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ENTOMOLOGICAL SOCIETY OF ONTARIO.

The fortieth annual meeting of the Society was held at Ottawa on the 3rd and 4th of September. On the former day a meeting of the Council for the transaction of business was held in the morning; in the afternoon reports were read from the various Branches, Sections and Officers of the Society, as well as several papers of an interesting character. In the evening a public meeting was held in the Assembly Hall of the Normal School, at which the President, Professor Lochhead, read his annual address. He was followed by Dr. L. O. Howard, of Washington, United States Entomologist, who gave a very clear and most interesting account of the transmission of yellow fever by mosquitoes. The second day was occupied with the reading and discussion of papers, the election of officers and the examination of a number of specimens brought by the members. A full account of the proceedings will be given in the Annual Report of the Society to the Legislature of Ontario.

The following were elected officers for the ensuing year :

President—Professor William Lochhead, B. A., M. S., Ontario Agricultural College, Guelph.

Vice-President—J. D. Evans, C. E., Trenton.

Secretary—W. E. Saunders, London.

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Experimental Farms, Ottawa; W. H. Harrington, F.R.S.C., Ottawa; John Dearness, B.A., Vice-Principal Normal School, London; Henry H. Lyman, M.A., F.R.G.S., F.E.S., Montreal; Rev. T. W. Fyles, D.C.L., F.L.S., South Quebec.

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Committee on Field Days—The Chairmen of the Sections and Dr. Woolverton, Messrs. Balkwill, Bowman, Law, Moffat, Rennie and Saunders, London.

Library and Rooms Committee—Messrs. Balkwill, Bethune, Bowman, Dearness, Moffat and Saunders, London.

A NEW BOMBUS FROM COSTA RICA.

BY J. C. CRAWFORD, JR., WEST POINT, NEBR., AND MYRON H. SWENK,
LINCOLN, NEBR.

Bombus leucomelas, n. sp.—♀. Black, with deep black pubescence, except that on anterior half of mesothorax, which is grayish, tipped with black, and on abdominal segments 3-6, which is pure white; clypeus arched, weakly and very sparsely punctured; labrum basally with two widely separated tubercles; joint 1 of flagellum equal to 2 and 3 together; wings deeply infuscated, iridescent; basal joint of hind tarsi not pointed at apex; pubescence of legs black. Length 21-22 mm.

♀. Similar to ♀, but much smaller, the third abdominal segment with black pubescence, the clypeus more strongly punctured. Length, 10-14 mm. ♂. Unknown.

One ♀, Cartago, June, 1903; one ♀, Volcano Irazu, February 22, 1902; four ♀♀, Monte Redonda, March 3, 1902.

Near to *B. funebris*, Sm., from which it differs in its larger size, the pubescence of the mesothorax not snow-white on the disc, and the third abdominal segment not black.

NOTES ON THE NORTH AMERICAN SPECIES OF ISODONTIA,
PATTON, WITH DESCRIPTIONS OF A NEW
SPECIES AND VARIETY.

BY H. T. FERNALD, PH. D., AMHERST, MASS.

The North American species of *Isodontia* may be distinguished by means of the following table :

- | | |
|---|--|
| 1. Mandible with two teeth (anterior tooth sometimes partly divided) . . . 2. | Mandible with three teeth 7. |
| 2. Petiole black 3. | Petiole yellow <i>exornata</i> , n. sp. |
| 3. Third segment of antenna longer than seventh or eighth 4. | Third segment of antenna shorter than seventh or eighth 5. |
| 4. Median segment above with long white hairs <i>macrocephala</i> , var. <i>cinerea</i> , n. var. | Median segment above without long white hairs . . . <i>macrocephala</i> , Fox. |
| 5. Body hairs gray 6. | Body hairs black <i>azteca</i> , Sauss., var. |
| 6. Front part of wings fuscous <i>azteca</i> , Sauss. | Wings entirely fuscous <i>azteca</i> , Sauss., var. |
| 7. Legs more or less yellowish 8. | Legs black <i>apicalis</i> , Sm. |
| 8. Abdomen black <i>tibialis</i> , Lep. | Abdomen more or less yellowish <i>elegans</i> , Sm. |

I am hardly prepared at present to accept *Isodontia elegans*, Smith, as a variety of *I. apicalis*, Smith. The differences between the two seem to be very constant, and their distribution appears to be somewhat different, *elegans* being more a southern and western form, while *apicalis* occurs chiefly in the central, eastern and northern States.

Patton (Proc. Ent. Soc., Wash., III., p. 46) regards *macrocephala*, Fox, as a synonym of *azteca*, Sauss. With this I am unable to agree, all the specimens of a large series of both of these species before me being distinguishable almost at a glance. The type specimen of *macrocephala* has the anterior tooth of the mandible with a groove dividing it into two portions, which leads me to believe that in this insect the mandible was originally three-toothed, but that the anterior two have partially fused. All my specimens of *azteca*, on the other hand, indicate an originally two-toothed mandible, and though the anterior tooth is blunt in many cases, it

shows no trace of any longitudinal groove, such as is present in the type of *macrocephala*. However, the length of the third segment of the antenna as compared with that of the seventh or eighth in the two species should be sufficient to show that the two are not identical in any case.

Isodontia apicalis, Smith, has sometimes been considered as a synonym of *Sphex philadelphica*, Lep., but I regard this as based on insufficient evidence. Lepeletier's description gives no characters which would place it in the more recent genus *Isodontia*, and in two points differs from what has been commonly considered that species. Lepeletier says (*Histoire Naturelle des Insectes, Hymenopteres, III., p. 340*): "Thorax niger, nigro villosus," and "tarsorum quatuor anticorum articulo extremo ferrugineo." None of the many specimens of what has been considered this insect which I have examined agree in these points with this description. An attempt to locate the type in order to settle the matter has proved a failure. The insect was in the Serville collection, and this is not at the Museum d'Histoire Naturelle at Paris, and Monsieur R. du Buysson writes me: "Ils ont dû être vendus et séparés dans beaucoup d'autres collections. Actuellement l'on ignore où ils se trouvent." I may add that Dr. F. Fr. Kohl, of Vienna, who has given much study to this group, writes me: "Wahrscheinlich ist Sph. philadelphicus Lepeletiers gar keine *Isodontia*."

Under these conditions it seems best to apply Smith's name—*apicalis*—to this insect, at least until Lepeletier's type shall be found.

Isodontia exornata, n sp.

Head: clypeus somewhat arched laterally, with a faint median carina most pronounced posteriorly, sometimes not perceptible; anterior edge slightly prolonged laterally, with a slight notch at the middle; surface covered sparsely with yellow hairs. Clypeus and frons to level of insertion of antennæ golden pubescent. Mandibles two-toothed, black at base and tip; elsewhere ferruginous. Eyes somewhat nearer at the clypeus than at the vertex. Antennæ, first six to eight segments ferruginous, terminal segments black; scape bearing a few yellowish hairs; third segment longest. Head with scattered punctures and sparsely covered with long yellowish hairs. A narrow, yellow pubescent band just behind the eye.

