

fossil under the microscope from the surface of a section it should, when not overlaid permanently by Canada balsam and a glass cover, be overlaid for the occasion by a little *water* and a glass cover; otherwise the roughness of the dry surface alone, however much it may be polished, will render the examination most imperfect and unsatisfactory.

XXXIII.—*On Longicorn Coleoptera of the Family Lamiidæ.*

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[Plate XVI. figs. 1-5.]

ÆTHALODES, n. g.

Head of moderate size and strongly concave between its antennal tubercles; the latter rather short and somewhat distant; front convex, subequilateral. Last joint of palpi ovate-cylindrical. Antennæ scarcely longer than half the body; scape stout, subcylindrical, slightly curved, somewhat expanded at the apex, the latter with a small but distinct cicatrice; fourth joint equal in length to the second and third united, distinctly shorter than the scape.

Prothorax acutely spined at the sides and with large rounded tubercles on the disk.

Elytra oblong, rough, with alternating rows of larger and smaller granules, rounded at the apex, and each elytron having at its base a small median projection.

Legs subequal, the posterior a little longer than the anterior or middle; femora linear; middle tibiæ emarginate.

Pro- and mesosterna simple. Metasternum moderately elongate.

This genus is allied to *Trachystola*, of which it has the general form, but from which it may be readily distinguished by the short third joint of its antennæ, by the peculiar tuberculation of its thorax, and the less prominent median projection at the base of each elytron.

Æthalodes verrucosus, n. sp. (Pl. XVI. fig. 1.)

Niger, squamositate fusca indutus; antennis concoloribus; prothorace lateribus acute spinoso, dorso quinque tuberculis; clytris seriato-granulatis, apicibus rotundatis.

Long. 23-28 mm., lat. 10-11 mm.

Hab. North China.

Black, covered (excepting the tubercles of the thorax and the summits of the granules of the elytra) with a dark brown squamosity. Head impunctate. Prothorax acutely spined at the sides, with five tubercles on the disk, of which one (median), much larger than the others, is emarginate behind and somewhat heart-shaped; two are placed one on each side in front of this, while the remaining two, quite small and, at first sight, scarcely noticeable, lie one on each side of and close to the large median tubercle, whose free lateral borders overlap and partly conceal them.

Elytra with four rows of larger and five of smaller granules on each, and in addition a short row of smaller granules on the outer margin of each extending about one third of its length from the base. The sutural row of smaller granules appears double at the base, owing to the presence of a few granules of larger size on each side of the scutellum, and extending in a curve on to the median process of the base.

Epepeotes uncinatus, n. sp. (Pl. XVI. fig. 2.)

Niger, viridi-griseo pubescens; capite et prothorace supra albo trivittatis, vitta media prothoracis angusta, evanida; elytris albo bivittatis, nigro maculatis, apicibus truncatis.

Long. 14–28 mm., lat. $4\frac{3}{4}$ –9 mm.

Hab. North India.

Black, with a greyish-green pubescence, which is darker on the head and prothorax. Head with three white vittæ on the vertex and one behind the lower lobe of each eye. Thorax with three white vittæ above, the middle one narrow and faint, and in some specimens almost entirely absent; a white vitta on each side just above the coxa, continued on to the sides of the breast. The lateral vittæ on the dorsal side of the thorax are continued on to the elytra through their entire length as two more or less distinct white bands; in some specimens these bands appear as nothing more than lighter portions of the pubescence, passing gradually into the darker shades on each side.

Elytra with numerous small black spots, apices truncate, the angles not produced. Abdomen with a single row of white spots on each side. Legs and first joint of antennæ coloured like the rest of the body; the remaining joints of the antennæ in the male fuscous, in the female dark grey, with their apices fuscous. Mesosternum feebly tubercled.

This very distinct species bears, in the British-Museum collection, the manuscript name which I have adopted.

Though an apparently common species, I have been unable to find any description of it.

Epepeotes albomaculatus, n. sp.

E. punctulato affinis, sed differt maculis elytrorum majoribus et paucioribus, vitta media thoracis brevi, abdomine quatuor sericibus maculorum.

