

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

Coloured pages/
Pages de couleur

Covers damaged/
Couverture endommagée

Pages damaged/
Pages endommagées

Covers restored and/or laminated/
Couverture restaurée et/ou pelliculée

Pages restored and/or laminated/
Pages restaurées et/ou pelliculées

Cover title missing/
Le titre de couverture manque

Pages discoloured, stained or foxed/
Pages décolorées, tachetées ou piquées

Coloured maps/
Cartes géographiques en couleur

Pages detached/
Pages détachées

Coloured ink (i.e. other than blue or black)/
Encre de couleur (i.e. autre que bleue ou noire)

Showthrough/
Transparence

Coloured plates and/or illustrations/
Planches et/ou illustrations en couleur

Quality of print varies/
Qualité inégale de l'impression

Bound with other material/
Relié avec d'autres documents

Continuous pagination/
Pagination continue

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

Includes index(es)/
Comprend un (des) index

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

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.

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	14X	18X	22X	26X	30X
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12X	16X	20X	24X	28X	32X

The Canadian Entomologist.

VOL. IV.

LONDON, ONT., SEPT, 1872.

No. 9

NOTES ON THE EGGS AND YOUNG LARVÆ OF

MELITÆA HARRISII.

BY W. SAUNDERS, LONDON, ONTARIO.

For several years past, I have tried to obtain eggs from this species by confining the females in small boxes, but without success until this year, when several of these insects were taken during the third week in June, and shut up in boxes and laid aside. They were unfortunately overlooked until the 5th of July, when in one box was found a cluster of 14 eggs which were about hatching, and in another 31 in one cluster, and three detached ones near it. Those in the latter box had not been so long laid, and their colour was unchanged, and from them the following description was taken:—

Length $\frac{3}{4}$ of an inch, width $\frac{1}{2}$ of an inch. Colour green, of rather a pale shade; nearly barrel-shaped, contracted towards the upper end, which has a nearly flat or slightly concave smooth surface. The sides are ornamented with a series of sixteen raised striæ placed at regular intervals, and the bottom end is somewhat flattened, and attached firmly to the surface of the box.

The other lot of eggs, which were just about hatching, had lost their green colour, and presented a whitish hue around the sides and towards the bottom; while the upper portion was dark brown, from the colour of the young larva showing through the transparent egg-shell. While examining one of the eggs under the microscope, one of the mandibles of the enclosed larva was thrust through the egg-shell near the upper surface, and soon after the other appeared near by in the same manner, and after some effort these were made to meet, and then shortly a small opening made, which admitted of the head being partly thrust through, when the larva soon began to eat the egg around, with the view of removing the top. The thickened striæ of the egg were not ruptured without much effort, the points of the mandibles being thrust through the interspaces, and the thicker ridge grasped and torn, after many endeavours, by pulling inwards. As the opening progressed, the sides continued to be eaten down sufficiently to admit of the head being thrust through, the thinner

interspaces being easily disposed of. After tearing through two or three of the striæ, the larva rests awhile from its efforts, and then begins afresh. On the upper flat surface there appears a black forked line, which varies in different specimens, which is caused by the diverging lines on the front of the head showing through; the lines varying as the position of the head is changed. After one hour and thirty-five minutes had been spent in these efforts (including frequent rests), the top was gnawed nearly around, when the head was pushed up, and the lid tilted over. The larva now rested for about ten minutes, although there was no obstacle to its egress, and then commenced to extricate itself, by first bending its head backwards and forwards, and stretching upwards. The second segment, with the first pair of feet, was soon extricated; the feet were placed on the side of the egg-shell, and thus a foothold gained by which to help to withdraw the third segment with the second pair. In like manner the fourth segment was soon extricated; then working its body from side to side with the head upwards, and alternately working it round with the head downwards, grasping with its jaws at adjoining eggs, or anything else within reach, the remaining segments were speedily withdrawn, the whole operation not occupying more than five or six minutes.

Description of young larva fresh from the egg :--

Length about $\frac{1}{16}$ of an inch, cylindrical.

Head large, rounded; colour dark greenish-brown, nearly black, with a forked line in front like an inverted Y, the diverging lines uniting a little above the middle, and the single line continued to the tip.

Body above dull pale yellowish, each segment with a transverse row of slightly darker raised dots, each emitting a single pale brown moderately long hair; on terminal segment is a yellowish patch above.

Under surface similar to upper; feet pale, semitransparent; prolegs pale yellowish.

Not knowing the food plant of this species, I tried the larvæ, in vain, on a great variety of plants and shrubs, including violet, pansy, willow, grass, clover, polygonum, and purslane, changing the food about every two or three hours for about two days and a half, by which time all but three had died of starvation. Then on examining "Abbot's Notes on Georgian Butterflies," as published by Mr. Scudder, CAN. ENT., vol. 4, p. 85, I found that the larva of *ismeria*, a closely allied species, feeds on *Helianthus*. No time was lost in procuring some common sunflower

leaves, of which the three remaining weakened specimens at once began to eat ; two of them soon became plump and active, but the other died.

After the first moult, the following description was taken :—

Length $\frac{1}{5}$ of an inch. Head medium size, dark brown : second segment pale on its anterior edge, brown behind, third segment brown also, the remainder of body being very pale brownish, with several round greenish-white spots on each segment. There is also, on each segment, a transverse row of pale slightly raised dots, from each of which arises a single brownish hair.

