

struck me as singular was, that these threads did not all float in the same direction, as though drifted from the animal by wind or tide, but, although they were several feet long, they formed three or four distinct bundles, which stretched straight out in different, and often opposite, directions from the body of the animal, from which it appeared that they were propelled by a voluntary effort.

In passing through Banka Strait, owing to the number of rivers (Palembang and others) which flow out of the island of Sumatra, the water had only seven-tenths of the saltness of the ocean; but notwithstanding this comparative freshness, I observed a number of large white *Rhizostomas* floating just below the surface, apparently unaffected by this peculiar condition.

XLI.—*List of Coleoptera received from Old Calabar, on the West Coast of Africa.* By ANDREW MURRAY, F.L.S.

[Continued from p. 95.]

Lymexylonidæ.

ATRACROCERUS, Palis. Beauv.

Atractocerus africanus, Boh. Ins. Caffr. i. 520.

A single specimen.

I have not seen any typical specimen of Boheman's *A. africanus*; but mine agrees perfectly with his description, and differs from the well-known *A. necydaloides* of Latreille in the particulars which Boheman points out. "At first sight," says he, "very similar to *A. necydaloides*, but is well distinguished from it by the head being ovate, the thorax longer, narrower, oblong-quadrate, and without a reflexed margin behind."

It would appear to range across Africa, and also into Madagascar; for I have seen specimens (probably *A. madagascariensis* of Castelnau) from that country which did not differ from this Old-Calabar species.

MELITTOMMA*, nov. gen. (See fig. 1, p. 316.)

Hylocæto similis, sed magnis oculis sine ocellis et thorace elongato.

Habit and facies similar to those of *Hylocætus*; the antennæ imbricated strongly in the male, subserrated in the female; the palpi as in *Atractocerus*; the head with very large eyes, as in *Atractocerus*, covering the whole sides of the head and nearly

* From μέλιττα, a bee, and ὄμμα, an eye,—bee-eyed.

meeting in front, reminding one of the eyes of a bee, in this respect differing entirely from the typical *Hylocætus*, which has small, black, round eyes placed on the sides of the head and occupying a very small part of it. There is no ocellus on the front of the head. The epistome or front of the head differs in having a projection in the middle and one on each side, above the insertion of the antennæ; in *Hylocætus* the front margin is quite straight. The back of the head is narrowed into a neck, which commences immediately behind the eyes. The thorax is longer than broad, and subparallel, instead of being broader than long. The first article of the tarsi is longer than in *Hylocætus*, being about as long as all the rest. Number of abdominal segments five; in the male there is a depression in the middle of the last segment, but none in the female. Coxæ very long, conical, and projecting, those of the anterior legs being nearly as long as the thighs. It has the head of an *Atractocerus*, and the body and elytra of *Hylocætus*, but appears to me to have more affinity with the former than with the latter.

The type of this genus is the *Hylocætus brasiliensis* of Castelnau. Lacordaire has already indicated that it must be separated from *Hylocætus*. Speaking of it and of *H. cylindricus* of Dejean (Cat. ed. 3. p. 128), he says:—"Both having the enormous and strongly granulated eyes of the *Atractoceri* (they are contiguous on the front in the males, a little separated in the females), combined with the elongated thorax of *Lymexylon*, cannot remain among the *Hylocæti*. They manifestly form a genus intermediate between the latter and the *Atractoceri*." (Lacord. Gen. Col. iv. 503.)

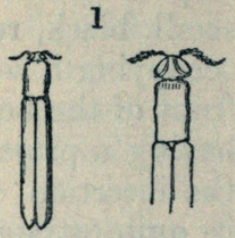
Although the facies is different from *Lymexylon*, the majority of the characters are the same. The most important difference is in the antennæ, which in *Lymexylon* are filiform, while in the present genus they are imbricated.

I entirely agree with those who object to the multiplication of genera, and prefer, wherever it is possible, to make the necessary subdivisions in the form of subgenera, which may serve the purpose of the student of the particular family without overburdening the general nomenclature. In this case, however, it would lead to a wrong appreciation of affinities were we to do so. Were we, on the strength of its facies, to make this form a subgenus of *Hylocætus* or *Lymexylon*, it would imply that it was nearer them than *Atractocerus*, and that the northern type of the family extended into Africa south of the Sahara, which, so far as we yet know, it does not; and to make it a subgenus of *Atractocerus* would be to treat with too little regard the abortive elytra of the latter.

Melittomma castaneum. Fig. 1.