Thorax: collar faintly punctured, clothed with scattered yellow hairs; its dorsal edge and the posterior edge of the prothoracic lobe golden pubescent. Mesonotum black with yellow hairs, rather coarsely

punctured and with a short median, unpunctured groove extending about one-third its length from its anterior edge. A small, somewhat triangular spot of golden pubescence is situated on the pleuron just posterior to the prothoracic lobe, and sometimes a smaller one occurs between this and the wing attachment. Tegulae smooth, pale yellow. Mesopleura and sternum covered sparingly with long yellow hairs. Scutellum black, punctured, the punctures rather more scattered than on the mesonotum; on each side just mesad to the attachment of the hind wings is a golden pubescent spot. Postscutellum covered by golden pubescence. Median segment coarsely punctured, on each side a golden pubescent band passes from the front edge just lateral to the edge of the pubescence on the postscutellum backward below the stigma to the posterior coxa. Just above the base of the petiole is a golden pubescent spot.

Abdomen: petiole slightly curved, ferruginous yellow, somewhat darker at the base beneath, covered with yellowish hairs; its posterior portion yellowish pubescent. Base of abdomen above, yellowish, remainder black, the hinder edges of the segments, however, dull yellowish; surface finely pale pubescent. A few hairs scattered over the more posterior segments. Beneath, minutely punctured, with scattered hairs in the female, in the male with a cross row of black hairs on each of the last three or four segments. Legs: coxae, trochanters and proximal part of femora black, hairy, remainder ferruginous. Sometimes a yellowish pubescence is present on the coxae and trochanters. Tips of claws nearly black. Spines dark ferruginous. Posterior tibiae yellow pubescent behind. Wings smoky, with a slight violet reflection.

Length, 16-20 mm. Wing expanse, about 30 mm.

Described from five male and two female specimens from Indian River and Biscayne Bay, Fla., and from N. C. and Ga. Types have been deposited in the collections of the National Museum at Washington, American Entomological Society at Philadelphia, Massachusetts Agricultural College, Amherst, Mass., and of Mr. W. H. Ashmead, Washington, D. C.

Isodontia macrocephala, var. *cinerea*, n. var.

This variety differs from the typical form only in the fact that the thoracic hairs are longer and whiter, giving the insect a noticeably gray appearance very different from that of the typical form, which is glossy black, the few gray hairs not modifying this, and, in fact, being generally overlooked unless the body is closely examined.

EUCORETHRA, A GENUS OF CULICIDÆ.

BY D. W. COQUILLET, WASHINGTON, D. C.

Eucorethra, Underwood.*

Intermediate between *Corethrella* and *Sayomyia*, having the antennæ 14-jointed, as in the former, but the spaces between the verticels almost bare, as in the latter; differing from each in the much shorter second joint of the antennæ, which is only slightly longer than wide. Antennæ of male rather robust, submoniliform on the basal half, the first six joints only slightly longer than wide, the remaining joints increasing in length and decreasing in diameter toward the apex, the antepenult about half as long as the penult, verticels composed of numerous very long bristly hairs except on the last joint; antennæ of female nearly cylindrical, the joints gradually increasing in length to the apex, scarcely thickened at the insertion of the verticels, which consist of a few rather short bristly hairs; proboscis about one and one-half times as long as height of head, palpi inserted near three-fourths of its length, 4-jointed; first tarsal joint much longer than the second; venation as in *Culex*. Type, the following species:

Eucorethra Underwoodi, Underwood.

Black, the bases of antennæ, of wings, stems of halteres, coxæ, femora except their broad apices, and the tibiæ, yellow; thorax gray pruinose and marked with three velvet black vittæ, the median one extending from the front end to slightly beyond the middle, and divided lengthwise by a gray line, the lateral ones reaching from the hind end of the mesonotum nearly to the suture; abdomen somewhat polished, its hairs yellow; hairs of legs chiefly black, those at apices of femora and tibiæ golden yellow, tarsal claws of female with a single tooth near the base, those of the male with an additional tooth near the middle; wings hyaline, a large brown cloud on veins at apices of first and second basal cells, at base of second vein, of first submarginal and second posterior cell, hairs of veins black, small and hind crossveins interstitial, petiole of first submarginal cell three-fourths as long as that cell, petiole of second posterior cell noticeably longer than the cell; length, 8 mm. A specimen of each sex bred at Kaslo, British Columbia, June 23 and July 8, by Dr. H. G. Dyar. Type, No. 6925, U. S. National Museum.

I have also studied a female specimen bred March 1, by Prof. W. L. Underwood, of the Massachusetts Institute of Technology, after whom the species is named, in recognition of his first discovery of this interesting form. Prof. Underwood's specimens were obtained in the woods of Maine.

*Science, August 7th, 1903, page 182.

THE LIFE-HISTORY OF MAMESTRA LAUDABILIS, GUENEE.

BY HARRISON G. DYAR, WASHINGTON, D. C.

The eggs of this species were received from the Rev. R. W. Anderson, of Wando, North Carolina. They hatched May 22, and the larvæ were matured by the middle of July. The larvæ are coloured to resemble a piece of wood or bark, and remain all day motionless, hidden on the ground. They are remarkably sluggish, can be handled freely for a considerable time without making the slightest motion. They are general feeders.

Egg.—Shape of two-thirds of a sphere, somewhat flattened. About 24 sharp, vertical ribs, diminishing in number by alternation towards vertex, waved, joined in a ring around the micropyle; cross striæ distinct, about like the ribs, forming a large, coarse reticulum. Whitish, with a broad, irregular dark-red ring and vertical spot, partly confluent. Diameter .6 mm.

Stage I.—Head slightly bilobed, shining brownish black, mouth broadly pale luteous, jaws red-brown; width about .3 mm. Body robust, short and stout, normal, joints 5 to 7 slightly arched, feet of 7 and 8 shorter than the others, but distinct. Pale whitish, tubercles small, black, but strongly raised. Setæ long, pale and distinct. Cervical shield black, angularly shaped, containing four raised pale tubercles. Later the cervical shield and tubercles are black except a lateral pale patch; anal plate defined by black; leg shields faintly dusky. Still later there appear narrow dorsal and subdorsal white lines.

Stage II.—Head rounded, apex in joint 2, shining brownish black, mouth paler; width about .5 mm. Body robust, equal, normal, joint 12 not enlarged; shields not differentiated. Olivaceous gray, paler in curved bands in the incisures; a faint, pale, subdorsal line edged below with blackish; stigmatal band broad, whitish. Tubercles black, moderate; setæ stiff, long, dark, curved backwards. Later brownish-gray, the dorsum checkered with blackish X-marks intersegmentally.

Stage III.—Head pale brown on face, vertex broadly sooty black with a bar running down a little way on each lobe before; width about .7 mm. Body robust, joint 12 not enlarged. Wood-brown, dorsal line white, narrow, subobsolete, dorsal space tessellated with intersegmental

X-marks of grayish-black, more solidly filled on thorax. Subdorsal line white, straight, distinct, filled in below with black to a waved, narrow, white, lateral line. Subventer gray shaded. Tubercles black, not raised; setæ coarse, pale.

