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COLEOPTERA, &c., IN BROMELIADS.

BY G. C. CHAMPION, F.Z.S.

In Vol. xlvii of this Magazine, pp. 17, 18 (1911), we published an extract from one of Prof. P. P. Calvert's interesting papers on the *Odonata* larvæ observed by him in epiphytic Bromeliads in Costa Rica. In another of his articles, entitled "Studies on Costa Rican Odonata" [Ent. News, xxii, pp. 401-411 (Nov., 1911)], he alludes to various *Coleoptera*, &c. (larvæ and imagines) occurring in these plants. The insects mentioned in this paper were presented by Calvert to the U. S. National Museum at Washington, and some of the beetles have recently been sent me for determination by the authorities of that institution. Mons. C. Picado, of Paris, too, has also forwarded to me, or to Mr. Gahan, certain *Coleoptera* and *Hemiptera* obtained from Costa Rican Bromeliads, and as he has been kind enough to allow us to retain these insects for the British Museum, I take the opportunity of publishing some remarks upon them and describing three new forms. Another paper bearing on this subject, entitled "A Contribution to the Knowledge of the Fauna of Bromeliaceæ," by Mr. Hugh Scott, was published in October last [Ann. and Mag. Nat. Hist. (8) x, pp. 424-438, pl. 10]. This paper gives an account of the author's observations in Trinidad, Dominica, and the Seychelle Islands, and notes upon various insects, including a peculiar Dytiscid (*Aglymbus bromeliarum*, Scott), and a remarkable Hemipteron (*Microvelia insignis*, Dist.) from Trinidad, &c. The "Helodine" larva from Trinidad and Dominica mentioned by him, may be that of a *Scirtes**, M. Picado having bred a species of this genus from a larva found in a Costa Rican Bromeliad. The former is described by Mr. Scott as "long and narrow, not tapering much towards the posterior extremity, flattened dorso-ventrally, with filamentous antennæ nearly as long as the body, and a group of rectal gills." It is apparently very like that of *Helodes minuta*.

The *Coleoptera* enumerated by Mr. Scott and Prof. Calvert belong to *Dytiscidæ*, *Hydrophilidæ*, *Staphylinidæ*, *Trichopterygidæ*, *Copridæ*, *Elatерidæ*, *Dascillidæ*, *Lampyridæ*, *Endomychidæ*, *Erotylidæ*, *Tenebrionidæ*, and *Curculionidæ*. The Costa Rican forms before me include: *Colpodes purpuratus*, Reiche, a Carabid said by M. Picado to be abundant everywhere in Bromeliads. *Phænonotum tarsale*, Sharp, a Hydrophilid, and an allied smaller form (gen. near *Perochthes*) belonging to the same family (both noted by Calvert), Juan Viñas.

* M. Severin, of the Brussels Museum, has recently sent me two species of the allied genus *Ora*, Clark, from Trinidad, for determination: one is referable to *O. marmorata*, Champ., the other is a new species allied to *O. nigricornis*.

