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## NOTES ON SOME OF THE COMMON SPECIES OF CARABIDÆ, FOUND IN TEMPERATE NORTH AMERICA.

BY PHILIP S. SPRAGUE, BOSTON, MASS.

ARTICLE NO. II.

In my previous article upon this subject, I treated upon the classification and the particular distinguishing characters of the genus *Harpalus*; in this I wish to call attention to their specific differences, by noting those variations of form or structure which are so constant as to cause us to consider them as denoting distinct species. The general form of the beetles of this genus is oblong-oval, rather broad, thorax quadrate and in length from .30-1 inch, black piceous, shining. Our northern exceptions to this color are *H. viridiacneus*, Beauv., and *H. erraticus*, Say, the former being bright brassy green, the latter dark ferruginous or the colour of immaturity. The cut accompanying the previous article was of *Harpalus caliginosus*, Say, a beetle so well known that I shall describe it in detail, that you may better understand my ideas in describing others. I shall suppose that you have taken up this beetle without any previous knowledge of its name; you perceive it has the general form of the genus *Harpalus*. We now proceed to examine the anterior and middle tarsi, the four first joints of which are strongly dilated, consequently it is a male, beneath they have at the sides a few coarse short bristles (had they been covered with a dense brush of hair, we should have laid it aside as most likely belonging to the genus *Anisodactylus*), its length from the apex of labrum to the end of the elytra is .90 (.80-1.05 are the extremes of specimens in my collection), width .35. If we now had access to descriptions of the beetles of this genus, we should find only one of this length or near it, consequently without further trouble we should only have to see that it agreed with the specific description. This is the largest *Harpalus* we have, being one-half longer than any other, and if the generic characters are well worked up, it cannot be mistaken for any other. The head is black with a few scattered punctures, nearly obsolete, the frontal impressions between the antennæ are well marked, apex of labrum

slightly emarginate at centre ; mouth, tarsi and antennæ reddish brown, the latter with the two basal joints smooth ; thorax nearly twice as wide as the head and much wider than long, finely punctured, confluent at the base and near the apex, sparsely at the centre on top, the dorsal longitudinal line distinct, abbreviated in front, sides depressed and flattened, making a wide margin which is punctured, it is narrow at the apical angle and very broad at the base, there is a very narrow raised border at the edge, on each side between the middle and margin a little inward from the base is a broad shallow fovea (basal fovea), more roughly punctured than the other parts, the sides are narrowed and rather broadly rounded forward from a little behind the middle, and sinuated posteriorly, the basal angles are acute with the apex pointed and somewhat extended outwards ; elytra broader than the thorax, oval, with its greatest width near the middle, the apex is obliquely and slightly sinuated, the striæ are deep, very finely and rather sparsely punctured, interstices convex, no dorsal puncture ; beneath dark piceous, punctured at the sides, mentum not toothed, on the abdominal segments beneath, each side of the centre, are seen a row of punctures from which a long bristle projects (ambulatorial setæ). I wish to call your attention to this marking for we have those with another set of setæ nearer the sides of the abdomen and called accessory ambulatorial setæ. The great length and breadth of this beetle distinguish it from all others of the genus, and I know of no beetle that it can be taken for.

During the middle of summer, under stones and boards in sandy soil near running water, beetles are found quite commonly, having the appearance of being immature in color ; this is *Harpalus erraticus*, Say. Long .60 (.50-.68). Testaceous beneath, darker above with the elytra piceous, more slender than the preceding. Head smooth, frontal impressions shallow, antennæ concolorous, with the two basal joints smooth ; thorax smooth, with the sides depressed, leaving a wide margin suddenly and broadly dilated behind, finely punctured, the basal foveæ are distinct and usually punctured, sides rounded forward of the middle and strongly narrowed behind but not rounded, basal angles obtuse, scarcely rounded at the extreme apex ; elytra much wider than the base of thorax, sub-oval, deeply and obliquely sinuate at tip, in the ♀ the outer angle acute and dentiform, the extreme apex is sometimes sub-sinuate, leaving a sutural spine, the striæ are moderately deep and impunctured, it has no dorsal punctures ; the abdomen beneath is finely punctured and pubescent at base. In most examples of this species a slight sinuation of the thorax is seen on each side, about one-third of its length from the base, in some the basal foveæ are scarcely punctured, making the whole thorax nearly smooth. I have in my collection one

specimen which is wholly dark piceous, almost black, with the exception of the outer joints of the antennæ, which are covered with fuscous hairs. This beetle differs from all other species of *Harpalus* (except *H. retractus*, Lec., from New Mexico, which I have never seen), by the deep and peculiar sinuation of the apex of elytra and also by its immature color.

*Harpalus testaceus*, Lec. — Iowa and Illinois — must be similar in color, but is much smaller, long .41, and also differs by belonging to the subdivision having accessory ambulatorial setæ. I presume from the fact that I never have obtained this beetle in my many western exchanges, that it is quite rare.

*Harpalus viridiaeneus*, Beauv., length .40 (.32-.42). Beneath black, above bright metallic green, more or less bronzed, sometimes coppery, rarely black; epipleuræ, legs, mouth and antennæ reddish-brown; head smooth, nearly black and darker than the thorax, which is a little wider than long, sides narrowed behind but not depressed, showing only the narrow border which is distinct wholly around the thorax, its basal foveæ shallow, somewhat linear, and with the angles and base punctured, posterior angles obtuse and very slightly rounded at the extreme apex; elytra wider than the thorax, with the sides finely punctured and pubescent, striæ not deep, and in some specimens nearly obsolete punctures may be seen, interstices flat, the apex is obliquely and strongly sinuate, in the ♀ the outer angle acute, no dorsal puncture. The color of this beetle marks it well, and with the apical sinuation of the elytra quite distinguishes it from others of the genus.