Long. 25-30 mm.

Hab. North India.

In colour and general appearance this species much resembles *E. punctulatus*, Westw. ; it is, however, a little larger, the median vitta of the thorax stops short behind at about one third of its length; the white spots on the elytra are much larger and fewer in number; they vary in size, the largest being at the middle of each elytron. The elytra are quite smooth behind and without any trace of carinæ, their apices are transversely truncate, with all the angles very slightly produced. Each of the first four abdominal segments has two white spots, the fifth one spot, on each side. The three specimens are apparently all females.

The species (*E. punctulatus*) referred to above is, I believe, synonymous with *E. (Monohammus) guttatus*, Guér., which is placed in the Munich Catalogue in the genus *Euoplia*. A specimen of the former in the British-Museum collection is Dejean's *Monohammus guttatus*, and a second specimen of Chevrolat's collection is ticketed *guttata*, Guér. To the genus *Epepeotes* must also be added the *Monohammus lateralis*, Guér. *Epepeotes meridianus*, Pasc., is probably synonymous with it.

Pelargoderus flavicornis, n. sp. (Pl. XVI. fig. 3.)

♂. Niger, grisco pubescens, fusco mixtus; antennis corpore paulo longioribus, articulis primo et secundo nigris, cæteris flavis, apicibus fusco-ferrugineis; prothorace lateribus modice tuberculato; quoque elytro pone medium macula magna, nigra, nitida; apicibus subrotundatis.

Long. 26 mm., lat. 9 mm.

Hab. Nias Island.

Black, with a short greyish pubescence mixed with fuscous. Antennæ in the male a little longer than the body, the scape and second joint black, the remaining joints rather thick, flavous at the base and dark ferruginous at the tips. Thorax with fairly well-marked lateral spines. Elytra with a large

black shining spot on each behind the middle ; apices slightly obliquely truncate or almost rounded. Legs greyish pubescent ; anterior tibiæ in the male somewhat twisted, feebly dentate along their lower border, with a distinct tooth near their tarsal end. The first two joints of the anterior tarsus in the same sex somewhat laterally expanded. Mesosternum with a small conical tubercle.

This species is very distinct, almost generically so, by reason of the shortness and greater thickness of its antennæ. In no other species of *Pelarygoderus* are the antennæ in the male less than twice the length of the body. The greater size of the spots on its elytra and the lighter colour of its antennæ are also marks which will easily differentiate it from other species.

Monohammus rivulosus (Pase. MS.), n. sp.

Omnino pubescens, punctis dispersis nonnullis elytrorum exceptis ; capite, prothorace, cruribus et corpore subtus griseis ; elytris brunneis albo vittatis ; antennis griseis, articulis a tertio apicibus fuscis.

Long. 18-26 mm., lat. 6-9 mm.

Hab. North India (Assam) and Laos.

Head, thorax, the underside of the body, and the legs dark grey and somewhat glossy. Antennæ grey, with the tips of the third to the last joint dark brown. The elytra are of a light brown colour, streaked with dull white ; one broad streak sets out from the shoulders, and, after passing obliquely inwards, runs close to and parallel with the suture for the rest of its distance ; posteriorly a very narrow stripe of brown divides it into two ; in addition to these there are two narrow stripes of white posteriorly, all uniting towards the apex, and a short white streak below the shoulder. The elytra are minutely punctured and have also some large, widely scattered, shallow punctures, which give them a somewhat spotted appearance. The apices are rounded.

Monohammus ciliatus, n. sp.

Æneo-niger, sparse ochraceo-pubescens, prothorace brevi, lateribus fortiter spinosis, spinis recurvis ; elytris punctulatis, ad basin minute granulatis, apicibus rotundatis, angulis suturalibus leviter productis ; antennis fuscis, subtus ciliatis.

Long. 27 mm., lat. 9 mm.

Hab. China.