Stage IV.—Head brown, obscurely mottled, a broad, curved, black band on face of lobe and spot on eye; width 1 mm. Body flattened, sluggish in habit, setæ stiff, curving alternately forwards and backwards; no shields; joint 12 not enlarged. Pale wood-brown, the dorsal smoky lattice-work obscurely cut by faint, pale, broken dorsal line. Subdorsal line concolorous with the ground, narrowly edged with blackish above. Sides black shaded; stigmatal region broadly pale; subventer and venter black shaded. Tubercles small, black. Skin granular spinulose.

Stage V.—Head pale brown, the clypeus and vertex darker; reticulations and curved band dull black; width 1.8 mm. Body flattened, squarish, densely papillose granular; setæ short, thick, broadly clavate; joints 12 and 13 dorsally folded, elevated. Light brown, brokenly reticulated in black, dorsal diamond-shaped lattice dark brown; subdorsal line straight, pale, of the ground colour, edged with black, forming triangular, segmentary velvety patches on a gray-black ground laterally. Substigmatal band of ground colour, broad, sharply edged, undulate; subventer blackish shaded. Feet pale. Tubercles small, black.

Stage VI.—Head slightly bilobed, rounded, apex in joint 2; wood-brown, mottled with black and reticulate, with curved vertical bands; width 2.3 mm. Body flattened, thorax depressed, subventral region prominent, joint 12 with distinct folds at tubercle ii. and 13 at tubercle i., rigid, resembling a broken piece of wood. Ground colour yellowish wood-brown, black dotted reticulate, papillose granular. Dorsal pale line edged by small black segmental lines, being the remains of the obsolete dorsal lattice marking. Joint 12 posteriorly shaded with black, behind the folded hump of tubercle ii. Subdorsal line pale, narrow, narrowly edged with black above, below with trigonate black lateral patches and traces of a lateral line; substigmatal band broad, whitish, waved, dotted with blackish. Subventer and venter gray-black, pulverulently shaded. Thoracic feet black-ringed, abdominal ones gray dotted. Tubercles small, black, iv. above the centre of the spiracle. Setæ short, stout, broadly swollen at tip, compressed, dentate, somewhat like scales, pale brown. Spiracles black.

LEPIDOPTERA IN BRITISH COLUMBIA.

Successful collections of Lepidoptera were made in British Columbia this season at Kaslo by myself, with the assistance of Mr. Caudell and Mr. Currie, and under the advice of Mr. J. W. Cockle. Over 20,300 specimens rewarded our efforts. Of these a large part are Noctuidæ, collected at sugar, showing some very fine series. Nearly 200 larvæ were observed. The material will be worked up at the U. S. National Museum. The National collection has been further enriched by the donation of 548 specimens from Messrs. Taylor, Bryant, Hanham, Bush and Harvey, whom I had the pleasure of meeting at the close of the collecting season.

HARRISON G. DYAR, Washington, D. C.

THE GENUS *PLATYLABUS*, WESMAEL, WITH DESCRIPTIONS OF TWO NEW SPECIES.

BY J. CHESTER BRADLEY, PHILADELPHIA, PA.

The table which I here present of the genus *Platylabus* must be considered merely as a preliminary or working table of the species in the collection of the American Entomological Society, or in my own cabinet. The other species, known to me only by description, I have included for the sake of convenience, and have placed a star before their names. I cannot vouch for the correctness of these.

P. thoracicus, Cresson, including *Phygadeuon impressus* of Provancher, which Cresson placed as a synonym of the former, var. *erythropygus*, Prov., of *thoracicus*, and *P. quadricarinatus*, Provancher, I have omitted, as the metathoracic spiracles are nearly or quite circular, placing them in the tribe *Phœogenini*, and probably in either the genus *Apaeticus*, Wesmael, or *Herpestomus*, Wesmael. As I have not seen specimens of *Apaeticus*, I cannot be sure that they belong to it, but from the descriptions it would seem probable, and it is there that I would provisionally transfer them.

Mr. G. C. Davis, in Proc. Acad. Nat. Sci., Phila., 1894, p. 185, from examination of Provancher's types, finds the following synonymy:

- crassicornis = *Phygadeuon*.
- mitralis = *Phygadeuon*.
- aciculatus = *Phygadeuon*.
- cincticornis = *Cryptus*.

The genus is placed by Mr. Ashmead in the Ichneumonini, and has the basal third of the petiole flattened, wider than thick dorso-ventrally, and the scutellum margined to beyond the middle.

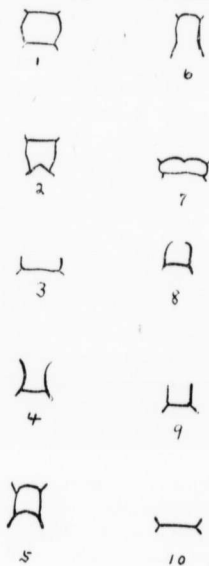


FIG. 13.

EXPLANATION OF FIG. 13.

- | | | | | | |
|-----|--------|----|------------|----|--------------------------|
| 1. | Areola | on | metathorax | of | <i>P. clarus</i> . |
| 2. | " | " | " | " | <i>P. metallicus</i> . |
| 3. | " | " | " | " | <i>P. consors</i> . |
| 4. | " | " | " | " | <i>P. Canadensis</i> . |
| 5. | " | " | " | " | <i>P. montanus</i> . |
| 6. | " | " | " | " | <i>P. Luzernensis</i> . |
| 7. | " | " | " | " | <i>P. signatus</i> . |
| 8. | " | " | " | " | <i>P. ornatus</i> . |
| 9. | " | " | " | " | <i>P. lineolatus</i> . |
| 10. | " | " | " | " | <i>P. Californicus</i> . |

1. Black, or rufous, or both.....3.
Metallic blue; species large; antennæ of female flattened before the apex; joints of flattened portion, broader than long; metathoracic spines very prominent.
2. Areolet on metathorax subhexagonal (fig. 13, 1); apical line not angled; scutellum of ♀ white; antennæ of ♂ without white annulus.....CLARUS, Cresson.
Arolet on metathorax shaped as in fig. 2; scutellum of ♀ black; antennæ of ♂ with white annulus.....METALLICUS, n. sp.
3. Thorax black.....4.
Thorax more or less rufous.....17.
4. Abdomen more or less rufous.
Abdomen entirely black, antennæ with pale annulus; spot on scutellum white.....5.
5. Metathorax with areola polished, shining in centre; legs red, apex femora, tibiæ and tarsi black. Length 5 mm. Prov. Quebec, Canada.....*RUBRICAPENSIS, Provancher.
Metathorax with median and two lateral apical areas transversely reticulate; superior area glabrous; tergum of petiole polished; postpetiole shagreened; legs clear, ferruginous, with apex of hind tibiæ and tarsi black. Length 9 mm. Idaho....*INCABUS, Davis.
6. Second segment only of abdomen red.....7.
More than second segment of abdomen red.....8.
7. Wings hyaline; anterior orbits enlarged below; antennæ with white annulus, third joint very short and red; metathorax finely punctured, pubescent, carinæ not prominent; legs black, the four anterior red in front; posterior femora red at base, and a more or less distinct red ring at base of posterior tibiæ; petiole polished, long; abdomen with white spot at its extremity; second and base of third segment stained red. Length 7 mm.....*SCUTELLATUS, Provancher.
8. Antennæ with pale annulus.....12.
Antennæ without pale annulus; scutellum black.....9.
9. Petiole aciculated.....10.
Petiole polished; abdomen entirely rufous (in one specimen darker); face white, with median black band; metathoracic spines and carinæ but slightly marked; discocubital nervure with a more or less distinct stump of a vein. ♂.....CONSORS, Cresson.