*Harpalus amputatus*, Say. Dr. LeConte refers to a beetle somewhat resembling the above (Pro. Acad. Nat. Sci., Philadelphia, page 99, 1865), as coming from Kansas, New Mexico, Saskatchewan, Montreal, Canada, which I will describe, hoping that others may have been more fortunate than myself in procuring it from this section. The only specimens I have seen were from New Mexico, one of which by the kindness of Mr. G. D. Smith, of this city, I have in my collection. Dr. LeConte says (loc. cit.) "above metallic blue or green, nearly black, with the apex of elytra truncate." Three of the four specimens I have examined are nearly black, with the faintest tint of dark blue, and only one was brassy green. The following is a description:—Length .38 (.37-.41). Above and below nearly black, shining, legs and antennæ piceous. Head smooth; the thorax at the sides broadly rounded before and behind, basal angles nearly obsolete, sides of thorax not depressed, basal foveæ shallow, with the outer angles somewhat flattened and punctured; elytra broader than thorax with the apex nearly squarely cut off, striæ well marked, the ♀ with sutural spine. The truncate elytra and round thorax sufficiently mark this species.

*Harpalus laticeps*, Lec. Length .55 (.52-60). Black above and below,

shining, very broad and convex, legs and antennæ rufo-piceous. Head very broad, black, shining, smooth, the frontal impressions small, antennæ short, not reaching the base of thorax, dark testaceous; thorax one-half broader than long, sides distinctly depressed at and behind the middle, basal foveæ broad, not very deep, finely punctured, sides well rounded before, distinctly narrowed behind, basal angles obtuse and rounded at the extreme apex, the fine raised border is distinct at the side and base, the dorsal line distinct, abbreviated in front; elytra a little wider than the thorax, not deeply striate, impunctured, interstices flat, a dorsal puncture behind the middle near the second stria, N. H., Me., Vt. The large head and convex and obese form, well mark this beetle. In the ♀ the elytra are slightly opaque or silky (*sericeo-opaca*) and generally with a small sutural spine. In nearly all of my specimens the sides of the thorax for a short space behind the middle are very slightly sinuate, the terminal spur of the anterior tibiæ is quite long and broad.

*Harpalus rufimanus*, Lec., 4c-48. Black, shining; tibiae, tarsi and antennæ rufo-piceous. Head smooth, not as broad as in the preceding, antennæ quite short; thorax distinctly wider than head, one-half wider than long, sides slightly depressed behind, broadly rounded and distinctly narrowed posteriorly, basal foveæ deep, somewhat linear, finely and confluent punctured, basal angles obtuse, scarcely rounded and sparsely punctured; elytra wider than thorax, ♀ "*sericeo-opaca*," striae deeper than in the preceding, impunctured, a small but distinct sutural spine in the ♀, behind the middle two dorsal punctures on the third interstices, near the second stria. The two punctures near together behind the middle on each elytron mark this beetle from all the other species, and perhaps I may say from all *Harpalidæ*. I cannot understand why this peculiarity has not been noted; Dr. LeConte neither mentions it in his description of the species (*Ann. Lyc. Nat. Hist.* 4, 402), or in his notes "On the species of *Harpalus* inhabiting America, north of Mexico" (*Pro. Acad. Nat. Sci.*, Philadelphia, page 98, 1865). I have in my collection 3 ♂, 2 ♀ thus marked, one of which Dr. Horn, of Philadelphia, and Mr. Ulke, of D. C., identified as *H. rufimanus*, Lec. I have seen two specimens in another collection thus marked, and I have also seen in Dr. Harris' collection, a specimen sent him by Dr. LeConte, from Lake Superior, and by me sent back to Dr. LeConte last year, for the Boston Society Nat. Hist., to be identified; now with eight specimens before me, one from Lake Superior, the others from N. H. near the White Mountains, all that I have ever seen agreeing perfectly with all descriptions (save this peculiarity), and these particular specimens identified by Dr. LeConte, Dr. G. H. Horn and Mr. Henry Ulke, three of our greatest American Entomologists, I can see no reason for believing this an accidental marking.

*Harpalus spadiceus*, Dej. Length 33-38. Rufo-piceous, legs and antennae ferruginous. Head smooth, rather large, mandibles long; thorax one-half wider than head, a little wider than long, sides broadly rounded, not at all depressed, strongly narrowed behind, basal angles obtuse, not rounded, basal foveae narrow, shallow, more or less punctured, disk smooth, somewhat convex; elytra oval, widest a little behind the middle, striae deep, impunctured, interstices convex with a dorsal puncture on the third near the second stria, behind the middle, elytra not opaque or reticulate in either sex. This beetle resembles *H. herbivagus* in color and size, but is more robust (convex), and in this respect more like *H. fallax*, Lec., and *H. Pleuriticus*, Kirby, but differs from both by the larger head and mandibles, and the strongly narrowed thorax posteriorly; it resembles in form of thorax, *H. viridiaceus*, but is still more strongly narrowed behind. Not common in New England; two examples from Massachusetts.

The above descriptions comprise most of our species whose form is so well marked as to be most readily recognized, and not easily confounded with others.