By the 16th of July, the larvæ had again moulted, and had now grown to a quarter of an inch in length, and were thus described :

Head small, bilobed, black and shining, with a few short pale brownish hairs.

Body above brownish-black, dotted and spotted with greenish. Second segment with a transverse row of tubercles, from which arise brown or blackish hairs. Third and fourth segments each with four black branching spines ; spines and branches all nearly black. From fifth to twelfth inclusive, each segment has six spines, the two upper pairs of which are black, tipped with greenish, and with a little greenish colour at base, the fine hair-like branches being black or brown. The lower pair of spines are set in a band of pale greenish-white ; where they partake of the same colour, both spines and branches, and this greenish-white stigmatal band, has a broken brownish line running through it. On twelfth segment is an additional dorsal spine, placed a little behind the others ; terminal segment with four spines arranged in two pairs, one above the other.

Under surface paler and greenish. Feet tipped with black ; prolegs pale semi-transparent.

Soon after this date, one of these larvæ escaped from confinement, and could not again be found ; the other soon ceased feeding, and became lethargic, and still continues so, but whether alive or dead now I can scarcely tell, although I fancy it is still living. From the observations of Mr. Scudder on *Argynnis bellona*, published in the September number of the *American Naturalist*, and also from remarks made in correspondence by Mr. Edwards, who has closely watched many members of this interesting family, as well as from my own observations, it seems highly probable that most, if not all of our species of both *Argynnis* and *Melitæa*, pass the winter in the larval state, the larvæ becoming lethargic while quite young.

LIST OF THE
NORTH AMERICAN SPECIES OF CATOCALA.

BY AUG. R. GROTE, DEMOPOLIS, ALA.

The present list is based upon a paper on the genus *Catocala* recently published in the Transactions of the American Entomological Society. The sequence of the species there adopted is here retained, with an unimportant change in a single instance for convenience of reference. The species are grouped according to the colour and design of the hind wings. Such an arrangement must, to a certain extent, be arbitrary, yet little violence seems to be done to the general affinities of the species by its adoption in this genus. With regard to the position of the species with black hind wings, it must be conceded that they are most nearly allied to the species with yellow secondaries. For instance, *C. epione* resembles *C. consors*; *C. Robinsonii*, *C. habilis*, etc. But I inaugurate the genus with the black winged species from the consideration that such species are not found in other continents, and that in North America the genus attains its fullest representation. I allow them to precede the more typical specific forms, such as certain of the red winged species, and conclude with the yellow winged *Catocala*, as has been customary with regard to the European species. From the Atlantic district we have at least one strictly representative species. This is *C. relicta*, which represents the European *C. fraxini* in our fauna. But I do not know *C. Walshii*, and thus have not been able to decide upon the degree of relationship between the red winged species of the two Continents.

In the following list, the names of species not known to me in nature, are followed by a dash (—). Those hitherto found in Canada are preceded by an asterisk (*). Mr. Saunders has kindly enabled me to add to the number of species hitherto known to me from various points in Canada. The Californian and Texan species are separately indicated; the rest are from the Atlantic district. I have not cited Mr. Walker's erroneous determinations in this genus, elsewhere pointed out, from a desire to avoid increasing the synonymy. While our collections from the Territories are as yet scanty, we must expect the discovery of many new species of the genus. Of the fifty-nine (59) here enumerated, ten (10) are known to me only by description. In the State Collection in St. Louis, I have been shown a specimen of *C. Robinsonii* taken in Missouri.

CATOCALA, *Ochsenheimer*.

1. Hind wings black and unbanded above with blackish fringes.
INSOLABILIS, *Guenee*.
2. Hind wings black and unbanded above with white fringes, sometimes interrupted with black.
*EPIONE, *Westwood*.
Noctua epione, *Drury*.
LACHRYMOSA, *Guenee*.
ROBINSONII, *Grote*.
*VIDUATA, *Guenee*.
Catocala vidua, *Guenee*.
DESPERATA, *Guenee*.
? *Phalæna vidua*, *Smith*.
RETECTA, *Grote*.
FLEBILIS, *Grote*.
TRISTIS, *Edwards*.
3. Hind wings black above, with a white band.
*RELICTA, *Walker*.
4. Hind wings various shades of red above, with a black median band.
CALIFORNICA, *Edwards*. (California).
STRETCHII, *Behr*.— (Virginia city).
*BRISEIS, *Edwards*.
ADULTERA, *Hinze*.— (California; *teste Lederer*).
IRENE, *Behr*.— (Ft. Tejon).
*UNIJUGA, *Walker*.
JUNCTURA, *Walker*.
WALSHII, *Edwards*.—
*PARTA, *Guenee*.
COCCINATA, *Grote*.
*ULTRONIA, *Guenee*.
Eunetis ultronia, *Hubner*.
*AMATRIX, *Guenee*.
Lamprosia amatrix, *Hubner*.
Catocala selecta, *Walker*.
var. *Catocala nurus*, *Walker*.
*CARA, *Guenee*.
*CONCUMBENS, *Walker*.
MARMORATA, *Edwards*. (Ureka).

*ILIA, *Guenee*.

Phalaena ilia, Cramer.

UXOR, *Guenee*.—

(an spec. praec. ?)

5. Hind wings orange above with a median black band.

ZOE, *Behr*.— (Searsville).