Black, with an ochraceous pubescence entirely covering

the head, legs, and underside of the body, but limited to more or less confluent spots on the thorax and elytra. The head deeply and triangularly concave between the antennal tubercles, and longitudinally sulcate. Thorax much broader than long, the lateral spines very long and directed somewhat backwards, very closely and finely punctured on the disk, the latter with a slight median lobe or swelling near its base just in front of and faintly projecting over the posterior transverse groove. Elytra very finely granulate at the base, the granules replaced behind by very close and somewhat fine punctures, which extend almost to the apex; the latter rounded, with the sutural angles very slightly produced. The last two joints of the antennæ are broken off in the two specimens under observation; the remaining nine are together about as long as the body, the scape and second joint are covered with an ochreous pubescence, the other joints show a trace of pubescence above, and all are fringed with hairs beneath. Both specimens are, I believe, females.

The ciliate antennæ and the rather short prothorax, with its long and recurved lateral spines, are characters which make the species doubtfully a *Monohammus*.

Haplohammus speciosus, n. sp.

Pubes olivaceo-aurea velutina tectus; capitis fronte sparse et minute punctulata; prothorace haud levi, antice et postice transverse bisulcato; elytris minute subseriatim punctulatis, apicibus subrotundatis.

Long. 15-23 mm., lat. 5-8 mm.

Hab. China and Hong Kong.

Completely covered with a dense, golden-olive, velvety pubescence, with shades varying in different lights. The pubescence is as bright on the under as on the upper side of the body, is less bright on the legs, and is rather dull on the front of the head and on the basal joint of the antennæ. A narrow median impressed line along the face and occiput. Cicatrice of scape pubescent, its margin not quite complete. Bases of third to eleventh antennal joints yellowish brown, clothed with a faint grey pubescence (denser in the female), the apices fuscous ferruginous. The prothorax appears slightly uneven on the disk; but this is chiefly due to the ruffled-looking pubescence; it has four transverse grooves, two anteriorly, of which one is very close to the anterior border, and two posteriorly; a faint median lobe or process abuts slightly on the anterior of the two latter grooves. A few punctures on each side of the middle of the disk. Elytra

smooth, minutely and somewhat seriatly punctured, the punctures visible only on the basal half. Apices somewhat angular, almost rounded. Anterior femora, especially in the male, stouter than the posterior pairs.

The only described species with which the present one might be confused are *M. permutans* and *M. vicinus* of Pascoe, yet from these it is very distinct. In each of these two species the legs are varied with brown, the prothorax above is more punctured, and the transverse grooves are scarcely distinct, while the elytra are coarsely enough granulate at the base, with small black granules. They are, taken altogether, much coarser-looking species.

Haplohammus socius, n. sp.

H. specioso simillimus, sed differt colore pallidiore, capitis fronte impunctata, prothorace paulo longiore, leviore.

Long. 19-21 mm., lat. 6-7 mm.

Hab. China.

Very like the last species, but with a paler and somewhat silvery pubescence. The front of the head impunctate; the prothorax somewhat longer than in *speciosus*, more even on the disk, with an appearance of a faint longitudinal median ridge, the transverse grooves less distinct, but still quite apparent.

Dihammus spinipennis, n. sp.

Griseo-fusco pubescens; antennis concoloribus, ♂ longissimis, scapo minute et sparse nigro-maculato; prothorace supra inequali, minute granuloso, subtus plicato; elytris ad humeros rectis, apicibus truncatis, angulis externis valde spinosis.

Long. 32-34 mm., lat. 11-12 mm.

Hab. New Caledonia.

Brownish grey; the antennal tubercles in front, the scape of the antennæ, the underside of the body, and the legs with minute scattered black spots, due to punctures, from each of which springs a short white bristle. Head with its sides and vertex darker than its front. Prothorax somewhat uneven on the disk, with numerous very small black granules on each side and extending on to the lateral spines. Scutellum pale, with a narrow black line in the middle. Elytra straight at the shoulders, minutely punctured throughout, apices truncate, with the outer angles strongly spined, the sutural angles not produced. The anterior tibiæ in the male slightly toothed near their tarsal end. First joint of anterior tarsus in the

male long, and produced on its outer side into a spur. Smaller than *longicornis*, Thoms., and distinguished, *inter alia*, by the long spines to the elytra.

