

VIII. *Materials for a revision of the Lampyridæ.* By the

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[Read June 2nd, 1880.]

PLATE I.

(Concluded from Part I. of the Transactions, p. 36.)

LIST OF NEW SPECIES.

Aspidosoma ægrotum.	Luciola substriata.
„ depictum.	„ affinis.
„ diaphana.	„ Malaccæ.
„ pulchellum.	„ tabida.
„ bilineatum.	„ pallescens.
„ costatum.	„ costipennis.
Lamprophorus crassus.	„ xanthura.
Diaphanes limbatus.	„ carinata.
„ guttatus.	„ spectralis.
„ Javanus.	Photuris tristissima.
Pyrocœlia <i>genus novum</i> .	„ fumosa.
„ terminata.	„ collaris.
„ lateralis.	„ ruficollis.
„ plagiata.	„ lucidicollis.
„ fumigata.	„ mexicana.
„ Foochowensis.	„ amœna.
„ Pekinensis.	„ scutellata.
Lampyris Huddi.	„ funestis.
Megalophthalmus Guatemalæ.	„ mollis.

ASPIDOSOMA, Cast., Munich Cat., p. 1645.

*A. Elytris ovatis apicem versus attenuatis.**Aspidosoma ignitum*, Linn. Syst. Nat. I., p. 645.

Columbia, Cayenne, and Antilles ; Mus. Brus., Gorh. ; Caracas, Mus. Brus., Coll. Chev. ; Rio Hondo, Honduras, coll. Godman and Salvin.

Aspidosoma laterale, Fab. Syst. El. II. 106.Amer. mer. “Huanaco,” Mus. Brus. ; Costa Rica ;
Hab. ? Gorh. [Norris.]

This is one of the largest species, nine lines.

Aspidosoma sticticum, Gemm. Col. Heft. VI.
 ,, *maculatum*, Fab. Ent. Syst. Sup. 125.

Brazil, Buenos Ayres; ♀ Bolivia, Mus. Brus.
Hab. ?—Gorh. [Norris.]

The thorax has a spot at each hinder angle and sometimes a linear one near the apex. Length, 7—9 lines.

Aspidosoma lineatum, Gyll. Schön. Syn. Ins. App. p. 23.

Mots. Etud. Ent. II. 11.

Brazil, Rio Janeiro; Mus. Brus.; *Hab.* ? Gorh. ♂, ♀.

Like *laterale*, but smaller.

Aspidosoma cassideum, Mots. Etud. Ent. II. 14.

Brazil; *Hab.* ? Mus. Brus.

Elytra of an uniform rusty red, strongly attenuated towards the apex. Length, 7—9 lines.

Aspidosoma fenestratum, Blanch. Voy. d'Orb. 111.

Cayenne and Bolivia; Mus. Brus. [Guér. Men.]; ♀.

Like *ignitum*, but the elytra with two pale lateral spots, one humeral, one median.

Aspidosoma polyzonum, Chev. Col. Mex. Cent. I. fasc.
 iii. 51.

Mexico; coll. Chev.

I cannot distinguish this from *ignitum* L.; there is a specimen of *ignitum* from the Antilles; it may therefore extend to Mexico.

Aspidosoma grossum, Er. Wieg. Arch. I. 81 ?

Peru; Mus. Brus.

There is a specimen in the Belgium Museum which I think is this. Fuscous; elytra obscurely lined with paler towards the apex, and with the anterior half of the expanded margin whitish yellow. Length, 7 lines.

Aspidosoma egrotum, n. sp.

Ovale, antice posticeque attenuatum, prothoracis elytrorumque marginibus late sub-diaphanis, illo disco piceo, lineâ medianâ guttisque lateralibus miniatis, angulis externis obsolete fuscis; his maculâ post medium obscurâ,

disco subfusco, suturâ et lineis duabus pallidis ; pectore, scutello abdomine basi et apice piceo.

Long. lin. $6\frac{1}{2}$ —7. ♂, ♀.

Mas.—Abdominis segmentis quinto et sexto læte flavis, ad margines albis, utrinque impressis, late emarginatis ; septimo fusco emarginato, apicali parvo, elongato-ovali : Oculis parum majoribus. *Femina*,—segmentis tribus ultimis pallidis, ad basin fuscis, marginibus miniatis, apice exciso.

Head yellow, antennæ and palpi fuscous, the former with the basal joint pale, prosternum rosy. Legs and underside of body dark pitchy-fuscous, extreme base of thighs paler. Abdomen fuscous, with the ventral segments paler in the middle at the apical margin ; in the male two diaphanous segments.

The rather elliptical form and entirely pale margin of the elytra with an obscurely fuscous spot, will distinguish this species.

Guatemala, Capetillo ; coll. Godman and Salvin.

Var. ? Elytris postice magis angustatis ; corpore subtus, pedibusque totis pallide flavis.

Nicaragua, Chontales ; Rio Janeiro ?

There is undoubtedly a Brazilian species very closely allied to, if not identical with this.

Aspidosoma depictum, n. sp.

Nigro-piceum, nitidum, prothorace, elytris subdiaphanis, his disco maculisque duabus, unâ subhumerali, alterâ paulo post medium fuscis, illo disco nigro-piceo extus late miniato, et ad angulam externam infuscato. Elytrorum disco lineâ singulari et suturâ tenuiter pallidis.

Long. lin. 7. ♂, ♀.

Mas.—Oculis majoribus, abdominis segmentis quinto et sexto læte flavis, limbo laterali fuscis.

Femina.—Segmentis ventralibus duobus penultimis flavis, fusco maculatis, apice bi-mucronato.

Head, prosternum, and pleural fold of a carmine red, the first with a dark dot between the eyes ; thorax twice as wide as long, its disc pitchy and glabrous, with a very narrow central red line, but the apex diaphanous ; the outer angles have a large fuscous spot.

The elytra have the discoidal portion, a basal spot, and a lateral larger one fuscous ; the discoidal portion divided by a single narrow line. The scutellum and body beneath, with the legs and antennæ, are fuscous, almost pitchy.

Irazu, Costa Rica ; coll. Godman and Salvin.

Obs.—This species is more conspicuously marked than most of the genus ; in form it resembles *ægrotum*, being elliptical, but all the species vary in this respect, some specimens being more ovate than others.

Aspidosoma diaphana, n. sp.

Ellipticum, elytrorum et prothoracis marginibus subdiaphanis ; thoracis disco et angulis externis, elytrorum disco et maculis duabus (basali obsoletâ) sordide fuscis, illo lineis tribus pallidis.

Long. lin. $5\frac{1}{2}$. ♀.

Very like the preceding but smaller, the thorax not so short but similarly coloured, the basal spot only of the elytra indistinctly marked, and the posterior lateral one further back ; the disc of the elytra with three obscure pale lines on each, and the body beneath, and legs yellowish, clouded here and there with fuscous.

Rio Sarstoon, Honduras ; coll. Godman and Salvin.

Aspidosoma pulchellum, n. sp.

Flavo-testaceum, thorace subdiaphano, vittâ medianâ basi et angulis externis nigris, subrugose punctatis, utrinque maculâ miniatâ ; elytris fuscis, suturâ tenuiter, et externe late albidis.

Long. lin. $4-4\frac{1}{4}$. ♂, ♀.