INNUBENS, *Guenee*.

var. *Catocala scintillans*, G. & R.

6. Hind wings black above, with a narrow even yellow band.

*CEROGAMA, *Guenee*.

7. Hind wings yellow above, with a median black band.

*NEOGAMA, *Guenee*.

SUBNATA, *Grote*.

PIATRIX, *Grote*.

PALAEOGAMA, *Guenee*.

var. *Catocala phalanga*, Grote.

HABILIS, *Grote*.

CONSORS, *Guenee*.

Phalaena consors, Smith.

PONDEROSA, G. & R.

Catocala nebulosa, Edwards.

MULIERCULA, *Guenee*.

BADIA, G. & R.

*ANTINYMPHA, *Walker*.

Noctua paranympa ‡ Drury.

Ephesia antinympa, Hubner.

Catocala affinis, Westwood.

Catocala melanympha, Guenee.

SERENA, *Edwards*.

ILLECTA, *Walker*.

*CLINTONII, *Grote*.

NUPTIALIS, *Walker*.—

ABBREVIATELLA, *Grote*. Texas.

FREDERICI, *Grote*. Texas.

MICRONYMPHA, *Guenee*.

*POLYGAMA, *Guenee*.

AMASIA, *Westwood*.

Phalaena amasia, Smith. (Upper figure).

FORMULA, G. & R.

Phalaena amasia, Smith. (Lower figure).

CONNUBIALIS, Guenee.—

GRYNEA, Walker.

Catocala nuptula, Walker.

*PRAECLARA, G. & R.

FRATERCULA, G. & R.

*MINUTA, Edwards.

var. *Catocala parvula*, Edwards.

GRACILIS, Edwards.

Catocala similis, Edwards.

8. Hind wings yellow above without a median band.

*ANDROPHILA, Guenee.

Corisce amica, Hubner.

LINEELLA, Grote.

MESSALINA, Guenee.

PHYLLOXERA VASTATRIX IN PORTUGAL.

The *Gardeners' Chronicle* of the 20th inst. records a meeting of the Scientific Committee of the Royal Horticultural Society on the 17th inst. The following communication formed part of its proceedings:—"From the Foreign Office came a copy of a communication from Her Britannic Majesty's Consul at Cintra, alluding to the appearance of the new Vine disease in Portugal; one vineyard, producing an average quantity of 70 pipes, last year only produced one pipe, the total loss in the Douro district being estimated at 500 pipes." In connection with this communication, it appears desirable to mention that a trade circular of the 12th inst. directs attention to a pamphlet from Oporto, published in June last (by Ernesto Chardron, Rua dos Clerigos), which treats at length of the same insect pest. This pamphlet, although it adds no new facts to the natural history of *Phylloxera vastatrix*, as ascertained by Westwood, Planchon, Lichtenstein, and Riley, has the merit of giving the locality where the insect first appeared in Portugal. It appeared first in the parish of Gouvinhas, where its ravages have been so great that one quinta, planted in 1842, producing in ordinary years 50 pipes of wine, was reduced in 1870 (otherwise a good year) to two pipes only.

The question arises, how did the *Phylloxera* first reach Portugal? It seems to me that there are only two likely means of conveyance in this instance. It must have got there, either in the egg or larval state, on canes imported from abroad. Or if such has not been the case, I presume winged gravid females have been carried from the infected districts of France into the vineyards of the Alto Douro; or perhaps the last-named locality has served as starting place for the French "Vignobles," after the presumed arrival of the insect from America.

England, France, and Portugal are now infested; how long Spain will remain free from the plague no one can say. Lately the *Phylloxera* has made its first appearance in Switzerland, in the cantons of Argovie, Schaffhausen, Zurich, and Thurgoyie; and there can be now but little hope that the Rhine and the Moselle districts will escape much longer.

The fact of the matter is, that even leaving Nature's own operations out of the question, the trade and exchange of choice varieties of hothouse Vines and hardy seedlings are now so extensive, that man is the real carrier of the pest.

Is it asking too much to call for international co-operation in the checking of the plague, universal as it is sure to become? One would think that the threatened destruction of wine-growing all over Europe and America is an evil, not only to the nations concerned, but of universal consequence. Governments there are which are enlightened enough to offer enormous prices for a sure remedy to destroy the insects; but why not fight the enemy *ab ovo*, by strictly ascertaining and confining its depredations to its present centres of dispersal and eradicating it there? Much might be done by stopping the distribution of canes and seedlings from countries at present occupied by the *Phylloxera*.

If some such measure were adopted on international grounds by all countries concerned, one fruitful source of propagation would be closed up. Local energy might then be applied to the task of overseeing the districts attacked, and doing battle with unforeseen arrivals in fresh localities.

Means have been found effectually to stop the importation of domestic animals affected by certain diseases. Surely rules could be devised to bar the distribution of cultivated plants when found to be accompanied by their insect foes.

It is the plain interest of the viticulturist, as well as that of the public, to agitate until protective international measures are taken in this grave

matter; and I feel convinced that future generations will honour the State which takes the lead of a movement to counteract a disease of such alarming influence over the prosperity of a widely spread and, until lately, remunerative culture.—ALBERT MULLER.

MICRO - LEPIDOPTERA.

BY V. T. CHAMBERS, COVINGTON, KENTUCKY.