Philonthus ochromerus, Sharp, a common Central American insect not previously recorded from Costa Rica, Orosi. *Musicoderus*, n. sp., Pitahaya. *Ophiomedon stipes*, Sharp, two specimens, with the disc of the elytra infusate near the suture, Orosi; the types were from Guatemala and Nicaragua. *Crytobium*, n. sp., one specimen found by Calvert, and now in the U. S. Nat. Museum, Juan Viñas. *Colastus ater*, Murray, a Nitidulid, Orosi. *Scaphidium variabile*, Matth., Orosi. *Thallisella crotchi*, Gorham, an Erotylid (noted by Calvert), Pitahaya. *Trochoideus americanus*, Buquet, one female (= *T. goudoti*, Guér.) (noted by Calvert as a new Endomychid genus), Juan Viñas; both sexes were found by the present writer in Chiriqui. *Scirtes*, n. sp.† *Metamasius dimidiatipennis*, Jekel, Juan Viñas (noted by Calvert); *M. cincinnatus* and *M. ochreofasciatus*, Champ., and *M. hebetatus*, Gyll., Orosi, and a n. sp. of the same genus, La Estrella. Prof. Calvert also records *Alegoria dilatata*, Cast., a Tenebrionid not hitherto noted from Costa Rica, from Juan Viñas; and the larvæ mentioned by him (*op. cit.*) are said to belong to genera near *Semiotus*, *Dolopius*, and *Photuris*. Mr. Scott, in the article above referred to, justly remarks that "the fauna inhabiting the spaces between the bases of leaves of Monocotyledonous plants in the tropics offers for investigation a fascinating field, in which that of the *Bromeliaceæ* is pre-eminent in its interest. The curious funnel-like form and closely fitting leaf-bases of these plants adapting them for the holding of water and organic detritus, their distribution throughout the richest parts of the Neotropical Region, their vast numbers of individuals and frequent epiphytic habit, all lead to the expectation that they may contain a rich and interesting series of animal forms." According to Ohaus, the water in Bromeliads does not altogether disappear in the dry season, even in places where sometimes rain does not fall for months. From this it can be seen that the fauna is likely to be largely amphibious or aquatic in nature. We now know that a Dytiscid, three Hydrophilids, a Dascillid (*Scirtes*), the larvæ of various Odonates, a caddis-fly, a Stratiomyid, &c., live in the water collected in these plants; and the presence of five large Calandrids of the genus *Metamasius* in a small collection made in Costa Rica clearly indicates that the larvæ of these weevils must (like those of the Elaterids mentioned by Calvert) attack the leaf-bases of the Bromeliads.

Some remarks on the Calandrids and descriptions of the new *Musicoderus* (a genus very closely related to *Philonthus*) and *Metamasius*, are appended below. A new Lygæid was also sent by M. Picado, and a description of this insect is also given.

† M. Picado informs me that he intends shortly to publish a description of this insect and its larva.

COLEOPTERA.
STAPHYLINIDÆ.
MUSICODERUS.

Musicoderus, Sharp, Biol. Centr.-Am., Coleopt. i. 2, p. 455 (1885.)

MUSICODERUS SPINICORNIS, n. sp.

Black, the mandibles and fifth tarsal joint piceous, the claws testaceous; the elytra and hind body clothed with long scattered decumbent hairs intermixed with very long erect black setæ; the punctures on the head and thorax each bearing a long erect seta; the legs pilose; the tibiæ with a row of spines on their outer edge; the anterior femora with numerous closely placed long spines beneath in ♂, and four spines in ♀. Antennæ setulose, rather stout, moderately long; joints 5-10 subquadrate, becoming shorter outwards; 6-10 transverse in ♀; joint 1 armed with three long spines (the intermediate one longer than the others) at the tip beneath in ♂. Mandibles about as long as the head in ♀, much longer in ♂. Head not wider than the thorax in ♀, much broader in ♂, depressed and obsoletely canaliculate in the centre between the eyes in both sexes, and impressed with scattered coarse punctures, except along the middle. Thorax with a dorsal series of five punctures and also with other scattered coarse punctures towards the sides. Scutellum coarsely punctate. Elytra broad, much longer than the thorax, impressed with scattered moderately coarse punctures. Hind body somewhat closely, coarsely punctate...

Length, 10½ mm.

Hab: COSTA RICA, Pitahaya; alt. 1400 metres.

One pair, found in November. Near *M. cephalotes*, Sharp, from Panama; but with the antennæ and hind body entirely black, the antennæ shorter and stouter, the second joint of the labial palpi not longer than the first, the elytra much longer, the posterior femora without true spines, the anterior femora closely spinose beneath in the male, and the first antennal joint armed with three spines at the tip in that sex. Numerous specimens of *M. cephalotes* were captured by myself in Chiriqui, but unfortunately no note was made as to their habits. The diagnosis of *Musicoderus* requires modification to include *M. spinicornis*, the long second joint of the labial palpi having been selected as one of the generic characters; but in the armature of the femora, &c., the present species agrees perfectly with *M. cephalotes* and *M. gracilis*. The allied genus *Onthostygnus*, Sharp, has also been found in Bromeliads, and it is highly probable that *Misantlius* lives in similar plants.