The reader is requested to make the following correction in my first paper:—Page 46, line 15 from top, after “*this paper*” insert “(4);” and at line 22, for “*having*” read “*the latter, however, has.*”

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## ON THE LARVA OF *THECLA INORATA*, G. & R.

BY W. SAUNDERS, LONDON, ONT.

On the 15th of June, 1869, I obtained several *Thecla* larvae by beating over an umbrella the branches of some small oak trees growing in a cemetery about two miles west of London. Not having met with them before I at once took the following description:

Length, .40 in., onisciform. Head small, pale greenish-yellow, with a minute black dot on each side. Mandibles pale brown, with a faint whitish patch immediately above them.

Body above *yellowish-green, streaked above with yellowish-white*, and thickly covered with fine, short, white hairs; second segment of rather a darker shade of green than the rest of the body. *A dark green dorsal stripe, on 3rd, 4th and 5th segments, the full width of the dorsal crest; narrow on the four terminal segments, almost obsolete on those intermediate* A faint whitish dorsal line runs through<sup>h</sup> the centre of this stripe. Dorsal crest edged with yellowish-white, most apparent where it borders the darker portions of dorsal stripe; sides of body with a few faint oblique lines of yellowish-white; body margined on each side with the same color close to

under surface extending around the posterior segments. In some younger specimens these yellowish-white markings have a reddish or brownish tint.

Under surface deeper bluish-green, with a faint white bloom. Feet and prolegs partake of the general color.

June 21st.—Since the 15th most of the larvæ have moulted, resulting in some change in their appearance.

Length .55 in. Head, color and markings as before.

Body above dull white with a faint green tinge, changing in some specimens to a slight ochrey-reddish tinge, thickly covered with minute white hairs; second segment pale green. The green dorsal stripe on third, fourth, and fifth segments has acquired a deep greenish brown tint, which contrasts strongly with the general color of body; the same change is also observable on the last four segments, and here the stripe is much widened, the anterior portion of it assuming the form of a triangular patch, its base on posterior part of eleventh segment, its apex on anterior part of tenth; on the intermediate segments the dorsal stripe is obsolete. On the fifth segment a streak of dark brown crosses the end of the dark dorsal stripe extending about half way down the sides; there is also a dot of the same color on each side of this segment close to under surface. On the sides of the fourth and sixth segments are several additional brown dots, very small. The tenth and eleventh segments have an oblique brown streak on each side, with a small spot of the same color placed below it. The sides of body have five or six white oblique lines.

Under surface green, with a whitish bloom; a patch of brown on each side in continuation of spots on tenth and eleventh segments; a patch of the same also behind the last pair of prolegs.

Before entering the pupa state these larvæ assumed a delicate pink color, the dorsal stripe becoming darker, the other lines paler. Length .60 in. Head, color and markings as before. Body above dull whitish pink; second segment greenish; dorsal stripe on third, fourth and fifth segments very dark brown, widest on fifth, where there is a spot of the same color on each side of it. The lines bordering dorsal crest, oblique lines on sides, and edging of under surface, all pale pink. On the hinder segments the anterior portion of dorsal stripe is widened, assuming the form of a triangular patch as before, its color scarcely so dark as that on anterior segments.

Under surface green with a yellowish tint, feet and prolegs of the same shade.

One of these became a chrysalis on the 27th of June. Length of pupa, .40 in. Color pale brown, sprinkled with many dots of a darker shade, and thickly covered with short yellow hairs. A ventral line of dark brown

along posterior segments. Under surface much paler. This description was taken June 30th. The imago appeared on the 13th July.

Among the first lot of larvæ secured one differed materially from the others in its appearance just before entering the chrysalis state. The body assumed a *deep green color* with the same dark brown dorsal markings, while the yellow edging of dorsal crest appeared very prominent in consequence of the deepening of general color, on posterior segments it was indistinct. The bordering around body close to under surface was dull pink, and the oblique lines on sides of body scarcely perceptible. The under surface was a little deeper in color than upper; feet faintly tipped with brown.

This specimen became a pupa June 24th, and the following description was taken on the 28th. Length, .40 in. Color, *brownish black*, thickly covered with short yellowish hairs, with three or four faint brown spots on each side of the ventral line on posterior segments. Wing cases mottled with pale brown, under surface paler. This produced the imago July 10th.

On the first of July some additional specimens of the larva were taken by Mr. E. B. Reed in another locality, also on oak. Several of these were kindly placed at my disposal. Some were of the normal cast as first described, while two or three appeared very distinct. The head had the same color and markings in all; but in one case the *body was pale brown* with a pinkish tinge, thickly covered with short whitish hairs; *no yellow or other markings*. Under surface yellowish-green. In a second specimen the color was of the same pale brown shade, but the yellow markings were present. Both these examples presented a marked contrast with the common form of whitish or greenish-white larva with broken dorsal stripe.

In all these cases the imago appeared identical—after a careful examination I could not detect any difference worthy of notice. Two of the common form of larvæ produced each three dipterous parasites, which escaped from the larva when full grown, and produced pupæ .19 in. in length, nearly oval in form; color dark brownish-red. One of these produced the imago on the 11th of July. The insect has not yet been determined.

In this interesting series of specimens we have the same imago produced from

First—A dull *white* or *whitish-green* larva, with *green* dorsal stripe and whitish lines, producing a *pale-brown* chrysalis.

Second—A *deep green* larva with *dark brown* dorsal stripe and *yellow* lines, producing a brownish-black chrysalis.

Third—A *pale brown* larva with a pinkish tinge, *with no dorsal stripe or other markings*.

Fourth—A pale brown larva with yellow lines.