Continued from Page 150.

GELECHIA.

This huge genus comprehends insects of great variety of size and structure, but unfortunately it has not yet been found practicable to subdivide it. It contains, no doubt, material for several genera, and for the convenience of the student, if for no other reason, its subdivision is the desideratum in microlepidopteroLOGY. The young student who finds a micro with the palpi simple or but scarcely at all thickened with scales beneath, the fore wings comparatively narrow, and the hind wings deeply excised beneath the tip, and is told that it is a *Gelechia*, may well be astonished when he finds a larger insect, with the hind wings not at all excised beneath the tip, and the palpi overarching the vertex, with a large brush beneath the second joint, which may even present some appearance of longitudinal division, and is told that it, too, is a *Gelechia*. Several of the species which I have placed provisionally in *Depressaria*, some entomologists would, no doubt, place in this genus. The species hereinafter described belong, with two or three exceptions, unquestionably to *Gelechia*. Possibly, the entomology of other localities may furnish the connecting links between these species and those that I have placed in *Depressaria*, but I have not met with the connecting links, and the two groups of species seem to me to be as essentially distinct as *Gelechia rososuffusella*, Clem., or *G. Hermanella*, Stainton, are from *Depressaria albipunctella*, as figured by Stainton. A few of the species, however, described below, do not belong to the group represented by *G. rososuffusella*; but to those having a small brush on the second joint of the palpi.

G. thoraccochrella. *N. sp.*

Second joint of the palpi with a small but distinct brush; palpi dark brown, ochreous along the inner surface and the second and third joints tipped with ochreous; apical half of the tongue yellowish; antennæ

annulate with ochreous and brown; head silvery, tinged with pale purple and flecked with dark brown; *thorax ochreous*; anterior wings dark grayish brown, with darker brown spots and somewhat sprinkled with ochreous. *Alar ex.* $\frac{1}{3}$ inch. Kentucky, in June.

At first glance this species is likely to be mistaken for *G. fuscopulvella post*, but it is much darker in color and the reddish-ochreous thorax also distinguishes it.

G. obscurella. *N. sp.*

Palpi much thickened beneath, almost brush like; palpi dark brown, mixed with ochreous; ochreous on the internal surface, and extreme tip of third joint ochreous; head silvery with a faint purple tinge, and flecked with brown; antennæ annulate with ochreous and brown; thorax and anterior wings ochreous, densely flecked with dark brown, in some lights showing a very faint roseate tinge. *Alar ex.* $\frac{1}{3}$ inch. Kentucky, in June.

This species also might, on a casual glance, be mistaken for *fuscopulvella post*, but the absence of anything like distinctness or definite form in the markings of the wings distinguishes it. It is a very plain and inconspicuous insect.

G. fuscopulvella. *N. sp.*

Second joint of the palpi almost forming a brush, externally dark brown, with dark ochreous intermixed, internally pale ochreous; terminal joint dark brown, with an almost equal quantity of yellow ochreous, intermixed; antennæ alternately annulate with ochreous and brown; head and anterior wings dark yellowish-ochreous, dusted with dark brown, and with a faint roseate tinge, the apical portion being about equally ochreous and dark brown. There are three distinct dark brown costal spots, the second of which is about the middle; the first is most distinct, and is connected with some irregular dark brown streaks on the disc. See *G. thoraceochrella ante.* *Alar ex.* $\frac{1}{3}$ in. In Kentucky in June.

G. fuscumaculella. *N. sp.*

Palpi with the second brush scarcely brush-like, ochreous and fuscous, mixed in about equal qualities, tipped with pale ochreous; head ochreous, dusted with brown; thorax brown; anterior wings dusted with brown, which is aggregated into irregular spots and blotches. *Alar ex.* $\frac{1}{2}$ inch. Kentucky.

G. quercinigracella. *N. sp.*

Ochreous-gray; *second joint of the palpi not at all brush like, but somewhat thickened or incrassate towards its apex beneath*; palpi dark brown,

with a little ochreous intermixed ; third joint annulate with pale ochreous at the base, middle and tip ; head ochreous-gray ; antennae with alternate annulations of dark brown and pale ochreous ; thorax and anterior wings ochreous-gray. There is a brownish patch at the base of the wings, an oblique dark brown streak from the costa, not far from the base, crossing the fold, but not quite reaching the posterior margin ; extreme costa dark brown, a dark brown costal spot about the basal third, another larger one about the apical third, the wing between the latter and the dorsal margin being overlaid with dark brown ; apical portion of the wing densely dusted with dark brown ; ciliae gray, with some intermixture of dark brown scales. *Alar ex.* $\frac{1}{2}$ inch. Kentucky.

The larva is slender, white, with a black spot behind each eye, and two small black ones, one above the other, on each side of each segment. Later in larval life, the black spots on the first segment spread, and cover the posterior margin of the segment, becoming confluent on top ; and the larva becomes dirty yellowish, with small black spots on each segment, and the space between the segments (or rather where the segments pass into each other), becomes suffused with pink. It feeds on the leaves of the "Black Jack" (*Quercus nigra*) in the latter part of June and in July.

G. grisella. *N. sp.*

Gray, densely dusted with dark brown, base of the costa dark brown ; head but faintly dusted ; antennae dark brown ; palpi with the second joint densely clothed beneath, but scarcely brush-like, dark brown externally, with a white annulation near the apex of the second joint, and another at the base of the third. *Alar ex.* $\frac{5}{8}$ inch. Kentucky. Imago in May.

