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The Canadian Entomologist.

VOL. VII.

LONDON, ONT., FEBRUARY, 1875.

No. 2

CAPTURES OF NOCTUIDÆ AT ST. CATHARINES, ONT.

BY GEO. NORMAN, ST. CATHARINES, ONT.

(Concluded from Page 6.)

- Hydræcia sera*—2nd July ; very common ; at sugar and light.
Gortyna cataphracta—September 22nd ; bred in quantities from larvæ in the stems of *Arctium lappa* ; also at rest.
Scolecocampa ligni—1st July ; rare ; at light.
Leucania Henrici—15th April ; bred.
———*pallens*—2nd July ; not common ; lime blooms.
———*phragmitidicola*—7th June ; not uncommon ; at light and sugar.
———*commoides*—2nd July to August ; common ; at lime blooms, sugar and light.
———*unipuncta*—2nd June ; very common ; at sugar and light.
———*pseudargyria*—11th July ; rare ; at sugar.
Ufeus satyricus—20th July ; rare ; at sugar.
Caradrina miranda—2nd June ; not uncommon ; at light.
Amphipyra pyramidoides—24th July to August ; common ; at sugar.
———*tragopoginis*—13th July ; not uncommon ; at sugar.
Ceramica picta—7th June ; bred ; larvae afterwards on cabbages.
Mautia Catharina—*N. g. et sp.*—Dec. 29th, 1873, wing in spider's web 11th May, rare ; at sallow palms.
Perigrapha Normani. *N. sp.*—11th May ; rare ; at sallow palms ; June, one at sugar.
Tæniosea gentilis. *N. g. et sp.*—30th June ; very common ; at lime blooms, sugar and rest to August.
———*perbellis*. *N. sp.*—2nd July ; rare ; at rest.
Tæniocampa alia—2nd May to June ; very common ; at palms.
———*oviduca*—30th May ; not unfrequent ; at light.
Orthodes infirma—29th June ; not unfrequent ; at sugar and light.
———*cynica*—8th June ; rare ; at sugar.

- Cirrhædia pampina*—1st September; common all the month; at sugar.
Cerastis decliva—21st September to October; common; at sugar.
 ——— *inulta*—18th September; rare; at sugar.
Orthosia infumata. *N. sp.*—18th August; not uncommon; at rest and sugar.
Xanthia ferruginoides—15th September to October; very common; sugar and with net.
 ——— *euroa*—9th September; not rare; at rest.
Scopelosoma Morrisoni—4th May; hibernated; common on palms; 18th October, fresh brood; rare; at rest.
 ——— *devia*, *n. sp.*—10th May; rare; at fallows.
Gonoptera libatrix—4th May; hibernated; at rest. Fresh brood—June to October; not unfrequent; at sugar.
Xylina petulca—5th May; hibernated; at palms. Fresh specimens—11th September; common; at rest and sugar.
 ——— *ferralis*—5th May; hibernated; at palms. Fresh brood—19th September; rare; at rest.
 ——— *Bethunei*—2nd May; hibernated; at palms. Fresh brood—7th September to October; common; at rest and sugar.
 ——— *disposita*—5th May; hibernated; at palms. Fresh brood—September to October; not uncommon; at rest and sugar.
 ——— *cinerea*—16th September; at rest and sugar; not rare.
 ——— *laticinerea*—2nd May; hibernated and very common; at palms and sugar. Fresh brood—seems later than the preceding species; 8th October; very numerous; at sugar and rest. I never took *cinerea* in the spring.
 ——— *tepida*—8th October; rare; at rest.
 ——— *pexata*—3rd May; hibernated; at palms. Fresh brood—16th September to October; frequent; at rest and sugar.
Calocampa nupera—10th May; hibernated; single specimen; at light.
Cucullia asteroides—7th June; common; at flowers and rest.
Crambodes talidiformis—13th June; rare; with net at raspberry blooms.
Adisophanes miscellus—2nd May; rare; at rest.
Plusiodonta compressipalpis—24th June; rare; with net over *Philadelphus coronarius*.