Thus showing variations as wide as those marking some distinct species.



The figure of this larva given in Boisduval and Leconte (Pl. 29, fig. 4), although very imperfect, is evidently intended to represent the normal form of this larva. It is there stated to feed on different species of thorn (*Cratægus* —).

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## A NEW SPECIES OF *ANARTA* FROM NOVA SCOTIA.

BY THE EDITOR.

In the Proceedings and Transactions of the Nova Scotian Institute of Natural Science (1868-9, p. 78-87), I have given a list of some specimens of Nova Scotian Lepidoptera, sent me for determination by the esteemed President of the Institute, J. Matthew Jones, Esq., of Halifax. Among these was included a new species of *Anarta*, the description of which I reprint here, as many of those interested in this department of Entomology may not have access to the original publication.

“*Anarta Acadensis*, Bethune (Pro. Trans. N. S. Inst. Nat. Sci., 1868-9, p. 84). The pretty little species of this genus are chiefly confined to mountainous and sub-arctic regions; one, however, is taken all over England, and another, *A. luteola*, Grote & Rob., has been found in the neighborhood of Quebec; Dr. Packard (Pro. Boston Soc. Nat. Hist. Oct. 17, 1866), has described several species taken in Labrador. The following is a description of our species:—

“Anterior wings dull brick red, sparsely powdered with black scales. Basal line indistinct, doubled, slightly dentate, black; transverse anterior line black, perpendicular to costa for nearly half its length, then curved outwards forming an irregular arc to the inner margin. Median space darker, with a transverse central black shade; orbicular spot very conspicuous, creamy white, with a few scattered ferruginous scales in the middle, narrowed posteriorly and produced till it meets the edge of the reniform; this spot is of the normal shape, concolorous with the rest of the wing, conspicuously bordered with white, except inferiorly where it is open and encroached upon by the dark central shade. Transverse posterior line, black, fine, forming a very convex arc outside of the reniform spot. Subterminal and terminal spaces paler; subterminal line rather broad, distinct, black, arising from a triangular black spot on the costa, slightly wavy, parallel to the outer margin; terminal line deep black, very distinct; fringes concolorous with the wing.

“Posterior wings shining, straw-yellow, with a broad well-defined black border, which is slightly excavated anteriorly just before the anal angle; costa, base and inner margin broadly discolored with black scales; fringes golden yellow at apex, pale yellow inferiorly.

“Under side of anterior wings shining, the costa narrowly, and the outer margin broadly, reddish-yellow, especially at the apex; inner margin rather broadly pale yellow; all the rest uniformly deep black. Posterior wings shining, pale yellow, with the costa and apex broadly irrorate with bright ferruginous scales, and a narrow ill-defined sub-marginal band; fringes pale yellow.

"Antennæ pale ferruginous, with a slight pubescence. Head and thorax ferruginous. Abdomen cinereous above, darker from numerous black scales below; anal tuft ferruginous. Tarsi annulated.

"Alar expansion 1.15 inch. Length of body 0.50 inch.

"*Habitat*, Nova Scotia. (No. 281, J. M. Jones). This very pretty little moth may be readily distinguished by its color and the conspicuous peculiarly shaped orbicular spot.

"Halifax: rare, taken in July at Ashbourne.—J. M. J."

## LIST OF COLEOPTERA,

TAKEN AT GRIMSBY, ONTARIO, BY J. PETTIT.

(Continued from page 54.)

## STAPHYLINIDÆ.

FALAGRIA, <i>Mann.</i>	*Capucinus, <i>Er.</i>	XANTHOLINUS, <i>Serv.</i>
Dissecta, <i>Er.</i>	Molochinus, <i>Er.</i>	Fulgidus, <i>Er.</i>
*Venustula, <i>Er.</i>	CREOPHILUS, <i>Steph.</i>	Cephalus, <i>Say.</i>
LEUCOPARYPHUS, <i>Kraats.</i>	Villosus, <i>Kirby.</i>	Hamatus, <i>Say.</i>
*Silphoides, <i>Kr.</i>	LEISTOTROPHUS, <i>Perty.</i>	BAPTOLINUS, <i>Kr.</i>
COPROPORUS, <i>Kr.</i>	Cingulatus, <i>Kr.</i>	*Filocornis, <i>Pa.</i>
Ventriculus, <i>Kr.</i>	OCYPUS, <i>Kirby.</i>	LATHROBIUM, <i>G. sv.</i>
TACHINUS, <i>Grav.</i>	Ater, <i>Er.</i>	Grande, <i>Lec.</i>
*Flavipennis, <i>Dej.</i>	STAPHYLINUS, <i>Linn.</i>	Punctulatum, <i>Lec.</i>
*Memnonius, <i>Grav.</i>	Maculosus, <i>Grav.</i>	Angulare, <i>Lec.</i>
Fumipennis, <i>Er.</i>	*Mysticus, <i>Er.</i>	Concolor, <i>Lec.</i>
Picipes, <i>Er.</i>	Vulpinus, <i>Nord.</i>	*Armatum, <i>Say.</i>
Fimbriatus, <i>Grav.</i>	Fossator, <i>Grav.</i>	*Longiusculus, <i>Grav.</i>
Limbatus, <i>Mels.</i>	STAPHYLINUS ( <i>contin'd.</i> )	*Collare, <i>Er.</i>
TACYPORUS, <i>Grav.</i>	Badipes, <i>Lec.</i>	CRYPTOBIUM, <i>Mann.</i>
Jocosus, <i>Say.</i>	Cinnamopterus, <i>Grav.</i>	Bicolor, <i>Er.</i>
CONOSOMA, <i>Kr.</i>	Violaceus, <i>Grav.</i>	Pallipes, <i>Nord.</i>
Crassum, <i>Lec.</i>	Capitatus, <i>Bland.</i>	*Latebricola, <i>Nord.</i>
Basale, <i>Lec.</i>	PHILONTHUS, <i>Curtis.</i>	STILICUS, <i>Latr.</i>
BOLETOBIUS, <i>Leach.</i>	Cyanipennis, <i>Er.</i>	*Angularis, <i>Er.</i>
*Niger, <i>Er.</i>	Aeneus, <i>Nord.</i>	*Dentatus, <i>Er.</i>
*Cincticollis, <i>Er.</i>	Blandus, <i>Er.</i>	LITHOCHARIS, <i>Er.</i>
Cinctus, <i>Er.</i>	Promptus, <i>Er.</i>	Confluens, <i>Er.</i>
*Rostratus, <i>Lec.</i>	Debilis, <i>Er.</i>	SUNIUS, <i>Steph.</i>
*Longiceps, <i>Lec.</i>	Lomatus, <i>Er.</i>	*Prolixus, <i>Er.</i>
QUEDIUS, <i>Steph.</i>	*Fulvipes, <i>Nord.</i>	*Linearis, <i>Er.</i>
Fulgidus, <i>Er.</i>	*Aterrimus, <i>Er.</i>	SUNIUS ( <i>continued.</i> )
*Lævigatus, <i>Er.</i>	Apicalis, <i>Er.</i>	Longiusculus, <i>Er.</i>

