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The Canadian Entomologist.

VOL. VII.

LONDON, ONT., MARCH, 1875.

No. 3

ON SOME OF OUR COMMON INSECTS.

THE BEAUTIFUL WOOD NYMPH—*Eudryas grata*.

BY THE EDITOR.

This moth (see fig. 6) is truly a beautiful creature. Its fore wings are creamy white with a glossy surface, with a wide brownish purple stripe

Fig. 6.



Colors, creamy white and brownish purple

along the anterior edge, reaching from the base to a little beyond the middle of the wing. On the outer margin is a broad band of the same hue, widening posteriorly, with a wavy white line running through it, composed of minute pearly dots or scales. It is bordered internally with dull deep green. The brownish purple band is continued along the hinder edge, but it is much narrower here and terminates a little before it reaches the base. There are also two brown spots, one round, the other reniform, near the middle of the wing, often so suffused with pearly white scales as to be indistinct above, but clear and striking on the under side.

The hind wings are reddish yellow, with a broad brownish purple band along the outer margin, extending nearly to the outer angle, and powdered here and there with a few whitish pearly scales; there is also a faint dot on the middle of the wing which is reproduced more prominently on the under side. The under surface of both wings is reddish yellow. The head is black, and there is a wide black stripe down the back, merging into a series of spots of the same, which extend nearly the whole remaining length of body. The sides of the body are reddish yellow with a row of blackish dots close to the under surface. The fore legs are beautifully tufted with white, the shoulder covers also are white, and so is the under surface of the body.

When this moth is at rest—that is, during the day time—its wings are closed like a roof over its back, and its tufted fore legs are stretched out.

The insect passes the winter in the chrysalis state, emerging as a moth from the middle of June to the middle of July. The earliest recorded date we have of the appearance of the moth is June 25th. It is usually common during the last week in June and the first in July, when it may often be found in the day time fast asleep on the leaves of the grape vine.

Soon after the moths appear they begin to deposit their eggs. These are among the prettiest and most beautiful of insect eggs; at *e*, fig. 7 (after Riley) we have a view of the upper surface, and at *f* a side view of this charming object.

It is round and very flat; its color is yellowish or greenish yellow, with an enclosed ring of black placed a little beyond the middle, and sometimes nearer to the outer margin. In the centre of the egg is a large, nearly round dot, and at a little distance from this a circle of smaller dots, from which arise a series of from 24 to 27 raised striae, diverging equally as they approach the outer edge, and crossed by many gracefully curving lines which interlace also the spaces between.

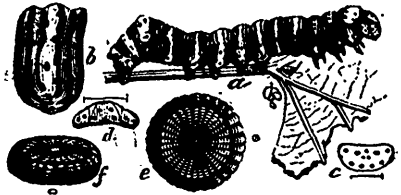


Fig. 7.

When mature, the young caterpillar escapes from the upper part of the egg, lifting the centre and rupturing the portion placed over the black ring. In some cases we have observed the egg shell to be eaten by the newly hatched larva; in others it remains almost untouched. The young larvae have a strange habit of twisting their hinder segments and throwing them forward, resting on the anterior segments in a curious manner. At this age they eat small holes all over the vine leaves in different parts; they are often solitary, but sometimes two or three may be found on a single leaf.

When mature, the full grown larva appears as at *a*, fig. 7; it is then nearly one and a half inches long, tapering towards the head, thickening towards the posterior extremity. The head is of an orange color, with a few round black dots and pale brownish hairs.

The body above is pale bluish, crossed by bands of orange and many lines of black. Each segment, excepting the terminal one, is crossed by an orange band, all of which are nearly uniform in width, excepting that

on the 12th segment, which is much wider. These are all more or less dotted with round black dots, from each one of which arises a single short brown hair. There are also crossing each segment six black lines, placed nearly at equal distances along each side, but with a wider space in the middle, where the orange band occurs. The twelfth segment is much raised, and the terminal one suddenly sloped. The under side is very like the upper, and also marked with orange and black; feet and prolegs orange, spotted with black.

The larvae feed on Virginia Creeper (*Ampelopsis quinquefolia*) as well as on the Grape-vine, and Mr. Bowles, of Montreal, has found them feeding on the Hop.

When full grown, they descend to seek some secure retreat in which to pass the chrysalis, or inactive stage of their existence. They are fond of boring into old pieces of wood, and in the chambers thus formed they find secure lodgment; they will also bore into corn-cobs. When rearing them we have supplied pieces of cork for this purpose, and have had as many as twenty-one chrysalids enclosed within two small bungs about $1\frac{1}{2}$ inches in diameter, and one inch thick. The excavation is but little larger than the chrysalis which is to rest in it; it is not lined with silk, but is made moderately smooth and is furnished with a cap or cover composed of minute fragments of cork, formed into a sort of membrane by means of a glutinous secretion mixed with threads of silk. When nicely finished the surface of this cover is slightly glossy, the glossiness extending a little beyond the actual orifice, indicating that the glutinous matter has been of a thin consistence and has spread a little during its application. When



Fig. 8.

the lid is lifted the head of the chrysalis is usually found quite close to it.