Head, middle of the body beneath, and base of the antennæ and legs pale yellow, sides of the breast and abdomen fuscous ; the two usual segments bright yellow in the male, the prosternal region rosy-carmine. Elytra with one raised nervure on their disc ; ovate, a little narrowed behind, punctured, the suture and nervure very finely whitish yellow.

Rio Sarstoon, Honduras ; coll. Godman and Salvin.

B. *Elytris subparallelis vel elongato-ellipticis, sæpe costatis.*

Aspidosoma bilineatum, n. sp.

Elongato-ovale, nigro-piceum, thorace pallido disco utrinque miniato, maculâ transversâ basali, vittâque medianâ et maculis lateralibus fuscis, elytris fusco-piceis bicostatis, costis limboque toto tenuissime flavis.

Long. lin. 6—7. ♂, ♀.

Mas.—Abdominis segmentis quinto et sexto læte flavis, nitidis.

Femina.—Iisden in medio et ad latera fusco notatis.

The oblong form nearly evenly rounded in front, and at the apex of the elytra combined with the fuscous elytra, of which only the extreme margin, the suture, and the raised nervures are paler, will readily distinguish this from any of the section A. The discoidal nervure is costate, nearly straight, not reaching the apex; between this and the suture is a second, but finer and less raised, and vanishing at two-thirds of the elytral length. The body beneath, the legs and antennæ are entirely pitchy, with only the diaphanous segments paler.

Mexico; Mus. Brus., coll. Gorh., Capetillo; coll. Godman and Salvin.

Aspidosoma costatum, n. sp.

Oblongo-ovale, thorace maculâ transversâ basali, vittâ medianâ, utrinque miniatâ piceis, maculis lateralibus paulo distinctis; elytris fusco-piceis, bicostatis, suturâ et costis tenuissime, margineque laterali latius pallidis.

Long. lin. 4—5. ♂, ♀.

Head, body beneath and legs pale, more or less clouded with fuscous; thorax pale and sub-diaphanous, markings as in *bilineatum*, but the lateral spot only indicated by a darker spot about the middle of the margin. Elytra with the discoidal costate nervure well marked and the callus strongly raised.

Panama; Rio Sarstoon, Honduras; coll. Godman and Salvin.

GROUP II. LAMPYRIDES.

LAMPROPHORUS, Munich Cat. p. 1646.

Lamprigera, Mots. Etud. Ent. i., p. 47.

The females of this genus are still unknown. I have nine examples before me, all of which are males. The dorsal abdominal plates are wide and lobed, or acutely angled at the sides. The eyes are enormous, and the antennæ short and rudimentary; their apical joint terminates in one or more mucronate points. The species seem readily divisible by the proportions of the antennal joints, and by the form of the pygidium.

Lamprophorus tenebrosa, Walker, Ann. Nat. Hist.
1858, p. 282.

Testaceo-brunneus, thorace semicirculari, tenuiter carinato, disco sub-rugose punctato, nigro, margine antico et limbo laterali testaceo, angulis posticis paululum acutis; elytris obsolete costatis, ad apicem gradatim attenuatis, abdominis apice et segmentorum quatuor marginibus nigris; antennarum apice denticulis minutis nonnullis, et mucrone unica instructis.

Long. lin. 7—9, ♂.

Mas.—Pygidio lateribus rotundatis, apice leviter late emarginato, segmento pro-pygidiali angulis externis acutis retrorsum productis.

The eyes occupy the greater part of the head, but are separated by the crown, which is strongly concave. The antennæ have the basal joint stout, obliquely truncate; the second is as long and nearly as stout; the third much narrower; conico-cylindrical, about the same length, the fourth, fifth and sixth longer than wide; from this point to the apex the joints are reduced in length, becoming transverse, the apical one short, ovate, and with a central slightly curved mucro.

Only *seven* segments are clearly discernible below, but the penis appears to have a two-lobed appendage at its base, which is perhaps really the eighth.

Ceylon; Brit. Mus. (*Type*).

Pondicherry; Brus. Mus. and Gorh. [Norris], also India, from Mr. E. Hudd.

Obs.—This species appears from his description to resemble *L. Boyei*, Mots., but in addition to the different *Hab.*, the antennæ are not bi-mucronate. In some specimens the pygidium and preceding segment project beyond the elytra, but in a small example are covered.

Lamprophorus crassus, n. sp.

Elongatus, subparallelus, testaceus, capite, thoracis disco, elytris, abdominisque segmentis dorsalibus nigropiceis.

Long. lin. 9. ♂.

Mas.—Abdominis segmentis tribus penultimis fortiter lobatis; pygidio bilobato lobis latius lanceolatis.

This species differs from *L. nepalensis* by the very short lunate thorax, of which the hind-angles are much more

acute ; the disc of the thorax is shining and uneven, with a tumid space on either side, the centre finely carinate.

The elytra are longer and more parallel, and entirely cover the abdomen, in the single specimen I have seen. The scutellum is pitchy. The dorsal plates are dark, excepting the base of the pygidium, and the latter presents a very striking difference to *Nepalensis* in being deeply cut out, so as to make the apex bilobate. The antennæ have their second joint stout, but shorter than the first ; the third longer than second, from thence gradually shortening, the eighth being quadrate, ninth, tenth, and eleventh short, terminated by a single mucro. They are not serrate, but the apices are obliquely truncate.

Pondicherry ; Mus. Brus.

Lamprophorus Nepalensis, Gray, Zool. Misc. p. 26.

Abdomen largely lobed, the penultimate as well as the pygidium pale, the latter truncate, very slightly emarginate. Antennæ a little serrate, apical joint short, ovate, clothed with yellow hairs. I fail to see the short double mucro attributed to it.

Hab.—Nepal ; Brit. Mus. (*Type*).

Assam plains, and Khasia hills, Gorh.

Lamprophorus diffinis, Walker, Ann. Nat. Hist. 1858, p. 282.

Hab.—Ceylon ; Brit. Mus. (*Type*).

Near *Nepalensis* ; differs by its smaller thorax, with the hind angles not acute, and the base and apex of the elytra are yellowish brown.

Lamprophorus Boyei, Mots. Etud. Ent. iii. 23.

Pygidium emarginate, all the dorsal plates strongly lobed, and excepting the two last dark above.

Amboina ; Mus. Brus.

Obs.—I have no doubt I am correct in my reference of this specimen, but the antennæ are not correctly described ; the second joint is longer and less stout than in *Nepalensis*, the apical *four or five joints* have each a double tubercle or blunt mucro on the inner side, which is in fact a rudimentary lamella, and the apical double point corresponds to this rudimentary part.

DIAPHANES, Mots. Etud. Ent. i. 44.

Though very close to *Lampyris*, this genus has a particular facies of its own, from the elevated margins of the thorax and wider elytra. The eyes are very large, even more developed than in *Lampyris* or *Lamprorhiza*, the abdomen not so acutely lobed as in the former, the fifth and sixth segments with transverse luminous spots. The species appear to be Indian or Malayan, but some of the African might be introduced, *e.g.*, *marginipennis*, Boh.; but as most of them are true *Lampyrides*, I prefer keeping this for the Eastern species.

Diaphanes indicus, Mots. l. c. iii. 15.

India; Mus. Brus. ♂.

Diaphanes limbatus, n. sp.