PÆDERUS, <i>Grav.</i>	OXYTELUS, <i>Grav.</i>	TRIGONODEMUS, <i>Lec.</i>
Littorarius, <i>Grav.</i>	Sculptus, <i>Grav.</i>	Striatus, <i>Lec.</i>
STENUS, <i>Latr.</i>	TROGOPHLEUS, <i>Mann.</i>	ANTHOBIUM, <i>Steph.</i>
*Colon, <i>Say.</i>	*Morio, <i>Er.</i>	Protectum, <i>Lec.</i>
Juno, <i>Fab.</i>	ANTHOPHAGUS, <i>Grav.</i>	PROTEINUS, <i>Latr.</i>
OXYPORUS, <i>Fab.</i>	*Cæsus, <i>Er.</i>	Parvulus, <i>Lec.</i>
Rufipennis, <i>Lec.</i>	LESTOVA, <i>Latr.</i>	MEGARTHURUS, <i>Steph.</i>
*Femoralis, <i>Grav.</i>	*Biguttula, <i>Lec.</i>	*Americanus, <i>Sachse.</i>
Lateralis, <i>Grav.</i>	ACIDOTA, <i>Steph.</i>	Angulicollis, <i>Makl.</i>
BLEDIUS, <i>Steph.</i>	*Subcarinata, <i>Er.</i>	OLISTHÆRUS, <i>Er.</i>
Fumatus, <i>Lec.</i>	*Patruelis, <i>Lec.</i>	Nitidus, <i>Lec.</i>
PLATYSTETHUS, <i>Mann.</i>	OLOPHRUM, <i>Er.</i>	GLYPTOMA, <i>Er.</i>
Americanus, <i>Er.</i>	*Emarginatum, <i>Er.</i>	*Costale, <i>Er.</i>
HISTERIDÆ.		
HOLOLEPTA, <i>Payk.</i>	Coarctatus, <i>Lec.</i>	*Deletus, <i>Lec.</i>
Fossularis, <i>Say.</i>	*Cylindricus, <i>Payk.</i>	TERETRIUS, <i>Er.</i>
HISTER, <i>Linn.</i>	Gracilis, <i>Lec.</i>	*Americanus, <i>Lec.</i>
Interruptus, <i>Beauv.</i>	PHELISTER, <i>Mars.</i>	PLEGADERUS, <i>Er.</i>
Merdarius, <i>Payk.</i>	*Subrotundus, <i>Mars.</i>	Transversus, <i>Say.</i>
*Harrisii, <i>Kirby.</i>	TRIBALUS, <i>Er.</i>	ACRITUS, <i>Lec.</i>
Fædatus, <i>Lec.</i>	*Americanus, <i>Lec.</i>	*Exiguus, <i>Lec.</i>
*Cognatus, <i>Lec.</i>	PAROMALUS, <i>Er.</i>	SCAPHIDIIDÆ.
Marginicollis, <i>Lec.</i>	— ?	SCAPHIDIUM, <i>Oliv.</i>
Depurator, <i>Say.</i>	SAPRINUS, <i>Leach.</i>	4 Pustulatum, <i>Say.</i>
Abbreviatus, <i>Fab.</i>	Distinguendus, <i>Mars.</i>	Piceum, <i>Mels.</i>
*Sedecim striatus, <i>Say.</i>	*Pennsylvanicus, <i>Er.</i>	SCAPHISOMA, <i>Leach.</i>
Americanus, <i>Payk.</i>	Conformis, <i>Lec.</i>	Convexum, <i>Say.</i>
*Carolinus, <i>Payk.</i>	Assimilis, <i>Er.</i>	TOXIDIUM, <i>Lec.</i>
LeContei, <i>Mars.</i>	*Scrupularis, <i>Lec.</i>	Gammaroides, <i>Lec.</i>
Parallelus, <i>Say.</i>	Fraternus, <i>Lec.</i>	