G. albistrigella. *N. sp.*

Second joint of the palpi but slightly thickened beneath towards the apex. Entire insect (except as stated below) dark brown in some lights, faintly tinged with purple, green, or bronze ; a small oblique white costal streak just before, and a few indistinct whitish scales or small spots in the apex, near the dorsal ciliae ; ciliae pale fuscous, with a dark brown hinder marginal line before their middle. *Alar ex.* $\frac{3}{8}$ inch. Kentucky, in June.

The wings are not spread in my single specimen, and I have not examined the neuration. It is rather a pretty species, which in its general appearance and style of ornamentation, seems to approach *Strobisia*, Clemens.

G. suffusella. *N. sp.*

Second joint of palpi slightly incrassate beneath towards the apex ; both

joints silvery white, with a fuscous band before the apex of the second, and with two fuscous annulations on the third, and extreme apex fuscous; head pale ochreous; antennae with alternate ochreous and brown annulations: anterior wings pale ochreous, suffused near the base with pale fuscous, behind which is an oblique pale band across the wing, and behind that an oblique fuscous band, behind which the wing is paler again, with another large pale fuscous patch before the beginning of the costal ciliae, and the apex dusted with fuscous; the whole wing is suffused, according to the light, with roseate, silvery, pale golden or pale green; the golden tinge is most distinct along the dorsal margin. *Alar* ex. $\frac{2}{3}$ inch. Kentucky, in May.

G. discomaculella. *N. sp.*

Second joint of the palpi but little thickened beneath; palpi dark brown, with dark ochreous intermixed. Antennae brown; anterior wings gray, densely dusted with brown, the dusting more dense towards the apex, with a small triangular ochreous patch at the beginning of the costal ciliae, and a small one opposite on the dorsal margin. In some lights, two minute golden spots are visible, one about the middle, and the other about the end of the disc.

Alar ex. $\frac{2}{3}$ inch. Kentucky, in May.

G. aurimaculella. *N. sp.*

Very near the preceding species but distinct, I think. Second joint of the palpi dusted with white, third joint but little dusted, both joints brown; head silvery, dusted with dark brown, and with metallic hues; thorax and anterior wings pale ochreous, almost whitish, mixed in about equal quantity with dark brown, which in places is aggregated into patches and which forms an oblique fascia about the basal fourth of the wing; apical half of the wing mainly dark brown with a white costal spot at the beginning of the ciliae and a smaller opposite dorsal one; On the disc are three minute and indistinct golden yellow spots or streaks. Alar ex. $\frac{1}{4}$ inch. Kentucky, in June.

G. ? curvilineella. *N. sp.*

Palpi simple, pale gray mixed with brown; antennae pale gray, annulate with brown; head, thorax and wings dusky gray, sprinkled with hoary: a hoary spot on each side of the thorax above the wings; two or three indistinct, dusky, longitudinal short streaks on the wings, the most distinct of which is on the fold before the middle. In some lights there is a tolerably distinct curved or zig-zag line beginning at the base of the wing,

passing thence to the costa, thence to the fold and backwards and forwards from the costal margin to the fold, to about the apical fourth, where it suddenly curves up to the dorsal margin at the beginning of the cilie. In some lights this line is invisible. Alar cv. $\frac{3}{8}$ inch. Kentucky, in May.

G. Physaliella. N. sp.

Second joint of the palpi a little incrassate beneath. Lower face creamy yellow; palpi, head, thorax, and anterior wings dark brown, a little bronzed, rather indistinctly dusted with ochreous, and still more indistinctly with white. Alar cv. $\frac{1}{8}$ inch. Kentucky.

The larva mines the leaves of the "Ground Cherry" (*Physalis Viscosa*) in September, and perhaps earlier, as I found there many empty mines. It mines the under surface, and produces a tubicular swelling of the upper surface. It pupates among leaves on the ground, and (in the breeding cage at least) the imago conceals itself among the leaves and "trash" on the ground. I have never seen any specimens except the two that I succeeded in rearing; but the mines are abundant. The following are my notes about the larvae:—"Larvæ now (Oct. 6th) about $\frac{1}{4}$ inch long; one of these in the mine appears bright bluish-green, with the head yellowish; another is pale bluish or bluish-green, almost white, suffused with pink upon the back, head pale brownish. Oct. 7, one of them has left the mine; it is $\frac{1}{4}$ inch long, robust, deep purple, with the head and 'shield' of the first segment green. Two imagines April 14." They were kept in a warm room.

G. quercivorella. N. sp.

Second joint of the palpi slightly incrassate beneath. Palpi very dark brown, mixed in almost equal proportion with white. Head white, rather sparingly flecked with dark brown. Antennæ dark brown, annulate with white; thorax and anterior wings dark iron gray, with a blackish costal spot about the middle of the costa, and another smaller one at the beginning of the cilie, and with other irregular and irregularly disposed dark brown spots on the wing; the dorsal margin paler gray. Hind wings of a leaden hue, faintly tinged with purplish. Alar cv. $\frac{1}{8}$ inch. Imago in June in Kentucky.