The chrysalis is about seven-tenths of an inch long, of a nearly uniform dark brown color, and roughened with small blackish points or granulations.

This insect is subject to the attacks of a parasite, a two-winged fly—a Tachina—probably the species known as the red-tailed Tachina fly, *Exorista leucania*, see fig. 8 (after Riley.) It is not much unlike the common house fly in appearance, is about a quarter of an inch long, with a white face, large reddish eyes, a dark hairy body with four, more or less distinct dark lines down the thorax, and patches of a greyish shade along the sides of the abdomen. The parent fly deposits

her eggs on the back of the caterpillar, usually a short distance behind the head, where they are cemented firmly by means of a peculiar secretion with which the insect is furnished. Three or four of these eggs are usually placed upon a single caterpillar, where, after a few days, they hatch, when the tiny worms eat their way through the skin into the interior of the body, where they feed upon the fatty matters, instinctively avoiding the vital organs. When the caterpillar is about full grown it dies, and from its body emerge these three or four full grown whitish grubs, which soon after their exit change to chrysalids. These are nearly one-fifth of an inch long, oval, smooth and of a dark brown color, from which in due time the perfect flies escape.

PRELIMINARY LIST OF THE NOCTUIDÆ OF CALIFORNIA.

Part IV.

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

Director of the Museum, Buffalo Society Natural Sciences.

61. *Prodenia præfica* Grote.

Allied to the Eastern *lineatella*; a little larger, with broader wings. The hind wings are more obscure, in the female subfuscous. The markings are so nearly alike in the two that I do not find good differences. Nevertheless, the tone of the three Californian specimens is less bright, the whitish apical shade is less defined, and the discal point beneath on the secondaries is evident and distinct, whereas it is wanting in *lineatella*. The extra basal and subterminal fields show a purply shading in *præfica*. *Expanse* 36 m. m.

California, No. 5568, Mr. Hy. Edwards; Mendocino, June, Mr. Behrens.

62. *Himella furfurata* Grote, Proc. Acad. N. S., Phil., 1874, p. 204.

Sauzalito, Mr. Behrens, Oct., Nos. 182 and 223.

The Californian specimens are a little darker than my type, more distinctly marked, the palpi distinctly blackish outwardly.

63. *Pyrophila pyramidoides* (Guen).

A specimen sent by Mr. Behrens does not differ from Eastern material.

64. *Graphiphora pacifica* (Harvey), Bul. Buff. S. N. S., 2, 120.
Sausalito, February, Mr. Behrens, No. 27 (red label).

The specimens seem merely to differ from the European *incerta* and the Eastern *alia* in tone. It is possible that all three names refer to a single species.

65. *Graphiphora arthrolita* Harvey, Bul. Buff. S. N. S., 2, 275.
California, Nov., No. 208, Mr. Behrens.

66. *Zotheca tranquilla* Grote, Bul. Buff. S. N. S., 2, 69.
California, Mr. Hy. Edwards, No. 160.

67. *Orthosia purpurea* Grote, Bul. Buff. S. N. S., 2, 125.
Sausalito, Oct., Nov., No. 3 (red label), Mr. Behrens.

68. *Orthosia crispa* Harvey.
Sausalito, Oct., Nov., No. 5 (red label), Mr. Behrens.

69. *Pseudorthosia variabilis* Grote, Bul. Buff. S. N. S., 2, 161.
Sausalito, Mr. Behrens, Nos. 166—168, 223, September to October.
Very variable in color. Specimens range from a pale fawn with nearly immaculate primaries, through reddish brown to dark olive brown with distinct markings.

70. *Glaea olivata* Harvey, Bul. Buf. S. N. S., 2, 120.
California, Mr. Behrens, No. 9 (red label), September.

71. *Xylomiges patalis* Grote, Bul. Buf. S. N. S., 1, 144, pl. 4, fig. 11.
Mendocino, Mr. Behrens, No. 18 (red label); Vancouver Island, Mr. Hy. Edwards, No. 5586.

72. *Xylomiges hiemalis* Grote, Bul. Buff. S. N. S., 2, 71.
Oakland, January, Mr. Behrens, No. 18 (red label).

73. *Xylomiges curialis* Grote, Bul. Buff. S. N. S., 1, 143.
California, Mr. Behrens, No. 8.

74. *Xylomiges crucialis* Harvey, Bul. Buff. S. N. S., 2, 277.

California, No. 5575, Mr. Hy. Edwards.

75. *Cucullia serraticornis* Lintner, 26, Am. Rep. N. Y. State Cab.,

174.

Cucullia matricariae Strecker.

California, Mr. Behrens, No. 5.

76. *Adipsophanes miscellus* Grote, Bul. Buff. S. N. S., 1, 181.

Californian specimens are labelled May 8th, by Mr. Behrens.

