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# The Canadian Entomologist.

VOL. VII.

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No. 8

ON SOME OF OUR COMMON INSECTS.

*THE LUNA MOTH*—*Actias luna* Linn.

BY R. V. ROGERS, KINGSTON, ONT.

If any of the insect host is a proof of high art in nature, and of the beauty of the Creator's thoughts, it is most assuredly the fair creature whose name is mentioned above. Allied to families whose members are among the greatest of the insect world, and having cousins and connections surpassing in size and beauty all others of their kingdom in this Dominion, still this moth is as pre-eminent above its fellows as is its namesake—the fair empress of the sky—above the lesser lights that rule the night.

So conspicuous is the Luna in her royal robes that she has a right to feel slighted at being thus long almost unnoticed in the pages of the ENTOMOLOGIST, and now it is hard upon her to be described among "Some of our Common Insects;" but blue blood always tells, and queenly grace and beauty will ever distinguish the Luna from among the *profanum vulgus* of the Articulata.

And now for a biographical sketch of this beauty from the cradle to the grave, and beyond that, after it assumes the resurrection attire, to that day when, its work accomplished, it lays itself down that its body may mingle again with its parent dust.

The head of the caterpillar is nearly elliptical in shape, and of a pearl color; the rest is of a delicate pale and very clear bluish-green color. A very pale yellow stripe extends along each side of the body, from the first to the tenth segment, just below the line of the spiracles; and the back is crossed, between the rings, by narrow transverse lines of the same color. After the manner of its kith and kin, each segment is adorned with small pearly warts—tinged with purple—five or six in number, each furnished with a few little hairs. At the end of the tail are three brown spots, edged above with yellow.

When at rest, this magnificent caterpillar (which, by the way, is very similar to that of its congener, *Telea polyphemus*, save that the latter is destitute of the lateral yellow stripe, and the bands between the segments, the tail being bordered by a brown V-shaped mark) is nearly as thick as a man's thumb; its rings being bunched and body shortened, the length is only about two inches, but when it sets out on its travels, it stretches itself to about three inches. In the CAN. ENT. (vol. 6, p. 86) Mr. Gentry describes an interesting variety in which the general color is a dull reddish brown; the lateral and transverse stripes of yellow have vanished, the abdominal spots shine conspicuously, but without the yellow edging; the pearl colored warts with their purple edge have, however, assumed a richer hue, and blaze like a coronet of rubies.

When the larva has passed its allotted days in eating the leaves of the hickory, beech, oak, or walnut, and is thinking seriously of preparing its silken shroud and the casket in which it is to lie until its resurrection morn, it casts about and draws together two or three leaves of a tree, and within this hollow spins an oval and very close and strong cocoon of whitish silk. It is about  $1\frac{3}{4}$  inches in length, of a chestnut brown on the outside; very thin, and frequently rough on the surface; covered with warts and excrescences, but seldom showing the print of leaves. Harris says that the cocoons are formed on the trees, and that they fall to earth with the leaves shaken off by autumnal gales; but other observers assert that the larva crawls to the ground just before its change, and there prepares for its future transformations.

In this state, too, the Luna greatly resembles the Polyphemus, and many a collector having—after careful searching—got together a fair supply of what he deems Luna chrysalids, is greatly chagrined by finding dusky, one-eyed, giant Polyphemi issue from the silken tombs, instead of a bright throng of empresses of the night in their delicate bridal attire. The Polyphemus cocoons are, however, white or dirty white; rather smaller than the Lunas, with rounded ends; sometimes angular, because of leaves moulded unevenly into the surface, and generally coated with a white powder.

About the month of June the Lunas awake from their long and death-like sleep, burst asunder their cerements—having first loosened the compact threads by ejecting a liquid—and issue forth in all their glory, no more to be mistaken for the sober one-eyed Cyclopeans, but resplendent in gay attire. The wings, which expand from  $4\frac{3}{4}$  to  $5\frac{1}{2}$

inches, are of a delicate light green color, and the hinder ones are each prolonged into a tail of an inch and a half or more in length, longer, indeed, than those of the day-flying Papilios. Along the front edge of the fore wings is a broad purple-brown stripe, extending also across the thorax, and sending backwards a little branch to a glittering, eye-like spot near the middle of the wing. These eyes (of which there is one on each of the wings) are transparent in the centre, and encircled by rings of white, yellow, blue and black. The hinder borders are more or less edged with purple brown. All the nervures are very distinct and pale brown. Near the body the wings are densely covered with hairs. The under sides are similar to the upper, except that an indistinct undulating line runs along the margin of both wings.

As for the body that bears these lovely appendages, the thorax is white, sometimes yellowish or greenish, crossed by the purple-brown stripe that traverses the whole length of the upper edge of the front wings; the abdomen is of the same color as the thorax, and covered with white hairs like wool. The head is white and small, and adorned with wide, flat and strongly pectinated antennae of a brownish tinge. The legs are purple-brown.

