

3. On the Coleoptera of the Families *Erotylidæ*, *Endomychidæ*, and *Coccinellidæ*, collected by Mr. H. H. Smith in St. Vincent, Grenada, and the Grenadines, with Descriptions of New Species. By HENRY S. GORHAM, F.Z.S.

[Received March 3, 1898.]

(Plate XXVII. figs. 6 & 11, 12.)

The few species representing these families can hardly be regarded as typical of the West-Indian Fauna, but it will be observed that a considerable proportion are described as new. It is hardly possible, for instance, to believe that the Languriides are only represented by the abnormal genus *Hapalips*, which also occurs in Colombia. The principal interest of the present collection lies in the wide dispersion it suggests of some minute forms, with the general apparent absence, in the smaller island at least, of the more specialized genera, such as *Ægithus* and *Megischyrus*.

EROTYLIDÆ. (Subfam. LANGURIIDES.)

HAPALIPS.

Hapalips, Reitter, Verhand. des natur. Vereins in Brünn, 1877, xv. p. 122.

Corpus elongatum, depressum. Pedes haud longi; tarsi quadriarticulati, articulis tribus primis subtus membranaceis, hirtulis: antennæ 11-articulatæ, articulis tribus ultimis clavam laxam articulatam præbentibus. Palpi maxillares articulo ultimo subuliformi. Oculi grosse granulati, magni. Mandibulæ apice bifidæ. Abdomen e segmentis quinque compositum, lineis coxalibus ægre distinguendis.

This name was proposed by Reitter for some species from Colombia which he placed between *Ips* and *Rhizophagus*. They are anomalous-looking Coleoptera. M. A. Grouvelle considers, however, that they are more nearly allied to *Languriides*, and I can see no reason why they should not be so placed. They differ however, from the known genera of that group in the following particulars:—They are depressed, reminding one of *Rhizophagus*; the elytra and some parts of the body are pubescent.

HAPALIPS GROUVELLEI, sp. n. (Plate XXVII. figs. 11, 11 a, ♂, 12, ♀.)

Elongatus, depressus, ferrugineus, parcius pube brevi vestitus, punctatus; elytris punctato-striatis; prothorace subquadrato, margine antico prominulo, quasi lobato; antennis thoracis longitudine, articulo basali valido, secundo ad octavum gradatim brevioribus, intermediis subquadratis, tribus ultimis clavam laxam præbentibus, nono et decimo transversis, ultimo subquadrato. Long. 4-4.5 millim.

Hab. ST. VINCENT. GRENADA : Mount Gay, leeward side ; Grand Étang 1900 feet, Black Forest and Chantilly Estates, Balthazar, windward side (*H. H. Smith*).

The antennæ in this insect are placed well in front of the large, coarsely granulated, oval eyes ; the epistome is prominent, rounded in front, and its edge covers the antennal sockets (as in *Languria*) ; the crown of the head is somewhat elevated and nearly smooth. The front of the thorax projects like a hood over the base of the head ; with this exception it is quadrate, a very little narrowed behind, coarsely punctured, the middle of its disk rather flat, its sides and base margined. The prosternal process is distinct, with raised margins, and a little arched. The elytra have striæ, with numerous closely-packed, squarish, but rather obsolete punctures, becoming smaller and vanishing before the apex. The scutellum is transverse. The metasternum is very strongly and sparsely, the abdomen more thickly and less deeply punctate.

A considerable series of examples of this insect was obtained, principally at Mount Gay Estate.

HAPALIPS FILUM.

Hapalips flum, Reitter, Verh. des natur. Vereins in Br nn, 1877, xv. p. 125.

Hab. GRENADA : Mount Gay Estate (leeward side) ; Balthazar and Chantilly Estate (windward side).

ISCHYRUS.

Ischyris, Lacord. Mon. Erotyl. p. 89 ; Crotch, Cist. Ent. i. p. 144 ; Gorh. Biol. C.-Am., Col. vii. p. 39.

ISCHYRUS GRAPHICUS.

Ischyris graphicus, Lacord. Mon. Erotyl. p. 125 ; Gorh. Biol. loc. cit. p. 39, t. 2. f. 17.

Hab. ST. VINCENT (*H. H. Smith*).