77. *Ablepharon absidum* Harvey, Bul. Buff. S. N. S., 2, 275.

Oregon, No. 2734, Mr. Hy. Edwards.

78. *Plusia Pasiphaeia* Grote, Bul. Buff. S. N. S., 1, 146, pl. 4, fig. 1.

California, Mr. Hy. Edwards, No. 152.

79. *Plusia bractea* (S. V.), Bul. Buff. S. N. S., 2, 72.

Mr. Behrens, Mendocino, June.

80. *Plusia gamma* (Linn.) Can. Ent., 6, 16.

California Mr. Hy. Edwards, 147; Vancouver Island, No. 4386.

81. *Plusia labrosa* Grote, Proc. Acad. N. Sci., Phil., 1874, 207.

Sausalito, Mr. Behrens, August, No. 162.

82. *Plusia Hochenwarthi* (Hochenw).

California, Mr. Behrens.

83. *Acerra normalis* Grote, Bul. Buff. S. N. S., 2, 162.

California, Mr. Behrens, No. 61.

84. *Helionche modicella* Grote, Bul. Buff. S. N. S., 1, 116, pl. 3, fig. 12.

California, Mr. Hy. Edwards, No. 104.

85. *Helioseca pictipennis* Grote, Bul. Buff. S. N. S., 2, 220.

California (Mr. Crotch, Mus. Comp. Zool. Cam).

86. *Adonisea pulchripennis* (Grote), Proc. Bost. Soc. N. Hist., 16, 241.

California, Mr. Hy. Edwards, No. 4380.

California (Mr. Crotch, Mus. Comp. Zool. Cam.)

87. *Melicleptria diminutiva* Grote, Bul. Buff. S. N. S., 1, 148.
California, Oregon, Mr. Hy. Edwards, No. 204.
88. *Melicleptria Californiensis* Grote, Bul. Buff. S. N. S., 2, 34.
Mr. Hy. Edwards, No. 93.
89. *Melicleptria prorupta* Grote, Trans. Am. Ent. Soc., 4, 294.
California, Lord Walsingham (in Am. Ent. Soc.); Mr. Crotch (in
Mus. Comp. Zool. Cam).
90. *Heliothis phlogophagus* G. & R.
California, Mr. Hy. Edwards, No. 151; Mr. Behrens.
91. *Heliothis armiger* (Hübner).
California, Mr. Hy. Edwards, No. 2566; Mr. Behrens, No. 54.
92. *Axeus arvalis* Grote, Bul. Buff. S. N. S., 1, 152, pl. 4, fig. 8.
California, No. 106; Oregon, No. 5254, Mr. Hy. Edwards.
93. *Annaphila diva* Grote, Bul. Buff. S. N. S., 1, 150, pl. 4, fig. 14.
California, No. 198, Mr. Hy. Edwards.
94. *Annaphila depicta* Grote, Bul. Buff. S. N. S., 1, 150, pl. 4, fig. 13.
California, Mr. Hy. Edwards, No. 2260.
95. *Annaphila decia* Grote.

Under the number 2587, Mr. Hy. Edwards sends two specimens of a smaller species than *depicta*, differing by the want of pale and brown shades on the reniform and along the t. p. line on the fore wings. The bright yellow secondaries have the black margin much wider and distinctly limited, intruded upon centrally by the yellow ground color. Beneath the fore wings have the terminal margin black as on the hind wings, not with the subterminal black fascia of *depicta*. Otherwise in markings and appearance the two species are very similar. *Expanse* 18 m. m.

96. *Annaphila mera* Harvey, Bul. Buff. S. N. S., 2, 277.
California, Mr. Crotch.

97. *Tarache flavipennis* Grote, Bul. Buff. S. N. S., 1, 153.

Sierra Nevada, Oregon, No. 2590, Mr. Hy. Edwards. The specimens are all females, and vary in the depth of color and extent of the yellow

central shading on the secondaries. Also that in one specimen the hind wings show a distinct median fascia beneath, usually indicated by a costal mark. In the pale yellow specimen this lighter shade replaces the deep yellow of the hind wings beneath. The t. p. line is marked by bluish metallic dots.

98. *Trichotarache assimilis* Grote.

♂. The eyes are constricted, naked. The antennæ naked. The body squamation is rough and hairy. The fore wings are narrow at base, with depressed costa, and widen terminally. In ornamentation the moth resembles *Tarache flavipennis*. The fore wings are olive blackish with gray or smoky whitish fringes, terminal space and median costal blotch which exhibits the black discal point as in *T. flavipennis*. The pale color also intrudes on costa before the s. t. line. The ordinary lines are fragmentary, marked by velvety points. Hind wings fuscous, yellow stained on the disc, with pale interlined fringes. Beneath yellow with blackish hind and external margins to the hind wings and costal stain, while on the fore wings there is a subterminal fuscous fascia, discal mark and costal stain above it; the fringes are pale. Body fuscous and mixed with pale hair. At first this insect looks like the possible male of *T. flavipennis*, but it differs apparently generically by the shaggy vestiture and narrow eyes. It differs in ornamentation by the terminal space being distinctly pale and by the want of metallic points on the t. p. line. *Expanse* 26 m. m.