Such is Luna in her various transformations to outward appearance; notwithstanding her size and loveliness, her habits and peculiar instincts are not very noteworthy. The gift of superior beauty, as among the highest of animals so in the insect world, is not frequently accompanied by remarkable intelligence or superior sense; and the most gaudy butterfly or moth is a fool in comparison with the dingy-colored bee. The caterpillars of butterflies and moths have some various instincts—chiefly in the direction of silk spinning and sepulchre building—but the perfect insects only live “to increase and multiply their race, and embellish nature. Their existence in the perfect state is usually very brief; it is one of the prettiest of honeymoons, and often love subdues and destroys every other passion. The gourmandizing caterpillar is never troubled by the ardent flame which consumes even the thought of sipping the nectar of the flowers that rival in beauty the wings of the perfect representation of elegance and love. The early insect lives and eats, and the perfect form lives and dies.”

## DESCRIPTION OF A NEW CALIFORNIAN AGROTIS.

BY AUG. R. GROTE, A. M.,

*Director of the Museum, Buffalo Society Natural Sciences.**Agrotis observabilis, n. s.*

♀. Fore tibiae unarmed ; middle and hind tibiae spinose. By the flattened abdomen allied to *cupidissima*. Fore wings dark blackish brown, with the terminal space paler, somewhat olivaceous. As in *exsertistigma*, the orbicular is open, triangulate, broadly pale margined, fusing superiorly with a pale subcostal shade extending from the base of the wing above this spot. Unlike *exsertistigma*, the orbicular and reniform are black, the ground color of the median space about them being powdered with deep yellow. A black basal dash before the geminate, waved, t. a. line ; the latter interrupted by the subcostal shade and with an interior pale shading. Claviform moderate, pale-edged. T. p. geminate, the inner line scalloped, the outer even, enclosing a rather broad pale space ; the line is very slightly sinuate, not depressed opposite the cell. Subterminal line nearly straight, dark, with a very pale powdery exterior shade. Subterminal space darker shaded on costa, relieving the costal dots distinctly. Terminal line dentate. Hind wings dark fuscous with pale interlined fringes. Beneath quite pale, faintly ruddy and sub-irrorate, with common exterior line fading towards internal margins and discal marks. Collar pale, edged behind with black ; tegulae blackish. *Expanse* 35 m. m. Hab. California (Behrens, No. 376.)

## TINEINA FROM CANADA.

BY V. T. CHAMBERS, COVINGTON, KENTUCKY.

(Continued from p. 128.)

*Argyresthia Goedartella* Auct.

This beautiful and well known European insect is now for the first time discovered in this country. I quote Mr. Stainton's description from *Ins. Brit.*, v. 3, p. 187. "Head yellowish white. Face and palpi white. Antennæ white, annulate with fuscous. Anterior wings white, sometimes suffused with golden, with an oblique golden fascia from the base of the

costa ; a golden fascia in the middle, furcate on the costa, one arm reaching the costa before the middle, the other a little before the apex ; between them are generally a few golden spots on the costa ; *beyond is another golden fascia, which, indeed, occupies the whole apex except a small white spot on each margin. Ciliae pale grayish brown.*" (The italics are mine.) "Posterior wing gray with paler ciliae. (The anterior wings are sometimes so much suffused with pale golden that the markings are almost obliterated.) Common among Birches in June and July. The larva feeds under the bark and in the young shoots of the Birch in March and April. *Al. ex.* 6 lines."

The single specimen before me is silvery white and the fasciæ are brown, golden, or topaz red with golden, according to the direction of the light. In lieu of that part of Mr. Stainton's description which I have italicised, I would say that in the apical part of the wing is an oblique broad fascia, nearest to the apex on the costal margin, where it contains a white streak, and it sends a branch to the dorsal ciliae so as to enclose a white spot at their base. Behind this fascia a narrow curved white one crosses the wing, and at the apex is a golden spot. It is a more handsome species than *A. andereggiella*, next after which as to beauty I would place *A. visaliella* Cham. *A. undulatella* Cham. and *A. Belangerella*, described below, are plain species.