The larva is white with bright red spots, closely resembling that of *G. Hermonella*. It feeds on Oak leaves, and when first observed, was forming a closely-fitting tube of white silk around itself on the under side of the leaf. This tube it closed in a day or two after, and by some means spun a band of brown silk across the middle of it on the outside.

G. longifasciella. Clem., *Proc. Ent. Soc. Phila.*, 1863, p. 12.

Telphusa curvistrigella, ante p. 133.

After my former paper was in the hands of the printer, I became satisfied that the species which I had made the type of this genus could be nothing else than *G. longifasciella*, Clem. It was discovered unfortunately too late to prevent the publication of the species as *Telphusa curvistrigella*. The genus *Gelechia* has become so large and unwieldy, and contains such a variety of size, ornamentation and structure, that the temptation is great to put every thing that will admit of it in another group. If this species had not been before described, I think I should permit it to remain as the type of the new genus *Telphusa*, as I placed it in the preceding number. But as Dr. Clemens (a better entomologist by far than I claim to be), has placed it in *Gelechia*, and that genus comprehends such a diversity of forms that it may include almost any thing of a certain (or rather uncertain) general structure, and as on further observation I am satisfied that this species really approaches nearer than I had supposed to the true *Gelechia* (*G. roseosuffusella*, Clem., being my type), I desire to retract my generic and specific names, so that the species will stand as described by Dr. Clemens, *G. longifasciella*. It is not, however, a true *Gelechia* of the *roseosuffusella* type.

G. variella. *N. sp.*

White; apical half of the forewings suffused with golden yellow, usually deeply so, sometimes faintly, becoming deeper towards the apex, and with indistinct whitish spots and transverse streaks in the apical part. Four distinct dark brown costo-apical spots at the base of the costal ciliae. In many specimens there is a small, rather indistinct, brown costal streak just before the ciliae; a small very oblique dark brown costal streak, placed about the middle of the costa, is continued along the costa towards, and, in many specimens, to the base; sometimes (in perhaps half of my specimens) this streak is absent. In some, the entire costa is dark brown or pale brown; in others, the entire costa is golden yellow; in others it is white. Sometimes the two costal streaks are golden instead of brown, and in these specimens there is a very narrow long and oblique white costal streak behind the two yellow ones in the apical part of the wing. Head and its appendages white, but in some specimens the antennae are faintly suffused with brown. *Alar* c.v. $1\frac{1}{2}$ inch. Kentucky.

This is an exceedingly variable species; the only constant characters seem to be that the species is white, with more or less of the apical part of the wing golden, with a few dark brown spots at the base of the costal

ciliæ, and with two or three small oblique brown or golden costal streaks. In many specimens there is a circular dark brown spot on the dorsal margin just before the ciliæ. Two or three of the best marked varieties, if taken at different times and in the absence of connecting links, would undoubtedly be considered distinct species. The larva is unknown, and I have met with the imago but once. Then it was swarming in great numbers in the grass and around the trunk of an Elm tree. The space occupied by them did not exceed twenty yards square.

G. obliquistrigella.

Anarsia obliquistrigella, ante p. 65.

G. apicistrigella.

Parasia apicistrigella, ante p. 66.

The neuration of the first of these insects is exactly that of *Anarsia*; that of the second is exactly that of *Parasia*. By attaching too much importance to the neuration, I was induced to place them in these genera respectively. The other characters, however, are those of *Gelechia*, and I have accordingly transferred them to that genus. The second joint of the palpi is somewhat thickened beneath in both.

INSECTS OF THE NORTHERN PARTS OF BRITISH AMERICA.

COMPILED BY THE EDITOR.

From Kirby's Fauna Boreali-Americana: Insecta.

(Continued from Page 155.)

GENUS MACROPS.

Body oblong, winged. Rostrum shorter than the prothorax, subcylindrical, somewhat arched, having a dorsal longitudinal ridge; bed of the scape of the antennæ oblique reaching from near the apex of the nostrum to the middle of the eye; antennæ apical, longer than the head, eleven-jointed; scape as long as the remainder of the antennæ, incrassated at the apex, reaching the eye; two next joints longer than the subsequent ones, obconical; the following four very short, top-shaped; the four last forming a subovate knob; eyes lateral, subimmersed, long, forming, in some measure, an isosceles triangle with the base rounded, and the vertex downwards; prothorax subglobose; antepectus emarginate, sides obsolete lobed; scutellum very minute, triangular; coleoptera oblong:

thighs unarmed ; tibiae armed with a very minute incurved spine or spur ; tarsi not dilated, penultimate joint bipartite.

At first sight the species of this little group would be set aside as belonging to *Sitona* Germer, with which they possess many characters in common ; a closer inspection, however, will satisfactorily prove that they belong to different genera. In the genus just named, the rostrum is shorter, thicker, and channelled ; the knob of the antennæ consists only of three joints, the bed of the scape turns below the eye ; the eye itself is round : the antepectus is not emarginate, or lobed ; the tibiae have no incurved spine.

[200.] 267. *MACROPS MACULICOLLIS Kirby*.—Plate viii., fig. 4.—Length of body 2 lines. Two specimens taken in Lat. 65°.

Body black, rather hoary from decumbent hairs and scales. Rostrum very minutely punctured ; ridge reaching from the base to the apex ; stalk of the antennæ a dull-red : prothorax minutely and thickly punctured, obsoletely ridged, having the sides, especially at the base, covered with little white scales : elytra furrowed, furrows punctured : tibiae, tarsi, and base of the thighs of a dull obscure red, posterior thighs on the inside more distinctly rufous.

