Technical and Bibliographic Notes / Notes techniques et bibliographiques

The Institute has attempted to obtain the best original copy available for filming. Features of this copy which may be bibliographically unique, which may alter any of the images in the reproduction, or which may significantly change the usual method of filming, are checked below.

L'Institut a microfilmé le meilleur exemplaire qu'il lui a été possible de se procurer. Les détails de cet exemplaire qui sont peut-être uniques du point de vue bibliographique, qui peuvent modifier une image reproduite, ou qui peuvent exiger une modification dans la méthode normale de filmage sont indiqués ci-dessous.

- ☐ Coloured covers/ Couverture de couleur
- ☐ Covers damaged/ Couverture endommagée
- ☐ Covers restored and/or laminated/ Couverture restaurée et/ou pelliculée
- ☐ Cover title missing/ Le titre de couverture manque
- ☐ Coloured maps/ Cartes géographiques en couleur
- ☐ Coloured ink (i.e. other than blue or black)/ Encre de couleur (i.e. autre que bleue ou noire)
- ☐ Coloured plates and/or illustrations/ Planches et/ou illustrations en couleur
- ☑ Bound with other material/ Relié avec d'autres documents
- ☐ Tight binding may cause shadows or distortion along interior margin/ La reliure serrée peut causer de l'ombre ou de la distorsion le long de la marge intérieure
- ☐ Blank leaves added during restoration may appear within the text. Whenever possible, these have been omitted from filming/ Il se peut que certaines pages blanches ajoutées lors d'une restauration apparaissent dans le texte, mais, lorsque cela était possible, ces pages n'ont pas été filmées.

- ☐ Coloured pages/ Pages de couleur
- ☐ Pages damaged/ Pages endommagées
- ☐ Pages restored and/or laminated/ Pages restaurées et/ou pelliculées
- ☑ Pages discoloured, stained or foxed/ Pages décolorées, tachetées ou piquées
- ☐ Pages detached/ Pages détachées
- ☑ Showthrough/ Transparence
- ☑ Quality of print varies/ Qualité inégale de l'impression
- ☑ Continuous pagination/ Pagination continue
- ☐ Includes index(es)/ Comprend un (des) index

Title on header taken from:/ Le titre de l'en-tête provient:

- ☐ Title page of issue/ Page de titre de la livraison
- ☐ Caption of issue/ Titre de départ de la livraison
- ☐ Masthead/ Générique (périodiques) de la livraison

☐ Additional comments:/ Commentaires supplémentaires:

This item is filmed at the reduction ratio checked below/
Ce document est filmé au taux de réduction indiqué ci-dessous.

| 10X | 12X | 14X | 16X | 18X | 20X | 22X | 24X | 26X | 28X | 30X | 32X |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | ✓ | | | | | |

# The Canadian Entomologist.

VOL. II. TORONTO, NOVEMBER 1, 1869. No. 3.

## THE GRAPE-SEED INSECT.

(*Isosoma vitis*, n. sp.)

BY W. SAUNDERS

In Vol. i., No. 3, page 20, of the *Canadian Entomologist*, I published a description of a larva found infesting the seed of the grape, and in the *Canada Farmer* for October 15, 1868, page 316, a fuller description of its habits and destructive powers, and ventured the opinion that it would probably produce, when mature, a small curculio. In this I was in error, for the perfect insect proves to be Hymenopterous, a small four-winged fly belonging to *Isosoma*, and as it is believed to be undescribed, I propose for it the name of *vitis* (*Isosoma vitis*, n. sp.). The following notes on its history were made subsequent to the date of the issue referred to.

In October I detached a larva from the inside of the seed, and placed it in a small glass cell between two plates of glass, in which state it remained until early in January, when it became a chrysalis, having first attached itself to the sides of the cell by a few short silky threads. It had now contracted in length, become nearly oval, and assumed a yellowish tint, with a few short loose silky threads adhering to different parts of its surface. On the 11th of February I examined some seeds and found the larva within still alive and active, just as it appeared in the fall. On the 7th of July further specimens were opened and the inmates found soft and motionless, these appeared to be in the chrysalis state, but I did not examine them with sufficient care to enable me to be positive. During the remaining part of July I looked many times into the bottles in which the grapes were enclosed but could not discover anything. On the 9th of August, feeling sure that the time for the appearance of the insect must be fully come, if not already past, I resolved on a thorough search for it. As soon as the contents of the bottles had been emptied on a piece of white paper, I observed a number of small four-winged flies among the dried-up grapes. They were all dead and stiff, some of them more brittle than others. From the observations made I should judge that they made their

escape from the middle to the end of July. The following is a description of the female described from seven specimens.

ISOSOMA VITIS, female, n. sp.—Expands about one-sixth of an inch. Head large, flattened in front, black, thickly punctured, and covered with many short whitish hairs; mandibles pale brown at base, tipped with black; antennæ black, thickly covered with whitish hairs, nine joined, inserted in deep sockets; the first joint pale brown, more slender than the others, very long, nearly as long as the three following, the second short, third to eighth inclusive nearly equal in length, the terminal joint longer, tapering slightly towards the tip. Throax black, punctured, and covered with whitish hairs.