Sub-parallelus, opacus, fuscus, thorace testaceo disco infuscato, margine antico fortiter reflexo, liturâ submarginali diaphanâ, elytrorum limbo toto, pectore, femoribus infra, abdominisque apice flavis.

Long. lin. 7—10. ♂.

Mas.—Oculis magnis, pygidio apice leviter bisinuato, segmento septimo ventrali apice rotundato, integro.

Head fuscous, eyes as in *Lamprophorus*. Antennæ scarcely longer than the head itself, fuscous; their basal joint large, rather paler, the second very short, the succeeding ones longer than wide, setose, obliquely truncate, the two before the apical shorter, but not transverse; thorax elongate hat-shaped, the lateral and front margin reflexed; the disc convex, with a fine carinate line from the base to the apex, which with the sides is yellow, as well as the base itself narrowly; the elytra are smoky fuscous, with the suture and lateral margin very narrowly yellow. Thighs above, tibiæ, tarsi, and abdomen fuscous, with the exception of two luminous transverse spots on the fifth and sixth segments, the apex of the pygidium, and seventh or apical segment, which are yellow. The thorax has two diaphanous spaces at the front, which are almost joined, and which are quite translucent, so that the head can be seen through from above.

India; coll. A. E. Hudd, and Gorh.

Diaphanes guttatus, n. sp.

Niger, supra testaceus, thoracis disco ad basin, elytrisque vittis duabus, paulo distinctis, fuscis.

Long. lin. 5½. ♂.

Mas.—Pygidio apice truncato, subsinuato, pallido, segmentis ventralibus duobus penultimis maculâ flavâ transversâ, apicali toto pallido.

Head very concave between the eyes, which are large and contiguous in front, as usual in this genus; thorax with the margin reflexed, and elevated in front, where there are two diaphanous spaces. Antennæ of the length of the thorax, filiform. Body, legs, and wings fuscous black.

Bengal; Mus. Brus. [Guérin].

Diaphanes Javanus, n. sp.

Niger, thorace, femoribus et tribus segmentis ventralibus testaceis, his nitidis, marginibus albis; elytris fuscis, suturâ et marginibus lateralibus conjunctim albido-flavis, antennis brunneis.

Long. lin. 5 ♂.

Allied, no doubt, to *D. adustus*, Mots., but does not agree in colour with his description. The eyes are very large; the thorax has the usual diaphanous spots, and with the scutellum, coxæ, femora, inner side of tibiæ, pleura of metasternum, and margins of elytra (excepting at their base), is pale testaceous yellow.

Java; Mus. Brus. [Guérin].

PYROCÆLIA, genus novum.

Head received into the prothorax, eyes small, or at most, moderate; antennæ nearly half the body's length, compressed, joint 2 very short, 3—10 strongly serrate, 11, small, oval. Thorax as in *Diaphanes*, front margin strongly reflexed, sometimes with sub-diaphanous areolets. The two segments preceding the apical one luminous, the diaphanous spots transverse, occupying most of the plate, and eburate. Legs rather long, femora reaching to the elytral margins. Abdomen with the dorsal segments, with acute hind angles, produced backwards, sublobate. Pygidium bisinuate, the middle lobe a little prominent.

This genus is superficially very like *Diaphanes*, the antennæ are very different; the thorax does not possess the diaphanous areolets, or in a much less degree. The eyes are comparatively small.

Lampyris bicolor, Fab., appears to me to belong to this genus, which seems composed exclusively of Eastern species. The females are hardly known.

Mr. G. Lewis has assured me that the female of one species (*Foochowensis*) is apterous, and I have two females sent me by Mr. A. Hudd, which I believe belong to an Indian species; they are entirely yellowish brown, with the prothorax similar in form to that of *P. bicolor*, F., but longer, with reflexed anterior margin; the meso-thoracic plate above has a fine carina, indicating the scutellum; the dorsal abdominal plates are obsoletely channelled, not lobed nor produced backwards at their angles; ventral plates similar in form to the dorsal, but with a pleural fold on which the stigmata are conspicuous.

Length, 13—15 lines.

Pyrocælia is not congeneric with any of Motschulsky's divisions, nor, with the exception of *bicolor*, has there, I think, been any species described which I can refer to it.

Pyrocælia bicolor, Fab. Syst. El. ii. p. 100; Cast. Essai, p. 143 (*Photinus*); Munich Cat., p. 1645 (*Cratomorphus*); "Nov. Cambria."

Java; Mus. Brus., Gorh. &c.

Obs.—*Lampyris lutescens*, Walker, Ann. Nat. Hist. 1858, p. 282, from Ceylon, is, I think, identical with this.

Pyrocælia terminata, n. sp.

Nigra, opaca, prothorace elytrisq. brunneo-testaceis, his apice nigro, illo antice acuminato, margine frontali fortiter reflexo, areolis parvis diaphanis.

Long. lin. 8. ♂.

Head and antennæ black, mouth testaceous, palpi black at their apex. Thorax entirely brownish yellow, hind angles a little produced backwards, acute, lateral margins sinuate, contracted at the base. Elytra oval, widening rather quickly from the shoulder, not costate, callus, rather prominent; closely punctured, tipped with black. Scutellum and meso-sternum yellow. Body, legs, and wings smoky-black.

India; coll. Gorh.

Pyrocælia lateralis, n. sp.

Nigro-fumosa, opaca, prothorace, mesosterno, elytrorum limbo laterali, suturâ tenuissime, scutello, abdominisque segmentis quinto et sexto flavis.

Long. lin. $7\frac{1}{2}$. ♂.

Head black, eyes moderate, antennæ of normal length, *i.e.* reaching to about the middle of the meta-sternum, serrate. Thorax rather small and short, without diaphanous areolets, base nearly straight, hind angles scarcely produced. Elytra with a rather wide yellow margin narrowing towards the apex, where it vanishes. Suture very narrowly yellow at the base.

Ceylon ; coll. Gorham.

Pyrocælia plagiata, n. sp.

Nigro-fusca, opaca, prothorace elytrisq. flavis, his plagiâ nigro-fumosâ, in medio incipiente ad apicem latiore. Long. lin. $8\frac{1}{2}$. ♂.

Head and eyes small, retracted within the thorax ; antennæ of normal form and length, the joints from the third, sub-quadrate and not strongly dentate, only a little acuminate internally. Thorax with the front margin reflexed, but not strongly, nor with diaphanous areolets ; hind angles a little acute. Elytra four times the length of the thorax, the suture and two nervures finely raised, with a long apical, black plagia commencing in a point about the middle of the disc and widening till it occupies the whole apex. Abdomen fuscous black with the exception of the two diaphanous segments.

Hab. ?—Mus. Brus. India ?

Pyrocælia fumigata, n. sp.

Testacea, capite, antennis, abdominis segmentis tribus, elytris retrorsum, pedibusque fumeo-nigris.

Long. lin. 8. ♂.

Thorax with the front a little raised, plain at the sides and hind angles, which are right angles but rounded. The elytra are a good deal rounded at the sides, ovate, with very slight traces of two costæ. Head black, eyes moderate, antennæ about as long as the *width* of the thorax. Apex of the abdomen whitish yellow.

Malacca ; Siam ; coll. Gorch.

Pyrocælia Foochowensis, n. sp.

Testacea, opaca, sub-parallelâ, capite, antennis, abdominis segmentis quatuor, pedibus, elytrisq. nigro-fuscis ; his suturâ marginibusque conjunctim, illis femoribus flavis.