The following are new species :

*Argyresthia Belangerella. N. sp.*

Head, antennae and palpi white, except that the antennae are annulate with dark brown and the face is a little suffused with yellow. Thorax on top and dorsal margin of the wings beneath the fold white, extending nearly to the tip. The other portions of the wings and sides of the thorax above them grayish brown. The grayish brown hue crosses the fold a little in the basal part of the wing, and the white crosses it a little at the base of the dorsal ciliae. There is a distinct dark brown dorsal spot just beyond the middle, but it does not entirely interrupt or cross the white part, and there are two smaller brown spots on the fold, near to and just behind it. There is also a somewhat indistinct brown spot about the middle of the costal margin, behind which and extending to the apex, at the base of the costal ciliae, is a row of alternate white and dark brown spots, and there are two brown spots within the dorsal ciliae in that part of the white which crosses the fold as above stated

There are also a few small white spots near the apex. Ciliae grayish streaked at the apex with brown. Legs yellowish white, the anterior pair brown on their anterior surfaces. *Al. ex.*  $\frac{1}{2}$  inch. Its nearest known American congener is *A. undulatella* Cham., but it is closely related to such European species as *A. spiniella* Zell. This collection also contains another species, marked No. 54, but too much injured to be recognized or described.

*Bucculatrix Canadensisella.* *N. sp.*

The ornamentation of this species differs from that of any other yet found in this country, and though allied to *B. cidarella* of Europe, it is still quite distinct.

Head white. Tuft tipped with dark reddish brown, and the face faintly tinged with purplish fuscous. Upper surface of the thorax brown margined all around by white. Base of the fore wings white, followed by an oblique brown fascia, which is nearest the base on the costal margin, and is followed by an oblique parallel white fascia; all of these are placed before the middle and are followed by a large brown patch which occupies the entire wing to the ciliae, except that it contains a white spot on the middle of the costal margin. The brown patch is margined before on the dorsal margin of the wing by a small tuft of raised brown scales. At the beginning of the dorsal ciliae is a white spot placed a little before, but becomes almost confluent with a longer white costal streak. Behind these streaks to the apex the wing is pale brown, with a darker velvety brown apical spot. Ciliae pale yellowish, with a dark brown hinder marginal line before their middle, not extending into the costal ciliae. Hind wings pale fuscous. *Al. ex.*  $\frac{3}{8}$  inch.

*Gracilaria pulchella.* *N. sp.*

The palpi in the single specimen of this species in the collection are broken off. Antennae dusky yellow, faintly annulate with brown. Head yellowish, with faint violet reflections. There is no trace of the costal triangle, nor, indeed, of any markings on the fore wings, which, and the thorax, are reddish yellow, or perhaps, more properly, are very pale or yellowish brick red, with strong violet and purple reflections, especially towards the apex of the fore wings. Hind wings grayish fuscous; abdomen grayish fuscous, with the tip pale yellow. Tarsi of the 1st and 2nd pairs of legs white, with the 1st pair of legs brownish red. The under surface of the thorax and the 2nd and 3rd pairs of legs dark gray, with the tibiae and tarsi of the 3rd pair yellowish. *Al. ex.*  $\frac{1}{2}$  inch.

*Elachista unifasciella*. N. sp.

Antennae brownish purple; palpi white. Head, thorax and fore wings brownish purple, in some lights reddish purple. There is an oblique white fascia just before the middle of the fore wings, which is a little nearer the base on the costal than on the dorsal margin, and the color of the wing is much deeper behind the wing than before it. There is a small white spot just before the dorsal ciliae, and a little behind it is a narrow costal white streak, which passes obliquely backwards nearly across the wing. The legs and tarsi are marked with brownish purple and yellowish white bands and spots. *Al. ex.*  $\frac{1}{4}$  inch. The white markings on the wings are metallic in some lights. I think it is not likely to be mistaken for any known species.

*Anarsia? albapulvella*. N. sp.

I have but a single specimen of this species, and have not examined the neuration. Possibly it belongs to *Ypsolophus*, to which it is allied by the ciliation of the antennae, apparent under the lens. But the ornamentation is unlike that of any *Ypsolophus* known to me, and the width and form of the wings and form of the palpi ally it to *Anarsia* rather than to *Ypsolophus*. The checkered ornamentation of the antennae reminds one of a *Plutella*.

Antennae dark brown, with a white spot on each side of each joint. Palpi dark brown, the tuft tipped with white, with a white line on each side of each joint. Tongue white. Head grayish brown. Fore wings and thorax brown, the wings sparsely but distinctly dusted with white, especially towards the apex, where there is a white dusted fascia which is strongly angulated posteriorly, following the course of the apical margin and connecting a small ochreous spot at the beginning of the costal ciliae with one at the beginning of the dorsal ciliae; there are six transversely oblique oblong narrow white spots around the base of the ciliae, two of them being on the costal and four on the dorsal margin. Ciliae ochreous. Posterior wings gray, with whitish ciliae. Legs and tarsi dark brown, the tarsi annulate with white. *Al. ex.*  $\frac{3}{8}$  inch.



## ON TWO NEW SPECIES OF HOMOPTERA.

BY H. K. MORRISON, CAMBRIDGE, MASS.

*Homoptera uniformis, nov. sp.*

Expanse 40 m. m. Length of body, 18 m. m.