Wings clear, iridescent, venation simple, consisting of a single vein. On primaries the basal portion of this vein runs a little above the middle of wing, when less than half way towards the apex it is curved to the costal margin where it is thickened, and runs parallel with the edge a short distance; then dividing, one portion extends somewhat further along the edge of the wing lessening in thickness towards the extremity, the other with a short outward curve terminates a little within the costal margin, and is widened at the tip. There is a slight duskiness about the inner portion of these branches, extending back to near the point where the vein first joins the costal edge.

The basal portion of vein on secondaries is thickest, and is coalescent with the costal margin for nearly one-third of its length, then contracting in size it turns inwards another third towards the middle of wing,—the terminal third increasing in size, extends to the costal margin, and runs a short distance parallel with it, the whole vein extending little more than half the length of wing. Both veins are sprinkled with many minute black dots, from which arise short black hairs; they are also partially fringed with hairs.

Abdomen long, black, straight smooth with a polished surface, placed on a short pedicel—the first ring very narrow, second and third a little wider and nearly equal in size, the fourth fully as wide as the three preceeding, fifth less than half the width of fourth, sixth a little shorter, terminal ring somewhat longer. The abdomen is a little contracted at its anterior extremity thickest on the third ring, lessening gradually in size till it reaches the last two segments, which are suddenly contracted, the terminal one ending in a point, with a few whitish hairs about and near the top. Anterior pair of feet pale brown, trochanters nearly black, second and third pairs have the trochanters black, femur and tibia nearly black along the middle, pale brown at each extremity, tarsi pale brown.

The male differs from the female in having the joints of the antennæ somewhat longer and more thickly covered with hairs; the hairs are also longer;

the abdomen is short, thick, and blunt, placed on a moderately stout pedicel nearly its own length. The abdominal rings have about the same relative size as in the female, but the posterior edge of third overhangs the fourth, the latter appearing as if partially drawn within the projecting edge of third ring.

I am indebted to my esteemed friend, Chas. V. Riley, State Entomologist of Missouri, for the correct placing of this insect, and would refer those who desire further information on this and other closely allied genera, to a valuable paper by the Senior Editor of the *American Entomologist*, in that interesting periodical, Vol. I., No. 8, illustrated by excellent figures, from accurate drawings made by the Junior Editor.

Having kept the grapes in bottles, only occasionally opened for ventilation, in a dry room, they had become quite hard, dry and shrivelled. In consequence of this many of the flies were unable to make their way out, the seed having become too hard for their jaws to eat through. On opening some of these the flies were found dead with wings fully developed and surrounded by small fragments of the interier coating of the seed which they had evidently gnawed off while endeavoring to escape. Those which had found their way out had eaten a small nearly round irregular hole through seed and skin. In many similar cases where the larva feeds within a hard substance it provides for the escape of the perfect insect by eating away the hard enclosure until it is reduced so thin as to appear almost transparent, then a very little effort is sufficient to remove the obstruction to the outward passage of the imago. In this instance I have been unable to detect any such preparation, and believe that the whole work of escape is accomplished by the perfect fly.

Notwithstanding the abundance of this insect last year, I have as yet been unable to detect their presence or any evidence of their work during the present season, probably the cold and wet character of the summer has been unfavorable to their operations.

---

## BRIEF NOTES ON THE TRANSFORMATIONS OF SEVERAL SPECIES OF LEPIDOPTERA.

BY CHAS. S. MINOT, BOSTON, MASS.

1. *Actias Luna.*—Eggs laid at night by a female in confinement, on April 30th, (this is an exceptional case, they are not generally laid until June.) They are lateriform, obrotundate, smooth, approaching in some cases a spheroid, opaque, very dark sepia with a faint tinge of olivaceous, though some specimens were marked with broad white bands irregularly disposed, and a very few almost entirely white.

2. *Ceratomia Amyntor* Hubn, (*Quadricornis* Harr.)—Eggs sub-spheroid hyaline, very light yellowish green, without corrugations or striæ, highly luteous. Laid on the 9th June—hatched on the 19th. Larva just hatched, .18 inch, elongated, attenuate, swelling at each extremity, the thoracic diameter being the greatest; colour yellowish-green; and horn .09 inch acuminate and black. After the first moult it assumes the appearance of the full-grown larvæ in everything excepting size. It moulted six times; full-grown specimens being seen in September.

3. *Mamestra Arctica* Boisd.—Eggs laid June 13th. Form above circular, tapering towards the apex, flattened at the base; transverse diameter less than longitudinal; luteous, pale yellowish-green; a cordate impression upon the slightly flattened apex, a little smaller than the eggs of *Chrysophanus Epixanthe.* They hatched while I was not at home, and therefore I am unable to give any further account of the metamorphoses of the insect.