## MISCELLANEOUS NOTES.

LARVA OF *HELIOTHIS ARMIGERA*.—At a recent meeting of the Entomological Society of London, Eng., "Mr. J. Jenner Weir exhibited two specimens of *Heliothis armigera*, Linn. (*H. umbrosus*, Grote), bred from larvæ which fed in tomatoes. An importation of tomatoes from Spain or Portugal had been greatly damaged by a number of green larvæ, with black lines and spots, which fed in the fruit, where there was apparently juice enough to drown them, and which ultimately produced the moths exhibited." This

\* Species marked with an asterisk have not been before included in the list of Canadian Coleoptera.

insect has been taken in all parts of the world, and of late years in the United States. In Illinois and Kentucky the larva has been very destructive to Indian Corn, and in the former State to the tomato as well (*Amer. Ent.*, i. 212). Mr. Glover has found it feeding in a young pumpkin; but it is best known in the United States as the Cotton Boll-worm, from the injury it inflicts upon the cotton crop. It is probable also that it attacks Indian Corn in Canada, (*Vide C. Farmer*, 1869, p. 425).

CAPTURES AT NORTH DOURO.—An attack of ague—for although that depressing complaint is happily of infrequent occurrence in our village, it was exceedingly prevalent last year—and a subsequent lengthened absence from home for the recuperation of health, prevented me from devoting much time, last summer, to the capture of entomological specimens for my cabinet.

Perhaps the most interesting addition I made to my collection was a very good specimen of the *Thyreus nessus*.

The *Colias philodice* appeared in great abundance, noticed chiefly around the puddles on the roads.

Among the *Coloptera* captured was the “one-coloured *Prionus*,” *Prionus unicolor*, called now, I believe, *Orthosoma cylindricum*. It is a good specimen, measuring  $1\frac{1}{2}$  in., exceeding by  $\frac{1}{4}$  in. another specimen previously included in my collection.

Some of the “Buprestians,” particularly the *Buprestis Virginica*, we find constantly in our neighbourhood. Last year I captured the *Buprestis fulvoguttata*, the “tawny-spotted Buprestis;” it measures a little over  $1\frac{1}{8}$  in.

The large “Capricorn beetles,” *Monohammus titillator*, were unusually abundant last season. I captured numerous specimens for the purpose of measuring their *antenna*, one pair of which had attained to the unusual—as far as my experience extends—length of  $3\frac{1}{8}$  in.

I also added a “Tree-hopper,” *Cicada canicularis*, to my collection. Both my specimens are of the same length, a little over  $1\frac{1}{8}$  in. to the end of the wing covers.

My Dahlias, last year, were infested with *hemiptera*. Indisposition at the time of their appearance disinclined me from the trouble of endeavouring to ascertain even the group to which they belonged. They were about  $\frac{1}{8}$  in in length, and prettily coloured.

Around my currant bushes were playing, during the summer months, innumerable “Ichneumon flies.” I never saw so many congregated within a similar space before. They were of different sizes and colours. I noticed one of the larger ones, of a steel-blue colour, with a linear body, entangled in a spider’s web. Madame Arachne, however, soon discovered that she had “caught a Tartar;” for, after a few ineffectual struggles to escape, the

Ichneumon managed to insert her ovipositor into the body of the spider, retaining it there for a longer period than would have sufficed for the deposit of an egg—probably the original intention—in fact, until the spider was, or appeared to be, dead. I need scarcely add, that I always welcome the appearance of the ichneumons, cruel as is their mode of propagation.

I saw a *Tremex columba* on one of the window-sills of my church. It was beyond my reach, and, having specimens in my cabinet, I took no pains to secure it.

And, to conclude this gossiping communication, I found, on a spruce tree, two *larvæ* of the *Orygia leucostigma*.—V. CLEMENTI, North Douro, Ont.

RASPBERRY GALL.—Towards the end of the summer of 1868, while entomologizing in the neighborhood of Billing's Bridge, south of Ottawa, in company with Mr. B. Billings, I noticed that the roots of the common raspberry, growing in certain localities, were attacked by a species of gall-fly. I recognized this gall as similar to one which I found on the 31st May, at a place called La Table Bay, Labrador. The galls are generally attached to the roots, but they sometimes occur on that portion of the stem which is covered with earth. I collected a quantity of the Labrador galls, which were placed in a paper bag, and brought to Quebec, where the (*Hymenopterous*) insects emerged, but unfortunately the galls and insects were lost on my removal to this city. The galls are small, spherical, and sometimes found in clusters, each being a cell, containing one insect. I visited the locality near this city this spring, but found the place covered with water, and I have not had another opportunity to look after them. I believe it was not described up to 1868. Do any of your correspondents know it?—WILLIAM COUPER, Ottawa, Ontario.

AN ODD PLACE FOR A HUMBLE BEE'S NEST.—Our country butcher being for a long time annoyed in his shop with humble bees, was at a loss to find out where they all came from. His shop is a wooden erection, having a broad running beam at the top of the wall to support the roof. The windows are open in the summer and the apertures covered with hexagon wire netting. On carefully searching the premises, he discovered on the top of this beam, at the foot of a rafter, a thriving colony of humble bees, snugly ensconced among the wool in a *sheep's tail* which he had cut off and thrown there some time in the spring. At my request the butcher promised to preserve it, but unfortunately, when I next went to see it, I learned that some rats had found it out and destroyed it.—R. D. CRUDEN, in *Science Gossip*. [Last summer I observed a somewhat similar instance. In the spring I carelessly threw a buffalo skin over a beam in my barn, in such a way that the sides hung down with the hairy portions inwards. Sometime

afterwards, suspecting the depredations of moths, I proceeded to beat the skin with a stick, and was considerably astonished to hear a great buzzing, and find myself attacked by some enraged humble bees, who had made their nest among the hair. After a time the skin was knocked down upon the floor, and the bees deserted their novel quarters.—C. J. S. B.]