Palpi long and slender, the second joint light and contrasting, the third dark, tipped with light. Thorax as usual in the genus. Abdomen cylindrical, with slight white dorsal tufts. Anterior wings uniform dull gray-brown, sprinkled with black atoms; the usual black clear-cut transverse lines are obsolete, the subterminal line only is seen as a black diffuse shade crossing the wings; some basal black markings; ordinary spots black, very distinct, close together; the orbicular a round spot, the reniform a sublunate black mark; a series of black dots before the concolorous fringe.

Posterior wings concolorous with the anteriors, having the same diffuse subterminal band, which, however, becomes condensed into a black spot at the anal angle. Beneath gray, concolorous, without lines; distinct black discal dots and a series of bicolorous white and black dots before the fringe.

Hab. Georgia.

Received from my friend, Mr. George W. Peck, of Brooklyn. The absence of the usual markings will distinguish this species, which does not differ structurally from the other *Homoptera*.

*Homoptera cinerea, nov. sp.*

Expanse, 45 m. m. Length of body, 20 m. m.

Palpi gray, of normal form. Collar, thorax and abdomen cinereous black. Pterygodes well marked. Abdomen strongly tufted, the two anal segments ochreous, very distinctly so beneath. Both wings shining, cinereous, on a black ground; the outer half of the wings have a slight purple tinge in certain lights; orbicular spot a black dot; median shade well marked, angulate on the median vein, followed by a blackish, less cinereous shade; exterior line black, indistinct, preceded by a cinereous shade line, twice angulate opposite the brown diffuse reniform spot; subterminal line distinct inferiorly only; a yellow brown shade along the costa of the posterior wings; the disk of the wings is occupied by

alternating cinereous and blackish shades, the former predominating; one distinct black median line, preceded by a blackish shade. Beneath uniform cinereous gray, discal dots not prominent.

Hab. Massachusetts.

The beautiful cinereous and black coloration of this fine species will at once separate it.

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## NOTES ON THE LIFE HISTORY OF THE AMERICAN TIGER MOTH.

BY ROBERT BUNKER, ROCHESTER, N.Y.

### *Arctia Americana.*

Egg spherical, .04 inch in diameter, honey yellow, shiny and smooth as polished glass; laid in straight rows. Larva, when first hatched, one-eighth of an inch long, head small and black, body dark brown clothed with ten longitudinal rows of bunches of spreading hairs; dark brown on the sides, dark gray on the back. First moult somewhat increased in size, color unchanged. Second moult  $\frac{3}{8}$  inch long, dark sooty brown; hair dark brown on the sides, grayish brown above. Third moult  $\frac{3}{4}$  inch long; hair on the sides and fore part above, reddish brown; light gray on the back.

Hybernated Sept. 16th. June 1st, 1875, fourth moult;  $1\frac{1}{4}$  inches long; body blackish brown, sides and fore part above clothed with ochre yellow, back with long bluish gray hairs. Fifth moult—body two inches long, velvety black, ornamented above with four rows of very long bluish gray hairs (directed backwards); in front and on the sides with dark yellowish-red hair, except the third row, which is made up of about equal parts of red and gray hairs; hairs immediately back of the head short and directed forward. Spiracles yellowish white, with a waxy lustre. Feet dark, snuff brown.

Cocoon thin and loosely put together, with hair from the body woven in.

Three specimens of this rare species were captured here last season. The one that came into my possession was brought by a friend, and laid about fifty eggs while in the box. With all the care I could bestow upon them only two reached maturity. A large majority perished during hibernation. Several sickened and died after the last moult; probably in a state of nature not more than two per cent would reach the imago state.

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### NOTES ON BUTTERFLIES.

BY W. H. EDWARDS, COALBURGH, W. VA.

I am able to complete the history of *M. phaeton*, part of which I communicated to the CAN. ENT. in Jan'y, 1869, vol. 1, p. 59.

The eggs are laid in large clusters of from 200 to 400 each, upon the under side of leaves of *Chelone glabra*. They are sub-conical, truncated, ribbed on upper half, yellow when laid, but soon turn to crimson. In 19 or 20 days, as Mr. Scudder informs me, they hatch. As the eggs found by me (13th June) had been deposited some days, I could not verify that point. The young larvae at once begin to construct a web, usually on the topmost leaves of the stem, and feed on the green leaves enclosed; as these are consumed, the web is extended down the stem, covering fresh leaves. The first moult takes place at six days, and the second at about the same time from the first. The third at a further interval of nine to ten days. Between the first and third the larvæ live much outside of the web, but the moult takes place within. Before the third moult a substantial web is constructed, and after the larvae have passed this moult, they become lethargic, and so remain till early the following spring. This period of lethargy commences, at this place, about the 15th of July. The web last constructed is often upon a different plant from that on which the larvæ feed, and in nearly all cases is supported by adjoining stems being incorporated.