CALANDRIDÆ.

METAMASIVS.

Metamasivus, Horn, Proc. Am. Phil. Soc. xiii, pp. 408, 410 (1873);
Champion, Biol. Centr.-Am., Coleopt. iv, 7, p. 103 (1910).

Prof. Calvert (Ent. News, xxii, p. 405 (1911)], has recorded one species of this genus, *M. dimidiatipennis*, Jekel (figured by me in the "Biologia"), from Bromeliads. Four others are represented in the material sent me by M. Picado. One of these, from Orosi, is *M. (Sphenophorus) hebetatus*, Gyll. (also figured by me in the "Biologia"), and, like *M. dimidiatipennis*, already known from Costa Rica; the remaining three are enumerated below.

METAMASIVS CINCINNATUS.

Metamasius cincinnatus, Champ. (*loc. cit.*) p. 110, pl. 5, fig. 18 (♂).

Hab.: COSTA RICA, La Mica, Orosi; alt. 1300 metres.

One male, much infested with *Acari*, found in January, differing from the unique discoloured Nicaraguan male, in having the rostrum, femora, tibiæ, metasternum, and basal half of the abdomen in great part rufous, and the black marking on the disc of the thorax reduced to a short posteriorly bifurcate median vitta on the anterior half. The posterior tibiæ have a dense tuft of long curled fulvous hairs near the middle of the inner margin, and a few long hairs between this and the tip.

METAMASIVS OCHREOFASCIATUS.

Metamasius ochreofasciatus, Champ. (*loc. cit.*) p. 113, pl. 5, fig. 28 (♀).

♂. Rostrum narrowly sulcate beneath and with the margins of the groove very feebly crenulate; posterior tibiæ with a tuft of long curled fulvous hairs at about the middle of the inner margin; ventral excavation very broad and deep, extending from about the centre of the metasternum to near the second abdominal suture; the fifth segment transversely depressed at the apex, and with the coarse punctures along the middle each bearing a long erect hair.

Hab.: COSTA RICA, Orosi; alt. 1300 metres.

Three males and two females. The type, from Azahar de Cartago, was a female. The male proves, as anticipated by me (*l. c.*, p. 104), to have long hairs on the hind tibiæ. In one of the Orosi specimens the narrow ochreous fascia on the elytra is reduced to a small spot and in another it is entirely wanting.

METAMASIVS BROMELIADICOLA, n. sp.

♂. Elongate, subfusiform, somewhat shining; black, the antennal scape, the base of the femora, the tibiæ and tarsi in part, and some indefinite spots along the sides of the body beneath, rufous; the prothorax rufous, with a sagittiform median vitta, and an elongate stripe on each side of it on the posterior half, these markings becoming coalescent at about the middle of the disc, and the sides anteriorly, black; the elytra sordid ochreous, with various black streaks and spots, the streaks tending to form a transverse post-basal

fascia and a triangular patch on the disc before the middle. Rostrum curved, rather slender, shorter than the prothorax, thickened at the base, sparsely very finely punctate; the frontal fovea small. Prothorax elongate, subconical, with a few coarse deep punctures along the middle of the disc at the base, and a row of punctures along the basal margin; the apical constriction also punctate, the rest of the dorsal surface almost smooth. Scutellum elongate, smooth. Elytra long, narrowed posteriorly, rather coarsely punctate-striate; the interstices with widely scattered excessively minute punctures, 1-5 more or less convex, the others flat. Pygidium coarsely, densely punctate. Beneath coarsely punctate, except along a broad space down the middle of the metasternum and the ventral segments 1-4, which is much smoother; ventral depression broad, reaching the first suture; the fifth segment transversely depressed at the apex and with the coarse punctures along the middle each bearing an erect hair. Tibiæ without tooth at the inner apical angle, the posterior pair densely ciliate with long fulvous hairs from near the base to the apex...