In the specimens of this insect (eight in number) from St. Vincent, the two middle spots on the thorax are connected with a basal spot. The head is yellow, excepting at the base and round the eyes, and the apical black on the elytra is little developed ; otherwise it is very near *I. 4-punctatus* and *I. subcylindricus*. It has occurred in Mexico and in Nicaragua.

The following species of *Ischyris* have been recorded from the West-India Islands :—

<i>Ischyris fulvitaris</i> , Lacord. Mon. Erotyl. p. 129.	Haiti.
<i>I. flavitaris</i> , Lacord. l. c. p. 130.	Cuba.
<i>I. modestus</i> , Oliv. Lacord. l. c. p. 130.	Haiti.
<i>I. (Oocyranus) tarsalis</i> , Lacord. l. c. p. 106.	Haiti.
Also	
<i>Oocyranus violaceus</i> , Sturm, Lacord. l. c. p. 196.	Cuba.

ÆGITHUS.

Ægithus, Fabr. Syst. El. ii. p. 9; Gorh. Biol. C.-Am., Col. vii. p. 85.

ÆGITHUS CLAVICORNIS.

Chrysomela clavicornis, Linn. Syst. Nat. ed. x. p. 370.

Ægithus clavicornis, Gorh. Biol. l. c. p. 87.

Coccinella surinamensis, Linn. Cent. Ins. 10.

Hab. GRENADA: Mount Gay Estate and Mount Maitland, on the leeward side.

The localities recorded show this to be an abundant and widely-distributed species. Its occurrence, however, in the Antilles has not been recorded before.

Three examples.

EUXESTUS?

Euxestus, Wollaston, Ann. & Mag. Nat. Hist. 1858, vol. ii. p. 411.

The small insect here described presents, as does the type of Mr. Wollaston's genus (*E. parki* from Madeira), the greatest difficulty in its classification. M. Fauvel (Rev. d'Ent. x. p. 162) has regarded *Euxestus* as a synonym of *Plæosoma*, Woll. Both insects are now before me, and present great differences in the form of the body, in the length of the antennæ, in the proportion of their joints, in the length of the legs and structure of the tarsi. *Euxestus* is, however, also very similar to an Eastern genus of Motschulsky, *Tritomidea*. But they are not congeneric; the structure of the capitulus of the antennæ alone will separate them. Our insect from Grenada is so similar to *Euxestus parki* that I cannot at present point out any differences which would separate it generically, but it is probable they will be found.

EUXESTUS? PICICEPS, sp. n.

Elongato-ovalis, niger, nitidus, fere glaber; capite prothoracisque margine antico rufo-piceis; elytris subtilissime punctato-striatis; antennis, pedibus abdomineque rufis. Long. 1.75 millim.

Hab. GRENADA: St. John's River and Mount Gay Estate, leeward side; Balthazar and Grand Étang, windward side (*H. H. Smith*).

Shining, glabrous, nearly black above; the head, trophi, legs, and abdomen deep castaneous red. The antennæ are ten-jointed, if the capitular apical joint be considered as one, but there is probably a concealed joint in the summit of the capitulus, giving it the appearance of being slightly truncate at the tip, the suture (if one exists) not being made out under the microscope; the basal joint is large and globular, the second much smaller but stout, the third elongate, gradually widening from the base, the six funicular joints transverse, but becoming bead-shaped near the club. The maxillary palpus has its apical joint awl-shaped and rather long. The legs are stout and short, the femora wide and receiving the tibiæ into grooves. Punctuation is visible under the microscope, when the elytra are seen to have series of very fine

and numerous punctures continuing to near the apex, and interspersed with many irregular points, and the thorax is covered with very minute but distinct points. Underneath, the body is very shining and deep red, with the exception of the metasternum, which is black and which, with the abdomen, is glabrous.

About ten examples were found.

Obs. With regard to *Tritomidea*, if Motschulsky's drawing of the antenna be correct, there are but *five* joints to the funicular portion of the antenna preceding the capitulus, and that portion itself is made up of three joints, which is certainly not the case in the West-Indian insect.

ENDOMYCHIDÆ.

ANIDRYTUS.

Anidrytus, Gerstaecker, Monogr. Endom. p. 256; Gorb. Biol. C.-Am., Col. vii. p. 125.

ANIDRYTUS sp. inc. ♀.

Hab. GRENADA: Mount Gay Estate, leeward side (*H. H. Smith*).