California, Mr. Hy. Edwards, No. 2589.

99. *Galgula hepara* Guenée.

California, No. 2575, Mr. Hy. Edwards. The specimen does not seem to differ from my material from Alabama.

100. *Galgula subpartita* Guenée.

Sauzalito, Nov. 11th, No. 211, Mr. Behrens. The specimen is paler and more distinctly marked than Eastern specimens, but seems to belong to the same species.

101. *Drasteria crechtea* (Cramer.)

California, No. 1, Mr. Behrens. The specimens of this variable species agree with the typical form of the East, but are larger.

102. *Drasteria cerulea* Grote, Bul. Buff. S. N. S., 1, 155.

California, Mr. Behrens, No. 2; Mr. Hy. Edwards, 91. Two specimens, No. 699, are sent by Mr. Hy. Edwards, labelled "Sierra Nevada." They seem merely to differ by the absence of the parallel fascia-like dark shades to the median lines.

Litosea.

This name is proposed for the Eastern *convalescens* and a new Californian species, both differing from *Drasteria* by the male antennae being bipectinate.

103. *Litosea adversa* Grote.

A unicolorous grayish species, with the thread like lines extremely inconspicuous. A black dot in the place of the orbicular. The t. p. line marked by a pale shade, nearly straight and adjacent to the similarly marked subterminal line, with which it is sub-parallel. Hind wings pale, yellowish gray, with double even lines like *convalescens*, not uneven as in the species of *Drasteria*. Beneath pale yellowish gray, powdered with ochreous, usually deeper stained outwardly. Faint discal dots and indications of double outer transverse common lines. More gray than *convalescens*, and distinguishable by the pale straight outer shaded lines of the fore wings. *Expanse* 36 m. m.

California, No. 6. Mr. Behrens (green label); Mr. Hy. Edwards, No. 708.

104. *Euclideanus cuspidata* (Hübner).

California, Mr. Mead, No. 38; Mr. Behrens, No. 4 (green label).

NOTES ON THE LARVA OF GRAPTA FAUNUS EDWARDS.

BY F. B. CAULFIELD, MONTREAL, P. Q.

On the 6th of June, 1874, I found on a wild gooseberry bush four larvæ of *Grapta faunus* Edwards. Length of full grown larva, $1\frac{1}{4}$ inch; form cylindrical: head flat in front, black, furnished with two branching horns and a few scattered white hairs; a yellow V-shaped stripe in front; the base between the horns, the ends pointing towards the mandibles; mandibles black.

Upper surface, second to sixth segments brick red, striped transversely with blue, yellow and black lines; a few white hairs on second segment; four branching yellow spines with black tips on third and fourth segments; six on fifth and sixth; seventh to twelfth segments white, with a faintly marked black dorsal strip; each segment with three transverse yellow bands and two oblique black spots; seven branching spines on each segment, viz., three on upper surface white, one on side brown, and one close to under surface white; two last segments black—twelfth with seven spines, five white and two brown; thirteenth segment with four white spines. Sides red, with two black bands, the lower band spotted with blue. Under surface grey, striped transversely with black. Feet and prolegs black.

These larvae suspended themselves to the lid of the box in which they were confined by a small button of very light pink silk, on June 18th, 1874, and in about twenty-four hours changed to grayish brown chrysalids. Head with two bi-forked horns, the outer point very short; thorax with an elevated keel-like ridge on top, with a small tubercle on each side. At the base, below this, there is a larger tubercle, and behind it another keel-like protuberance, hollowed on top; there are six raised silver ornaments on the dorsal surface, the first resembling in shape a capital G; the second is an oblong spot, and the third is a sharply-pointed tubercle. The abdominal segments are furnished with eight rows of tubercles; on each side are five brown spots, decreasing in size towards the posterior extremity, and below the spiracles there is a brown stripe. Under surface gray, with ten brown spots.

The first butterfly emerged from chrysalis on July 3rd, 1874, the second on the 4th, the third on the 6th; the other died in chrysalis.

These larvae fed freely on wild gooseberry, but I do not think it is its favorite food, as these were the only larvae of *faunus* that I could find, although I searched closely for them. Mr. Edwards informs me that Mr. Scudder found the larva of *faunus* on Willow, and that may be its principal food plant here, for *faunus* was very plentiful here last season (1874), and if the larvae had been common on the Gooseberry I must have found them, as I examined numbers of the bushes, finding plenty of larvae of *G. progne*, but only four of *faunus*.

TINEINA FROM TEXAS.

BY V. T. CHAMBERS, COVINGTON, KENTUCKY.

(Continued from page 35.)

LAVERNA.