10. Antennæ black, slightly thickened beyond the middle; abdomen polished; 2 dorsal carinæ of petiole not reaching apex; carinæ on metathorax indistinct, angles subspinose; legs rufous; coxæ and trochanters black; abdomen red. Length 9 mm. *PACIFICUS, Harrington.
- Antennæ red, in ♂ black at apex, *much thickened at apex*; metathorax with distinct carinæ; face finely punctate; petiole large at apex. Length 5 mm. *RUFICORNIS, Provancher.
12. Petiole broad at apex; scutellum entirely white; generally no white between eyes and mandibles, but a white line between antennæ and eyes, between pro- and mesothorax, and between pleura and dorsum of mesothorax. 14.
- Petiole slender, narrow at apex, not very rough, black; apex red; following 3 joints abdomen red; no white on thorax or face, except between the eyes and the mandibles and the apex of scutellum; flagellum rufous at base. Length of antennæ 9 mm., of insect 8 mm. CANADENSIS, Cresson.
14. Dorsum of 3 basal abdominal segments piceous, rest of abdomen rufous; face, mouth-parts, broad orbital lines, cheeks, neck, stripes on mesonotum, most of pleura and sternum, large spot on meta-pleura, apical spot on metathorax (but black in centre), petiole, broad margin of remaining segments and parts of legs white; carinæ on metathorax prominent, spines long; petiole scabrous, with two distinct carinæ. Length 8 mm. FOXI, Davis.
- Abdomen red, apical portion more or less dark; only an anterior orbital line, ring on antennæ, scutellum and humeral lines white. 15.
15. Abdomen long and narrowly oval; face uniformly and closely punctured, not polished; anterior orbital line reduced to a mere short stripe; antennæ long, 6 mm.; basal joints of flagellum more than twice as long as broad; metathoracic carinæ well marked; spines not prominent; apex of petiole aciculated; base of second segment shagreened; abdomen red; base of petiole darkened. Length 7-8 mm. MONTANUS, Cresson.
- Abdomen short and very broadly oval; face sparingly punctured, smooth and polished anteriorly and on clypeus; white line in front of eyes long and broad; antennæ short, 4 mm.; basal joint of

- flagellum not twice as long as broad; metathoracic carinæ and spines prominent; petiole smooth, polished; second segment of abdomen evenly punctured; abdomen red; apex of 4th and base of 5th segments black, rest of apex white. Length 6.5 mm. LUZERNENIS, n. sp.
17. Thorax entirely rufous. 22.
 Thorax more or less black. 18.
18. Scutellum white; pleura, propodeum and legs rufous; white annulus on antennæ. 19.
 Scutellum black or rufous. 21.
19. Antennæ as long as body, or longer. 20.
 Antennæ considerably shorter than body; anterior orbital line white, interrupted medially; metathoracic carinæ and spines inconspicuous; petiole broad apically, roughened, very finely subaciculate; abdomen moderately broadly oval, rufous; fifth segment fuscous, apex white. SIGNATUS, Provancher.
20. Antennæ longer than the body; anterior orbital broad, not interrupted, also a fine posterior orbital line present; a bright white stripe on anterior margin of prothorax; propodeum, legs, pleura, stains on mesonotum and abdomen, except base of petiole, rufous; metathoracic carinæ and spines somewhat more strongly marked than in *signatus*; petiole not so broad apically, and abdomen more narrow and longer than in that species; petiole sub-polished at apex, laterally carinate. ORNATUS, Provancher.
- Antennæ as long as body; prothorax, mesonotum and abdomen beyond second segment black, remainder of insect rufous; broad orbital lines, face except transverse spot above clypeus, clypeus except central apical spot, scape beneath, collar, humeral line, line beneath each wing, stripes on mesonotum and mesopleura, two spots on metathorax above hind coxæ, broad apical margin on all abdominal segments, more or less of anterior coxæ and trochanters, white, apex of femora, apical third of tibiæ posteriorly and tarsi of hind legs black; metathorax rugose; superior area subpolished; petiole very broad, finely and rather sparsely punctured. *BAKERI, Davis.
21. Antennæ without white annulus. One specimen of *consors* that I have seen has the propodeum slightly rufous. CONSORS, Cresson (pars.)

22. Antennæ with white annulus, rufous at base, black at apex; abdomen and petiole rufous, smooth polished, without carinæ.....LINEOLATUS, Provancher.

Antennæ without white annulus..... 23.

23. More or less shiny; rufous, stains of black on mesothorax; third abdominal segment rufous; legs all red; areolet in wings moderate in size; base of metathorax punctured, carinate; postpetiole not very broad, polished, but sparingly punctured.....CALIFORNICUS, Cresson.

Opaque; pale ferruginous; base of third abdominal segment and apex of posterior tibiæ black; areolet in wings very large; base of metathorax rugose and without carinæ; postpetiole very broad and shagreened.....*OPACITUS, Davis.

1. P. CLARUS, Cresson. ♀. ♂.

1867. *Ichneumon clarus*, Cresson, ♀. Tr. Amer. Ent. Soc., Vol. I., p. 297.

1877. *Platylabus clarus*, Cresson, ♀. ♂. Tr. Am. Ent. Soc., VI., p. 199.

1886. *Platylabus magnificus*, Provancher, ♀. Add. Faun. Hym. Can., p. 36.

This, and the following species, are easily distinguished by their large size and brilliant blue colour. Areola, shown in figure 1, from the description *magnificus*, Prov., must belong here.

Habitat.—Mass.; Bécancour, Can. (*magnificus*).

Type in coll. American Ent. Society.

2. P. METALLICUS, n. sp. ♀. ♂.

Bright metallic blue; wings hyaline; white annulus on antennæ; metathoracic area shown in fig. 2. Length of antennæ 12 mm.; of insect 12 mm.

♀. Metallic blue; anterior orbital line interrupted medially, short posterior line, annulus on antennæ, front tibiæ and apex of femora anteriorly, trace on middle femora and tibiæ anteriorly, white; remainder of front 4 tibiæ and tarsi and posterior tarsi ferruginous; clypeus broadly truncate, labrum prominent, face narrowed in front of eyes; base of clypeus marked by suture, two longitudinal,

well-impressed, grooves on face, which is evenly and closely punctured; antennæ as long as the body, thickened and flattened beyond the apex, the joints of flattened portion broader than long; thorax evenly punctured, more densely on the pleura; scutellum slightly reddish at apex; metathorax above and at apex transversely wrinkled, areola smooth, polished, carinæ well marked, tooth at hind angles large and distinct; wings hyaline; abdomen shagreened, especially at base of second segment; petiole with two very well marked and angular carinæ, not reaching apex; postpetiole finely shagreened; gastrocœli large.