A single female specimen of an *Anidrytus*, belonging to Section B, which are species of a depressed form and with the elytra not very ovate and but slightly convex. The *Anidryti* are very similar in form and colour, and it would be very difficult to determine this example in the absence of the male, but it appears to be most like *A. parallelus* Gerst. The genus has not, I believe, been recorded previously from the Antilles.

RHYMBUS.

Rhymbus, Gerstaecker, Monogr. Endom. p. 347; Gorb. Biol. C.-Am., Col. vii. p. 142.

RHYMBUS GLOBOSUS, sp. n.

Orbicularis, valde convexus, niger; corpore subtus, pedibus inter-medius, et posticis elytrisque ferrugineis. Long. 1.75 millim.

Hab. GRENADA: Chantilly Estate, windward side (*H. H. Smith*).

Very convex, shining, clothed with pubescence, which is greyish on the thorax and rufous on the elytra. Head, antennæ, palpi, and thorax black; the antennæ as long as would reach rather further than the hind angles of the thorax, 10-jointed. Thorax black and shining, the sides narrowly margined and reflexed; the basal sulci are distinct, wide at their bases, strongly convergent and arcuate, terminating as fine lines. Scutellum brownish. Elytra brown; the punctation is fine but just visible as separate points under the quarter-inch Coddington lens. The legs are red, with the tibiæ rather more obscurely pitchy or red, the anterior pair being more obscure than the middle and posterior legs.

Six specimens of this little *Rhymbus* were obtained; it is very distinct from any other described species.

RHYMBUS UNICOLOR, sp. n.

Orbicularis, valde convexus, ferrugineus, rufo-pubescentis; elytris crebre, minute, distincte punctatis; antennis fulvis, articulis duobus basalibus et apicali dilutioribus. Long. 1.75 millim.

Hab. ST. VINCENT, leeward side (*H. H. Smith*).

The size and form are precisely those of *R. globosus*, and the form of the thorax, the thoracic sulci, and the narrow reflexed margins are similar; the pubescence appears rather more ragged and rather less thick (perhaps owing to less fine condition), but the uniform colour very clearly distinguishes this little species, the only part which differs being the middle of the antennæ and the front portion of the thorax, which are darker rusty-red than the rest, and the apical joint of the antennæ, which is decidedly pale. This species is evidently nearly allied to *R. apicalis* Gerst., a Colombian insect, but is, I think, smaller, and better kept distinct as an insular form for the present. Nine specimens were obtained.

DIALEXIA.

Dialexia, Gorham, Biol. C.-Am., Col. vii. p. 146.

DIALEXIA PUNCTIPENNIS, sp. n.

Breviter oblongus, suborbicularis, parce pilosellus, castaneus, nitidus; elytris parce punctatis; antennis flavis, clava laxè triarticulata, nigra; prothoracis angulos posticos usque attingente. Long. 1 millim.

Hab. GRENADA: Balthazar, windward side (*H. H. Smith*).

The genus *Dialexia* was formed for the reception of a minute beetle (*D. setulosa* Gorh.) from Guatemala, of which, as in the present case, only a single specimen was obtained. They may be compared with the European *Aspidophori*. The antennæ are 9-jointed. In the present species there are faint indications of basal sulci, in two short lines at the base of the thorax (as in *Rhymbus*), and under the microscope ($\frac{1}{4}$ -inch objective) the elytra are distinctly but sparsely punctate. The determination of Micro-Coleoptera, when only single specimens are sent, must always at best be tentative. In the present case, however, the minute insect here described is in perfect condition, and on remounting it I was able to set out the legs and antennæ, so that I have no doubt of its position. The occurrence of a second species more than 1500 miles from the original discovery is an interesting fact, indicating the vast amount we have to learn about the distribution and classification of these minute forms of insect life.

The present insect is allied to *Rhymbus minutus* Gorh. and *Alexia minor* Crotch; and I would call attention again to my remarks on those species, in the 'Biologia,' under *Dialexia*.

I could not under any circumstances admit the *specific* identity of any of these upon evidence drawn from single examples from such distant localities. That must remain, I think, for some future student, when larger numbers have been collected.

COCCINELLIDÆ.

MEGILLA.

Megilla, Mulsant, Spec. Col. Trim. sécur. p. 24; Gorb. Biol. C.-Am., Col. vii. p. 151.