Length, 12 mm. Breadth, $4\frac{1}{2}$ mm.

Hab.: COSTA RICA, La Estrella; alt. 2000 metres.

One male, found in September. Near *M. quadrilineatus*, Champ., from Mexico and Guatemala, but with very different elytral markings; the fulvous hairs on the posterior tibiæ (δ) extending along the inner margin to the tip, and not clustered into a median tuft. The rostrum is narrowly grooved beneath, as in the females of various allied forms. *M. connexus* has similarly formed hind tibiæ in the male, but it is not very nearly allied to the present species.

HEMIPTERA.

LYGÆIDÆ.

PAMERA.

Pamera, Say, Heteropt. Hemipt. N. Am. (1831); Distant, Biol. Centr.-Am., Rhynchota, i, p. 206 (1882).

PAMERA ALBOANNULATA, n. sp.

Elongate, narrow; black or brownish-black, the posterior lobe of the pronotum sometimes fuscous and with the lateral angles, basal margin, and two minute spots in front, ochreous; the tip of the scutellum, two transverse fasciæ on the corium, the outer margin of the latter to about the middle, and a triangular patch at its base, whitish, and an oblong or oblique spot near the inner apical angle of the corium, and the tip of the cuneus ochreous; the second joint of the antennæ ochreous or brown, the fourth with a broad white annulus near the base; the base of the femora, the tibiæ, and the first two joints of the tarsi pale ochreous; the rostrum pale brown; the surface finely pubescent, the head, pronotum, and scutellum with intermixed long scattered erect hairs; the femora and the intermediate and posterior tibiæ set with scattered stiff projecting setæ: the anterior femora armed with two or three short spines towards the apex beneath. Head densely punctate, the basal portion short;

the eyes large and prominent; antennæ very finely pubescent, rather slender, about reaching the cuneus, joint 2 very elongate, longer than 3, 3 and 4 sub-equal in length, 3 distinctly thickened outwards; rostrum reaching the middle coxæ. Pronotum moderately constricted at the sides, feebly arcuate-emarginate at the base; finely punctate. Hemelytra sub-parallel, very little narrower than the pronotum; finely punctate. Terminal abdominal segment of ♂ reaching beyond the membrane, curved upwards at the tip and sulcate behind. *Nymph*: Brownish-black, the hemelytra with a large, posteriorly tridentate, ochreous patch at the base; the abdomen fuscous, variegated with ochraceous; antennæ with joint 2 ochreous, and 4 with a broad white annulus at the base; tibiæ and tarsi ochreous; femora blackish-brown. Antennæ stout, joint 2 not longer than 4, 3 a little shorter and thickened outwards; head smaller and shorter than in imago, the eyes smaller, the ocelli wanting; legs shorter than in imago, the setæ shorter; the anterior femora armed with two or three short spines; tarsi with two joints of equal length.

Length, $5\frac{1}{2}$ - $6\frac{1}{2}$ mm. Breadth, $1\frac{1}{2}$ - $1\frac{3}{4}$ mm. (♂ ♀.)

Hab.: COSTA RICA, Orosi; alt. 1200 metres.

One male, three females, and two nymphs, received from M. Picado, and stated to have been found in Bromeliads. Very near *P. vicinalis*, Dist. (Biol. Centr.-Am., Rhynch. i, p. 207, pl. 19, fig. 13), from Alta Vera Paz, from which it differs in having the first joint of the antennæ black, the fourth sharply albo-annulate near the base, and the third longer than the second; the corium albo-bifasciate; the membrane black to the tip; and the anterior femora armed with two or three spines only. The nymph has the second antennal joint relatively shorter, the third stouter, and the annulus on the fourth extending to the base.

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