Castaneum, elytris dilutioribus, opacum, levissime punctatum, sericeo pubescens; thorace elongato, fere parallelo, lateribus medio parum angulatis; elytris $3\frac{1}{4}$ thoracis longitudine.

Long. 9 lin., lat. $1\frac{1}{3}$ lin.



Very close to *Hylocætus brasiliensis* of Castelnau, almost the only distinction being that it is a very little smaller, darker in colour, and that the posterior lateral margins of the thorax are sinuate, while in *brasiliensis* they are straight and form a slightly obtuse basal angle. It is a good deal like *Hylocætus dermestoides*, but longer and of firmer texture, chestnut-coloured, the elytra paler than the head and thorax, very finely punctate and fulvo-sericeo-pubescent. The eyes are subtriangular in shape; the granulations interspersed with a short, fulvous, silky pubescence. The thorax is a little longer than broad; the sides are slightly angled in the middle, where it is widest, and slightly sinuate both before and behind the middle; the anterior angles obtusely rounded, posterior angles rectangular; the surface is finely granulosely and very closely punctate, dull, with sericeous reflexion from the pubescence; there is a slight depression on each side behind the middle, and before it towards the anterior angles, and also before the middle on each side of the disk; the sides are very finely margined, most so posteriorly; the anterior margin is nearly straight, slightly emarginate in the middle; the basal margin slightly bisinuate. Scutellum nearly oblong, angles of the apex rounded. Elytra more than three times the length of the thorax, rather more finely granulosely punctate than the thorax, most so towards the base and shoulders, which are very slightly shining; there are four slightly raised costæ, besides a slightly raised sutural line and outer margin; the two innermost costæ are united together near the apex, and from the point of union a single line continues obliquely outwards and backwards a short distance, when it is united to the next costa; this last is very faint, and is least distinct towards the base; the outer costa is near the margin, and scarcely visible when viewed from above. Each elytron terminates at the apex in a peak, the termination of which is rounded. There is a slightly raised sutural line; but the space between it and the innermost costa falls towards the suture. The underside is sericeous and granulosely punctate, like the upper. The legs are very like those of the Heteromorous genera *Serropalpus*, *Phloiostroia*, and the neighbouring groups, as indeed are those of the whole family of Lymexylonidæ.

Only a female specimen received. The above description therefore applies only to the female; but, as it is almost identical with *M. brasiliense*, I have taken the characters of the male specified in the characters of the genus from one of that species.

This is another example of a Brazilian form occurring at Old Calabar.

I may take this occasion to say that I think the family to which this species belongs (the Lymexylonidæ) is not here in its right place. Although actually pentamerous, it appears to me that the species composing it are Heteromera in disguise, and that their place is next the genera I have above mentioned. On the same principle that botanists disregard the rules of the Linnæan system when they run counter to natural affinity, entomologists ought, I think, more frequently than they do, to disregard the tarsal characters when inconsistent with other indications of affinity. Westwood (with his admirable *flair entomologique*, that instinct for affinity which so rarely errs) acknowledged this relationship between the Lymexylonidæ and Melandryadæ in his 'Modern Classification of Insects;' and Lacordaire, in alluding to his remarks, also admits the analogy. Both, too, in placing the family in or near its present position, admit that it is not placed satisfactorily. It comes awkwardly in between *Ptinus* and *Clerus* (where Lacordaire has placed it), and not much better between *Ptinus* and *Bostrichus* (where Westwood has put it). But if it is to come among the Pentamera, there is no better place for it. They have bent to that artificial test; but in doing so they have removed it from a group of insects like it in facies and habit, of similar structure, and endowed with some of the exceptional peculiarities which are to be found in this family. That group is a cluster of Heteromerous genera belonging to the Melandryadæ. All of them have the underside of the body and legs and tarsi (except in the number of articles) constructed on the same principle, and that a principle deviating considerably from that of the Pentamera. Some of them, too, as *Serropalpus*, have a similarity in outward appearance to the Lymexylonidæ. In species of that genus and others of the Heteromera not far distant from it, "Nature has played strange antics" with the maxillary palpi, turning them into curiously serrated organs in *Serropalpus*, into strange long flexible trunks like the antennæ of *Blatta* in *Nemognatha*, and into distorted indescribable masses in *Cerocoma*; and in the Lymexylonidæ an analogous distortion of these organs into flabellated plates occurs. I do not remember any similar abnormal vagary appearing in the palpi of any other group of Coleoptera, except in the Palpicornes and in some