MEGILLA MACULATA.

Coccinella maculata, De Geer, Mém. Ins. v. p. 392; Gorb. Biol. C.-Am. l. c. p. 151, t. viii. figs. 19 & 20.

Hab. ST. VINCENT (*H. H. Smith*).

Very widely distributed in North and South America, and has been recorded from the Antilles by Olivier.

PSYLLOBORA.

Psyllobora (Chevr.), Mulsant, Spec. Col. Trim. sécur. p. 169; Gorb. Biol. C.-Am., Col. vii. p. 165.

PSYLLOBORA PUNCTELLA.

Psyllobora punctella, Mulsant, l. c. p. 173; Crotch, Rev. Cocc. p. 142.

Hab. GRENADA: Caliveny Estate, windward side, and Mount Gay Estate, on the leeward side (*H. H. Smith*). GRENADINES: Bequia and Mustique Islands (*H. H. Smith*).

Crotch remarks of this species, "easily to be recognized by the yellowish-white elytra, which have only two basal dots black." This may have been so in the specimens he examined from Trinidad and St. Vincent, but Mulsant expressly says that the elytra have four to five dots. And this is so: in the examples from Grenada there are always two basal and generally two median, and sometimes the three apical dots present; the latter may sometimes disappear altogether. The thorax has five dots forming an **M**.

[*Psyllobora nana* Muls. Spec. Col. Trim. sécur. p. 181: Cuba and Jamaica. *Psyllobora lineola* Fabr., Muls. l. c. p. 185: Martinique, Guadeloupe.]

CYCLONEDA.

Cycloneda, Crotch, Rev. Cocc. p. 162; Gorb. Biol. C.-Am., Col. vii. p. 169.

Daulis, Mulsant, Spec. Col. Trim. sécur. p. 296.

CYCLONEDA SANGUINEA.

Coccinella sanguinea, Linn. Amœn. Acad. vi. p. 393.

Daulis sanguinea, Mulsant, l. c. p. 326.

Cycloneda sanguinea, Crotch, l. c. p. 164; Gorb. Biol. C.-Am. l. c. p. 170.

Hab. ST. VINCENT, windward side. GRENADA: Mount Gay and Vendôme Estates, leeward side; Granville, Grand Étang; Balthazar, and Lake Antoine Estate, windward side. GRENADINES: Bequia and Union Islands (*H. H. Smith*).

This insect is distributed from the Southern States of North

America to Buenos Ayres, and has been recorded from Cuba by Mulsant and from Guadeloupe by MM. Flentiaux and Sallé.

CYCLONEDA DELAUNEYI.

Neda delauneyi, Flent. et Sallé, Ann. Soc. Ent. Fr. 1889, p. 483¹.

Hab. GRENADA: Mount Gay Estate, leeward side; Balthazar, windward side (*H. H. Smith*). GUADELOUPE¹.

The almost white marginal band of the elytra is sinuous just before the apex, and is almost divided there by the brown discoidal colour of their surface being prolonged into an acuminate point on the suture. The disk of the thorax is clouded, but the white sides are not defined by lines, as in *C. rubida*, and sometimes the whole thorax is whitish. Several allied species (as *N. viridula* Muls., to which the authors compare this insect; and *C. pallidula* = *C. rubida* var.) are light green when alive, which colour fades to a dirty yellow. The elytra in some of our examples are paler on the middle than towards the sides. Ten examples were sent by Mr. Smith.

HYPERASPIS.

Hyperaspis, Chev., D'Orb. Dict. univ. d'Hist. nat. vi. p. 780; Muls. Spec. Col. Trim. sécur. p. 649; Gorh. Biol. C.-Am., Col. vii. p. 191.

HYPERASPIS FESTIVA.

Hyperaspis festiva, Muls. l. c. p. 659; Crotch, Rev. Cocc. p. 230; Gorh. Biol. C.-Am. l. c. p. 195.

Hab. GRENADA: Vendôme Estate, leeward side; Grand Étang, windward side (*H. H. Smith*).

The specimens, seven in number, which appear to be referable to this species, are of both sexes (the males with yellow, the females with black heads), but are somewhat discoloured, and seem rather more deeply punctured than typical examples. The difference is, however, very slight. The example from Grand Étang is a small male.