With the first warm days of April the larvæ leave the web and scatter about the swamp in search of the young stems of *Chelone*. They moult twice and reach maturity about the 5th of May. The chrysalis period is

from 14 to 18 days. I have found no evidence that these larvæ feed on any other plant than *Chelone glabra*, though, as I have said, the webs are built on other plants.

*Phyciodes nycteis* Doubleday.

I have sometimes confounded this species with *P. Harrisii*, and I see that in vol. iv, CAN. ENT., p. 237, I made this error. The larvæ of *nycteis* feed on *Actinomeris squarrosa*, as was correctly stated by me in vol. v, p. 224. I then described the fall brood of *nycteis*, all of which hibernated after the third moult, and revived the following spring. This season I have raised an early brood from the eggs, and about one-third of the larvæ went on to chrysalis, while the remainder became lethargic after the third moult.

The chrysalis of this species varies much. Some are light-coloured, nearly white, with delicate blackish spots and fine streaks of brown over the surface; others are almost wholly black, while others again are between the two extremes. The length of the chrysalis is one-half inch, and the shape very nearly that of *phaeton*.

*Argynnis idalia*.

Mr. G. M. Dodge sent me last fall, from Nebraska, several eggs of this species, and I succeeded in carrying a few of the larvae through the winter, and one of them past the fifth moult, but this one died before chrysalis. The eggs are congeneric in shape with those of *cybele*, *aphrodite* and *diana*, and the larvae are of the same character as in those species. In the first two stages the larvae, indeed, are scarcely distinguishable in any respect from those of *diana*. After this, instead of the color being black or brown, as in the three species named, they are prettily ornamented with light stripes; but the spines and the arrangement of them are just as in the others. The food plant was common violet, or cultivated violets or pansies, indifferently. I raised quite a number of larvae of *cybele* last winter, and with perfect success. Instead of enclosing them in glasses, a process which proved disastrous to the *Argynnis* larvae which I attempted to raise in '73-'74, I covered the plants with wire gauze cylinders. These admitted plenty of air, and I had only to see that fresh leaves were supplied.

LIST OF NEUROPTERA COLLECTED CHIEFLY IN THE  
NEIGHBOURHOOD OF LONDON, ONT.

BY THE EDITOR.

All the species named below have been submitted to Dr. H. Hagen, of Cambridge, Mass., to whose kindness we are indebted for the determination of most of them.

PERLINA.

*Perla rapinsularis*.

" species undetermined.

*Chloroperla bilineata*.

*Taeniopteryx maura* ?

EPHEMERINA.

*Ephemera natata* ; very common.

*Potamanthus cupidus* ; not uncommon.

*Hexagina bilineata*.

AGRIONINA.

*Calopteryx maculata* ; common about damp woods in the neighbourhood of small streams.

*Lestes disjuncta* ? ; not uncommon.

*Agrion irene* ; common.

GOMPHINA.

*Ophiogomphus rupinsularis* ; not common.

*Gomphus spicatus* ; not common.

*Cordulegaster maculatus*.

AESCHINA.

*Aeschna constricta*.

" *verticalis*.

" *vinosa*.

LIBELLULINA.

*Celithemis eliza* ; rare.

*Plathemis trimaculata* ; common.

*Libellula quadrimaculata* ; rare.

" *exusta* ; rare.

" *pulchella*.

" *basalis* ; rare.

" *julia*.

*Leucorhinia frigida* ; not common.

“ *intacta* ; not common.

*Diplax obtrusa* ; common.

“ *vicina* ; not uncommon.

“ *scotica*.

*Nannophya bella* ; common.

#### SIALINA.

*Sialis infumata*.

*Chauliodes pectinicornis* ; not uncommon.

“ *serricornis* ; rare.

*Corydalis cornuta* ; not uncommon.

#### HEMEROBINA.

*Hemerobius tutatrix*.

“ *simulans*.

*Polystoechotes punctatus* ; very common.

*Chrysopa oculata*.

“ *externa* ?

#### PHRYGANINA.

*Neuronia ocelligera* ; not common.

“ *postica* ; not common.

*Limnophilus stigma*.

*Setodes* ; spec. und.

*Hydropsyche scalaris* ?

In addition to the above, Dr. Hagen has kindly supplied us with the following list of species found in Canada.

*Ophiogomphus colubrinus* ; Quebec.

*Gomphus parvulus* ; Nova Scotia.

*Hagenius brevistylus* ; Ottawa.

*Cordulegaster Sayi* ; Quebec.

*Aeschna septentrionalis* ; Nova Scotia.

*Ephthalma tenebrosa* ; Nova Scotia.

“ *elongata* ; Nova Scotia.

“ *torripata* ; Nova Scotia.

*Cordulia libera* ; Canada.

