellum coarsely punctured. Propleuræ above closely punctured; the rest coarsely irregularly reticulated. Mesopleuræ above irregularly longitudinally striated; below closely punctured. The median segment at the base is closely rugosely irregularly reticulated; the lateral keels are roundly curved; the space behind these is smooth; the apex behind is narrowed into a distinct neck, and is irregularly transversely striated. Metapleuræ coarsely irregularly reticulated. Legs rufous; the anterior pair paler, more yellowish in tint; the four front coxæ and trochanters pale yellow. Wings hyaline, with a faint fulvous tinge at the base; the stigma testaceous, the nervures black. The second and third segments of the abdomen are black above; the apical two are entirely black.

## BRACONIDÆ.

## IPHIAULAX ELIZEUS, sp. nov.

Luteous; the antennæ, front, vertex, the occiput, the upper half of the outer orbits, and the apical abdominal segment black; the face, clypeus, and malar space, and upper half of the inner orbits, pale yellow; the wings to the transverse basal nervure and the basal half of the stigma yellow; beyond that dark fuscous; the apex of the hinder tibiæ broadly, and the hinder tarsi black. ♂ and ♀. Length 8, terebra 2 mm.

*Hab.* Deesa (Nurse).

Head smooth and shining, the face sparsely covered with pale hair; mandibles pale rufous. Back of abdomen irregularly rugosely punctured; the sutures on the second, third, and fourth segments are wide and stoutly striated; on the sides of the fifth the furrow is wide, closely and finely striated; the furrows on the apex of the fifth and sixth segments are narrow, distinct, and deep; there is no keel or distinct plate on the base of the second segment. The base of the first cubital cellule is hyaline, broadly above and below; the cloud on the posterior wings commences opposite that on the anterior.

## IPHIAULAX SMENUS, sp. nov.

Rufous, the flagellum of the antennæ black; the wings dark fuscous, the first cubital cellule and a spot below it hyaline, the stigma yellowish fulvous; the mesonotum and scutellum sparsely but distinctly punctured; the median segment closely and strongly punctured. ♂ and ♀. Length 8-11 mm., ovipositor 13-16 mm.

*Hab.* Deesa (Nurse).

Vertex smooth; the front with a deep furrow, its sides finely and closely punctured; the sides of the face somewhat strongly and closely punctured. Clypeus almost smooth, except close to the apex. Mandibles punctured and rufous at the base, the apex black. Parapsidal furrows distinct, narrow, deep, indistinctly crenulated. Median segment thickly covered with white pubescence. Petiole coarsely rugosely punctured, except in the centre at the apex; the lateral furrows with a few transverse keels; the second, third, and fourth segments are more closely rugosely punctured; the transverse and oblique furrows are closely striated; the apices of the segments are smooth; the oblique furrows on the second segment are stoutly striated, the hollow at their apex smooth. There is no plate or keel on the base of the second segment. The basal four segments of the abdomen are together as long as the head and thorax united.

Agrees in coloration (except that the hinder tibiæ and tarsi are not black) with *I. punjabenses*, Cam., but that species has the ovipositor only as long as the body, and the abdomen is shorter and broader. The species varies considerably in size. The male has (or may have) the apical segments of the abdomen black.