♂. Metallic blue; face, anterior and posterior orbital lines, mandibles, annulus on antennæ, scape beneath, short line beneath the wings, scutellum, anterior legs in front, coxæ, trochanters, tibiæ, tarsi and apex of femora in front white, rest of tibiæ and tarsi of front 4 legs and tarsi of posterior legs ferruginous. In other respects like the female.

The type ♀ of this species was included by Cresson in his redescription of *clarus* in Tr. Am. Ent. Soc., VI., 1877, p. 199, and was the exception which he made as to the white scutellum of that species. The male specimen was added to the collection afterwards, and differs from the male of *clarus* in having the white annulus on the antennæ, as well as in the metathoracic character.

Habitat.—N. H. (♀ type). Me. (♂ type).

Types.—In the collection of the American Entomological Society.

3. *P. RUBRICAPENSIS*, Provancher, ♀.

1882. *Platylabus rubricapensis*, Provancher, ♀. Nat. Can., XIII., p. 329.

Habitat.—Cap Rouge, Canada.

4. *P. INCABUS*, Davis, ♀.

1897. *Platylabus incabus*, Davis, ♀. Tr. Am. Ent. Soc., XXIV., p. 352.

Habitat.—Moscow, Idaho (Aldrich).

5. *P. SCUTELLATUS*, Provancher, ♀, ♂.

1875. *Ischnus scutellatus*, Provancher. Nat. Can., VII., p. 111.

1877. *Platylabus scutellatus*, Cresson. Tr. Am. Ent. Soc., VI., p. 200, ♂.

- Habitat*.—Cap Rouge, Canada.
6. *P. CONSORS*, Cresson, ♂.
 1877. *Platylabus consors*, Cresson, ♂. Tr. Am. Ent. Soc., VI.,
 p. 200. Cresson says this may be the male of *Californicus*. See
 figure 3.
Habitat.—California.
Types.—In the collection of the American Entomological Society.
7. *P. PACIFICUS*, Harrington, ♀.
 1894. *Platylabus pacificus*, Harrington, ♀. Can. Ent., XXVI., p. 210.
Habitat.—Vancouver's Island (Taylor).
8. *P. RUFICORNIS*, Provancher, ♀, ♂.
 1886. *Platylabus ruficornis*, Provancher, ♀, ♂. Add. Faun. Hym.
 Can., p. 38.
Habitat.—Ottawa, Canada (Harrington).
9. *P. CANADENSIS*, Cresson, ♀.
 1877. *Platylabus canadensis*, Cresson, ♀. Tr. Am. Ent. Soc., VI.,
 p. 200. Figure 4.
Habitat.—Canada.
Type.—In the collection of the American Entomological Society.
10. *P. FOXI*, Davis, ♂.
 1897. *Platylabus Foxi*, Davis, ♂. Tr. Am. Ent. Soc., XXIV., p. 353.
 This species has much more white on it than any other. Most of
 the males of the genus have more white than the females, and
 when the female of this species is known it will doubtless be less
 plentifully supplied with white.
Habitat.—Camden, N. J. (Fox).
11. *P. MONTANUS*, Cresson, ♀.
 1877. *Platylabus montanus*, Cresson, ♀. Tr. Am. Ent. Soc., VI.,
 p. 200. Figure 5.
Habitat.—N. H.
Types.—In the collection of the American Entomological Society.
12. *P. LUZERNENSIS*, n. sp., ♀.
 Black; abdomen and legs mostly rufous. Length, 6.5 mm. See
 figure 6.
 ♀. Anterior orbital lines not broad nor continued below the eyes, a
 short line behind the eyes near their top; annulus on antennæ,

humeral line, line below the wings and scutellum white; legs rufous, except coxæ and trochanters and knees, tarsi and apex of tibiæ of hind legs, which are fuscous. Remainder of insect as described in the table. A quite distinct species.

Habitat.—White Haven, Luzerne Co., Pa., Aug. 15, 1902. (Taken by the author.)

Type.—One female, in the author's collection.

13. *P. SIGNATUS*, Provancher, ♀.

1874. *Phygadeuon signatus*, Provancher. Nat. Can., VI., p. 282.

1877. *Platylabus signatus*, Cresson. Tr. Am. Ent. Soc., VI., p. 200. Figure 7.

Habitat.—P. Que., Canada.

14. *P. ORNATUS*, Provancher, ♀.

1875. *Phygadeuon ornatus*, Provancher, ♀. Nat. Can., VII., p. 181.

1877. *Platylabus ornatus*, Cresson. Tr. Am. Ent. Soc., VI., p. 200. Figure 8.

Habitat.—P. Que., Canada.

15. *P. BAKERI*, Davis, ♂.

1897. *Platylabus Bakeri*, Davis, ♂. Tr. Am. Ent. Soc., XXIV., p. 352.

Habitat.—Ann Arbor, Mich. (Baker).

16. *P. LINEOLATUS*, Provancher, ♀.

1875. *Ichneumon lineolatus*, Provancher. Nat. Can., VII., p. 82.

1875. *Phygadeuon rufipes*, Provancher. Nat. Can., VII., p. 181.

1877. *Platylabus lineolatus*, Cresson. Tr. Am. Ent. Soc., VI., p. 201. Figure 9.

Habitat.—P. Que., Canada.

17. *P. CALIFORNICUS*, Cresson, ♀.

1877. *Platylabus californicus*, ♀. Tr. Am. Ent. Soc., VI., p. 201. Close to the preceding species. Figure 10.

Habitat.—California.

Types.—In the collection of the American Entomological Society.

18. *P. OPACITUS*, Davis, ♂.

1897. *Platylabus opacitus*, Davis. Tr. Am. Ent. Soc., XXIV., p. 353.

Habitat.—Moscow, Idaho (Aldrich).

SYNOPSIS OF EPEOLINÆ.

BY CHARLES ROBERTSON, CARLINVILLE, ILLINOIS.

Females.

Segment 5 with a more or less evident bevelled or truncate space, false pygidium, which is rather sparsely short, bristly and fuscous, purplish or sericeous in certain lights; ovipositor (applied here to one of a pair of appendages often exerted one on each side of the sting) setiform, fimbriate, apex with several curved divergent spines; mandibles simple; maxillary palpi 3-jointed; scutel finely punctured, sub-bilobed; segments 1-4 with apical fasciæ of pale appressed pubescence.....Triepeolus.

Segment 5 with a silvery lunule at apex; ovipositor ligulate, bare or pubescent, apex acute, its edges dentate; at least the mandibles, tegulæ and legs red.....I.

1. Maxillary palpi 3-jointed; mandibles with an internal tooth; closely punctured; scutel sub-bilobed; pleura and pectus with surface nearly concealed by pubescence; mesonotum bilineate; border of segment 1 interrupted on apical margin, 2 with fasciæ produced laterally and interrupted medially, 3-4 with apical fasciæ notched in the middle, 5 with two lateral patches; tubercles, labrum and joints 1-3 partly red; 8 mm.; *minima* in *gn. nov.*, type *Triepeolus minimus*, Rob.....Argyroselenis.