Cyriocrates Waterhousei, n. sp. (Pl. XVI. fig. 4.)

Niger, squamosa pubescentia viridi-cærulea; prothorace supra æquali, macula longitudinali nigra subdepressa media; elytris ad basin granulis parvis, nigris, maculorum nigrorum tribus seriebus transversis; antennis ♀ corpore paulo brevioribus, articulis basalibus viridi-cæruleis, cæteris nigris.

Long. 27 mm., lat. 11 mm.

Hab. Nias Island.

Excepting a longitudinal black spot on the thorax and three (or four) series of spots on the elytra, the body is entirely covered with a bluish-green squamous pubescence, somewhat iridescent on parts. Head, including the labrum and base of the mandibles, entirely bluish green, with a very faint longitudinal median line on the face and vertex. Antennæ in the female a little shorter than the body; the scape, second joint, and bases of the third and fourth joints blue, the rest black.

Prothorax with strong and sharp lateral spines; the disk smooth.

Elytra with some small black granules at the base, with three transverse, somewhat anteriorly curved bands, each made up of eight quadrate black spots. (In a second specimen there is a fourth indefinite band, which may have been due to rubbing.) From each of the minute and scattered punctures of the elytra there springs a short black hair; these hairs, of which there are a few also on the prothorax, are only visible when looked at sideways.

Legs coloured like the rest of the body; the middle tibiæ, fringed, like the posterior, with black hairs on their lower outer border, are but very faintly emarginate.

In colour and markings resembles *Monohammus Bowringi*, White, but is otherwise very distinct.

I have named this fine species after my colleague, Mr. C. O. Waterhouse, to whose help and guidance I owe much.

Aristobia angustifrons, n. sp.

Pallide griseo-pubescentis, nigro maculata et plagiata; oculorum lobis inferioribus grossissimis, approximatis; antennis nigro-annulatis, articulis primo, tertio et quarto apice villosis; prothorace supra

vix inæquali, maculis nigris parvis plurimis, lateribus spinis longis, acutis; elytris nigro plagiatis, apicibus emarginatis.

Long. 37 mm., lat. 13 mm.

Hab. Siam.

Clothed with a pale grey pubescence, having spots and patches of black. Head with very large eyes, and consequently a narrow front; vertex longitudinally sulcate. Scape of the antennæ faintly grey at the base, the apex black and with a small tuft of black hairs; the second and bases of the following joints pale grey, their apices black; third joint at its apex with a tuft of black hairs almost entirely surrounding it, the fourth also slightly villose at its extremity. Head and thorax above thickly dotted with small black spots. Elytra granulate at the base; a black patch covering the shoulders and extending inwards almost as far as the scutellum, the latter dark grey; four velvety black spots or patches along the margin of each elytron, the largest at the middle, and four spots on each along the suture. The body underneath grey, each of the first four abdominal segments with a black nitid spot in the middle and two smaller spots on each side. The femora ringed with black at the ends, pale grey in the middle. Tibiæ with a small black patch near the tarsal end; the tarsi black, slightly mixed with grey.

By its very large and approximate eyes this species differs from most species of the genus; in this, as in some other respects, it seems to come close to *A. Voetii*, Thoms.

Cælosterna (Lamia) pulchellator, Westwood, which appears in the Munich Catalogue under *Batocera*, has been referred by Ritsema to the genus *Psaromaia*, while it is redescribed and figured by Aurivillius as *Euoplia argenteo-maculata* ('Entomologisk Tidskrift,' 1887). Its true affinity is with the species *C. javana* and *C. plagiata*.

Monohammus carissimus, Pasc., is a *Cælosterna*, for which *C. tessellata*, White, is a synonym.

Cælosterna imitator, White, is a *Cyriocrates*, and closely enough allied to *C. Horsfieldi*, Hope.

Rhaphidopsis (Eutænia) elegans, Waterh., is a *Cælosterna*.

Cælosterna trifasciella, White, is the type of the following genus.

EUTÆNIOPSIS, n. g.