Corrigenda :

The publication of the paper on this genus in the February number of this magazine, in its present form, was unfortunate, and resulted from a misunderstanding by the Editor of a letter addressed by me to him. The paper was prepared from specimens contained in Mr. Belfrage's first collection, and was sent by me to the Editor some months ago. Further study of that collection and of additional material, induced me to suppress some of the descriptions and to amend others, and with a view thereto I requested a return of that portion of the mss. Unfortunately my letter was misunderstood, and the wrong mss was returned to me, while the paper on Laverna was published. The following corrections will, I hope, prevent any confusion which might otherwise arise.

For *L. lyonetiella*, wherever it occurs in that paper, read *L. ænothææila*. *L. lyonetiella* was the original mss name, given from its resemblance in ornamentation to some species of Lyonetia. Afterwards, on discovering the food plant, the name was changed to *L. ænothææilla* at p. 30 *ante*, but the correction was not made throughout the paper.

For *L. ignotilisella*, p. 33, read *L. ignobilisella*. The description of this species is imperfect, and was intended to be suppressed. It is not in my power now to improve it.

For *L. fusco cristatella*, p. 34. I am satisfied from further study that this description was made from damaged specimens of the species described by me in the January number as *Næra fusco cristatella*. *Næra* is preoccupied among Mollusca, and I substitute for it *Leuce*. It is more nearly allied to *Gelechia* than to *Laverna*.

For *L. miscocalonella*, p. 34, read *miscocolorella*. The following description is at least an improvement on the former one:

Vertex and antennæ brown; face and inner surface of the palpi ochreous yellow; outer surface of the palpi brown, except at the base and extreme tip, which are ochreous yellow; thorax on top and basal third of

the forewings dark brown, with some reddish ochreous intermixed, especially about the base of the hind margin, which is paler than the remainder of the basal portion of the wing; in the basal costal part of the wing are two small dark brown tufts, which, from their obscurity, are likely to escape observation; near the posterior margin of the brown basal portion are two large dark brown raised tufts, one of which is nearest the costal and the other to the dorsal margin, the *latter* being the largest. The middle third of the wing is pale ochreous, with a faint reddish tinge, and is crossed a little obliquely by three almost confluent raised tufts of the same hue, which, without very close observation, will be mistaken for a continuous transverse row of raised scales, or for two tufts, one costal, the other dorsal. In this middle portion of the wing the extreme costa is marked by numerous small dark brown spots, and the tuft is dark brown on the costal margin, and there are one or two small dark brown spots on the disc. Following this middle ochreous portion of the wing is a rather narrow and irregular band of dark brown and reddish ochreous scales, containing a large dark brown tuft on the dorsal margin, and some raised scales near the costa. Immediately behind this band is a whitish spot on the costal margin, while on the dorsal margin the brown band extends back along the margin of the dorsal ciliae to the apex, and contains a row of minute dark brown slightly raised scales, extending around the apex at the base of the ciliae, which are brownish gray. The under surface of the body is whitish, and the legs and tarsi are dark brown with white annulations. *Al. ex.* a little over half an inch.

To the naked eye the anterior and apical parts of the fore wings are brown, and the middle third stramineous.

The neuration is that of *Chauliodus*, except that only four, instead of five veins are given off from the cell to the hind margin, but the fifth is indistinctly indicated. The tongue is scaled (naked in *Chauliodus*), the second joint of the palpi is scarcely clavate and is shorter than the third, and the tufts do not project over the margins of the wings as in *Chauliodus*, and the somewhat elongate basal joint of the antennae has no hairs depending over the eyes as in that genus. The neuration and palpi are very nearly that of *Perimede erransella* Chamb.; perhaps they ought not to be separated generically, and, indeed, as to this species and the other Texas species in this collection, I am not sure that they should be included in *Laverna*, though if they are separated from it, several of the recognized European species would with equal reason be also separated from it, and more than one new genus would have to be created. In

truth, I am unable to determine what constitutes a true *Laverna*. *L. cephalanthiella* Cham. is probably nearer it than any other American species; but the species referred to this genus by European authors differ greatly in structure, more greatly, perhaps, than do those which I have referred to it. I doubt greatly whether any well marked lines separate it from *Chauliodus*, *Chrysaelista*, or even from *Theisoa* and *Elachista*.

L. obscurusella. *N. sp.*

The tongue is scaled as in *Laverna*, but the labial palpi are those of *Chauliodus charophilellus*; the basal joint of the antennae has dependent hairs, and the tufts of scales, though not projecting over the hind margins of the wings, as in *Chauliodus*, are arranged along the dorsal margin. As I have but a single specimen, I have not denuded the wings.