Long. lin. 8. ♂.

At first sight similar to *Lampyris marginipennis* and a little to *Diaphanes limbatus*, separable of course from both by the compressed, serrate antennæ. The thorax is much shorter than in the latter, obsoletely carinate and with acute angles, the front with two diaphanous areolets. The elytra are opaque, and the colour of the abdomen will separate it from *marginipennis* (in which it is wholly yellow.)

China, Foochow (Lewis); coll. Gorh. Brit. Mus.

Pyrocelia Pekinensis, n. sp.

Nigro-fumosa, thoracis disco abdominique flavis, antennis thorace duplo longioribus, compressis.

Long. lin. 6. ♂.

Thorax much narrower than the elytra, the margin entirely fuscous-black, but only finely at the base. Disc and prosternum yellow. Elytra with the sides sub-parallel.

China; coll. Gorh., Pekin; Brit. Mus.

LAMPYRIS, Geoffroy, Munich Cat. p. 1647.

Type, *L. noctiluca*, Lin.

Lampyris noctiluca, Lin.,—Fab.,—Jacq. Duv. Mon. i. 7, fig. 2.

Europe; all collections; rarer in the South and East. Female with only the attachments of the elytra, and a scutellar, sulcate, carina.

Lampyris Lareyniei, Jacq. Duv. Mon. i. 12, fig. 5.

Sardinia; Corsica; Mus. Brus., Gorh. (Plason), ♂, ♀.

Colour paler, and thorax longer than *L. noctiluca*, and with hind angles right instead of acute. ♀ with very small rudimentary elytra, and scutellum developed; of a pale yellow colour.

Lampyris lusitanica, Mots. Etud. Ent. iii. p. 19.

„ *Raymondi* Muls. et Rey. Ann. Soc. Agr. Lyons, iii. p. 222.

France (Hyeres); Spain, Portugal; Gorh. (Plason). ♂.

I cannot find any satisfactory point of difference in the males of this and *noctiluca*; the female is said to have small rudiments of elytra.

Lampyris Bonvouloiri, Jacq. Duv. Mon. ii. p. 101.

Italy ; Gorh. (Plason). ♂.

Lampyris Zenkeri, Germ. Mots. Etud. Ent. iii. p. 17.

„ *diluata*, Cast., Guérin Voy. Lefebv. p. 301,
Pl. iii.

France (in the south) ; Mingrelia ; Mus. Brus. Gorh.

Abyssinia ; Mus. Brus. [Guér. Type]. Greece, Athens.

The latter is the locality of *L. diluata*, Guérin, on the type specimen with ticket in his own writing. I think it is scarcely separable from *Zenkeri* ; the thorax is a little more contracted at the base, and the elytra and suture finely yellow at the margins.

Lampyris Reichei, Jacq. Duv. Mon. i. 13, fig. 6.

„ *mauritanica*, Oliv. ii. 28, p. 1, Pl. V., fig. b.c.,
Mun. Cat. 1648.

Spain ; Mus. Brus. ♂. [Guer.] Tavira ; ♀.

I have not seen any specimens of this from the African coast, and I very much doubt the correctness of the synonymy. The female is similar to that of *mauritanica*, Lin., but has rudimentary elytra. I have not seen specimens of that species from the European side.

Lampyris mauritanica, Lin. Syst. Nat. ii. p. 645 ; Fab. Syst. Ent. p. 202 ; Ol. Ent. ii. 28, p. 13, Pl. I., fig. 5. ♂, ♀.

Algiers ; Mus. Brus., Gorh., Chev., Brit. Mus., &c. Tangiers ; Mus. Brus.

The only female which I can refer without doubt to this species is from Algiers, and has no rudiments of elytra ; while females from Spain and Portugal, which I think referable to *Reichei*, J. D., have rudimentary elytra, and a well-developed scutellum. The male has the dorsal segments of the abdomen with acute, produced hind angles, especially the two before the last ; the apex is narrow and rounded.

Lampyris depressiuscula, Mots. Etud. Ent. iii. p. 19.

Circassia ; Mus. Brus.

I have not seen authentic specimens of any of Mots.' Eastern species, and refer two specimens in Brusse's Museum with some doubt to this.

Lampyris marginipennis, Bohem. Ins. Caff. i. 2, 439.

South Africa (Natal, Orange River, &c.); Brit. Mus., coll. Gorh., Hudd., &c.

Obs.—All the South African species of this genus which I have seen have the under side of the body wholly pale yellow.

Lampyris nigripennis, Bohem. Ins. Caff. i. 2, 440;
nec Mots.

„ Nigrita Gemm., Mun. Cat. 1648.

South Africa, coll. Gorh., Hudd.

Lampyris Huddi, n. sp.

Flavo-testaceus, elytris fuscis, abdomine dimidio brevioribus, apicem versus attenuatis thoracis margine reflexo, disco postea bifoveolato.

Long. lin. 7. ♂.

Very distinct by the abbreviated elytra, which scarcely cover half the abdomen; the wings are ample; the first four segments of the abdomen pale fuscous; legs yellow, tibiæ and tarsi infuscate. Eyes very large, antennæ yellow.

Hab.—India, Bombay; coll. Hudd.

Lampyris marginella, Hope, Gray Zool. Misc. 26.

India, Nepal; Brit. Mus. (*Type*), coll. Gorh.

Rather referable to *Diaphanes* than *Lamprorhiza*. The form is that of *Lampyris*, the luminous segments and transparent areolets of the thorax as in *Diaphanes*.

LAMPORRHIZA, Jacquelin Duval.

Type, *L. splendidula*, Lin.

Lamprorhiza splendidula, Lin. Syst. Nat. i. 2, 644.

Europe, France, Belgium, Germany, Austria. Not in the North. All collections. ♂. ♀.

Obs.—Fifth and sixth segments luminous, eburated in ♂; pygidium rather deeply emarginate.

Lamprorhiza Boieldieni, Jac. Duv. Mon. i. 17.

France; Gorh. (Plason). ♂, ♀.

Obs.—Sixth ventral segment with a small luminous spot, pygidium emarginate in ♂.

Lamprorhiza Delarouzei, Jac. Duv. Mon. i. 18.

France (?), "Gabon;" Gorh. (from Chevr.). ♂.

Obs.—Fifth and sixth segments with irregular brownish-yellow markings.

Pygidium deeply emarginate, the middle of the excision with a triangular lobe.

PHOSPHÆNUS. Cast. Ann. Fr. 1833, p. 138.

Pygidium in the male deeply cut out, sides of the excision sinuate, ventral apical plate small, acuminate.

Phosphænus hemipterus, Geoffr.

Europe generally, not in the North. All collections. Its occurrence in England is at least doubtful.

AMYTHETES. Illiger Mag. vi. p. 342.

Pygidium with apex bisinuate.

Amythetes apicalis, Germ. Ins. spec. nov. p. 67; Mots.

Etud. Ent. 1854, p. 25;

præusta, Blanch. Voy. d'Orb. Ent. 124?

Brazil; coll. Gorh., without locality.

Amythetes fastigiata, Ill. (Indescript). ?

Picea, nitida, fortius subrugose punctata, scutello, prothoracis elytrorumque marginibus, et suturâ pallidis, thoracis disco canaliculato angulis posticis acutis.

Long. lin. 5—5½.