- Placodes cinereola*—19th June; not uncommon; at light.
Abrostola ovalis—16th August; rare; at light. Many larvæ of some
Abrostola afterwards beaten from nettles.
Plusia aerca—20th June; rare; at light.
 ————*balluca*—June; rare; at light.
 ————*precationis*—3rd June to October; very common; at flowers and
 at rest.
 ————*simplex*—1st June; rare; with net over Lilac blooms.
 ————*mortuorum*—2nd August; rather scarce; at rest and over Thistle
 flowers (*Cnicus arvensis*.)
 ————*8-scripta*—1st September; rare; at rest.
 ————*ampla*—21st July; rare; with net over *Cnicus arvensis*.
Heliothis exprimens—5th June; rather frequent; over Lilac and *Weigelia*
rosca.
Acontia candefacta—6th September; rare at light.
Oligia versicolor. *N. g. et n. sp.*—Rare; 23rd June; at rest.
Leptosia concinnimacula—1st June; common; at rest and at sugar.
Erastria carneola—1st June to September; very common; at rest and at
 sugar.
 ————*synochitis*—25th June; rare; at rest.
 ————*nigritula*—15th June; common at rest to July.
 ————*muscosula*—9th June; very common; at rest and at sugar.
Chamyris cerinthia—29th June; rare; one pair at rest.
Drasteria erichtea—May 10th; common; at light and sugar to August.
 ————*erichto*—12th June; common; at rest, sugar and light.
Parallelia bistriaria—8th June; common; at rest and at sugar.
Parthenos nubilis—3rd June to September; very common; at rest and at
 sugar.
Catocala epione—27th July; rare; at sugar.
 ————*insolabilis*—29th June; rare; at rest.
 ————*residua*—1st August; not common; at sugar.
 ————*relicta*—4th August; common to September; at sugar and rest.
 ————*unijuga*—18th August; not rare; at sugar.
 ————*Briseis*—5th August to September; not uncommon; at sugar
 and at rest.
 ————*parta*—20th July to September; common; at rest and sugar.
 ————*ultronia*—11th July to August; very common; at rest and sugar.
 ————*concupens*—4th August to September; very common; at rest
 and sugar.

- Catocala amatrrix*—27th August to September; common; at rest and at sugar.
- cara*—20th August to September; less common than last; at sugar and at rest.
- innubens*—2nd August; very common; at rest and at sugar.
- D. C.* var. *scintillans*—8th September; rare; at sugar.
- ecrogama*—21st July to September; very common; at rest and at sugar.
- neogama*—24th July to August; common; at sugar and at rest.
- piatrix*—15th August; not rare; at sugar.
- habilis*—20th August not uncommon; at sugar.
- cebebs. N. sp.*—18th August; rare; one specimen at sugar; Strathsallow.
- Clintoni*—11th July; rare; one specimen at sugar.
- polygama*—8th July to August; very common; at sugar and at rest.
- Homoptera lunata*—2nd May to June; common; at rest and at sugar.
- Saundersii*—17th June; common; at rest and at sugar.
- cdusa*—11th August to September; not uncommon; at sugar and at rest.
- Ypsia undularis*—23rd May to June; common; at sugar and at rest. Apparently a second brood in August.
- Pseudoglossa lubricalis*—10th July; common; at sugar and at lime blooms.
- Epizeuxis Americanalis*—9th July; common; at sugar.
- Chytolita morbidalis*—23rd June; common; at sugar.
- Palthis angulalis*—24th June; rare; at sugar.
- Bomolocha baltimoralis*—21st June; very common; at rest and at sugar.
- abalienalis*—14th June; common; at rest and at sugar.
- Hypena subrufalis*—29th June; not common, at rest.
- Platyhypena scabra*—23rd July to October; common; at rest.

THE *Cossus* of the Greeks and Romans, which, at the time of the greatest luxury among the latter, was introduced at the tables of the rich, was the larva, or grub, of a large beetle that lives in the stems of trees, particularly the oak; and was, most probably, the larva of the Stag beetle, *Lucanus cervus*.—*Curious History of Insects*.

PRELIMINARY LIST OF THE NOCTUIDÆ OF CALIFORNIA.

Part III.

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

*Director of the Museum, Buffalo Society Natural Sciences.*21. *Mamestra cinnabarina* Grote (*ante.*)

Under the number 5574, Mr. Hy. Edwards sends six specimens which, in their yellow rufous color, resemble the European *M. fasciuncula*; they are distinguished by the paler hind wings, the white reniform and the absence of white outer shading to the t. p. line. The Californian species may be held to represent the European *M. strigilis*.

50. *Zosteropoda hirtipes* Grote (*ante.*)

Under the number 4408, Mr. Hy. Edwards sends the female of this interesting form. The hind wings are fuscous in the disc with a shaded fascia; they are without the gathering of longer hair on the veins, which characterize the male. The tibiæ are clothed with sparse and rather long hair, not tufted as in the male. The long pointed palpi are characteristic and the shape of the primaries and ornamentation are as in the male. By a clerical error I have given the eyes as "naked" in my original generic description. They are hairy, as in *Heliophila*, and this character, with the tufted legs, induced my approximation of the genera in the "List of the Noctuidæ of North America."

51. *Agrotis euroides* Grote, Proc. Acad. N. S., Phil., 1874, 202.