Head broadly concave between the antennal tubercles; front rectangular, broader than long. Inferior lobes of the

eyes rather small, reaching not more than halfway to the base of the mandibles. Antennæ in the male a little longer than the body, in the female somewhat shorter; scape stout, thickest in the middle, with a broad and completely margined cicatrice at the apex; third joint longer than the scape, the fourth and following joints gradually decreasing in length and thickness.

Prothorax subtransverse, somewhat swollen in the middle, narrower behind than in front of the lateral median spines.

Elytra rather narrow, oblique at the shoulders, with their sides parallel and apices rounded.

Legs with the femora rather thick in the middle; the middle tibiæ entire; the claws of the tarsi broadly divergent.

The sternal processes are simple, the mesosternal narrowly truncate behind and not pointed. The anterior coxal cavities incompletely closed in behind.

Owing to its distinct and completely margined cicatrice this genus must be placed in the *Monohammus*-group, in which it may come after *Celosterna*. From the latter genus it is easily distinguished by its narrower form, its smaller eyes, and broader front, its elytra oblique at the shoulders, and its anterior coxal cavities open behind.

Type *E. trifasciella*, White (Proc. Zool. Soc. 1850, p. 13, pl. xiii. fig. 1).

A somewhat variable species from China, Hong Kong, N. India, and Penang.

Thomson apparently confounded this species with his *Eutania Javetii*. In his description of *Eutania* he gives *Javetii* as the type; but subsequently *trifasciata*, White, is given as the type, and *Javetii* as a synonym. I have no doubt that *trifasciata* was written in error for *trifasciella*, and I feel almost as certain that Thomson was wrong in his identification of that species. At any rate his description of *Eutania* is quite inapplicable to *trifasciella*, White.

HAPLOTIRIX, n. g.

Of the somewhat elongated form and general appearance of the genus *Goes*.

Head as in *Monohammus*; antennæ (male) more than half as long again as the body; scape rather long and slender, with a narrow and completely margined cicatrice; the third joint a little longer than the scape, the fourth to tenth decreasing in length, the eleventh nearly twice as long as the tenth.

Prothorax rather small, laterally spined.

Legs of equal length; the femora sublinear; middle tibiæ without the slightest trace of tubercle or notch.

Sternal processes simple and rather narrow; the anterior coxal cavities distinctly open behind*.

This last character, in conjunction with the entire median tibiæ and the rather narrow sternal processes, will sufficiently distinguish the genus amongst the group of the Monohammids; there is only one other genus of the group (*Euteniopsis*, described in the present paper) in which the anterior coxal cavities are open behind; from this genus it is very distinct.

May be placed after *Mecynippus* and *Goës*.

Haplothrix simplex, n. sp. (Pl. XVI. figs. 5 & 5 a.)

Omnino dense brunneo-griseo pubescens; antennis concoloribus, scapi cicatrice pubescente; prothorace supra æquali, spinis lateralibus ad basin angustis; elytris elongatis, lateribus subparallelis, apicibus rotundatis; segmento abdominis quinto (♂) ad apicem media fovea.

Long. 26 mm., lat. 8 mm.

Hab. Siam.

The whole of the body, the legs, and antennæ covered with a unicolorous, dense, drab-grey pubescence. The head impunctate. The prothorax smooth above, the lateral spines rather narrow at the base; the elytra very minutely punctured, the punctures scarcely visible through the pubescence. The legs all very similar in size and form. The last segment of the abdomen in the male is slightly emarginate at the apex, and has, just in front of this emargination, a deep and somewhat transverse depression.

Pharsalia alboplagiata, n. sp.

P. vinosa affinis, sed major; prothorace omnino ochraceo, impunctato, antice et postice transverse sulcato; elytris lateribus ante medium

* In the treatment of the Lamiidæ this character of the coxal cavities, so useful in other families, has been hitherto neglected. Lacordaire, indeed, in his introductory account of the family, states that the anterior coxal cavities are constantly closed behind. I have shown that there are exceptions to this rule in the *Monohammus*-group. In the *Batocera*-group of Lacordaire the character is of greater importance, for by means of it the genera may conveniently be subdivided into two groups, in one of which the coxal cavities are open behind, in the other closed. The former includes *Batocera* and all the genera which most closely resemble *Batocera* in their organization, viz. *Apriona*, *Megacriodes*, and *Rosenbergia*.

albo-plagiatis, apicibus rotundatis; antennis fuscis, tenuiter griseo-pubescentibus.