“ *Shurtleffii* ; Nova Scotia.

“ *spinigera* ; Canada.

“ *semiagaea* ; Nova Scotia.

*Leucorhinia Hudsonica* ; New Brunswick.

*Aeschna constricta*, recorded in the Ontario list, is also found in Nova Scotia.

The above brief list of 43 species from Ontario and 13 from other portions of Canada, embraces, we believe, all that are known to occur in our Dominion. In view of the great number of insects belonging to this interesting order which occur throughout Canada, we hope that some of our collectors will devote a portion of their leisure moments towards more thoroughly working up this long neglected order of insects.

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### DESCRIPTION OF *PAGHNOBIA ORILLIANA*.

BY AUG. R. GROTE, A. M.,

*Director of the Museum, Buffalo Society Natural Sciences.*

Both sexes of a species of *Pachnobia* have been collected by Mr. Geo. Norman, at Orillia, which I propose to call by the name of *orilliana*. It is evidently allied to *Agrotis hyperborca*, which I know only from Millière's and Herrich-Schaeffer's illustrations. It looks at first sight like a species of *Graphiphora* (*Tacniocampa*).

All the tibiae are spinose. The head is sunken, eyes naked, abdomen short. The wings are wide, the male antennae shortly pectinate, setose. The color is not unlike that of *Graph. incerta*, but more olivaceous. There is no basal dash. The color is paler, carneous gray, like the thorax, to the angulated median shade, beyond which the median space is olivaceous brown. The orbicular is large, spherical, concolorous, with a central brown dot and a brown ring. The claviform is suffused with deep brown, prominent, attaining the median shade. The reniform lies in the deeper color of the median space posteriorly, concolorous, kidney-shaped, darker stained inferiorly, well sized. The t. a. line is outwardly oblique, thrice waved, brown. The t. p. line is obsoletely geminate, the pale interior shade showing, of the usual shape, succeeded by a pale shading on the subterminal space which intrudes on the deep brown ground color outwardly like a finger below costal region. The deep brown color of the s. t. space shows the costal dots plainly and extends downwardly narrowly within and along the s. t. line, outside of the pale

shade which follows the t. p. line. S. t. line whitish gray, broad, distinct, with a subcostal dentation else continuous and even. Terminal space blackish; broken black points indicate the terminal line. Fringes reddish brown. All the veins marked by blackish scales, and there is a blackish shading over the median space anteriorly, below median vein and on the inferior portion of the basal field. The male has the lines and spots less obvious and the shading of the wing more strongly contrasts. Hind wings with reddish brown fringes, shaded with fuscous and with a blackish exterior shade and faint median line. Beneath the wings are irrorate with rufous; on both pair the terminal spaces are contrasted by a whitish coloring. A common subterminal shade and exterior line; discal marks linear, luniform. Beneath the vestiture is reddish brown, as are the sides of the palpi; above, with the front, these latter are pale. *Expanse* 35 m. m.

In the male the conformation of the subterminal pale shading is indistinct; the blackish shading basally on interior margin is restricted, the claviform is shorter, not attaining the median shade; the dark olive brown tint of the s. t. space forms a spot along the s. t. line opposite the cell. In this species the form of the thorax, which is darker colored posteriorly, recalls that in *Lithophane*.

Lederer only gives armature to the middle and hind tibiae in his diagnosis of *Pachnobia*. *P. carnea*, the type, has all the tibiae spinose; so has *Pachn. scropulana* (*Agrotis scropulana* Morr.) The species have the habitus of *Graphiphora* (*Taeniocampa*). I find that none of the characters given by Mr. Morrison in a recent number of *Psyche*, to distinguish his *Agrotis scropulana*, are valid, except that of the basal markings of the primaries, to which I am the first to draw attention. I am therefore still of the opinion that it is not certain that the White Mountain species is really different. I have recently re-examined my type of *Matuta Catharina*. I believe it to be a female; the simple antennae may not distinguish it from *Pachnobia* in this event, but it is different by the unarmed fore tibiae. It has a resemblance to *Pachn. orilliana* in habit and the black stains on the veins. Our North American species of *Pachnobia* will be as follows:

*Cornuta* Grote,  
*Scropulana* (Morr.)  
(An spec. seq.?)  
*Carnea* (Thunb.)  
*Orilliana* Grote.



## INSECTS OF THE NORTHERN PARTS OF BRITISH AMERICA.

COMPILED BY REV. C. J. S. BETHUNE, M. A.

*From Kirby's Fauna Boreali-Americana: Insecta.*

(Continued from Vol. vii, p. 113.)

## COLEOPTERA.

By an unfortunate oversight, descriptions of the following Coleoptera have been omitted. They should have preceded the family Cleridae on p. 109 of the present volume. In the reprint which we are preparing they will appear in their proper place.—ED. C. E.