of the *Pselaphidæ*, where it is of another character. Further, in this same heteromorous group we have a number of species where the elytra are very much diminished in size, and some (as *Myodites*) where they are almost as little developed as in *Atractocerus*. Again, in this family the number of abdominal segments varies in different genera, the number being merely a subordinate (generic) character; so it is with the *Rhipiphoridæ*. Now such resemblances or coincidences are to me very suggestive of affinity. We find constancy and inconstancy characteristic of whole sections of animals and plants. One tribe of plants the horticulturalist can bend in every direction he pleases; another is like cast iron, immovable. It would be a phenomenon casting doubt on its affinity to find a plant apparently belonging to the latter varying like the former. I do not think that, in this present case, the existence of the curious phases of development to which I refer tells us more than that the *Lymexylonidæ* belong to that part of the Heteromorous family in which similar variations are found. Their nearest allies among the latter must be sought on other grounds, viz. the ordinary similarity of parts. Such a constitutional character is more vague, and, although probably as certain, extends over a wider field. I therefore think Westwood was wrong in condemning the earlier British entomologists who wished to place *Lymexylon* with *Cantharis* (for, before Westwood spoke, others had already seen the Heteromorous affinity) merely because he thought it came nearer *Helops* and *Melandrya*, and still nearer the Malacodermata. The character reaches as far as the abnormal deviations in question extend.

If the reader asks why I, holding that this is not the proper place for this family, still place it here, my answer is that I do so for his convenience; he would not look for it anywhere else. And as this is not an attempt to amend the classification of *Coleoptera*, but simply to record what species are found in Old Calabar, I sink my own opinions on such theoretical points and place the species in the order where they will most naturally be looked for; and that is, in the order followed by Lacordaire. Where I can follow my own proclivities without inconvenience, I do so.

Cleridæ.

STIGMATIUM, Gray.

Stigmatium dorsiger, Westw. Proc. Zool. Soc. 1852, p. 37.

I can see no difference between my specimens and Westwood's description of this species, except that he says that under a lens the surface of the elytra is finely punctate. In my specimens there is some fine granulation, but no punctuation.

A number of specimens have been received. They vary a good deal in intensity of colour and degree of denudation of pubescence.

ERYMANTHUS, Klug.

Erymanthus horridus, Westw. Proc. Zool. Soc. 1832, p. 35.

Erymanthus vesuvioides, Thomson, in Rev. et Mag. Zool. 1856, p. 114.

Var. *purpureo-niger*.

Three specimens.

Prof. Westwood describes and figures his species as shining black, with rufo-piceous protuberances. M. Thomson's specimens of *E. vesuvioides* are described and figured as varying in colour, the ground-colour being ferrugineo-testaceous encroached upon by brown and black. My specimens are all three of a rich shining dark tawny claret-colour, almost black, with rufo-piceous or tawny brown shining through on the tops of the tubercles. With the exception of the differences in colour, I see no distinction between my specimens and the descriptions and figures of these species respectively given by Westwood and Thomson. They all come from West Africa:—Prof. Westwood's from Cape Palmas; M. Thomson's from Grand Bassam; and mine from Creek Town, Old Calabar.

THANASIMODES, nov. gen. (See fig. 2, p. 320.)

Elongatus; palparum maxillarium ultimo articulo securiformi.

Prothorace subquadrato, angulis rotundatis; elytris longis; femoribus posterioribus haud apicem elytrorum attingentibus; ceteris fere ut in *Thanasimo*.

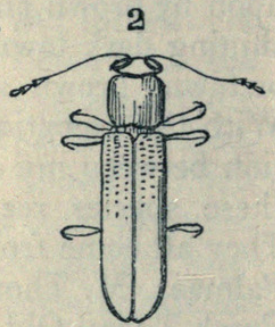
Elongate, subcylindrical, shining and metallic. Mentum transverse, narrow. Ligula bilobed, the lobes diverging. Last article of the labial palpi very large, transversely securiform; that of the maxillary palpi also securiform, but not half so broad. Labrum emarginate. Head declined, ovular. Eyes rather large, nearly on a level with the rest of the surface of the head in front, but projecting a good deal behind, the head being narrower behind them; rather strongly emarginate on the under-side, distinctly but not coarsely granulated. Antennæ longer than the head and thorax, rather slender, of eleven articles, the first conical and bent, second to eighth flattened subcylindrical, second moderately long, third longer than the second, fourth about the length of the second, fourth to eighth gradually but very slightly increasing respectively in length and thickness; the ninth to eleventh triangular and a little thicker than the preceding, forming a loose slender club; the eleventh largest, unequally ovate, and acuminate. Prothorax subquadrate, convex, with the sides subparallel and the angles rounded, constricted at the

base so as to form a narrow short peduncle. Elytra long, broader at the base than the thorax, nearly parallel, and rounded behind. Wings ample. Legs moderate; the posterior thighs not reaching nearly to the end of the elytra; the tibiae are grooved, rather large; tarsi with the first article invisible, except under the lens and when viewed laterally or from below, when it can be discerned as a small plate below and alongside the lower and basal part of the first apparent (the second) article; this second article is rather long, the third is shorter, and the fourth short; the claws are appendiculate, and not dentate, but with a slight prominence at the base. The abdomen has five segments, besides the anal projection.