4. *Tetracis lorata* Grote.—From two females confined in a box, I obtained on June 18th-20th over three hundred eggs. These are subovate, slightly flattened at the larger end, varnished. From 15 to 40 eggs are laid at a time, during the night only; they are deposited about 100 in one spot, in curving, sometimes angulated rows, which have the appearance somewhat of radiating from a common centre. When first laid they were yellowish-green; on the 20th they had become ochra-olivaceous; on the 21st indian red, and by the 28th or 29th the greater part appeared gray, which effect was caused by innumerable minute black atoms on a whitish ground. On the 31st they were all a deep, though rather dull purple. Hatched on the 30th and 31st. Some of the larvæ lived until July 7th. Head several times larger than the prothorax, ochraceous, luteous, sub-globose; anal segment much enlarged, white; prop-legs, two pairs, white. The enormous head and anal segments gave these caterpillars the appearance of minute, animated dumb bells. Above, fuliginous; stigmatical line, white; beneath, pale red. They were very active, almost constantly in motion. Each time before looping, it rears itself up on its hind legs, and turns round in every direction, as if scrutinizing with almost every food plant I could think of.

The changes the eggs went throw are most remarkable and interesting. I have been unable to learn of anything at all equal to it. If any of the readers of this journal know of any parallel case, or have any explanation to offer as to these extraordinary alterations of the colour, I should be very glad to hear from them.

5. ——— ——— ———Mr. Scudder has in his collection the larval stage of an insect closely allied to this, both he and Dr. Packard

are at a loss to assign it to its systematic position; they also agree in considering it not to be *Rhopalocerous*. The eggs were laid on a currant leaf, and were received by me through Mr. Scudder after a three days journey. The following description was made soon after I received them, July 18th. Long. diam. .07, trans. diam. .05 inch. Top-shaped, tapering towards the apex, where they were slightly flattened; sides much compressed, lacteous, sordid, with a large jet spot on each of the compressed sides, and a blace dot above. Just before hatching, the spots disappear, the ground colour becomes pale lemon yellow, and the shell is luteous. Larvæ appeared on the 29th.; the first act of their existence was to eat the egg shells entirely, except the basal part by which they were glued to the leaf. When two days old, these caterpillars are one-sixteenth of an inch long; head large, perpendicular, top-shaped, reddish-brown, luteous; eyes black, shining; mouth small, jaws not powerful; body tapering towards urite, above yellowish-brown, lighter underneath, very distinctly separated along the stigmatical line from the darker shade of the upper surface. Above, on each segment four black spines, branching thus—first a stout pedicel, branched like a Y, the inner branch being shorter than the outer, both divarications ending in four setoid appendages, three very short, and the fourth and exterior one as long as the rest of the spine and curving like that portion of the ellipse which would be included between two adjacent points of the intersections of the transverse and longitudinal axes with its circumference. These spines are .05 inch long. Whenever they move they march in single file. From several experiments I made, I am satisfied that they have no certain leader in moving. Their eyes seem to be useless, for they did not appear to perceive any difference between light and darkness, the leader seeming to feel his way along in a manner very ususual for larvæ, and those behind having each a very delicate silken thread about the length of the head of the larvæ, which attaches it to the one in front. There are prop-legs on the 2nd., 3rd., 4th., 5th and last abdominal segments.

---

## ENTOMOLOGY AT HELLMUTH COLLEGE.

At the request of the Head Master, the Rev. A. Sweatman, I recently accompanied my friend, Mr. W. Saunders, to the college, to adjudicate the prizes given for the collections of native insects, made by the boys during the summer vacation. Considering that this is the first effort of the school at entomology the result is most gratifying, and I feel sure that some slight notice of these collections will be of interest to the readers of the *Entomologist*.

The first prize, value $15, was awarded to William Hugh Wood, who resides in Walsingham, in the county of Norfolk, and contained representa-

tives of Lepidoptera, Coleoptera, Orthoptera, Hemiptera, Diptera, Neuroptera, and Hymenoptera, embracing about 140 different species, amongst which we noticed in Lep., Heteropterus marginatus, Catocala epione, Darapsa chœrilus, Homoptera lunata, and a very handsome Catocala quite new to us, with a distinct white spot in each forewing; in Col., Dytiscus verticalis, Carabus sylvosus, Toxotus decoloratus, Telephorus rotundicollis, Necrophorus Pustulata, and Tomoxia————————; also two new species of Neuroptera. This collection is very good, and reflects great credit on the industry and perserverance of *Master Wood.*

The second prize, value $5, was gained by Wm. G. Hodgins, of Toronto. This was a fair collection containing some 90 species, but bore traces of having been somewhat augmented from the collection of a tolerably experienced entomolgist.

Other collections were exhibited by Messrs. R. D. Bourke, and R. Dewar, of London, and J. R. C. Dobbs, of Portsmouth, and although these last named boys obtained no prizes, they are entitled to some praise for their efforts. These collections are given to the school to form the nucleus of the school collection, and in a very short time I expect to see the cabinet well stocked.

I may add that the Head Master takes a great personal interest in our Society, and is giving the boys every encouragement to develope their tastes in this and all other branches of natural history.—E. B. REED, London, Ont.

---

## DESCRIPTION OF LARVA OF CATOCALA POLYGAMA, GUEN.

BY E. B. REED, LONDON, ONT.

*Taken at Port Stanley, Ont., July* 1, 1869, *feeding on Thorn.*

*Length,* 1 and four-tenth inches; body cylindrical inclined to onisciform.