The three apical ventral segments are white and eburated, very shining.

Rio Janeiro; Mus. Brus., coll. Gorh., Bahia; Gorh.

MEGALOPHTHALMUS, Gray, Griff. An. Kingd. I., 371.

Megalophthalmus Benetti, Gray loc. cit.

Columbia; Brit. Mus. (Type.)

Megalophthalmus costatus, Cast. Essai. p. 132,

obsoletus, Blanch. Voy. d'Orb. 123;

Pl. 7, fig. 7.

Bolivia; Mus. Brus. [Guér. Men. Types.]

Megalophthalmus collaris, Guérin, Rio. Zool. 1843, p. 18.

Columbia ; Mus. Brus. (Type.)

Obs.—Resembles an *Amythetes*, but the antennæ are eleven jointed, with equal lamellæ, and are not more than twice the length of the head and thorax. The elytra are pitchy black, with slightly raised nervures. The thorax is pale, tubercularly elevated on each side of the disc, miniate ; scutellum pale, whitish. The abdomen of the type is gone.

Megalophthalmus marginatus, Guérin, Wien. Verzeich. v. p. 579.

Columbia ; Mus. Brus. (Type.)

Megalophthalmus melanurus, Cast. Essai. 131.

Peru ; coll. Gorh. [Norris]. Chili ; Mus. Brus.

Obs.—This species does not belong to the genus ; it will, I think, come near *Lucidota*. I have only seen two specimens, which vary in size, one being 3, the other 5 lines in length.

Megalophthalmus Guatemalæ, n. sp.

Niger, opacus, elytris tricotatis, costis duabus exterioribus ad apicem conjunctis, prothorace fulvo, disco carinato, utrinque tuberculato, margine elevato. Scutello flavo.

Long. lin. $3\frac{1}{2}$ —4. ♂.

Allied to *M. costatus*, Cast., differs in being more linear ; in having the disc of the thorax scarcely darker, not infusate ; by the antennæ being quite black, as well as the legs (with the exception of the anterior coxæ, which are yellow). The first costa on the elytra terminates rather more than one-third from the apex, the second and third (the humeral one) coalesce shortly before the apex, which the single branch reaches, in which respect this species differs from *costatus* or *obsoletus*, but resembles *collaris*, with the exception that the apical branch is there very short and evanescent. I am not able to decide certainly which is the luminous segment, but it seems to be the fifth ; it is reddish brown at the base and eburated white at its apical margin. The pygidium is lobed at the sides, rounded at the apex.

Guatemala, Zapote ; coll. Godman and Salvin.

LUCIOLA, Castelnau, Ann. Fr. 1833, p. 146.

Type *L. Italica*, Lin.

Sexual distinctions not apparent in the European species ; at least all the specimens I have examined have only six ventral plates, and may be all female. In the Eastern species seven ventral plates are clearly distinguishable. In *ovalis*, Hope, the three apical in the male are luminous, and are yellow, glabrous, diaphanous ; the fifth is short ; the sixth nearly twice the length of the fifth, and has a deep longitudinal line giving it the appearance of being cleft. The apical is produced in the middle. The female has six ventral plates, the two last diaphanous, the apical longer than in the male, but similarly produced.

Luciola Italica, Lin. Syst. Nat. i. 2, p. 645.

Europe, Italy. All collections.

Luciola lusitanica, Charp. Hor. Ent. p. 194,
italica, Fab.

Europe, Mediterranean district, Portugal (Cintra), Mus. Brus. ; Southern Italy, Corfu, Plason ; most collections.

Luciola mingrelica, Ménétr. Cat. rais. p. 161,
mehadiensis, Fald., Dej., Jacq. Duv., &c.

Hungary ; [Plason]. Asia Minor, shores of Black Sea, &c. ; coll. Gorh., Lagodiche ; Mus. Brus.

Obs.—Very nearly allied to *lusitanica*, blacker elytra, with more distinct nervures.

Luciola græca, Cast. l. c. 147.

Syria, Mus. Brus., Constantinople.

Luciola discicollis, Cast. l. c. p. 147.
mendax, Dej. Cat.

Senegal ; Mus. Brus.

Luciola puncticollis, Cast. l. c. p. 148.

Senegal ; Mus. Brus., coll. Gorh.

Obs.—Castelnau distinguishes the sexes, remarking that the males have two, the females three luminous segments. As the body beneath is wholly yellow I cannot follow this distinction.

Luciola Caffra, Boh. Ins. Caff. i. 2, p. 445 ?

Zambesi ; coll. Gorh.

Two specimens doubtfully referred to this; the elytra are pitchy and margins and suture testaceous, they are scarcely costate.

Luciola Goudoti, Cast. l. c. p. 150,

Cribricollis, Klug. Ins. Mad. 1833, p. 69.

Madagascar ; Mus. Brus., [Guérin] ; coll. Gorh.

Luciola Madagascariensis, Guér. Mag. Zool. 1830, t. 22.

Madagascar ; coll. Gorh.

Luciola plagiata, Erichs. Nov. Act. Ac. Cur. xvi. 2, p. 231 ?

Philippine Isles ; coll. Gorh.

Luciola vespertina, Fab. Syst. El. ii., p. 103.

India, Assam ; coll. Gorh.

Sexual characters are visible here. Fabricius describes the male, in which two segments are white, the apical almost semicircular ; in the female the eyes are much smaller and the subapical ventral plate deeply cut out.

The species which I refer to this is about six lines in length; the thorax is transverse and its hind angles produced and acute; the basal portion of the abdomen is infusate in the female. A species in my own collection and in that of the Brussels Museum from Madras, Bombay and Bengal, differs in being smaller (three and a half to four lines); the thorax is not so wide and its angles are nearly right ; while a third species, from Malacca and Madras, is much smaller and has the elytra obliquely truncate at the apex.

I propose, then, provisionally to separate the various species which are allied to, and rather closely resemble *vespertina*, F., as follows :—

1. *Vespertina*, Fab. Head black, prothorax channelled in both sexes, elytra very closely punctured but not striate, one or two nervures visible, anterior tibiæ dark, middle pair infusate in part, hind pair yellow.

2. *Substriata*, n. sp. Head black, prothorax with a fine raised medial line, elytra closely punctured, with the punctures becoming arranged in rows, nervures not distinguished, but the interstices a little raised. Tibiæ all yellow.

Bombay.

3. *Affinis*, n. sp. Very near No. 1. Smaller and hind angles of thorax not produced, elytra punctured as in No. 1, but two nervures more clearly visible, prothorax channelled. Tibiæ as in No. 1.

Madras [Murray], Bombay, Bengal, Mus. Brus.

4. *Malaccæ*, n. sp. Smaller and more parallel than either of the preceding, thorax scarcely wider than long, channelled, hind angles right but rounded off a little, sixth ventral segment in the ♀? with a deep circular emargination of each side, the portion between lobed and curved upward to meet the pygidium, its own apex being angularly emarginate. The apical margin and central lobe have rather long ciliæ of grey pile. Four specimens from Malacca in my collection agree with the description above, while two from Madras have the eyes smaller; one of them having the same curious structure of the abdomen, the other having seven ventral segments, the sixth widely emarginate, the seventh small, with a central lobe excised at its apex, of the same form and ciliated as in the ♀?