## [240.] FAMILY DIRCÆIDÆ.

326. *XYLITA BUPRESTOIDES* Payk.—Length of body 3 lines. Taken in Canada by Dr. Bigsby.

Body narrow, black-brown, very minutely and thickly punctured, sprinkled with short decumbent pale hairs, not glossy. Head inserted; eyes hemispherical; palpi rufous; antennae nearly as long as the prothorax, ferruginous, a little embrowned at the apex; prothorax not wider than long, anteriorly narrowest, posteriorly obsolete trilobed; sides rounded; scutellum transverse; elytra very little wider than the prothorax; tarsi ferruginous.

[Taken by Agassiz's Expedition to Lake Superior.]

## FAMILY ANTHICIDÆ.

327. *NOTOXUS MONODON* Fabr.—Length of body  $1\frac{2}{3}$  line. A single specimen taken in Lat. 65°.

[241.] Body hairy with pale hairs. Head blackish; mouth, palpi, and antennae testaceous; prothorax testaceous; horn convex above, margin denticulated; elytra testaceous with a blackish band near the apex which rises upwards at the suture, and three blackish spots; two at the base, and one between the band and the apex, the last very faint; legs testaceous; postpectus and base of the abdomen embrowned; the remainder of the prone part of the body is testaceous.

[Not uncommon in Canada. Described and figured by Say (Am. Ent., i, 21, plate 10).]

## FAMILY CANTHARIDÆ.

328. *CANTHARIS UNICOLOR* Kirby.—Length of body 7 lines. Taken in Canada by Dr. Bigsby.

Body black, hoary from numerous decumbent white hairs; antennae subsetaceous, a little longer than the prothorax; two first joints very long, the first curved and nearly twice the length of the second; and the second as long as the three following ones together; prothorax rather bell-shaped, channelled; wings embrowned.

[Belongs to the genus *Epicauta* Red.]

[242.] 329. *MELOE IMPRESSA* Kirby.—Length of body  $5\frac{1}{4}$  lines. A single specimen taken in Lat.  $65^{\circ}$ .

Nearly related to *Meloe violacea*, but very much smaller. Body violet-coloured. Head with scattered but not large punctures; front between the antennae transversely and obtusely elevated; antennae irregular; prothorax not much narrower than the head, anteriorly rounded, posteriorly narrower and emarginate, towards the base with a deepish impression, with several scattered but not large punctures, and two little transverse oblique crescents formed of punctures; elytra wrinkled; outer claws and spurs rufo-piceous, inner claws paler.

330. *MELOE NIGRA* Kirby.—Length of body 6 lines. A single specimen taken in Lat.  $65^{\circ}$ .

Extremely similar to the preceding species, but the body is all black with no tint of violet, except the base of the antennae below the band and the tibiae and tarsi; the head and prothorax are more thickly punctured, and the claws and spurs are ferruginous.

[Previously described as *M. conferta* Say.]

## [243.] FAMILY MELYRIDÆ.

331. *DASYTES FOVEICOLLIS* Kirby.—Length of body  $2\frac{3}{4}$  lines. A single specimen taken in the Journey from New York to Cumberland-house.

Body somewhat hairy, underneath black and glossy; above with a blue tint. Head glossy, punctured with largish scattered punctures; front with two impressions; prothorax nearly square, with the sides a little curved, punctured at the head, with a pair of transverse anterior impres-

sions ; sides and base margined, margin reflexed ; elytra less glossy than the rest of the body, minutely, but not conspicuously, punctured.

[Belongs to the family *Malachiidae*.]

[254.] V.—HYMENOPTERA.

FAMILY CIMBICIDÆ.

351. *CIMBEX FEMORATA* Linn.—Length of body 10 lines ; expansion of wings 21 lines. A single specimen taken in Lat. 65°.

♀. Body very black, hairy. Antennæ yellow, brown at the base ; legs blue-black ; tarsi yellow ; wings hyaline with yellow nervures, brown at the tip, with a brown cloud in the middle areolet adjoining the costa.

352. *TRICHIOSOMA TRIANGULUM* Kirby.—Length of body 9 lines. A single specimen taken in Lat. 65°. Another was also sent me from Canada by Dr. Bigsby.