Maxillary palpi 2-jointed.....Epeolus.

Males.

Maxillary palpi 2-jointed.....Epeolus.

Maxillary palpi 3-jointed.....I.

1. Mandibles with an internal tooth; *minima* in.....Argyroselenis.

Mandibles simple.....Triepeolus.

Triepeolus, Robertson.

Females.

Ventral segment 5 flattened, concave, strongly produced and bent down at apex; dorsal segment 5 with a semicircular sericeous truncation; black; mesonotum anteriorly with a broad pale-yellow band; border of segment 1 broad, interrupted basally and sometimes apically; fasciæ continuous on 2-4, gradually or abruptly widening on sides of 2; 13-16 mm.....concaus.

Ventral segment 5 simple; dorsal segment 5 usually with lateral patches.....I.

1. Border of segment 1 hardly wider on the sides; fascia on sides of 2 abruptly produced forward; mesonotum bilineate; apex of pygidium convex. 6.
- Border of segment 1 much wider on the sides. 2.
2. Mesonotum bilineate; pygidium longitudinally carinate. 4.
- Mesonotum with a subcordate completely enclosed space; black. . . 3.
3. Fasciæ continuous except on base of segment 1, abruptly widened on sides of 2; space on mesonotum hardly trilobed; patch on pleura subquadrate; scutel flat, spines nearly obsolete; 14-16 mm. Nevadensis.
- Fasciæ interrupted on segments 1-2, gradually widening on sides of 2; space on mesonotum trilobed; patch on pleura L-shaped; scutel sub-bilobed, spines distinct; 10-14 mm. remigatus.
4. Segment 5 shining, rather coarsely punctured, apex concave, bevelled space and lateral pubescent patches indistinct; apex of pygidium truncate; scutel rather strongly bilobed; black, labrum, middle of mandibles, tegulæ, tibiæ and tarsi tinged with red; segment 1 with transverse subquadrate patch, the apical fascia interrupted or continuous; fasciæ on 2-4 continuous, paler on 4; lunate patch on pleura separated from patch surrounding tubercle; ventral fasciæ none; 13 mm.; *sp. nov.* simplex.
- Segment 5 opaque, densely punctured, apex convex, bevelled space always and lateral pubescent patches usually distinct; apex of pygidium convex; scutel less bilobed; patch on segment 1 usually triangular; fasciæ on 1-2 interrupted, 3-4 continuous, that on 4 of the same colour; lunate patch on pleura usually connected with patch surrounding tubercles; ventral segments 2-4 with apical fasciæ. 5.
5. Labrum, mandibles, joints 1-3, tegulæ and legs red; 11-12 mm. lunatus.
- Labrum, mandibles, joints 1-3, tegulæ and legs black; 10-13 mm. concolor.
6. Ornaments cinereous; fascia on segment 1, and sometimes on 2, interrupted; black; closely punctured; 11-12 mm. donatus.
- Ornaments cream colour; legs usually red. 7.
7. Pectus coarsely and sparsely punctured; mandibles, labrum, joints 1-3 and tegulæ sometimes tinged with red; fascia on segment 1, and sometimes on 2, interrupted; 8-11 mm. pectoralis.
- Pectus finely and closely punctured. 8.

8. False pygidium small; apex of ventral segment 5 narrow; black; coxæ and front trochanters black; closely punctured; fasciæ interrupted on segments 1-2; 12 mm.; *sp. nov.* micropygius.
False pygidium large 9.
9. Pleura with an L-shaped patch; middle and hind femora red; fasciæ on segments 3-4, and usually on 2, continuous; 10 mm. helianthi.
Pleura with a lunate patch; femora usually more or less black; labrum, mandibles; scape, tubercles and tegulæ usually red; the legs rarely black; fasciæ usually interrupted on segments 1-3, usually continuous on 4; 8-12 mm Cressonii.
- Males.
- Border of segment 1 hardly broader on the sides; mesonotum bilineate; abdomen 6-fasciate 6.
Border of segment 1 broad laterally, forming lunate or subquadrate patches; ornaments cream colour 1.
1. Disc of mesonotum not enclosed by a complete border 3.
Disc of mesonotum black, subcordate, with a complete border; black. 2.
2. Abdomen 5-fasciate, rarely a faint fascia on segment 6; the bands continuous, that on 2 suddenly widened on the sides; scutel flat, spines nearly obsolete; 13-16 mm Nevadensis.
Abdomen 6-fasciate, bands interrupted on segments 1-2, gradually widening on sides of 2, cinereous on 6; 10-15 mm . . . remigatus
3. Mesonotum anteriorly with a broad band; abdomen 5-fasciate, segment 1 with fascia continuous or interrupted, 2-5 with continuous fasciæ wider on sides of 2-3; black; 12-15 mm . . . concavus.
Mesonotum bilineate 4.
4. Abdomen 5-fasciate, bands continuous or interrupted on segment 1, continuous on 2-5, cinereous on 4-5; black patch on segment 1 transverse subquadrate; black, labrum, mandibles, base of antennæ, tegulæ, tibiæ, tarsi and pygidium more or less tinged with red; 12 mm simplex.
Abdomen 6-fasciate, bands interrupted on segments 1-2, sometimes on 3, cinereous or whitish on 5-6; black patch on segment 1 usually triangular; 10-13 mm 5.
5. Labrum, mandibles, joints 1-3, tegulæ and legs red lunatus.
Labrum, mandibles, joints 1-3, tegulæ and legs black concolor.
6. Ornaments cinereous; fasciæ usually interrupted on segments 1-2, white on 6; black; 9-12 mm donatus.
Ornaments cream colour; tibiæ and tarsi usually red 7.

7. Middle and hind femora red ; mandibles, labrum, antennæ and tegulæ black ; pleura with an L-shaped mark ; 10-11 mm . . . helianthi.
 Middle and hind femora more or less black ; mandibles, labrum, base of antennæ and tegulæ red ; rarely entirely black ; pleura commonly covered with pubescence ; fasciæ usually interrupted ; 8-11 mm Cressonii.

Epeolus, Latreille.

Females.