5. *Chinensis*, Lin. Syst. Nat. I. 2, p. 645? This is certainly very close to No. 2, but the thorax has more distinct hind angles, and is channelled, not with any raised line; the tibiæ are black except at their extreme base, and the apex of the elytra with a very small black spot.

Foochow [Lewis]; coll. Gorh.

6. *Præusta*, Escholtz. Antennæ yellow, thorax channelled, elytra very obsoletely punctured and with hardly any trace of nervures.

Philippine Isles, Manilla; Mus. Brus. ♀? coll. Gorh. ♂?

Obs.—The ♂ has the sixth seg. excised, the seventh acuminate.

Luciola tabida, n. sp.

Pallide testacea, antennis articulo basali excepto, elytrorum apice tarsisque infuscatis, thoracis angulis posterioribus rectis, basi depresso submarginato.

Long. lin. 5. ♀.

Head yellow, eyes small, received into the prothorax. Elytra clothed with a fine white pile, apex with an indeterminate fuscous spot. The subapical segment of the abdomen is emarginate, the segment preceding *marginated with black*.

Fernando Po; coll. Gorham [Waterhouse].

Luciola pallescens, n. sp.

Pallide testacea capite, antennis, tibiis anticis tarsisque fuscis, thorace perbrevis, disco convexo angulis posticis productis, acutis, maculis tribus unâ discoidali, duabus basalibus, et margine frontali piceis, elytris crebre punctatis apicem versus attenuatis, pube griseo tenuiter vestitis.

Long. lin. 7. ♂, ♀.

Mas.—Abdominis segmento ventrali apicali semicirculari.

Femina.—Segmento sexto profunde exciso, septimo bicarinato.

Readily recognised by its large size and depressed form; the antennæ in the male are about half the body's length. The last three segments are shining, and paler than the rest of the abdomen, and are no doubt the luminous portion.

Java; ♂ coll. Gorh.; ♀ Mus. Brus. [Dr. A. Breyer].

Luciola costipennis, n. sp.

Flavo-testacea, capite, antennis, pedibus (femorum basi exceptis), apiceque, nigris, elytris costâ humerali distinctâ, ad apicem fere propectâ.

Long. lin. 3.

Clear testaceous yellow, about the size of *L. Goudoti*, thorax transverse subquadrate, a little narrowed at the anterior angles, channelled, hind angles very slightly produced backwards; deeply punctured, but not so coarsely as the elytra, in which the punctures are large, ocellated, and sometimes confluent; the humeral costa is very raised, and divides the elytron into two flat areae; the suture and margin are both raised.

China, Foochow [G. Lewis]; coll. Gorh.

Obs.—This species belongs to the *vespertina* group, but is so easily distinguished by its costate elytra I have thought it better to keep it separate.

Luciola picticollis, Kiesenwetter.

Lewis, Cat. Col. Japan, 1204.

Japan [G. Lewis]; coll. Gorh.

Obs.—E. von Harold, Deuts. Ent. Zeit. 1877, p. 357, says both this and the following = *cruciata* Mots. They are however distinct from each other, and it is scarcely

likely that either = a species which is from Java. There are, moreover, discrepancies between *picticollis* and *cruciata* in the description given by Mots. The femora in the Japanese species are not yellow at the base, and the length of Mr. Lewis's species is 7 lines. The male has the abdomen as in *cruciata*, sec. Mots. The female has the fifth and sixth segments yellow and short, the apical very small and black.

Mr. Lewis includes *præusta*, Esch. Kies?, *cruciata*, Mots., *lateralis*, Mots., and *japonica*, Thun., as separate species occurring in Japan, in his catalogue. There is evidently some error here. The latter is given as synonymous with *chinensis*, Lin. in the Munich catalogue.

Luciola vitticollis, Kies. Lewis, Cat. Coll. Jap. 1203.

Three and a half lines long, more opaque than the preceding; thorax even, not channelled, rosy, with a broad vitta, widest at the apex and base.

Japan [Lewis]; coll. Gorh.

Luciola ovalis, Hope, Gray's Zool. Misc. 1831,
circumdata, Mots. Etud. Ent. iii. 1854, p. 50.

The singular structure of the abdomen has been noticed in the prefatory remarks on the genus, p. 99.

India; coll. Hudd, Gorh., &c., Assam; Mus. Brus., Brit. Mus. ♂, ♀.

Luciola indica, Mots. Etud. Ent. iii., p. 53.

India; Andaman Isles; coll. Gorh.

Bombay; Mus. Brus. [Guérin].

Luciola xanthura, n. sp.

Elongata, depressa, sordide testacea, suturâ apiceque elytrorum flavis, capite nigro, antennis, thoracis disco, abdomineque fuscis, hoc segmentis duobus apicalibus maris albis, eburatis.

Long. lin. 3. ♂.

Thorax with the base truncate, hind angles right, disc strongly punctured; elytra obsoletely punctured, nervures visible, but faint.

India, Neilgherry Hills; Mus. Brus. [Guérin].

Luciola carinata, n. sp.,
striata Lat. ? Dej. Cat. nec. Fab.

Feruginea, elytris flavis, interstitiis fusco-irroratis punctato-striatis, suturâ, lineis quatuor, et margine elevatis, antennis (basi excepto), thoracis disco, maculis duabus, abdominis segmento quarto ad marginem, tarsisque nigris.
Long. lin. 5.

This species may be at once known by the orange-yellow colour, the two distinct spots on the middle of the thorax, and the singular evenly carinate elytra. The suture and two first carinæ are moderately raised; the two second pale lines start from the raised humeral callus, but are scarcely elevated lower down; all the lines unite with the pale margin of the base, but only the suture and margin are connected at the apex. The ventral apical plate is long, and somewhat triangular, with a fovea on each side at the base, and a pale triangular spot in the middle of the base.

Java; Mus. Brus. [Guérin].

Luciola australis, Fab. Syst. Ent. p. 201.

Very close to *indica*, Mots. The only difference I can see being that the tibiæ are black, and that the suture and margins are not inclined to be pale, as in some specimens of *indica*.

Port Denison; Mus. Brus. [Simson].

Luciola spectralis, n. sp.

Supra pallide flavo-testacea, capite sordide flavo, antennis, thorace maculis duabus magnis, elytrorum apice latius, corpore pedibusque nigris, his basi, illo segmentis quinto et sexto flavis.

Long. lin. $5\frac{1}{2}$ ♂ ?

Thorax obsoletely channelled, clothed with yellow pile, hind angles acute, scarcely produced. Elytra with four costæ. The black colour of the apex not very pronounced, and the yellow extends along the suture and margin. Punctuation of the elytra close but distinct, the pile very short but close.

New Zealand; coll. Gorham. A single specimen.

Luciola discoidea, n. sp.

gratiosa Dej. Cat.

Sordide fusca; thorace flavo, disco late nigro, capite, abdominisque basi nigris, elytris fuscis flavocinctis.

Long. lin. 3. ♂, ♀.

Head black, antennæ of half the length of the body, fuscous, thorax closely subrugosely punctured, transversely, subquadrate, front angles rounded, hind angles sub-acute, base sinuate.

The male has the two apical, the female the sub-apical ventral plates white, shining, and diaphanous.

Senegal ? ; coll. Gorham.

Obs.—I am not sure of the locality ; this species may be the same as *discicollis*, Cast.

PHOTURIS, Leconte, Proc. Ac. Phil. v. 337.