Long. 21 mm., lat. 7 mm.

Hab. Borneo.

Head with an ochraceous-grey pubescence and with a faint longitudinal raised line on the front. Prothorax with a short transverse depression on the middle of the disk. Elytra without basal crests, roughly punctured at the base, the punctures becoming smaller as they pass backwards; the basal part, especially around the scutellum, and the scutellum itself with an ochreous pubescence; a large white, somewhat broken patch on each side in front of the middle; towards the apex the pubescence is again ochreous. The whole of the underside of the body, except along the middle of the abdomen, ochraceous. The legs entirely ochraceous grey.

Excepting *vicina*, Pasc., this is the only described species of the genus in which the elytra are without basal crests.

Pharsalia pulchra, n. sp.

P. mortali affinis; prothorace supra flavo-variegato, scutello flavescente; elytris nigro-velutinis, flavo maculatis et fasciatis.

Long. 23½ mm., lat. 9 mm.

Hab. Siam.

Closely allied to *Pharsalia (Zygocera) mortalis*, Thoms., with which it agrees very well in its structural details. It is, however, distinct enough by the colour and pattern of its markings. At the base of the elytra is a flavous band well intermingled with black; just in front of the middle is a tolerably broad transverse flavous band, which is interrupted and mingled with black near the suture. Towards the apex there are three or four irregular flavous spots on each elytron, and some smaller spots in front of them near the suture. The markings on the head are similar to those of *mortalis*.

Pharsalia (Zygocera) mortalis, Thoms.

This species occurs twice in the Munich Catalogue, once under the genus *Callipyrga* and again as *Cereopsius saga* (Dejean's Cat.). Recently (Notes Leyd. Mus. vol. ix. 1887) it has been fully described and referred to its true genus by Van de Poll under the name *albomaculata*.

Rosenbergia exigua, n. sp.

♀. Parva, nigra, pube grisea tecta; antennis corpore paulo longi-

oribus, scapo apice leviter ruguloso; elytris griseis ochraceo mixtis, granulis maculisque parvis, nigris, nitidis, numerosis; apicibus truncatis, angulis productis.

Long. 32 mm., lat. 10 mm.

Hab. New Guinea.

Pubescence dull leaden grey on the head and thorax, light grey on the underside of the body, somewhat darker on the legs, and a light grey mixed with ochreous on the elytra. Head somewhat large; eyes large and subapproximate; a median impressed line on the face and vertex. Superior lobes of the eyes margined behind on the vertex with minute black dots. Antennæ with the scape rather stout, somewhat rugose towards the apex, as in species of *Apriona*; first to third joints and base of fourth grey, the rest sooty brown. Prothorax with two transverse wrinkles in front of the middle, the lateral spines scarcely directed upwards and not constricted at the base. Elytra with a very small transversely directed tooth at each shoulder, with numerous small, black, scarcely raised granules near the base; posteriorly these granules are replaced by spots which extend almost to the apex. The latter transversely truncate, with the angles produced into short spines, the outer spines very slightly longer than the sutural.

Much smaller and otherwise distinct from any of the species of the genus hitherto described.

EXPLANATION OF PLATE XVI. FIGS. 1-5.

- Fig. 1.* *Æthalodes verrucosus.*
Fig. 2. *Epepeotes uncinatus.*
Fig. 3. *Pelargoderus flavicornis.*
Fig. 4. *Cyriocrates Waterhousei.*
Figs. 5 & 5 a. *Haplothrix simplex.*

XXXIV.—*Note on an Abnormal Specimen of the Dentition of Rhinoptera.* By A. SMITH WOODWARD, F.G.S., F.Z.S.

MR. WILLIAM DAVIES has recently presented to the Zoological Department of the British Museum a remarkably abnormal example of the dentition of the Selachian genus *Rhinoptera*, which seems worthy of a brief notice, from the