#### ENTOMOLOGICAL SOCIETY OF CANADA.

At a recent Meeting of the Council of the Agricultural and Arts Association of Ontario, the following resolution was adopted.—

“That the Secretary notify the Entomological Society that their Report will not be required until about the 1st of October; also that the grant will be paid at the same time as the County Societies; also that they will be furnished with room for their Cabinet in the Agricultural Hall.”

At an informal meeting of some members of the Council of the Entomological Society, who met in London, on the 15th ult., it was resolved that the Report for 1870 should comprise a description of the insects noxious and beneficial to the following productions of the field, the garden and the orchard: wheat, potatoes, peas, hops: the apple, plum, grape, currant and gooseberry; the strawberry, cabbage, cucumber and squash, and any other crop, fruit, or vegetable that may be attacked during the coming season by a new ravager or in a more than ordinary degree. Members of the Society, and the public generally, are requested to kindly render such assistance as may be in their power, by forwarding specimens and furnishing information of insect depredations, to either the general Secretary, Rev. C. J. S. Bethune, Credit, Ont., or to the Secretary of the London Branch, E. B. Reed, Esq., London, Ont.

Specimens of noxious and beneficial insects in all their stages, and examples of their work and operation, are earnestly requested for the Cabinet of the Society. They may be sent by mail, with perfect safety, if enclosed in stiff pasteboard, or tin boxes of convenient size, and packed with a little cotton-batting, wool, or other soft substance. They should never be enclosed in a letter without some such protection, nor should dead specimens be sent loose in a box. Living larvæ should be sent in *air-tight boxes*, with sufficient food to last them on their journey; otherwise they die on the road and shrivel so much as to become unrecognizable. Dead larvæ should be carefully packed in small vials filled with diluted spirits. As much information as can be afforded about the specimens is always most desirable.

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#### REPORT OF THE LONDON BRANCH,

FOR THE YEAR ENDING DECEMBER 31, 1869.

Your Committee present the Fifth Annual Report. We congratulate the members on the prosperous state of the London Branch. The Financial Statement shows a small

balance in hand, after paying off some \$45 of the debt on the Society's Apparatus, and we trust that during the present year this debt will be greatly reduced. The Society numbers 30, and we hope to procure some fresh additions to our ranks. We feel that the Society is greatly indebted to those of our members, who, not being practical entomologists themselves, yet aid and encourage us by their subscriptions in prosecuting our useful work. The last Provincial Exhibition bore good testimony to the industry and perseverance of London Collectors. The display of Insects there was probably the finest ever yet exhibited in the Dominion. We feel proud in recording that Four Prizes were obtained, amounting to \$26 50. This sum, in accordance with our usual custom, was added to the funds of the Branch. We must not omit to notice that Entomology has been started at the Hellmuth College, and the Head Master, the Rev. A. Sweatman, is desirous of giving the science every encouragement.

It is with pleasure that we now record the success of the Parent Society in obtaining aid from government. Upon a strong application to the Agricultural Association of Ontario, the Board has made a grant of \$400 for the present year, conditional on a Report being made and collections procured, and the publication of the CANADIAN ENTOMOLOGIST being continued. This is, indeed, a great success, and we trust that through this wise liberality the Society may be enabled to diffuse, far and wide, a more practical knowledge of Entomology. The CANADIAN ENTOMOLOGIST has entered on its second year, and bids fair to obtain a good share of success. We notice that its pages are now doubled. We earnestly request our members to contribute to its pages any interesting facts in Entomology that may come under their notice.

We also beg to inform the members that the Parent Society, in acknowledgment of the industry and importance of the London Branch, has donated \$75 for the purchase of a Cabinet for the Branch; any contributions of Insects will therefore be most welcome.

In conclusion, we trust that the members will use their best endeavors to promote the interests of the Society, remembering that our aim is not a selfish one, but that the practical results of our labor affect the interests of a very large proportion of our community.

EDMUND BAYNES REED,  
*Sec. and Treasurer.*

GEORGE M. INNES,  
*President London Branch.*

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#### BOOKS RECEIVED.

*Nature*.—A weekly illustrated Journal of Science. Macmillan & Co., London. Nos. 9-15. The objects of this excellent new publication are, as stated in its prospectus, "to place before the general public the grand results of scientific work and scientific discovery, and to urge the claims of science to a more general recognition in education and in daily life; and to aid scientific men themselves, by giving early information of all advances made in any branch of natural knowledge throughout the world, and by affording them an opportunity of discussing the various scientific questions which arise from time to time." The numbers before us bear ample witness to the satisfactory mode in which these objects are being carried out; they contain a large number of practically scientific articles by eminent writers, accounts of recent scientific discoveries, valuable re-

views of new works in all departments of science, reports of meetings, and abstracts of important papers read before learned societies in all parts of the world, much interesting correspondence and notes of a general character. A regular perusal of this publication cannot fail to be of great benefit to any naturalist or scientific student. No. 14 contains some copious extracts from what appears to have been a very able and interesting address delivered to the Entomological Society of London by the President, Mr. W. H. Bates. No. 15, an article on "Entomology in America," referring especially to Dr. Packard's *Guide to the Study of Insects*.