Type, *P. pennsylvanica*, De Geer.

The determination of the species of this genus is attended with almost as much difficulty as those of *Photinus*. The adoption of Dejean's catalogue names is one principal cause of the confusion that exists. Motschulsky gives *hectica*, Fab., as the type of *Photuris*, Dej. No doubt it would have been well if Leconte had taken one of the larger tropical species for a type ; but it is more than doubtful if Dejean's reference of *hectica* was correct, for I do not think it possible to join his *biguttata* with it. Hence I think it necessary to consider the North American species the type. I think the best plan is to reject the Dejeanian names altogether. I give references to his names for the sake of those collections that have them, but it must be uncertain whether they refer to the same species or not. It must ever be a misfortune to have had them at all.

The genus will divide into sections by the structure of the claws : Sec. I.—Claws simple. Sec. II.—Claws split in the male, simple in the female. Sec. III.—External claw split. Sec. IV.—All the claws split.

All these agree in having a Telephoroid aspect. The head is exserted, the elytra very soft, and apt to curl up when dry ; the thorax, however, is, unlike that of *Telephoridae*, semicircular, with hind angles usually produced, and the diaphanous segments are very conspicuous and white. In Sec. I. I cannot discover the sexual distinction, unless it is in some species in which one sex has only a luminous spot on the fifth plate, the other the whole of the fifth and sixth luminous. In Secs. II. and III. the males have larger eyes, and the apical ventral plate produced into a long acuminate lobe, reaching the apex.

SEC. I.—Claws simple, a luminous spot, or two segments luminous.

Photuris hectica, Fab. Syst. El. ii. 102.

The species I refer to this is testaceous above, with black head and abdomen, one luminous spot; the legs, antennæ, and three spots on the thorax are also black. This is the only species I have seen at all agreeing with the Fabrician description.*

Brazil; coll. Gorham.

Photuris moesta, Germ. Ins. spec. nov. 65.

Black, a little shining, lateral margin of elytra terminating before the apex, white; head, crown, and mouth black, yellow below antennæ, pleuræ of the prothorax and reflexed margin of elytra yellow. One yellow spot on fifth, or middle of fifth, and whole of sixth segment yellow. Pygidium and ventral apex entire, acuminate, in some specimens with one spot, the ventral apex is notched. ♀?

Brazil; Rio Grande, coll. Gorh., Mus. Brus.

Photuris tristissima, n. sp.
limbata, Dej.?

Very nearly allied to *moesta*, and perhaps not distinct; chiefly distinguished by having the margin pale to the apex, and the suture and lateral margin of the thorax pale. It is duller, and rather fuscous than black. The fifth segment in the ♂? is often wholly white as well as the sixth.

Brazil; coll. Gorh. Rio Janeiro, Mus. Brus.

Obs.—The thorax has sometimes two red spots, very distinct examples of which are *biguttata*, Dej.

Photuris fumosa, n. sp.
aurita, Dej.

Oblongo-ovata, nigro-fumosa, opaca, thorace lunari angulis posticis acutis, productis, thorace plagis duabus capite infra oculos, et antennarum articulis tribus subtus pallide flavis.

Long. lin. 6—7.

Var.—Elytris vittis duabus sub-marginalibus flavis biplagiata, Dej.

Brazil; coll. Gorh., and Olivier. [Chevr.]

Obs.—A spot on the 5th, and in the *var.* one on the 6th segment also, luminous. ♀?

Photuris telephorina, Perty Del. An. Art. p. 27,
Pl. VI., fig. 3.

A well-known, rather variable species. I have a variety (*dimidiata*) in which the apex of the elytra only is black; a spot on the 5th and 6th segments, or the whole of those plates are luminous.

Brazil; all collections.

SEC. II.—Claws split in the ♂, simple in the female.

Photuris collaris, n. sp.

Nigerrima, sub-nitida, thorace lunari, ore, antennis articulis duobus basalibus læte rufis, pedibus nigropiceis femoribus anterioribus et intermediis brunneis.

Long. lin. 5—7½. ♂, ♀?

The two sub-apical in the male, and the three apical segments in the female are whitish yellow; the sixth emarginate, and the apical notched in the ♀.

Zapote, Guatemala; coll. Godman and Salvin. ♂.
Mexico; Mus. Brus. ♀.

Photuris ruficollis, n. sp.

Nigra, thorace lunari, scutello, coxis et trochanteribus anticis rufis.

Long. lin. 5½. ♀.

Very nearly allied to *collaris*; the scutellum is red, the thorax more rounded at the sides, and more opaque than in that species.

In the specimen in my collection, a spot common to the fifth and sixth segments is luminous.

Hab.—? Coll. Gorch.

Photuris lucidicollis, n. sp.

Fusca, elytris marginibus et suturâ, interdum etiam vittâ discoidali, dilutioribus, thorace lunari margine pallido, disco piceo, canaliculato, utrinque roseo-miniato, angulis posticis acutis retrorsum productis.

Long. lin. ♂, ♀.

Mas.—Segmentis tribus ventralibus apicalibus albis, apicali parvo, medio acuminato producto; unguiculis fassis.

Femina.—Segmento ventrali apice exciso, nigro, unguiculis simplicibus.

Var.—Elytris nigro-fuscis margine toto tenuiter flavo, corpore nigro.

This species, especially the *var.*, bears some resemblance to *Photinus cincticollis*, Chev. The form of the thorax and its acute hind angles afford a ready distinction.

Guatemala, Duenas, Capetillo ; Costa Rica ; coll. Godman and Salvin.

Obs.—The specimen from Capetillo is the dark *var.* of the ♀.

The Costa Rica specimen has the ventral apex pale, as the ♂.

Photuris mexicana, n. sp.

Fumeo-nigra, thorace pallide flavo, disco nigro utrinque roseo, antennarum basi, femoribus et tibiis anticis intus, et ore pallidis.

Long. lin. 5. ♂, ♀.

Mas.—Segmentis apicalibus tribus, flavis vel roseis ; apicali acute producto ; unguiculis fassis.

Femina.—Segmentis tribus apicalibus flavis, apice exciso ; unguiculis simplicibus.

Mexico ; coll. Gorham, Hudd. and Chevr. [Boucard.]

Photuris amoena, n. sp.

Nigro-fusca, thorace rufo, disco nigro, margine pallido, pectore pedibusque pallide flavis, his genubus, tarsis, et tibiis apicibus fuscis ; elytrorum suturâ tenuiter, margine laterali latius flavis.

Long. lin. 4—5. ♂, ♀.

Mas.—Unguiculis externis fassis, segmento quinto et sexto læte flavis, eburatis, apicali acute producto.

Femina.—Unguiculis simplicibus, segmento quinto maculâ albido-flavâ eburato, sexto et apicali excisis, rufis.

Guatemala, St. Geronimo, and Guatemala City ; coll. Godman and Salvin.

Obs.—This has a superficial likeness to *P. frontalis*, Lec., but besides having simple claws in the ♀, the head is black, and it is abundantly distinct.

SEC. III.—External claw split in both sexes.—*a*. One or two segments luminous.

Photuris latefascia, Mots. Etud. Ent. iii. p. 61.
annuliventris, Dej.
cinctiventris, Chev. Guér. ♀.

In the male *two* segments, in the female *one*, before the apical are white and luminous; the structural characters of the apex are as usual in this genus.