268. *MACROPS VITICOLLIS Kirby*.—Length of body $2\frac{1}{4}$ lines. A single specimen taken.

Body covered with brownish-black scales. Rostrum ridged at the tip, the rest covered with scales, which perhaps conceal the remainder of the ridge ; stalk of the antennæ rufous : prothorax with three narrow pale stripes, the lateral ones a little waved : scutellum pale ; elytra slightly furrowed ; furrows minutely punctured ; mottled with pale : tibiae and tarsi, the former obscurely, rufous.

[201.] GENUS LEPIDOPHORUS.

Body covered with scales. Antennae longer than the head, eleven-jointed ; scape as long as the remainder of the antennae, reaching to the eye, growing gradually thicker towards the apex ; pedicel as long as the two following joints, obconical ; the remaining joints of the stalk rather top-shaped ; knob three-jointed, ovate, acute ; rostrum shorter than the prothorax, thick, subcylindrical, straight ; bed of the scape of the antennae very short, not reaching the eye ; eyes subobtusangular, with the vertex downwards : prothorax rather longer than wide, barrel-shaped : elytra taken together oblong-oval : scutellum punctiform : thighs clubbed, unarmed ; tibiae armed at the apex with a short incurved spine ; penultimate joint of the tarsi bilobed.

269. *LEPIDOPHORUS LINEATICOLLIS* Kirby.—Length of the body $2\frac{1}{2}$ lines. Several specimens taken in Lat 65°.

Body black, underneath hairy with little whitish round scales and hairs of the same colour intermixed. Head and rostrum behind the antennae covered with similar scales: antennae dusky-red: prothorax dusky, confluent punctured with three whitish longitudinal narrow indistinct stripes formed of minute scales: elytra mottled with whitish and dusky round scales; slightly furrowed with punctures in the furrows; at the apex, in the deflexed part, there is a series of white rigid minute bristles between each furrow: legs hairy, reddish brown, thighs darker.

[202.] 270. *TRACHYPHLEUS MELANOTHRIX* Kirby.—Length of the body $2\frac{3}{4}$ lines. A single specimen taken in Lat. 65°.

Body really black, but quite covered with a brown powdery substance, resembling mud or dirt. Head impressed between the eyes; rostrum longer than the head, and nearly as wide, emarginate and hairy at the end; antennae rufous, scape covered with brown powder: prothorax transverse, obsoletely channelled, with several short rigid black bristles on each side of the channel arranged nearly in rows: elytra obsoletely furrowed with slight punctures in the furrows, and between each furrow is a row of longer rigid black truncated bristles; a few white ones are discernible at the apex: legs bristly, with white bristles, rufous, but the thighs are covered with powdery scales.

[203.] 271. *PACHYRHYNCHUS (RHINARIA) SCHONHERRI* Kirby.—Length of the body 5—7 lines. Taken in Canada by Dr. Bigsby. Also in Georgia? by Mr. Abbott.

Body thickly covered, especially underneath, with hoary pile. Antennae shorter than the head; eyes brown: prothorax with three faint whiter stripes: scutellum white; elytra with nine rows of punctures, and at the base of the lateral margin is a portion of a tenth row, between the second and third; in the sixth, seventh, eighth, and ninth rows the pile is thicker than in other parts of the elytrum, so as to form three white stripes, on these stripes there are also four rows of distant black dots on each elytrum. [Not uncommon in Canada.]

[204.] 272. *ATELABUS SIMILIS* Kirby.—Length of the body $2\frac{1}{2}$ lines. Taken in Canada by Dr. Bigsby.

This species is nearly the transcript of *A. curcilionoides*, for which I at first mistook it, but a closer inspection convinced me it was distinct. They agree in being black, glossy, and naked; in having a red prothorax and elytra, the latter with several rows of punctures; in having the head

and rostrum more or less punctured, with curved impressed lines on each side just above the eyes, in the disk of the front; the prothorax also in both is minutely punctured, and the cubit arched and internally serrulated. They differ, however, in several respects. In *A. curculionoides* the head is wider in proportion, the occiput black, levigated, with a central impression; the curved lines of the front not distinctly punctured; the stalk of the antennae rufous; the prothorax at the base is streaked with transverse linear impressions; the scutellum is nearly black, and the interstices of the rows of punctures of the elytra are irregularly punctured. In *A. similis* the hinder part of the head which is punctured and wrinkled, and scutellum are rufous, a transverse impression divides the occiput from the front; the curved lines are distinctly punctured; in the front between the eyes is a wide channel; the antennae are piceous; the prothorax is not streaked at the base: and the elytra between the rows of punctures are levigated. [Synonymous with *A. analis* Illig.; taken in Canada.]

273. *ATTELABUS BIPUSTULATUS* Fabr.—Length of the body 2 lines. Taken in Canada, near Lake St. Clair, by Dr. Bigsby.

[205.] In sculpture this species for the most part agrees with *A. curculionoides*, except that there is an impression between the eyes, and a pair on the disk of the prothorax. The whole of the body is very black, except the shoulders of the elytra, which are covered by a large oblong red spot, the anterior thighs are armed with a minute tooth: the disk of the coleoptera, or elytra taken together, towards the base is depressed; and the scutellum is obversely triangular, the vertex of the triangle pointing towards the head. [This and the preceding species are both described and figured in Harris' Injurious Insects, pages 65 and 66; taken in Canada.]