Thanasimodes metallicus. Fig. 2.

Nitidissimus, sparsim pilosus, supra viridi-metallicus, subtus viridi-cyaneus; abdomine versus apicem et femoribus læte rufis; thorace levissime et parce punctato; elytris striato-punctatis, striis versus apicem evanescentibus.

Long. 11 lin., lat. $3\frac{1}{8}$ lin.



Very bright and shining clear metallic green above, and bearing scattered long fine fulvous hairs; below blue or greenish blue, with the anal appendage and last segment of the abdomen of a bright red, which extends along the external margin of one or more of the preceding segments; there is also a tinge of red on the margin of each of the segments and on the metathoracic parapleuræ; the femora, with the exception of the tip and the base, are of the same red colour, although not so bright. Antennæ, labrum, maxillæ, palpi, and tarsi brown; mandibles black. Head rounded, very smooth, with a few faint punctures and fine fulvous hairs on the surface, and a few wrinkles above the eyes. Thorax convex, very smooth and shining, with a slight trace of a transverse depression near the front, with a few faint punctures and fine hairs scattered over the surface; the sides subparallel, the angles rounded, the base constricted, the constriction or peduncle wrinkled. Scutellum impunctate, subtriangular, with the apex rounded. Elytra three times the length of the thorax, punctate-striate, the striæ deeper towards the base, and disappearing on the posterior half, or only to be traced in very faint distant punctures and hairs; shoulders distinct, sides inflexed and margined. The underside is shining, finely punctate; the segments of the abdomen more deeply and distinctly (but still very sparingly) punctate. The legs are more pilose than the body, and the lamellæ of the tarsi are fulvous.

One specimen.

This is one of the largest and perhaps the finest of the *Cleridæ*.

Malacodermata.

HEDYBIUS, Erich.

Hedybius cæruleus.

Supra læte cæruleus, antennis pallidis, articulo primo et articulis duobus ultimis luridis; subtus et pedibus nigris; nitidus; capite lævi, antice utrinque impresso; thorace quam caput angustiore, subrotundato, lævi, versus latera et postice late marginato, antice leviter transversim impresso, disco modice convexo; elytris postice quam antice parum latioribus, fortiter et dense granulatim punctatis.

Long. $2\frac{1}{4}$ lin., lat. $\frac{3}{8}$ —1 lin.

Above rich deep cærulean blue; the underside and the legs black; antennæ pallid testaceous, with the first and the last two articles lurid or piceous. Head smooth, longitudinally bi-impressed in front. Thorax narrower than the head, rounded or, rather, octagonal or hexagonal in shape, with all the corners rounded off, smooth, shining, and impunctate; the disk moderately convex, slightly depressed in front and surrounded on the sides and base with a broad deep channel. Scutellum distinct. Elytra broader behind than in front, deeply, coarsely, and closely granulosely and irregularly punctate, the punctation not so deep towards the base and in the neighbourhood of the scutellum and shoulders; the space near the scutellum depressed; the shoulders prominent; a distinct line near the suture and along the outer margin; apex rounded; the exsertile vesicles on the underside of the thorax and abdomen distinct.

Apparently pretty common.

The genus to which this species belongs is the African representative of *Attalus*, which is not found in Africa proper, *i. e.* south of the Sahara, being a European genus and only found in Africa in the Mediterranean district. Erichson describes a species of *Attalus* from Tasmania, which, however, I have not seen.

Of this African genus there are upwards of a dozen species, which have been described by Erichson, Boheman, &c., all from the Cape, except one from Abyssinia.

Lampyridæ.

LUCIOLA, Casteln.

(Subgenus *Delopyrus*, Motsch.)

Luciola bimyxata.

Testaceo-fulva; capite nigro; prothorace testaceo, medio plus
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minusve nigro; scutello pallido; elytris singulis margine testaceo circumcinctis; pedibus pallidis.

Long. $3\frac{1}{2}$ lin., lat. 1 lin.