*Head,* flat, bilobed and horned or notched, dark brownish red with several long hairs just above the mandibles and collar.

*Body,* plump, smooth and firm to the touch; color, greenish grey with small spots and blotches: *on the seventh segment, two lateral black spots; on the* eight segment, a small fleshy dark coloured horn curved backwards; the anal segment terminated by two elongated prolegs; on each segment are two dorsal spots or pimples with one long hair in each; a thick fringe of greyish hair on the base of the sides; the spiracles blackish not distinctly marked.

*Under side,* greenish white, with a central row of blackish spots, largest in the centre of the body, and growing smaller towards each end.

*Feet,* grey; prolegs greenish gray.

This description was made July 7, and the larva commenced going into chrysalis the same evening.

A slight cocoon was formed by drawing together two leaves of thorn, to one end of which the larva attached itself by a few threads of silk. Length of pupa sixth-tenths of an inch: greatest breadth $\frac{1}{4}$ of an inch; the colour at first light reddish brown, becoming dark on the 4th or 5th day, the whole covered with a plum-like bloom; the tongue and wing cases very clearly defined; head case blunt; the imago was produced July 29, after about 21 days; its alar expansion was 1 and seven-tenths inch.

As far as I can ascertain, this is the first time this larva has been described I have taken it before, but failed to describe or rear it.

---

## THE IMPORTED CURRANT WORM FLY (*Nematus ventricosus*, Klug.) AND ITS PARASITE (*Hemiteles nemativorus*, Walsh).

BY BENJ. D. WALSH, M.A.

I wish to correct a few mistakes which I have made in the paper on this subject, which was published in the ENTOMOLOGIST, Vol. II., No. 2.

1st. I have said that "not a single American species of *Hemiteles*, so far as I am aware, has as yet been described under that generic name as occurring north of the West India Islands." This is incorrect. Mr. Riley, in his Missouri Report, has described two species, viz., *H. thyridopteryx* male and female, and *H. Cressonii* male, as found in his State.

2nd. In *H. thyridopteryx*, Riley—in which I have now seen Mr. Riley's own specimens male and female—the metathorax of female is strongly thorned, while that of the male is unarmed. It is the same with *H. incretus*, Cresson, though I had overlooked the fact from Mr. Cresson's diagnoisis giving the thorns as a *specific*, and not as a *sexual* female character. These two are the only described N. A. *Hemiteles*, were both sexes are known, and the female has thorns on the metathorax: and there is no described male that has these thorns, though I have one such male in my collection. Moreover, in Gravenhorst's genus *Hoplismenus*, which scarcely differs from *Cryptus*, except by the presence of these thorns, the males, according to Brulle, have the methorax unarmed, while that of the female is strongly thorned (*Hymen.* IV. p. 186). Consequently we may infer, with a reasonable degree of probabillty, that in *Hemiteles* these thorns very frequently, but not always, form a sexual character peculiar to females. This is a remarkable and somewhat anomalous fact, because in *Ichneumon morulus*, Say, the female only of which is described by Say, but of which I possess two males, I find that the metathoracic thorns are equally well developed in either sex.

3rd. In *H. thyridopteryx*, Riley, the females has the front wings bifasciate with fuscous, and the male has them hyaline. In *H. incertus* Cresson, the front wings of females are fuscous, and those of males hyaline bifasciate with fuscous. And there is no other described N. A. male with fasciate or bifasciate

wings, nor have I any such in my collection. Hence we may infer that usually, when *Hemiteles* females have the front wings entirely fuscous or banded with fuscous, the males will respectively have them either banded with fuscous or entirely hyaline. Such colorational sexual characters, though very unusual, are not without their parallel in other orders of insects. For instance in *Myodites Walshii*, Lec. *(Coleoptera)*, the wings of males are hayline, and those of females strongly fasciate with fuscous. Conversely in the European *Potamanthus marginatus*, Zetterst. *(Pseudo-neuroptera)*, as I am informed by Dr. Hagen, the front wings of males are tipped with fuscous, and those of females are hyaline immaculate.

4th. Since then in *Hemiteles* metathoracic thorns and fasciate wings, when present—which is by no means universally the case—are usually not a specific but a mere sexual female character, the Synoptical Table which I have given for this genus must be considered as applying exclusively to the female sex.

We may observe here that the body of *H. thyridopteryx* male is very notably darker-colored than that of females. This is the only exception with which I am acquainted to a general colorational law which I have laid down, namely, that in *Ichneumonidæ*, when sexual differences prevail as to the coloration, the male body is almost universally lighter-colored than that of females; whereas in *Tenthredinidæ* the converse rule holds good very generally (*Proc. Enl. Soc. Phil.* VI., p. 239). Until I saw with my own eyes Mr. Riley's specimens, I rather inclined to believe that he must have made some mistake in referring his male and female to the same species. The male of *H. thyridopteryx* is further extremely remarkable for having the stigma perfectly hyaline—a peculiarity which I do not remember to have noticed in any other Ichneumon Fly.