[HYPERASPIS CONNECTENS.]

Coccinella connectens, Schönh. Syn. Ins. ii. p. 157, nota.

Hyperaspis connectens, Muls. l. c. p. 662; Gorh. Biol. C.-Am. l. c.

Hab. WEST INDIES: St. Eustatius, St. Bartholomew.

Both these species occur also on the continent, and may be local varieties.

HYPERASPIS CINCTICOLLIS.

Cleoithera cincticollis, Muls. Spec. Col. Trim. sécur. p. 553.

Hyperaspis cincticollis, Crotch, Rev. Cocc. p. 230; Gorh. Biol. C.-Am., Col. vii. p. 195, t. x. fig. 23.

Hab. GRENADA: St. George's and Vendôme Estates, leeward side; Granville, windward side (*H. H. Smith*).

This insect is hardly more than a variety of *H. festiva* in which

the yellow colour is more extended and the middle and apical fasciæ have become united. When found by Mr. Champion in the Pearl Islands, Panama, both forms occurred abundantly. Probably other slight differences might be found in examples from the mainland of Colombia, whence it was described by Mulsant. One example from each locality only.

CRYPTOGNATHA.

Cryptognatha, Muls. Spec. Col. Trim. sécur. p. 497; Gorh. Biol. C.-Am., Col. vii. p. 181.

CRYPTOGNATHA MELANURA, sp. n. (Plate XXVII. figs. 6, 6 a.)

Rufa; capite, prothoracis margine tenui antico et lateribus late albis; disco nigro; elytris sanguineis, pone medium nigris; pedibus pallidis. Long. $1\frac{1}{4}$ millim.

Hab. GRENADA: Mirabeau Estate, windward side (*H. H. Smith*).

This little species has the head, the extreme front edge and the sides of the thorax rather widely white, and the legs are nearly white. The disk of the thorax is black, and is, with the elytra, very finely punctured, the punctures scarcely visible except under the microscope. The elytra are chestnut-red, except in the apical third or rather more, which is black. The whole insect is (as usual in this genus) nearly orbicular and strongly convex.

There is only one example.

SCYMNUS.

Scymnus, Kugelann, in Schneider's Mag. i. p. 545 (1794); Mulsant, Spec. Col. Trim. sécur. p. 950; Gorh. Biol. C.-Am., Col. iii. pt. 2, p. 226.

Sect. I. DIOMUS.

SCYMNUS THORACICUS.

Coccinella thoracica, Fabr. Syst. El. i. p. 378.

Scymnus thoracicus, Muls. loc. cit.; Gorh. Biol. C.-Am. l. c. t. xxi. fig. 18.

Hab. ST. VINCENT, south end. GRENADA: Mount Gay Estate, Mount Maitland, St. George's and Vendôme Estates, leeward side; Balthazar, Lake Antoine, Mirabeau, La Force, and Caliveny Estates, Granville, on the windward side; Grande Anse, south end. GRENADINES: Mustique and Union Islands.

SCYMNUS OCHRODERUS.

Scymnus ochroderus, Muls. Spec. Col. Trim. sécur. p. 951; Crotch, Rev. Cocc. p. 270.

Hab. ST. VINCENT, leeward side, to 3000 feet. GRENADA: Mount Gay and Vendôme Estates, St. George's and Mt. Maitland, on the leeward side; Balthazar, Chantilly, Caliveny, and Mirabeau Estates, on the windward side. GRENADINES: Mustique Island.

The type of this species from St. Bartholomew is before me, and I see no difference between it and many examples sent by Mr. H.

H. Smith from Grenada. They are very like *S. thoracicus*, but are smaller on the average when a series like ours of about 35 examples is examined. They are, moreover, rather more oblong and more convex, and have a third of the elytra red at the apex, and this red part often more brightly coloured than in *S. thoracicus*. In some examples the thorax has a black spot on the base, as is more usual in *S. thoracicus*; but if we are right in our reference no reliance can be placed on the presence or absence of this mark, as the great majority of specimens of both species which I have seen are free from it.

SCYMNUS ROSEICOLLIS ?

Scymnus roseicollis, Muls. Opusc. Ent. iii. 1853, p. 270; Crotch, Rev. Cocc. p. 270; Flent. et Sallé, Ann. Soc. Ent. Fr. 1889, p. 484 ?