[255.] Body black, shining, covered with soft and woolly whitish hairs, punctured more or less. Head, excluding the mandibles, depressed, orbicular, as wide as the trunk ; mandibles crossed, very sharp, black ; upper lip subpentagonal, flat with a longitudinal elevation in the middle, hairs on this part black ; anterior margin of the nose wavy, emarginate in the middle ; antennæ with the fourth, fifth, and sixth joints testaceous ; three eyelets behind the antennæ arranged in a triangle ; eyes oval, prominent ; vertex square, marked out by a ridge on each side ; trunk subglobose ; prothorax with a longitudinal furrow ; thighs and coxæ black-blue ; under a strong magnifier beautifully and most minutely reticulated, which gives them a silky lustre ; the rest of the leg is testaceous ; the two posterior pair of thighs are thicker than the others and armed at the apex with a short tooth on each side, between which is a cavity to receive the shank when folded ; tarsi with a sucker underneath at the apex of the four first joints ; wings testaceous with piceous nervures, and a cloud at the tip ; abdomen ferruginous with a dorsal triangular black spot, extending from the base towards the apex, but not entering the last segment ; the basilar ventral segments are spotted with brown.

[Found in Canada and Colorado.]

353. *TRICHIOSOMA LUCORUM* Linn.—Length of body 7 lines ; expansion of wings 15 lines. A single specimen taken in Lat. 65°.

Body black with a very slight æneous tint ; glossy, hairy with ciner-  
ascent hairs, those of the trunk long. Head orbicular, scarcely so wide  
as the trunk ; upper lip small, convex, orbicular, punctured ; antennae  
black ; wings subhyaline with a cloud at the tip ; nervures some piceous  
and others rufous ; thighs black with a very slight tint of blue ; posterior  
pair armed with a tooth ; abdomen short, subovate, black, covered more  
or less with short decumbent down ; black above, underneath reddish at  
the tail.

[256.] FAMILY TENTHREDINIDÆ.

354. *ALLANTUS LEUCOSTOMA Kirby*.—Length of body 6 lines. One  
specimen taken in Lat. 65°.

Body narrow, black, glossy, without hairs. Head scarcely so wide as  
the trunk, wedge-shaped ; palpi, suborbicular upper lip, emarginate nose,  
and base of the mandibles, white ; apex of the latter rufous ; antennae a  
little shorter than the trunk, nine-jointed, with the third joint longer than  
any of the others ; neck constricted ; tegulae testaceous ; wings sub-  
hyaline with piceous nervures ; legs yellow, with the apex of the tibiae  
and the whole of the tarsi of the posterior legs, black ; abdomen linear,  
acute at the anus.

This species comes near *Allantus ater*, but the mandibles are rufous at  
the apex ; the palpi are whiter ; and the legs of a different colour.

FAMILY SIRICIDÆ.

355. *SIREX BIZONATUS Stephens*.—Length of body 18 lines ; expansion  
of wings 27 lines. Taken in Lat. 65° and in the journey from New  
York.

[257.] Body very black, covered with innumerable punctures from  
each of which proceeds a black upright hair. Head narrower than the  
trunk ; mandibles incumbent ; palpi rufo-piceous ; antennae as long as  
the trunk, yellow ; behind each eye is a large oval yellow eye-like spot  
perfectly naked and smooth ; legs and tips of the thighs yellow ; wings  
yellowish with dark nervures ; abdomen with the second, seventh and  
eighth segments luteous ; anal mucro linear, yellow, terminating in a  
point ; ovipositor black.

The specimens of this species, which Mr. Stephens found near Lon-  
don, might probably have been imported in fir timber from Canada.

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DESCRIPTION OF A NEW SPECIES OF ANNAPHILA  
FROM CALIFORNIA.

BY LEON F. HARVEY, M. D., BUFFALO, N. Y.

*Annaphila immerens*, n. s.

This is perhaps the slightest species of the genus yet known.

The blackish gray fore wings show the median line distinctly; the t. p. line is incepted nearer the apex than usual, denticulate, slightly rounded opposite the cell, and unusually strongly inflected below the black mark, which denotes the reniform spot. The orbicular is a black dot. The t. p. line is bordered outwardly with a pale shade. Hind wings deep orange yellow, without dot or median line; the latter obsoletely indicated at internal margin. A very narrow terminal black line, inwardly dentate above submedian fold; fringes fuscous. Beneath orange yellow, immaculate, with narrow even blackish edging and fuscous fringes. On primaries costal traces of a transverse line. Body blackish fuscous.

*Exp.* 20 m. m. *Hab.* California.

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BOOK NOTICES.

The Butterflies of North America, by W. H. Edwards, second series, part 3.

The third part of the second series of this superb work has reached us since our last issue. It contains five magnificent plates, figuring *Papilio zoliazon*, *Argynnis Meadii*, *Apatura celtis*, with drawings of the egg and of the larva in its various stages; *Chionobas gigas* and *Californica*, and *Lycena regia* and *heteronea*, with accompanying descriptions and much interesting information regarding the habits of the species.

Description of a new Crustacean from the Water Lime Group at Buffalo, by Aug. R. Grote and W. H. Pitt.

We have received advanced sheets of this paper, accompanied by an excellent photograph of the interesting object of which it treats. Both will appear in No. 1, Vol. 3 of the Bulletin of the Buffalo Society of Natural Sciences.