While on this subject I may add, that I do not quite see the force of Mr. Saunders' inferences (*Can. Entom.* II., p. 16) as to the occasional hybernation of the Currant Worm in the larva state. In N. W. New York,—which lies in nearly the same latitude as London, C. W.—this Saw-fly comes out of the ground from the latter part of April to the fore part of May, and the female oviposits shortly afterwards. The earliest flies produced from this laying of eggs appearing about the last week in June. I can see no reason, therefore, why a larva might not have hatched out from the egg in London, C. W., in the first week of May, 1869, spun up on Mr. Saunders' paper bag on May 30, 1869, and the cocoon been noticed by that gentleman for the first time, as he informs us, on May 31st, 1869. Yet Mr. Saunders from these data arrives at the conclusion that such a larva "must have remained unchanged during the winter, and constructed its cocoon after the 22nd of May." In most insects that hybernate under ground there is a considerable variation in the time at which the imago state is assumed in the following spring; and of course the earliest

females will lay the earliest eggs and produce the earliest groups of young larvæ.

The Heteropterous larvæ described by Mr. Saunders (p. 15) as attacking the Currant Worms were not, as he supposes, those of *Stæretrus fimbriatus*, Say., which are quite different but those of some species of *Arma*—perhaps *Spinosa*, Dallas, or *Modesta*, Dallas, or a species closely allied to *Modesta*, which I have found to live in the larval and pupal states in the nests of the Fall Web Worm (*Hyphantria textor*, Harris), preying voraciously upon the inhabitants thereof.

The reader will kindly please to correct the following slips of the pen in the paper to which this forms a sequel :

Page 10, line 2, for "*latter*" read "*former*."
" 10, " 11, " "13" " "14."

---

## NOTES ON HADENA XYLINOIDES.

BY W. SAUNDERS, LONDON, ONT.

On the 17th of June I captured a female specimen of Hadena xylinoides, early in the evening on a sugar cask. Having confined it in a pill box I laid aside and did not examine it again until the 20th, when it was observed that a number of eggs had been deposited. These, although examined casually by the microscope, I neglected taking a minute description of. They were about medium size, of a flattened conical form, greenish in color, and ornamented many striæ. The eggs hatched on the 24th of June, when the following description of the young larva as seen under a common eye-glass was taken :—

Length 0·12 in., cylindrical. Head rather large, bilobed, black and shining. Body above green and glossy, semi-transparent, with a number of raised brownish dots on each segment, from every one of which arises a brown hair. Second and terminal segments have each a patch of brownish black above under surface similar to upper. Feet blackish brown ; prolegs green tipped with brown.

The middle part of body is arched when walking, the motion resembling that of a Catocala ; the anterior pair of prolegs do not appear to be used in progression. The general appearance, glossiness and semi-transparency of skin reminds one of a Saw-fly larva.

Between the first and second moult another description of the larva was taken. Length 0·32 inch. Head small, bilobed, pale brownish, very transparent.

Body above dull greenish brown along the middle with a reddish tinge at each extremity. 2nd segment above similar in appearance to head. A pale

whitish dorsal line, and a lateral line of the same hue about half way between dorsal line and spiracles. Close to under surface is a faint double whitish line enlarged to a whitish patch at each extremity. 12th segment slightly raised.

Under surface dark dull green along the middle of body; paler with a reddish tinge about each extremity. Feet dark brown; prolegs pale greenish.

After the second moult, July 2nd, the body became much darker in color, and other striking changes were apparent. The head was much larger, and the smooth polished appearance of second segment had almost disappeared. The body above was dull blackish green, almost black on sides, while the whitish lines were about same as before. From the upper lateral line to the dorsal were oblique blackish brown lines meeting on the hinder part of each segment.

On the underside, the 5th, 6th and 7th segments were black with a polished surface, while on the other segments the color was dull blackish green.

I found these creatures quite omnivorous in their appetite, they would feed on almost any green thing, but I fed them chiefly on dandelion leaves and lamb's quarter (Chenopodium album). Having kept them rather closely shut up and crowded they were attacked soon after the second moult by violent diarrhœa, which although I gave them more room and ventilation soon proved fatal to them all. A fortunate circumstance enables me to complete the history of this insect.

On the 5th July, while visiting a friend's garden, I observed a larva feeding on Scabious, which proved to be a nearly full-grown specimen of Xylinoides. The following is its description :—Length 1¼ inches, nearly cylindrical. Head rather small, flat in front, blackish brown and shining, with a few minute hairs scarcely visible without a magnifyer.

Body above black, with a tinge of brown; a broken bluish dorsal line. On each side, close to under surface, is a stripe of brown slightly glossy, dotted with minute bluish white specks appearing like a bloom on the surface. A short whitish yellow lateral stripe on second and part of third segments, and the same on the outer edge of terminal prolegs.

Under surface brown, of the same shade as the lateral stripes above, with a similar bloom. Feet brown and shining; prolegs pale shining brown within, marked with black without.

This larva entered the chrysalis state about the middle of July, forming a rough outer case of leaves, fastened to the cover of the box in which it was confined by silken threads; within this the brown chrysalis was enclosed. The imago appeared on the second of August.

I have also found the chrysalis of this species attached to the under-side of a log early in May.