Head and palpi white; third joint of the palpi is externally marked with about three or four small purple brown spots, and the second joint is externally dusted with scales of the same color towards the base. Antennae brown. Thorax white on top, but marked with some small brown specks, some of which also are scattered over the base of the fore wings, which are white with a large pale yellowish ochreous spot, which crosses the fold at about the basal fourth. The wing behind this spot to the tip, is more or less, though faintly tinged with pale ochreous yellow and grayish, especially so along the middle of the disc, where there are two or three small dark brown tufts of raised scales; there is a bluish gray spot on the dorsal margin before the ciliae, and there is an opposite costal spot of the same hue which also is visible in the ciliae: there are three small tufts of ochreous red scales along the dorsal margin of the fore wings, one of which is near the base, another about the middle, and the third is just behind the bluish gray patch above mentioned. The legs are brown and the tarsi are annulate with white. *Al. ex.* $\frac{3}{8}$ inch.

Additional corrigenda:

Ante p. 30, for *L. longiella* read *langiella*.

P. 32, for *superbella* read *elegantella*.

P. 10, for *buristriga* read *brevistrigella*, and for *planipenella* read *planipenella*.

V. 6, p. 237, *pallidagriscella* read *pallidegriscella*.

P. 244, for *pallidastrigella*, *pallidestrigella*.

BUCCULATRIX.

B. niveella. *N. sp.*

Snow white, very faintly tinged with yellowish on the front of the tuft and in the apical part of the fore wings, and with a very few scattered brown scales in the costal ciliae, but with two distinct dark brown hinder marginal lines in the dorsal ciliae, one at their base, the other beyond their middle, slightly converging towards the apex. *Al. ex.* a little under half an inch.

The two following species I place with a little doubt in this genus. In Bucculatrix the tongue is short, but with careful observation of both these species, and dissections of one of them (*B. ? magnella*), I have been unable to discover any trace of a tongue; the tuft also is larger than is usual in Bucculatrix, and in the hind wings of *B. magnella* the apical vein goes to the apex, and the median gives off only a single branch, instead of two. It is also a large species for the genus.

B. magnella. *N. sp.*

Snow white. There is a rust red spot on the front of the tuft; a dark golden brown streak along the middle of the fore wings, beginning on the base, but in the apical part of the wing curving down to the base of the dorsal ciliae, and extending thence around the apex. There is another narrow streak of the same hue parallel to it, which begins behind the middle of the wing, and is usually partly confluent with it, and after reaching the base of the dorsal ciliae, it passes on to and through the apical ciliae. There is a dusting of ochreous scales along the base of the costal ciliae, and the apex is suffused with reddish ochreous. *Al. ex.* fully half inch. Season, April and May.

B. immaculatella. *N. sp.*

No tongue? Silvery white, immaculate. *Al. ex.* $\frac{1}{2}$ inch. Season, May.

BUTALIS.

B. brevistrigella.

This is a very variable species, or my specimens represent more than one species. Sometimes (as stated in the former description) there is simply a yellow streak on the fold, which is sometimes interrupted. In others there is no distinct streak on the fold, but the dorsal margin to the fold, and crossing it near the base of the wing, is densely dusted with pale ochreous yellow, thus approaching *B. dorsipalidella*, which may possibly be an extreme variety of the same species.

ERIPHIA-*gen.* nov.

Allied to *Elachista* and *Laverna*. Indeed, but for the more elongate palpi, and without having examined the neuration, I should have placed it in *Elachista*.

Palpi rather long, drooping in the dead insect, divergent; third joint pointed and about half as long as the second. Antennae simple, about as long as the body.

Primaries lanceolate; the submedian is furcate at the base; the cell is truncate (the subcostal and median running nearly parallel, and the discal vein being straight); the subcostal gives off three branches before the end of the cell, and a fourth at the end has a common origin with the fifth or apical branch, which goes to the apex; the discal has a central branch to the dorsal margin, and the median is furcate from the end of the cell, both branches being short. It thus resembles *L. astra* or *L. longiella*, Ins. Brit.

Secondaries linear lanceolate. Internal and submedian veins distinct, the latter furcate on the dorsal margin; median obsolete to the end of the cell, where it divides into two distinct branches; discal short, distinct, closing the cell about the middle of the wing; subcostal indistinct to the end of the cell, where it becomes distinct and bends up to the costa just beyond the middle. (Possibly, however, it would be more correct to consider what I have called the 'internal' as the submedian, and what I have called 'submedian' as the median; and what I have called the 'median' as a furcate branch of the discal continued faintly through the cell to the base. If this view is correct, then the cell is unclosed between the submedian and the furcate discal branch, and thus the neuration of both wings would resemble those of *L. longiella*, and the insect would be a *Laverna*.

E. concolorella. *N. sp.*

Dark bronzy brown; unicolorous. *Al. ex.* $\frac{1}{3}$ inch. Season, July.

ELACHISTA.

E. ? concolorella. *N. sp.*

Without the aid of a lens, this insect would be mistaken for the preceding. It is, however, quite distinct. The antennae are but little more than half as long as the wings, and the palpi are not much more

than half as long as in *Eriphia concolorella*. I place it somewhat doubtfully in *Elachista*, because of the neuration, which approaches that of *Laverna*. The submedian of the primaries is not furcate at the base; the cell is narrow and acuminate, with three subcostal branches to the margin from near the end of the cell, besides the apical branch, which is furcate before the apex, with one of its branches to each margin; the median is also three-branched, the last from the end of the cell almost confluent with the furcate apical branch of the subcostal.