Columbia; Mus. Brus., coll. Gorh.

Photuris axillaris, Mots. Etud. Ent. iii. p. 61.

If I am right in my reference, this is very like *latefascia* in form and details, but the elytra are nearly black, only the middle of the suture and margin being yellow.

Columbia; Mus. Brus. ♂.

Photuris scutellata, n. sp.

Nigra, thorace elytrorumque dimidio basali rufo-ferrugineis, his maculâ scutellari nigrâ.

Long. lin. 6. ♂, ♀.

Mas.—Segmentis quinto et sexto læte flavis, apicali nigro, acute producto.

Femina.—Segmento quinto albido, apice leviter exciso.

Columbia; Mus. Brus. [Guérin], coll. Gorh.

Obs.—This species is labelled "*lycoides*" in my collection from Norris. It is not *lycoides*, Cast. Essai. Ann. Soc. Ent. Fr. ii. 145.

Photuris funestis, n. sp.

Nigerrima, thorace rufo maculâ basali transversâ, angulis posticis acutiusculis, margine laterali reflexo, elytris quintuplo brevior.

Long. lin. 6. ♂, ♀.

Mas.—Segmentis quinto et sexto læte flavis, emarginatis; apicali nigro, acute producto.

Femina.—Segmento quinto albido.

Columbia; Mus. Brus. [Guérin].

Of similar form with the three preceding species, which all have the thorax very small compared with the length and amplitude of the elytra; the eyes of the males are rather large and prominent; the luminous segments are particularly conspicuous, and not clouded in either sex.

SEC. III.—*b*. Three segments luminous.

Photuris pennsylvanica, De Geer. Ins. iv., p. 52.

This species, or very closely-allied varieties which I am not at present able to separate, has a very extended range, from Canada to the equator. Specimens of the typical form have the elytra dark fuscous brown with pale margins, suture, and a single vitta starting from the humerus and varying in length. This form appears to be *Telephoroides vittigera*, Mots.

Canada, Montreal, Quebec, &c. ; U. S. Michigan, Pennsylvania, &c. ; Guatemala, Zapote ; all collections.

Var.—*a*. Elytra nigro-picea, margine et suturâ tantum flavis. *T. lineatocollis*, Mots., Quebec. Mus. Brus., "Am. bor." ; coll. Gorh.

Var.—*β*. Latior, pallidior, elytris strigâ pallidâ intervittam humeralem et suturam, alterâque ante marginem.

Mexico ; Mus. Brus., coll. Gorh., Guatemala, Zapote, Capetillo, San Geronimo ; Nicaragua, Chontales ; Costa Rica ; British Honduras, Rio Sarstoon ; coll. Godman and Salvin.

Var.—*γ*. Elytris totis fuscis.¹

Antilles ; Mus. Brus.

Var.—*δ*. Minor, elytris et thorace sordide fuscis.

Antilles ; Mus. Brus.

Var.—*ε*. Tota pallida, elytris vittis et marginibus ægre distinctis, dilutioribus.

Columbia ; Mus. Brus., Guiana ; Demerara ; Costa Rica ; coll. Gorh., Panama ; Chiriqui ; coll. Godman and Salvin.

The male has larger eyes, two segments before the apical eburated, yellowish, and emarginate ; the apical produced but not spiniform.

Photuris frontalis, Leconte Proc. Ac. Phil. v., p. 337, 1852.

United States, Texas. ♂ coll. Gorh.

Thorax coarsely punctuate, hind angles scarcely produced, male with the two subapical segments deeply emarginate, head yellow.

Photuris fruticola, Escholtz. Mots. Etud. Ent. iii., p. 60, tibialis Dej.

trivialis Bohem. Res. Eugen. 1858, p. 77.

Guatemala, Zapote; coll. Godman and Salvin, Brazil; Parana; coll. Gorch., Monte Video; Mus. Brus. ♂, ♀.

Thorax shining, immaculate; the elytra vary in depth of colour, the head is usually black, or partly so.

Photuris mollis, n. sp.

Sordide livida, capite, antennis, tibiis, tarsis, thoracis disco, elytrisque fuscis his margine, in medio latius, et suturâ tenuiter pallidis.

Long. lin. $3\frac{1}{2}$ —4. ♂, ♀.

Head with the concave crown black, becoming testaceous towards the mouth; antennæ fuscous except at their insertion, prothorax shining, obsoletely punctured, the disc pitchy, base sinuate, hind angles hardly produced; elytra of a dull leaden hue, finely pubescent, not much wider than the prothorax; coxæ and femora pale; the margin of the fourth and the three following ventral segments entirely whitish. Sexual characters normal.

Guatemala, Zapote; coll. Godman and Salvin.

Photuris brunnipennis, Jacq. Duv. Hist. Cubæ, vii., p. 89.

Cuba; coll. Chevrolat [now Olivier], who sent me the ♂. Resembles *fruticola*, but more pubescent, and head yellow; the suture and margins are widely testaceous in their middles.

SEC. IV.—All the claws split (in both sexes?)

I have not seen a female of the only species known to me in this section. The male has the apical segment acutely produced, the fifth and sixth are yellow, eburated, and with the punctiform stigmata distinct.

Photuris lividipennis, Mots. Etud. Ent. iii., p. 58.

Brazil? coll. Gorch. [Norris.] ♂.

EXPLANATION OF PLATE I.

In all the figures *a* is the dorsal, and *b* the ventral surface of the apex of the abdomen.

- Fig. 1. *Lamprocera Latreillei*, Kirby. ♂.
- „ 2. *Hyas denticornis*, Germ., ♂ and ♀.
- „ 3. *Cladodes flabellicornis*, Mots. Sex uncertain.
- „ 3a. *Cladodes lamellicornis*, Mots. Sex uncertain.
- „ 4. *Phænolis laciniatus*, Gorham. ♂? *c*, ventral apical plate enlarged.
- „ 5. *Vesta Chevrolatü*, Cast. ♂.
- „ 6. *Lucernula fenestrata*, Germ.
- „ 7. *Æthra concolor*, Gorham. Sex uncertain, ventral.
- „ 8. *Lucidota flabellicornis*, Fab. ♂.
- „ 9. *Alychnus xanthorrhaphus*, Kirsch. ♂ and ♀.
- „ 10. *Lucidota apicalis*, Gorh. ♂
- „ 11. *Lucidota discolor*, Gorh. ♂
- „ 12. *Photinus coruscus*, Lin. ♂ and ♀, ventral.
- „ 13. *Photinus longipennis*, Mots. ♂ *a* and *c*, ♀ ventral.
- „ 14. *Pyrectomena striatella*, Gorh. ♂ and ♀ ventral
- „ 15. *Cratomorphus giganteus*, Drury. ♂ and ♀.
- „ 16. *Cratomorphus diaphanus*, Germ.? ♀.
- „ 17. *Cratomorphus bifenestratus*, Gorh. ♀.
- „ 18. *Cratomorphus insignis*, Gorh. ♂.
- „ 19. *Hyas angularis*, Gorh. (*Chev.*).
- „ 20. *Alychnus xanthorrhaphus*, Kirsch. ♀.

The figures are all a little enlarged.



Gorham, Henry Stephen. 1880. "VIII. Materials for a revision of the Lampyridæ." *Transactions of the Entomological Society of London* 28, 83–112.
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