Pale dirty testaceous brown; females pubescent both above and below; males pubescent below. Head black, punctate. Eyes in the male very large and prominent, in the female small and level with the head. Thorax testaceous, with a larger or smaller black space in the middle and towards the anterior margin; strongly punctate; transverse; anterior margin projecting in the middle; sides parallel and nearly straight; anterior angles rounded; base bisinuate, posterior angles projecting and nearly right-angled; the sides slightly reflexed; the base (except the angles) transversely bisinuate impressed close to the margin, and with a rounded depression on each side, just within the projecting angles. Scutellum large, elongate, truncate at the apex, widest at the base, pale. Elytra with a pale margin running round each from the shoulder to the suture; irregularly punctate, and bearing faint traces of two or more costæ. Underside finely punctate; the thorax and margins of the metathorax pale testaceous. In both sexes the last two segments of the abdomen are alone phosphorescent, and nearly white and impunctate; pygidial segment rounded triangular.

Apparently rather rare.

From both sexes having only two segments of the abdomen phosphorescent, the species should belong to one or other of Motschoulsky's subgenera *Delopyrus* and *Delopleurus* (both also from Africa, and each represented hitherto by only one species, the former from South Africa, the latter from Mozambique), that being the main character of these sections. M. de Motschoulsky gives characters for distinguishing them between themselves founded on the form of the thorax and pygidium. This species comes between the two as regards the thorax, it being neither in the form of a crescent nor a transverse square (which are the respective characters of that part given by Motschoulsky), it being indeed somewhat rounded in front, but subquadrate behind. In regard to the pygidium it corresponds with *Delopyrus*. If it must go to either one or the other, that subgenus seems therefore to have the stronger claim to it.

I have called the species *bimyxata*, or "with two wicks," in allusion to there being only two phosphorescent segments of the abdomen.

LAMPYRIS, Fab.

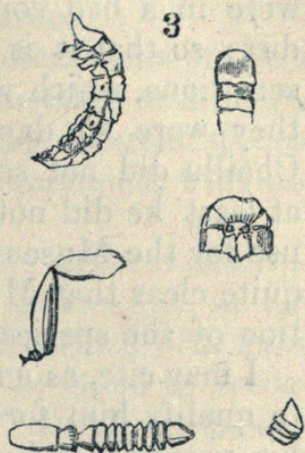
Lampyrus pharos. Fig. 3.

Femina testacea; antennis brevibus; capite occulto infra tho-

racem; prothorace antice rotundato, postice quadrato; aptera, pedibus compressis.

Mas ignotus.

Female.—Pale testaceous or dirty fawn-coloured, with a velvety down which looks whitish in different lights. Prothorax a large plate rounded in front, quadrate behind, covering the head, which is small and placed nearly in the middle of the underside, and from it a raised rib runs obliquely to each of the anterior angles of the underside, and another straight backwards to the base, forming the foundation of the sides of the thorax, each side of which meets the other side in a ridge at the sternum, like the ridge of a house inverted. The head is withdrawn into the triangular tunnel thus formed; the eyes are black, sunken; the antennæ short, thick, eleven-jointed; the palpi also very short, with the joints like cups within each other. There are no elytra, but on the middle of the back of the mesothoracic segment there are faint indications of a suture. The stigmata are very distinct on the underside; the legs are lamellate, and the tarsi short and thick.



I have given the above description from two specimens which I received from the Rev. Mr. Waddell. He mentioned that the insect gave a strong continuous steady light for hours, which has suggested the name. The terminal segments show no signs of having been phosphorescent, being of the same texture as the rest of the surface.

Mr. Waddell informs me that it is rare at Old Calabar.

XLII.—*Synopsis of the African Squirrels* (Sciuridæ) in the *Collection of the British Museum*. By Dr. J. E. GRAY, F.R.S., V.P.Z.S., Keeper of the Zoological Department.

THE British Museum contains a large collection of the Squirrels of various parts of Africa. The series contains the original type specimens of the species described by Kuhl from the Congo, Waterhouse from Fernando Po, Ogilby from the Gambia, Rüppell from North and Eastern Africa.

There are also three or four specimens purchased from M. du Chaillu; but they can scarcely be regarded as the types of the species described in the 'Boston Journal of Natural History' under his name*, as only two of them bear any names, viz. :—

* The American zoologist who misled M. du Chaillu into believing that



Murray, Andrew. 1867. "List of Coleoptera received from Old Calabar, on the west coast of Africa." *The Annals and magazine of natural history; zoology, botany, and geology* 20, 314–323.

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