- Front with a large tubercle on each side ; mesonotum not bilineate ; middle of segment 1 and apex of 2 with golden fasciæ ; mandibles with an internal tooth ; head and thorax coarsely, abdomen finely punctured ; pectus with coarse, sparse punctures ; labrum, joints 1-3, collar, tubercles, line above, tegulæ, scutel and axillæ red ; spurs black ; wings fuliginous ; stigma rather large ; 7-9 mm bifasciatus.
- Front simple ; mesonotum bilineate ; border of segment 1, apical margins of 2-4, and lateral patches on 5 of pale pubescence . . . 1.
1. Pleura below finely and closely punctured ; scutel low ; transverse, opaque ; mandibles simple or with an indistinct internal tooth ; fasciæ continuous or nearly so 3.
 Pleura below coarsely and sparsely punctured ; scutel bilobed, shining ; fasciæ interrupted, that on sides of 2 projecting forward ; abdomen finely punctured ; tubercles, axillary spines and spurs more or less red 2.
2. Thorax coarsely, rather sparsely, punctured ; mandibles simple ; fasciæ cinereous, pointed on the disc ; silvery lunule subtriangular ; joints 1-3 more or less red ; 9 mm lectoides.
 Thorax rather finely and closely punctured ; mandibles with an internal tooth ; fasciæ club-shaped on the disc ; silvery lunule transverse ; joints 1-3 red ; scutel usually more or less red ; 7-9 mm interruptus.
3. Scutel quite surpassing lateral spines ; spurs red ; lateral patches of segment 5 separate ; femora more or less black ; 9-11 mm autumnalis.
 Scutel hardly surpassing lateral spines ; spurs black ; lateral patches of segment 5 connected across the disc ; femora red ; 7-8 mm pusillus.

Males.

- Front with a large tubercle on each side ; mesonotum bare ;
 7-9 mm.....bifasciatus.
 Front simple ; mesonotum bilineate ; segments 1-6 with apical
 fasciæ1.
 1. Pleura below finely and densely punctured ; scutel flat.....3.
 Pleura below coarsely and sparsely punctured ; scutel bilobed.....2.
 2. Mandibles simple ; thorax coarsely punctured.....lectoides.
 Mandibles with an internal tooth ; 7-9 mm.....interruptus.
 3. Scutel quite surpassing lateral spines ; spurs red ; 7-9 mm. autumnalis.
 Scutel hardly surpassing lateral spines ; spurs black ; 6-8 mm. pusillus.

LIST OF CANADIAN COLEOPTERA.

BY JOHN D. EVANS, TRENTON, ONT.

(Continued from page 243.)

Gyrinidæ.

- 1505, *Gyrinus minutus*, Fab., '80.
 *1514, " *aquiris*, Lec., '80.
 " sp., '80.

Hydrophilidæ.

- 1542, *Helophorus oblongus*, Lec, '79, '80.
 1543, " *lacustris*, Lec., '80.
 1546, " *linearis*, Lec., '80.
 1597, *Hydrocharis obtusatus*, Say, '80.
 1614, *Berosus striatus*, Say, '80, '81.
 *1622, *Laccobius ellipticus*, Lec., '80.
 1653, *Hydrobius fuscipes*, Linn., '79, '81.
Cercyon, sp., '81.

Silphidæ.

- 1693, *Necrophorus marginatus*, Fab., '79, '80.
 1702, " *vespilloides*, Hbst., '81.
 1706, *Silpha lapponica*, Hbst., '79, '80.
 1707, " *trituberculata*, Kirby, '81.
 1709, " *noveboracensis*, Forst., '81.
 1710, " *Americana*, Linn., '81.
 *1711, " *ramosa*, Say, '79, '80, '81.

Staphylinidae.

- 2055, *Aleochara bimaculata*, Grav., '79.
 2100, *Quedius fulgidus*, Fab., '79.
 2119, *Creophilus villosus*, Grav., '79, '80, '81.
 2124, *Staphylinus badipes*, Lec., '81.
 2149, *Philonthus aeneus*, Rossi., '79, '81.
 2150, " *furvus*, Nord., '79.
 2167, " *hepaticus*, Er., '79, '80.
 *2233, " *Lecontei*, Horn., '79.
 *2303, *Stenus bipunctatus*, Er., '81.
 2573, *Pæderus littorarius*, Grav., '81.
 2732, *Bledius ruficornis*, Lec., '81.
Homalium, sp., '81.

Scaphidiidae.

- 2976, *Scaphium castanipes*, Kirby, '81.

Phalacride.

- *2993, *Phalacrus politus*, Melsh., '79.
 *2996, *Olibrus vittatus*, Lec., '79, '80.
 2998, " *striatulus*, Lec., '79, '80.
 " 2 sp., '79 and '80.

Coccinellidae.

- *3035, *Næmia episcopalis*, Kirby, '79.
 3041, *Hippodamia 5-signata*, Kirby, '81.
 3043, " *Lecontei*, Muls., '79.
 3046, " *convergens*, Guer., '80.
 3050, " *13-punctata*, Linn., '79, '80.
 3051, " *parenthesis*, Say, '79, '80.
 3058, *Coccinella 9-notata*, Hbst., '79.
 3059, " *transversoguttata*, Fab., '79, '80.
 3060, " *monticola*, Muls., '79.
 3072, *Harmonia 12-maculata*, Gebl., '81.
 3075, *Anatis 15-punctata*, Oliv., '80, '81.
 *3095d, *Brachyacantha albifrons*, Say, '79, '80.

Erotylidae.

- 3236, *Tritoma thoracica*, Say, '79.

Cucujidae.

- 3314, *Pediacus fuscus*, Er., '81.

Dermestidae.

- *3418, *Dermestes marmoratus*, Say, '79, '80.
 3425, " *lardarius*, Linn., '79.
 3428, " *vulpinus*, Fab., '80.

Histeridae.

- 3480, *Hister interruptus*, Beauv., '79.
 3494, " *depurator*, Say, '79, '80.
 *3583, *Saprinus lugens*, Er., '79, '80.
 3586, " *Oregonensis*, Lec., '79, '80.
 3586a, " *distinguendus*, Mars., '79.
 *3610, " *fimbriatus*, Lec., '79.

Nitidulidae.

- Nitidula*, sp., '79.
 3664, *Cercus abdominalis*, Er., '79.
 *3734, *Pocadius helvolus*, Er., '80.
 *3739, *Meligethes mutatus*, Hor., '79.

Byrrhidae.

- 3887, *Cytilus sericus*, Forst., '80.
Byrrhus, sp., '79.

Heteroceridae.

- Heterocerus*, 2 sp., '81.

Dasyllidae.

- 4016, *Cyphon variabilis*, Thunb., '81.
 " 2 sp., '81.

Elateridae.

- *10049, *Cryptohypnus nocturnus*, Esch., '79, '80.
 4245, *Elater apicatus*, Say, '80.
 4253, *Drasterius elegans*, Fab., '79, '80.
 4287, *Agriotes limosus*, Lec., '79, '80.
 4297, *Dolopius lateralis*, Esch., '79, '80, '81.
 4322, *Melanotus fissilis*, Say, '80.
 *4467, *Corymbites morulus*, Lec., '79, '80.
 4482, " *hieroglyphicus*, Say, '81.
 4484, " *cruciatus*, Linn., '79.
 4495, " *metallicus*, Payk., '81.
 " sp., '79.

Buprestidae.

- 4576, *Dicerca prolongata*, Lec., '79, '81.
 4619, *Melanophila longipes*, Say, '79, '80.
 4739, *Agrilus anxius*, Gory., '79.
 4761, *Brachys aërosa*, Melsh., '80.

Lampyride.