In the secondaries the cell is rather wide, unclosed; the subcostal is distinct and furcate, with a branch to each margin: the median is three-branched (or two-branched, with an independent discal branch arising at the median and indistinctly continued through the cell, which is unclosed).

Dark bronzy brown; unicolorous. *Al. ex.* a little less than a third of an inch. Not so slender an insect as *Eriphia concolorella*.

E. parvipulvella. *N. sp.*

White; a few ochreous yellow scales scattered over the primaries, especially towards the apex. *Al. ex.* scarcely $\frac{1}{4}$ inch. Season, May, July, August and September.

CORRESPONDENCE.

YOUNG OF POLYXENUS.

DEAR SIR,—

During the past summer I have bred the young *Polyxenus* from the egg. The eggs were found under the bark of dead pines, and were in masses of about thirty, I should judge; intermixed with them were numerous hairs from the posterior part of the body of the adult. The eggs are translucent white, sometime before the young appear turning somewhat opaque; in shape oval, long diameter barely one-hundredth of an inch.

Length of the young ten hours from the egg, seven two-hundredths of an inch. The young differ in no marked manner from the adult, except in the smaller number of segments, which are four, and in having only three pairs of legs, attached to the three anterior segments. The fourth segment is small and has the two tufts of silvery hair so characteristic of the adult.

HENRY L. MOODY, Malden, Mass.

CROCIGRAPHA.

DEAR SIR,—

On page 250 of the CAN. ENT., Mr. Morrison doubts the propriety of the generic reference of *Perigrapha Normani* Grote. I had previously (Bull. B. S. N. S.) noted the different antennal structure of the American species, not being acquainted autoptically with the European forms. The species of *Perigrapha* are regarded as related to *Taenioampa* by Lederer, and it was natural that in describing an American species, differing by the presence of a prothoracic tuft, that I should refer it to a genus differing by this character from *Taenioampa*, to which otherwise both were related. Lederer has divided the genus *Taenioampa* (which should now be known, as I have shown elsewhere, as *Graphiphora*) into sections already, on peculiarities of antennal structure. There can be no propriety of further enlarging the genus by the admission of species with a tufted thorax, so that I propose the above name for *C. Normani*.

DEAR SIR,—

In Mr. Morrison's letter on page 16 of this volume of the CANADIAN ENTOMOLOGIST, he allows himself to call my statements with regard to certain recently described species, "palpable blunders." In the course of his paper, however, the synonyms I claimed that Mr. Morrison has made are admitted, with the exception of two, *Hadena rasilis* and *Agrotis exsertistigma*. With regard to the former insect, I think it much more nearly resembles Hübner's figure of *grata* than *Graphiphora oviduca* does in habitus, size, ornamentation and color, and my blunder (if I had made one) can hardly be called "palpable." With reference to *Agrotis exsertistigma*, I find that I am in error and that the species is valid. I have not known until now the true *exsertistigma*. Mr. Morrison founded this species on two specimens sent him by myself for description with other material, but neither were returned me with the other specimens. Having no duplicates of the material sent him, I inferred that *exsertistigma* was based on specimens with open orbicular, which I referred to *alternata*, but which I now see are Californian specimens of *A. cupida* Grote. Mr. Morrison's non-return of the specimens merely confirmed me in my own wrong identification of *alternata* Grote, as found in California. I am exceedingly sorry to find myself in double error. In the present case the description of Mr. Morrison has helped to mislead me, since *exsertistigma* has a conical abdomen and should not be compared with either *alternata*

or *cupida*, which have it flattened, while *cupida* varies in California in a character (the open orbicular) which Mr. Morrison uses to separate *exsertistigma*.

To the list of synonyms I have given as recently made by Mr. Morrison, Mr. Morrison adds that of *Orthosia baliola*. They would therefore stand as follows :

1. *Copipanolis vernalis* Morr. = *Eutolype Rolandi*.
2. *Mamestra illabefacta* Morr. = *Mamestra lilacina*.
3. *Anthoptera nigrocaput* Morr. = *X. Ridingsii*.
4. *Orthosia baliola* Morr. = *Apamea purpuripennis*.
5. *Hadena rasilis* Morr. = *Elaphria grata*.

Of these five synonyms, one (No. 4) I had not detected, one (No. 5) is not conceded by Mr. Morrison and three (Nos. 1-3) are now admitted by him.

Mr. Morrison is in error in stating that I remark that his *vulgivaga* is "probably a re-description of *H. apamiformis*." I quote the species on page 215 as a distinct species unknown to me, and merely say "from the description I think it not improbable," etc., which is a very different thing. I make no positive statement with regard to either *sericea* or *vulgivaga*. I am glad that *sericea* is not founded on the specimen sent me as a "n. s." allied to *apiata*, because that *was apiata*. I thought *sericea* might be the insect, because Mr. Morrison disputed my determination and thought it distinct, and because he speaks comparatively of *apiata* in his description of *sericea*.