## ENTOMOLOGICAL SOCIETY OF CANADA.

### ANNUAL GENERAL MEETING.

The Annual General Meeting of the Society was held, by invitation of the London Branch, in their rooms, City Hall, London, Ont., on Wednesday, the 22nd of Sept., 1869, at 7.30 p. m. William Saunders, Esq., Vice-President, occupied the chair. Owing to the varied attractions and engagements caused by the Provincial Exhibition then being held, the attendance of members was not large.

The Secretary-Treasurer read the minutes of the last meeting, the financial report, and a detailed statement of the condition, present success, and prospects of the CANADIAN ENTOMOLOGIST; on motion they were adopted. Letters of apology for non-attendance from the President, Prof. Croft, Mr. W. Couper, and others, were read, as well as various other communications.

*President.*—Professor CROFT, D. C L., University of Toronto.

*Vice-Presidents.*—E. BAYNES REED, London; B. BILLINGS, Ottawa.

*Ex officio Vice-Presidents.*—REV. O. BRUNET, President, Quebec Branch; Rev. G. M. INNES, President, London Branch.

*Secretary-Treasurer.*—Rev. C. J. S. BETHUNE, M. A., Credit, Ont.

*Curator.*—W. OSLER, B. A., Toronto.

*Council.*—J. PETTIT, Grimsby; G. J. BOWLES, Secretary, Quebec Branch; W. COUPER, Ottawa.

The following gentlemen were elected Honorary Members:—

Baron R Von Osten Sacken, Russian Consul General, New York.

Dr. Herman Hagen, Museum of Comparative Zoology, Cambridge, Mass.

Dr. Asa Fitch, State Entomologist of New York.

And the following Corresponding Members:—

Rev. J. G. Morris, D. D., Baltimore, Md.

F. G. Sanborn, Boston Society of Natural History, Boston, Mass.

W. S. M. D'Urban, Albert Memorial Museum, Exeter, England.

The meeting then proceeded to the examination of many rare and interesting specimens exhibited by various members; amongst the most noteworthy may be mentioned a fine specimen of *Catocala relicta*, Walk., taken at Hamilton, by Mr. Mills; *Philampelus pandorus*, Walk. *(satellitia* Harris), raised from larvæ by Mr. Saunders and Mr. Denton; *Catocala polygama*, Guen., from larvæ, by Mr. Reed. Mr. Saunders also exhibited specimens raised from larva, of *Thecla inorata*, Grote and Rob.; *Plusia balluca*, Gey., from the hop; a handsome *Tortrix* from thorn, a small species of leaf-roller that is very destructive to pear, plum, cherry and apple trees, specimens of *Vematocampa filamentaria*, Guen., from pear and willow, etc. Mr. Bethune exhibited a collection of *Cicindelidæ*, embracing nearly all the known Canadian

species, several from the United States, and two from Switzerland; some remarkable Australian Hymenoptera and Coleoptera, recently sent out by Mr. Walker; and a number of duplicate Coleoptera which were distributed amongst the members present. Mr. Reed exhibited many interesting specimens of Lepidoptera, including several bred from larvæ.

After spending a few pleasant hours examining specimens and comparing notes, the meeting adjourned.

---

## MISCELLANEOUS NOTES.

EXTENSION OF HABITAT OF PIERIS RAPÆ, LINN.—On the 1st of October I captured a specimen of *P. rapæ*, Linn., on flowers in a salt marsh on the New Jersey side of the Hudson River, less than a mile from this city. It in no wise differed from a European specimen in my collection. This, I believe, is the most southerly point from which the appearance of this butterfly has been yet recorded.—THEODORE L. MEAD, New York.

PIERIS RAPÆ.—The larvæ of this insect were very abundant and injurious this year about Montreal; here they were not numerous, and therefore did little damage.—G. J. BOWLES, Quebec.

MELITÆA PHAETON, CRAM.—I am glad to be able to inform you that I have a brood of *M. phaeton* feeding. They were found by Mr. J. L. Mead, of New York, who has spent some time here this season. He found them within close webs which were attached to *Chelone glabra*, and sometimes to other plants, as Iron-weed [*Veronica*] and a *Solidago*. In one instance a web was attached to the two last named. The larvæ which I have feed on *Chelone;* they appear to feed at night, and during the day collect in dense clusters in the corner of the box in which they live. They are now half an inch long, and marked much as the mature specimens.

Mr. Mead has found the larvæ of another species of Melitæa, quite black, and lying—without a web—upon the under side of the leaves of the plant, a specimen of which I enclose with this. [The plant has been kindly determined for us by Prof. Macoun, of Belleville, as the "*Actinomeris squarrosa*, Nutt., a tall branching plant from 4 to 8 feet high, with the stem winged above. It is common on the western prairies."] These larvæ are difficult to rear, and probably will not be brought to chrysalis state this season. I suppose them to be *M. itharos*, or one of the allied small species.—W. H. EDWARDS, Coalburgh, West Va., September 16th, 1869.