Hab. ST. VINCENT, windward side, sea-level; leeward side. GRENADA: St. George's, Mount Gay Estate, Vendôme Estate, Mt. Maitland, Grand Étang, leeward side; Balthazar, windward side; Grande Anse, south side (*H. H. Smith*). GRENADINES: Mustique.

There are about eighteen examples of a *Scymnus* among those sent from Grenada, which agree in many of their details with Mulsant's description, and as MM. Flentiaux and Sallé referred without hesitation a species from Guadeloupe to *S. roseicollis*, I do not venture to give our insect a new name. Our insect is oval, pointed towards the apex; the head, thorax, and two round spots detached from the apex are bright yellow; the body is blackish, only yellow towards the tip of the abdomen. The example in Crotch's collection is from Guadeloupe, but is not *S. roseicollis* Muls. in my opinion, and has no typical value.

SCYMNUS GRENADENSIS, sp. n.

Oblongus, convexus, dense griseo-pubescentis, niger; prothoracis angulis anticis obscure rufescentibus; elytris singulis vitta angusta rufa, nec basim nec apicem attingente; pedibus flavis. Long. 1.25 millim.

Hab. GRENADA: Balthazar, windward side; Mount Gay Estate, leeward side.

This species is near to the one described by me as *Scymnus högei* (Biol. C.-Am., Col. vii. p. 230). It is smaller, more convex, and the red vitta of the elytra is of a different form, not being shaped like a comma, but of even width throughout. The head is obscurely red, the thorax is rather narrow and blackish, except near the front angles. The body is blackish; the punctation is not visible under a Coddington lens. The single example from Balthazar is the type; the specimen from Mount Gay is a little lighter in tone, the apex of the elytra and that of the body being distinctly red, but I think it obviously represents the same species. I cannot pretend to give further details, as the specimens

have been mounted with Canada balsam on card, and to clean them so as to really determine the form of the coxal fossettes would perhaps be only unsatisfactory. It is a distinct-looking species, and when found in the same or neighbouring islands ought to be recognized.

[SCYMNUS PHLÆUS.]

Scymnus phlæus, Muls. Spec. Col. Trim. sécur. p. 983; Crotch, Rev. Cocc. p. 271.

Hab. West Indies (*Chevolat*).

The type of this is not in Crotch's collection; a single example representing it is marked "*phlæus?*," and is from Caracas, but is valueless, being in miserable condition, and does not agree with Mulsant's description.

EXPLANATION OF PLATE XXVII. FIGS. 6, 11, & 12.

Figs. 6, 6 a. *Cryptognatha melanura*, p. 341.

11, 11 a. *Hapalips grouvellei*, ♂, p. 334.

12. *Hapalips grouvellei*, ♀.

4. Remarks on the Affinities of *Palæospondylus gunni*. In reply to Dr. R. H. Traquair. By Dr. BASHFORD DEAN¹.

[Received March 12, 1898.]

Whether *Palæospondylus* is to be accepted by zoologists as a Devonian hag-fish is a question of singular interest. For all views as to the kinships and descent of the Marsipobranchs, the outcome of widely-spread morphological and ontogenetic studies, must stand the test of this historic evidence. Thus, if *Palæospondylus* becomes the landmark in the descent of Marsipobranchs, this line must obviously have been both as ancient and as independent as those of other fish-like vertebrates.

But the evidence that *Palæospondylus* is a Cyclostome has yet to be satisfactorily furnished. Many of its accurately determined structures are distinctly unlike those of myxinoids or petromyzonts; while those features which appear at first sight cyclostomian occur also in other fish-like forms, and in the mouth, nasal region especially, may even in part be due to the imperfect preservation of the fossil. These objections, not unduly critical in view of the importance of the subject, become all the more formidable in view of the fact that paired fins may have been present.

The latter condition was suggested by the present writer, on the evidence of a specimen of *Palæospondylus* in the geological museum of Columbia University, presenting a series of transverse ray-shaped markings, which were interpreted as probably the basal supports of paired fins. The brief paper² in which the specimen

¹ Communicated by A. SMITH WOODWARD, F.Z.S. (See P. Z. S. 1897, p. 314.)

² Trans. New York Acad. Sci. vol. xv. 1896, pp. 101-104, pl. v.