In CAN. ENT., 6, 250, Mr. Morrison states that "Mr. Grote refers *Ceramica* to *Taeniocampa*." In my paper (Bul. Buff. S. N. S., 2, 122) I give the genera (as elsewhere) separately and distinctly, but cite their names under the same heading in a short synoptical table, with the remark, "I have no perfectly preserved specimens of *Ceramica exusta*, and the structural difference from *Taeniocampa* is not apparent to me," as an excuse for so doing.

Mr. Morrison's remark as to my identification of *Agrotis lycarum* I think is unfairly put. This identification was always made hesitatingly from a figure, and had been finally abandoned before Mr. Morrison had written on the subject. Again, *repentis* G. & R. was described in Europe and the name a ms. one of Guenee's. That we had not then identified *messoria* was, perhaps, pardonable, Mr. Riley also having redescribed Harris' species as *Cochrani*.

I notice, also, Mr. Morrison's remark that I have mistaken the generic characters of *Hydroecia semiaperta*. This species, with hairy eyes, is placed by Mr. Morrison first in *Hydroecia*, a genus which has the eyes *naked*. It was sent to me as a n. s. of *Hydroecia* by Mr. Morrison for examination, and I then returned the species determined as belonging to a genus allied to, but distinct from *Hydroecia*. In the Proceedings of the Academy I merely discuss the priority of the names *Apamea* and *Hydroecia*, show that they are synonyms, and adopt *Apamea* and refer all the American species described under *Hydroecia* to *Apamea*. Among them is Mr. Morrison's *semiaperta*. There is not a word as to the structure of the species, and, in fact, I refer to *semiaperta* in the next description as *Hydroecia semiaperta*. It was not my intention then to discuss its structure or erect the new genus, to which I have always in letters stated it to belong.

Mr. Morrison speaks of *nigrescens* as a synonym of *fasciolaris*. I have examined and determined both species as distinct from specimens in the collection of the American Entomological Society. The two are totally, and, I believe, even generically different.

Mr. Morrison allows himself to make an extraordinary statement with regard to one of the few generic names proposed in my List and its Supplement, to the effect that such names without further description need not be adopted. Independent of the fact that it is customary to retain such names as can be proven by the works of Hübner, Ochsenheimer, Walker and many others, the view taken by Mr. Morrison is untenable from the consideration that I have indicated my type and clearly circumscribed the genus by an enumeration of the species in every case. Science is occupied by the fact and not the name; by his criticism Mr. Morrison shows himself affected by the name and not the fact. There can be no doubt that I have made such genera recognizable by including under them described species and thus facts and things admitted by science as existing and already defined. My generic names are as strictly to be preserved in these cases as if they were defined with the minuteness which characterizes Mr. Scudder's definition of *Papilio*. Take, for instance, my genus *Eucloptocnemis*, proposed in my List for the *Heliophobus fimbriaris* of Gueneé. Even the Etymology of the name suggests my reference to Gueneé's statement that his species has armed tibiae, and my inference that then it cannot be a *Heliophobus*, which has them unarmed. If from such data as this no conclusion can be drawn and no action taken by a

student in my capacity, then large numbers of terms throughout Zoology are liable to be overturned any moment by persons as ill-advised as Mr. Morrison. I cite, for example, Mr. Allen's recently described *Loligo Hartingii*, determined specifically upon a figure.

It is true that Mr. Morrison takes no regard as to the meaning of generic terms, and hence has probably taken no cognizance of the derivation of *Eucoptocnemis*, since he establishes himself a new genus under the name *Eutricopis* (my term *Tricopis* with a common prefix), which belies its designation in having the tibiae unarmed! Mr. Morrison incorrectly refers *Eucoptocnemis fimbriaris* to my genus *Pleonectopoda*, where it does not belong, just as he incorrectly refers *Eutolype Rolandi* Grote, under the synonym *vernalis*, to my genus *Copipanolis*, where it is equally out of place.

My List of the Noctuidæ will amply attain the ends proposed if it will continue to call forth corrections and additions, and so be of service in perfecting a knowledge of its subject, the Noctuidæ of N. America.

A. R. GROTE.

Buffalo, N. Y.

DEAR SIR,—

I got a number of larvae of *Papilio asterias* in July, 1874, in Fulton County, Ohio, three of which changed to pupae. One of the pupae I poured chloroform over, and when it stopped moving, put a pin through it. A few days after I looked at it, and found it had grown almost black about the wing cases. I broke off the piece of the pupa skin that covers the head, legs and antennae, and was surprised to see it move. The wings would get dry sometimes, and I would put a drop of water on them to keep them moist. At last the time came for hatching, and with my help, the butterfly got out of the pupa case, but could not expand on account of its wings being dry. Yours truly,

ALLEN V. MOORE.

Fort Buford, D. T.