LARVÆ ON ŒNOTHERA.—I was intending to write to you and to Mr. Saunders to-day about the larvæ on the Œnothera, when No. I. of the CAN. ENT. came to hand. I had been watching them for some days and trying to

rear them, as I suspected they were the larvæ of *Alaria florida*, Guen. But I am somewhat puzzled ; I have not found the green caterpillar on the leaves but always on the buds with its head buried, eating into the bud from the outside, and I could not make out whence the animal came ; but Mr. Saunders seems to have found it on the leaves. On examining some of the buds which had a hole in them, and apparently the worm attacks only those just about to blossom, I found on the inside a worm about one-third of the size of the green one ; more of a grey colour and marked almost exactly the same, only much more distinctly,—at least it seems so to me. I did not find this worm in all. Now in what relation do these stand to each other, or are they quite different? The *Alaria* seems fond of sweet-scented flowers ; the only one I had ever taken before this year was on the *Datura Africana*, the perfume of which is almost overpowering.—HENRY CROFT, Univ. College, Toronto, August 16th, 1869. [In reference to the above, which was crowded out of our last issue, Mr. Saunders states that he had also observed this smaller larva in seed pods of *Œnothera* for the first time a few days before the date of Prof. Croft's letter. It was very similar in colour to the larva of *A. florida*, but quite distinct, being *very small*. He has some of them now in chrysalis only quarter of an inch long. He adds that he did not usually find his specimens of *Alaria* feeding on the leaves, but generally with their heads buried in the flower buds, as described by Prof. Croft ; he fed them, however, on both leaves and buds in captivity.—ED.]

COLLECTING GROUND ON LAKE SUPERIOR.—Pie Island in Thunder Bay, Lake Superior, is the best place I know of for Coleoptera. Should any Entomologist go to Thunder Bay, let him by all means visit Pie Island. I am sure I observed 100 species that were new to me when on it, but unfortunately I had no means of collecting.—JOHN MACOUN, Belleville.

CAPTURES.—*Eudamus tityrus*, Sm. Abb. On July 9th, 1869, I captured a fine specimen of this handsome butterfly under an Acacia tree (*Robinia*) on one of our most crowded streets ; it had evidently just emerged from the pupa state, for I caught it with ease in a pill box. This is the second time only that this insect has been taken in London ; the former specimen, caught also on an Acacia tree, is in my cabinet.

*Cossus plagiatus*, Walk. (*Xyleutes* of Hubner, according to Grote).—A good specimen, slightly beaten, was brought to me early in July. I think this is the first time it has been taken here.

*Callimorpha interrupto-marginata*, Beauv.—On July 21st a fine female of this rare insect was brought to me ; it laid a large number of eggs, which, however, failed to produce larvæ. This is a beautiful moth, and when its

wings are folded presents a very extraordinary sight with its distinctly marked cross, which gives it a truly orthodox appearance.

*Thecla inorata*, Grote & Rob.—I reared some half dozen specimens from larvæ taken on oak.—E. B. REED, London, Ontario.

CAPTURES.—During my stay in Goderich I had hardly the average success. The following is a list of the rarities I have been able to find the names of:—*Cymindis reflexa*, Lec.; *Desmocerus palliatus*, Forst.; *Clytus erythrocephalus*, Oliv.; *C. speciosus*, Say; *Microrhopala interrupta*, and *Epicauta vittata*, Fab.; and of Lepidoptera, *Alypia Langtonii*, Couper; and two species of Ægeria which are new to me.—N. H. COWDRY, Stratford, Ontario.

LUMINOUS LARVÆ.—I send you specimens of luminous larvæ which were plentiful here in August, 1868; they were given me by a gentleman who found them on the Island of Orleans. Can you tell me what they are?—G. J. BOWLES, Quebec. [They are the larvæ of *Phorturis pensylvanica*, De Geer. See CAN ENT. vol. I. p. 39. We were fortunate enough to find a specimen of this larva on the evening of October 2nd, 1869, on the sandy road near the Port Credit Railway Station. It was a warm damp night with occasional showers. —ED ]

INSECTS AT THE PROVINCIAL EXHIBITION.—We are glad to see that our London friends obtained four prizes at the recent Provincial Exhibition held in their city, viz. :—

| | |
|---|---|
| W. Saunders, 1st Prize for native collection..... | $12 00 |
| Do Extra Prize for foreign " ..... | 4 70 |
| E. B. Reed, 3nd Prize for native " ..... | 8 00 |
| London Branch of Ent. Soc. Can., Extra Prize for English insects..... | 6 00 |
| | $30 00 |

We understand that the Londoners make a rule of giving the amount of their prizes to the funds of their Branch of the Society; this is a most laudable practice, and we heartily recommend its adoption in other localities, as the Society stands in need of all the money it can get. The following account of this department of the Exhibition we clip from the Toronto *Globe*:—