- 4815, *Ellychnia corrusca*, Linn., '79, '80.
 4818, *Pyropyga nigricans*, Say, '79, '80.
 4824, *Pyractomena borealis*, Rand., '79, '81.
 4935, *Telephorus nigritulus*, Lec., '81,
 4939, " *flavipes*, Lec., '80.
 4948, " *Curtisii*, Kirby, '81.
 *4952, " *Oregonus*, Lec., '79, '80.
 " sp., '79.
 " 3 sp., '81.

Malachide.

- *4999, *Collops cribrosus*, Lec., '79, '80.
 5013, " *vittatus*, Say, '79.

Cleride.

- 5159, *Trichodes Nuttalli*, Kirby, '79.
 5232, *Necrobia violaceus*, Linn., '79, '80.

Lucanide.

- 5419, *Platycerus depressus*, Lec., '79, '80.

Scarabæide.

- 5435, *Canthon lævis*, Drury, '80.
 5444, *Copris anaglypticus*, Say, '81.
 5459, *Onthophagus janus*, Panz., '79.
 5510, *Aphodius hamatus*, Say, '80, '81.
 *5513, " *occidentalis*, Horn., '79, '80.
 5528, " *granarius*, Linn., '80.
 *5550, " *consentaneus*, Lec., '79, '80.
 *5620, *Trox sonore*, Lec., '79, '80.
 5623, " *unistriatus*, Beauv., '80.
 5650, *Hoplia trifasciata*, Say, '81.

- 5656, *Dichelonycha elongata*, Fab., '79.
 5659, " *testacea*, Kirby, '80.
 5662, " *Backii*, Kirby, '79.
 5674, *Serica vespertina*, Gyll., '79.
 " *sp.*, '79.
 10240, *Lachnosterna dubia*, Smith, '79.
 *5822, *Polyphylla decemlineata*, Say, '79.
 *5925, *Cremastochilus Knockii*, Lec., '79.
 5939, *Trichius affinis*, Gory., '79.

Cerambycidae.

- 5975, *Criocephalus agrestis*, Kirby, '79.
 6062, *Elaphidion villosum*, Fab., '80.
 6183, *Xylotrechus undulatus*, Say, '79.
 6248, *Pachyta liturata*, Kirby, '79.
 6259, *Acmæops bivittata*, Say, '79, '80.
 6273, " *proteus*, Kirby, '79.
 6279, *Bellamira scalaris*, Say, '81.
 *6295, *Typocerus balteatus*, Horn., '79.
 *6323a, *Leptura convexa*, Lec., '79, '80.
 6361, " *mutabilis*, Newm., '79.
 *6369, *Monilema annulatum*, Say, '79, '80.
 6386, *Monohammus maculosus*, Hald., '80.
 6387, " *scutellatus*, Say, '81.

(To be continued.)

A RARE BUTTERFLY.

On July 1st I caught a *Hypolimnas misippus*, Linn., ♂, at the sugar estate "Isabel," ten miles north-east of this town. Gundlach, in his "Entomologia Cubana," 1881, states that he has only caught one male in 1851 at Cardenas, and two females in 1869 and 1876, respectively. I do not know of any other male having been caught in the island, and should be very glad to hear from any of your correspondents who may have caught them since 1881.

My specimen is quite perfect and measures 57 mm. across the wings, and is therefore slightly smaller than the specimen illustrated in Holland's "Butterfly Book." THEO. BROOKS, Guantanamo, Cuba.

BOOK NOTICES.

THE ORTHOPTERA OF INDIANA.—By W. S. Blatchley, State Geologist, Indianapolis, Ind. From the 27th Annual Report of the Department of Geology and Natural Resources of Indiana, 1902. One Vol., 8vo., pp. 123 to 471.

No one better qualified than the author of this work could possibly be found to prepare a handbook of the Orthoptera of Indiana, and admirably he has performed his self-imposed task. For nearly twenty years he has been a close observer and student of the insects of this order and has published many papers of both a systematic and descriptive character upon them. Several of these have appeared from time to time in the pages of this magazine. The book contains the results of his investigations and studies, and is designed to impart a full and clear knowledge of this important group of insects to school pupils and young people on the farm. Certainly anyone desiring to study the order, whether living in Indiana or Ontario, or any of the neighbouring States, will find his way made easy by this work, and will learn without much difficulty how to distinguish the species and what their life-histories and characteristics are.

The opening pages of the book give a full and clear account of the external anatomy of a Locust, the natural enemies of the Orthoptera, and a bibliography of the more important books and papers on the order. The main portion of the volume is termed "A Descriptive Catalogue of the Orthoptera Known to Occur in Indiana." Convenient keys are given to the families, genera and species, facilitating the identification of a specimen, and these are followed in each case by scientific descriptions, the synonymy, geographical distribution and other information; in the case of the Locusts especially the accounts of the habits of the species are very full and interesting. The work is rendered complete by a chapter on the Life-zones of the State as illustrated by the distribution of the Orthoptera, a glossary of the terms used and a full index. There are over 120 excellent figures in the text, largely taken from Luggers Orthoptera of Minnesota, and a beautiful coloured plate of the remarkable pink variety of the Oblong-winged Katydid (*Amblycorypha oblongifolia*).

A CLASSIFICATION OF NORTH AMERICAN SPIDERS.—By Prof. John Henry Comstock, Ithaca, N. Y. Comstock Publishing Co., 1903. Large 8vo., pp. 56. (Price, 50 cents.)

Anyone taking up the study of Spiders will find this a useful manual, as the tables will give him a clue, without much difficulty, to the families and genera; for the determination of species he will require to have recourse to some other work, such as Emerton's "Common Spiders of the United States." The tables require for their use some previous knowledge of the external anatomy of the Spiders and the technical terms used in their description. The author has in preparation a textbook of North American Arachnida, and publishes these tables in advance in order that they may be tested before publication of the larger work.

THE INSECT WORLD: A monthly magazine, edited by Y. Nawa, Gifu, Japan. Vol. VII., 1903.

Recent numbers of this remarkable magazine have contained a page or two in English, giving an illustrated description of some Sphinx Moth or other interesting insect. Hitherto one has only been able to read the English title, admire the excellent illustrations and turn over the pages with a great longing to be able to read Japanese. In the January number there was an account of a remarkable moth, whose larva lives as a parasite on certain species of Cicada; a coloured plate is given showing the different stages of the insect, the neuration of the wings of the moth and the host with parasites attached. Mr. Marlatt gave, at the meeting of Economic Entomologists, very interesting descriptions of Mr. Nawa and his entomological laboratory and museum, which he visited last year.

DEATH OF PROFESSOR GROTE.

It is with profound regret that we record the death of our greatly-esteemed friend, Professor AUGUSTUS RADCLIFFE GROTE, A. M., the tidings of which has just reached us. The sad event occurred on Saturday, September 12th, at Hildesheim, Germany, where he had been living for the past nine years; during the previous ten or eleven his home had been at Bremen. With the exception of this last score of years, his life was spent in the United States, and was devoted almost entirely to the study of the Lepidoptera of North America.

We beg to offer our deepest sympathy to his widow and children in their affliction. It may be some slight consolation to them to know that their grief is shared by many on this side of the Atlantic who were his friends and colleagues in earlier years.

Mailed October 3rd, 1903.