*Hardwicke's Science Gossip*—Nos. 61 and 62, January and February, 1870—Contains many entomological articles and notes, as well as much that is interesting in other departments of science.

*Le Naturaliste Canadien*, Vol. ii., Nos. 2 and 3; January and February, 1870. The former number contains a continuation of the list of *Colcoptera* taken at Portneuf, P. Q., which it is interesting to compare with Mr. Pettit's of Grimsby, Ont. The latter number includes an article on "Agriculture and Entomology," being a petition presented by the Editor to the Council of Agriculture at Quebec, drawing their attention to the ravages of insects, and calling upon them to render assistance to the work of investigating their natural history.

*The Canadian Naturalist and Quarterly Journal of Science*. Montreal: Dawson Brothers. Vol. ii. Nos. 2 and 3, Sept. 1869. Contains "Notes on the Small Cabbage Butterfly, *Pieris rapæ*," by Mr Ritchie, and a review of Harris' *Entomological Correspondence*, in our department of natural history.

*The Canadian Builder and Mechanic's Magazine*. Dyas & Wilkens, London, Ont.-Jan. 1870. An illustrated monthly publication, edited by practical men, who are engaged in these departments of industry.

*A Preliminary List of the Butterflies of Iowa*. By S. H. Scudder (From the Transactions of the Chicago Academy of Sciences). Embraces 46 species, including the following new species: *Chrysophanus Dione*, *Apatura Proserpina*, *Nisoniades martialis*, and *Hesperia Iowa*.

*Proceedings of the Boston Society of Natural History*. Vol. xiii., pages 161 to 192. — *The American Entomologist*. Vol. ii., Nos. 3 & 4. — *The American Naturalist*. Vol. iii, No. 11. — *The American Agriculturist* — *The Canada Farmer*. — *The Maine Farmer*. — *New York Sun*. — *Once a Month*, *Arthur's Home Magazine*, and *The Children's Hour*. — *Newman's Entomologist*. Nos. 73 and 74 (from Mr. Reeks). — *The Rural New Yorker*. — *Report of the Fruit Grower's Association for 1869*. — *The Gavel*. No. 2. Toronto, February, 1860. A new Masonic Magazine, edited by Dr. R. Ramsay.

*Proceedings and Transactions of the Nova Scotian Institute of Natural Science of Halifax, N. S.*—Vol. ii., part 3, 1868-9. It is pleasing to find such tokens of prosperity and success manifested by a scientific society as are apparent in the handsomely printed volume before us. It contains, besides the proceedings of the Institute, thirteen



papers read at its meetings by members engaged in different branches of science. In Entomology there is a paper on Nova Scotian Lepidoptera by the Rev. C. J. S. Bethune and Mr. J. M. Jones, and a preliminary synonymic List of Coleoptera of the same Province, by the latter gentleman. The Part is illustrated by 5 plates and diagrams, including a lithographic drawing by Mr. Jones, of *Anarta Acadiensis*, Bethune.

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#### ADVERTISEMENTS.

FOR SALE CHEAP.—A fine Oxy-Hydrogen Dissolving-View Apparatus, with Polaroscope, Microscope, and Kaleidoscope complete; and a large collection of suitable slides. Apply to E. B. REED, London, Ont.

PETITES NOUVELLES ENTOMOLOGIQUES.—On the 1st and 15th of each month.—This periodical contains a resume of all news concerning entomologists and their doings, and is indispensable to all who wish to keep themselves posted up in current entomological information. Subscription (for Canada) \$1.20 a year, post free. All communications to be addressed to Mons. E. Deyrolle, fils, 19 Rue de la Monnaie, Paris, France. Canadian subscribers can remit in two or three cent postage stamps.

N. B.—We shall be prepared in a few weeks to supply subscribers in Canada and the United States with the above publication at the price named, \$1.20 a year, post free. Applications may be sent at once.—ED. C. E.

CLUB RATES.—In addition to the Club rates announced on the second page of the wrapper, we are enabled to offer the following :

*The American Agriculturist* (\$1.50), and the *Canadian Entomologist* (\$1), for \$2.

*Once a Month* (\$2), and the *Canadian Entomologist* (\$1) for \$2.25.

*Arthur's Home Magazine* (\$2), and the *Canadian Entomologist* (\$1) for \$2.25.

*The Children's Hour* (\$1.25), and the *Canadian Entomologist* (\$1), for \$1.75.

*The Educator* (36 cents), and the *Canadian Entomologist* (\$1), for \$1.05.

*Petites Nouvelles Entomologiques* (\$1.20), and the *Canadian Entomologist* (\$1) for \$2.

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#### AGENTS FOR THE CANADIAN ENTOMOLOGIST.

CANADA.—E. B. Reed, London, Ont.; W. Couper, Naturalist, Ottawa, Ont.; G. J. Bowles, Quebec, P. Q.; J. Johnston, Canadian Institute, Toronto, Ont.

UNITED STATES.—The American Naturalist's Book Agency, Salem, Mass.; J. Y. Green, Newport, Vt.; R. Trestrail & Son, The Bazaar, Dixon, Ill.

FRANCE.—E. Deyrolle, fils, 19 Rue de la Monnaie, Paris.

ENGLAND.—We hope to be able to announce the name of an agent in London in our next issue.

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\* \* We regret that this number should have been delayed by unavoidable circumstances, beyond the time announced for its issue. April 1st is the date set down for the issue of No. 6; communications for insertion should be in our hands at least ten days previously.