"In few departments of the Exhibition was there a more noticeable improvement than in that of Natural History, especially in the show of insects, which, this year, embraced the finest collection of butterflies, moths, and beetles ever brought together in the Dominion of Canada. This improvement was entirely due to the exertions of the resident members of the London Branch of the Entomological Society of Canada, who, at the cost of considerable time and labour, had prepared

their private collections for exhibition to the public. The whole number consisted of sixty-three cases, embracing probably two thousand different species, and five or six thousand specimens. They were all neatly arranged in their proper scientific order, and were also labelled in a general way with reference to their beneficial or noxious qualities. The principal collection is the property of Mr. William Saunders, of London, a gentleman who has attained a high reputation among scientific men as a thorough entomologist. It includes twenty-two cases of Canadian insects, and four of foreign species. It is undoubtedly the best private collection in the Dominion, and would be worthy of consideration anywhere. Next to this a collection of English butterflies and moths, the property of the Entomological Society. The case of butterflies included a representative of every British species. The moths were not so complete. These are interesting as objects of comparison with the allied species of this country. Mr. Edmund Baynes Reed, the Local Secretary of the Society, exhibited his private collection of sixteen cases of beetles, butterflies, moths, dragon-flies, &c. Among these are some magnificent specimens. We especially noticed a case of Under-wing moths *(Catocalidæ)*, which includes some very beautiful species. The Rev. G. M. Innes, of London, showed seven cases of Canadian butterflies and moths, and an interesting case of specimens of various orders from Labrador, a portion of our country whose natural history has not yet been much investigated. Mr. J. M. Denton, also of London, exhibited nine cases of native insects, some of English butterflies, all in very nice order, and including many fine specimens."

MOUNTING SMALL INSECTS.—I have adopted successfully the following plan of preparing and mounting very small insects for the microscope, such as parasites and acari from birds, beetles, &c. Having procured the parasite alive, I place it on the inside of a sheet of tolerably good note paper, folded, and when in the act of running, I close the paper and press it tightly in a book, which, for want of a better press, I put between two books in my book-case. By this means I find the legs, antennæ, &c., nicely extended, all the expressed moisture absorbed by the paper, and the skin apparently unbroken. I allow it to remain in the book about two days, when it is carefully removed from the paper, put into the turpentine bath, and afterwards mounted in balsam in the usual way.—A. A., F. in *Science Gossip.*

---

## EXCHANGES.

GALLS AND GALL-INSECTS.—Galls and Gall-Insects from all parts of the globe are my speciality, and since the lamented death of my friend Mr. Wilson Armistead, of Leeds, († February 18th, 1868,) I am carrying on the researches which he so vigorously started in this field. I shall therefore be happy to enter into correspondence and exchange or contributions of specimens, with any gentleman in Canada who takes an interest in this particular branch of Entomology—ALBERT

MULLER (of Basle, Switzerland, but residing now in England), Eaton Cottage, South Norwood, London, S. E., England.

LEPIDOPTERA.—I wish to obtain any North American specimens of *Phalenites*, Latr., especially such forms as are likely to be found in southern New Hampshire or Eastern Mass.; any species of *Crapteryx Acidalia*, *Coremia*, *Cidaria*, and *Boarmia*, will be particularly acceptable. New Canadian species I will describe in the CAN. ENT. I have some 70 specimens of *Hesperia metacomet*, Harris, about equal numbers of both sexes, for exchange.—C. S. MINOT, 39 Court Street, Boston, Mass.

COLEOPTERA.—Species desired from Canada, especially the eastern region; can give in exchange Southern and California forms, as well as those from the New England States.—P. S. SPRAGUE, 227 Broadway, South Boston, Mass.

PHOTOGRAPHS.—An esteemed correspondent writes to us asking, "Is it possible to get up a 'Naturalists' Photo. Exchange Club,' as I am anxious to fill an album with the portraits of my fellow labourers in the field of science?" Should such a thing be practicable, we should be very happy to render any assistance in our power; perhaps some of our correspondents will give us their opinion on the subject. Personally, we should be delighted to fill our album with the *cartes* of all our 'bug-hunting' friends, and should willingly send a copy of our own in return to any who cared to have it.—ED. C. E.

TEXAN INSECTS.—25,000 specimens of insects from Texas, for sale and exchange. G. W. BELFRAGE, Waco, McLennan Co., Texas. Care of Forsgard & Co.

LEPIDOPTERA.—I wish to exchange eggs of *B. Yama-mai*, *Pernyi*, and *Cynthia* for good specimens of *Arctia parthenos*, *A. Americana*, *D. variscolor*, *Thecla Ontario*, *Augustus striyosa*, or almost any exclusively northern species. Correspondence requested.—W. V. ANDREWS, 130 Charlton Street, New York.

---

## TO CORRESPONDENTS.

SUBSCRIPTIONS RECEIVED.—To. vols. I. and II.: From A. M., London, England; J. W. H. R., Yarmouth, N. S. To vol. II.: From H L. M., Malden, Mass.; C. S. M., Boston, Mass.; T L. M., N. Y.; E. P. A, Cambridge, Mass.; F. P. A., do. (per *Am. Ent.*); W. H. E, Coalburgh, Va. Subscription to Packard's *Guide* from B. B., Ottawa.

C. H. B., Rock Island, Ill.—Your first letter enclosing 50 cents, has never reached us. Our rate of subscription is now $1.25 per vol. Money must be at the sender's risk, unless in a registered letter, P. O. order, or Bank draft. The postage to Canada from the U. S. is 6 cents; when only 3 are put on a letter we have to pay 10.

N. H. C., Stratford, Ontario.—Please send a specimen of the *Dacus* that we may be able to determine the species. The pale colour is probably owing to immaturity.