274. *APOTOMUS OVATUS* Fabr.—Length of the body $1\frac{1}{4}$ line. Variety B taken by Dr. Bigsby near Lake St. Clair.

[206.] Body very short, between pear-shaped and ovate, deep violet, naked, minutely punctured. Head black, rostrum levigated: prothorax somewhat lozenge-shaped, emarginate anteriorly, very thickly and confluent punctured, with a levigated discoidal longitudinal line: elytra furrowed, furrows punctured.

VARIETY B. Blue-green. [Belongs to *Attelabus* Fabr., or *Pterocolus* Sch.]

275. *ANTHRIBUS FASCIATUS* Olivier.—Length of the body 4 lines. Taken in Canada by Dr. Bigsby.

Body black, covered more or less with brown decumbent short hairs. Rostrum angular, thickish, dilated at the tip, below the antennae covered thickly with snow-white decumbent pile; antennae almost as long as the thorax, rufous, knob dusky-brown; front marked with two whitish dots, one adjoining each eye on their upper side: prothorax wrinkled with a transverse discoidal impression, and near the base with an elevated transverse ridge: elytra wrinkled with a discoidal tubercle near the base, near the apex adorned with an irregular angular band composed of snow-white decumbent pile: abdomen whitish with a double indistinct series of black dots: tibiae with a white ring.

VARIETY B. With the tubercles of the elytra less conspicuous; the abdomen snowy-white; thighs variegated with white.

I have no memorandum whence I received this variety. It is smaller, and probably American.

MISCELLANEOUS.

MR. COUPER'S LABRADOR TOUR.—The following notice lately appeared in the *Montreal Herald*:—

“GREAT ENTOMOLOGICAL LOSS.—Mr. Couper, the Canadian Entomologist, who left Montreal on the 10th of May last to collect butterflies and moths in Labrador, has had his splendid collection of rare specimens destroyed by some of the Indians, who took revenge in this way for some statement made by him in the *Quebec Chronicle*, about seven years ago, regarding the destructive practice of the tribe in spearing salmon on the then spawning grounds.”

In a recent letter from Mr. Couper, who has returned from Labrador, he confirms this statement. He informs us that “a six weeks' collection, consisting of 36 specimens of *Colias Interior*; 4 species of *Argynnide* (100 specimens); 5 species of *Lycanide* (200 specimens,) and a quantity of other material, amounting to about 400 in all, were destroyed by Indians, who, I suppose, broke open my trunks, &c. during absence from camp. At all events the destruction took place between Mingan and Seven Islands, on the north shore. The loss was not discovered until I examined the cases after leaving the latter place. I was informed by the lessee of the salmon fishery at Mingan that my life was not safe, as I helped the fishery guardian to prevent the Indians from spearing salmon on the Mingan river, and also wrote as above stated seven years ago. Before I left Mingan, I went to the *Pere* who attends to their spiritual

wants, and he was partly aware of my situation, but there being no schooner going west from the place at the time, he kindly sent me off in a schooner belonging to the Mission, in company with two Indian sailors, who brought me to Bersiamits. I was therefore compelled to leave Migan about the 20th of July, while I was searching for *Colias interior*, *Argynnis Boisduvali* and *Lycæna Scudderi*. The specimens collected on Anticosti were not with the destroyed collection—they are safe—and are all I can send my subscribers this year, but, if God spares me, it is my intention to return next May to collect the lost species, which can be obtained without going into the section of country occupied by these Indians.

As soon as I send off the material to my subscribers, I will write an article on the Entomology of Anticosti."

We deeply regret to hear of the severe loss Mr. Couper has thus sustained, and cannot but admire his perseverance in determining to revisit these northern districts next year to endeavor to replace his lost material. We sincerely hope he will be eminently successful. We also hope soon to be able to furnish our readers with the promised paper from Mr. Couper's pen.—ED. C. E.

LIBYTHEA MOTYA.—I captured on the 2nd of September, near Hoboken, N. J., a *Libythea motya* (Bois & Lec.) at least I presume it to be that species, that being the only one given to the U. S. in Kirby's new Catalogue. I should be glad to learn through the columns of the CANADIAN ENTOMOLOGIST in what portions of North America this butterfly has been found. The specimen captured by me is very close to *L. Myrrha* (Godt.) the habitat of which is the East Indies. It is, however, somewhat smaller.

W. V. ANDREWS.

The insect described by Dr. Kirtland as *L. bachmanii* is probably a variety only of *L. motya* of B. & L. This has been taken in Ohio, and also at Hamilton, in Ontario. It has also been received by us from W. H. Edwards, Esq., of West Virginia.—ED. C. E.

ADVERTISEMENT.

TRINITY COLLEGE SCHOOL, Port Hope, Ont.—*Visitor* :—The Lord Bishop of Toronto ; *Head Master* :—The Rev. C. J. S. Bethune, M.A.

The course of instruction includes all the usual branches of a sound education in Classics, Mathematics, English, German, French, Natural Science, Book-keeping, Drawing and Vocal Music.

FEES:—Board and Tuition, \$220 per annum. Michaelmas Term will commence on *Thursday, Sept. 19th*. For further information apply to the Head Master.