California, Mr. Behrens, No. 66; Vancouver, Mr. Hy. Edwards, No. 5576.

52. *Agrotis gravis* Grote, Bull. B. S. N. S., 2, 155.

Mendocino, Mr. Behrens, Nos. 83, 132; California, Mr. Hy. Edwards, No. 2622.

This species varies in tone. In two ♀ specimens the fore wings are yellow brown, with the stigmata concolorous. A ♂ specimen sent by Mr. Hy. Edwards from Vancouver, No. 5607, may belong here; the markings are obliterate and the primaries more rounded.

53. *Agrotis lagena* Grote.

♂. The specimen is much larger than *A. Hollemani*, hind wings paler and the ornamentation differs in detail, with a general great similarity. The resemblance to the Coloradian *Oncocnemis Chandleri* is so perfect that they can hardly be separated. Nevertheless, the *Oncocnemis* has unarmed tibiae, the fore tibiae alone with a terminal spine, whereas the *Agrotis* has all the tibiae armed, the fore tibiae with a double row of spines. The insect is also more whitish and larger. The antennae are simple, the eyes naked and lashed. Whitish gray, with longitudinal interspaceal striations of a darker tint, more prominent terminally. The stigmata are united, the decumbent open orbicular fusing with the reniform, so that a flask-shaped figure is produced longitudinally on the cell. A narrow black basal ray; a terminal series of blackish dots; the nervules accentuated. Hind wings whitish, soiled with fuscous; the nervures marked. Body pale, with a black line on the collar and inner edging to the tegulae. Palpi with the middle joint dark at the sides. Beneath whitish, without markings. Exp. 40 m. m. California, Mr. Hy. Edwards, No. 2256.

54. *Agrotis clandestina* (Harr.) Grote.

Two specimens from Nevada, under the number 5627, from Mr. Hy. Edwards. One specimen collected by the late Mr. Crotch, Mus. C. Z. Camb., from California.

55. *Agrotis alternata* Grote, List, p. 10.

Agrotis exsertistigma Morr., Proc. Bost. Soc. N. Hist. 1874, 166.

Mendocino, No. 4 (red label), Mr. Behrens; also sent under the No. 164.

The Californian specimens do not seem to me to belong to a different species. The character of the open orbicular is variable, as in one specimen it is shaped as in my Eastern specimens. The collar is brown in all my remaining Californian specimens. I forwarded Californian examples of this species to Mr. Morrison with this determination, although this circumstance is not mentioned (as should have been done) in Mr. Morrison's paper. This is a very variable species; one Californian specimen has the forewings unicolorous pale brown, without markings. Others have no trace of the claviform, and the median space is not shaded with black, showing that Mr. Morrison's characters for his species are invalid.

56. *Agrotis cupida* Grote.

A single specimen, without number, sent by Mr. Behrens, belongs apparently to this species.

57. *Agrotis subgothica* (Haw).

Agrotis jaculifera Guen.

Two fresh specimens sent by Mr. Hy. Edwards under the number 4656, from Vancouver Island. The colors are more intense, else I see no differences from our Eastern material.

22. *Mamestra illaudibilis* Grote.

Mamestra laudabilis Grote, Ante p. 157.

Both sexes are sent by Mr. Hy. Edwards, from Vancouver Island of this species, which agrees in size with the Eastern *laudabilis*, and in the lunulations of the median lines. The Western species differs by the tegulae being lined with black, by the median space being wholly black, by the sub-basal and sub-terminal spaces being greenish white, and apparently by the smaller reniform. The bright green tint of *laudabilis* is wanting. The white hind wings have the median nervules soiled with fuscous, and the ♀ has a blackish clouding in the disc. The abdomen is whitish, over fuscous. California; Vancouver Island, Nos. 5580 and 5581, Mr. Hy. Edwards.

58. *Mamestra oliracea* Morr., Proc. Bost. Soc. N. Hist., 1874, 143.

To this species I would refer a specimen from Colorado, sent by Mr. Theo. L. Mead, under the No. 41, one from Canada sent by Mr. Saunders, and two from Vancouver Island sent by Mr. Hy. Edwards, under the No. 5580. It is distinguishable from *M. 4-lineata*, *M. laudabilis* and *M. illaudabilis* by the fuscous hind wings, and from the two latter by the greater evenness of the median lines. It is a little larger than any of the other species and bears a certain resemblance to *Hadena modica*. Besides these, five specimens from Vancouver Island seem merely to differ by being a little smaller and more blackish, the fore wings a little shorter, the white subterminal line sometimes showing a ruddy and pale blotch before it, near the internal margin, and in one specimen the t. p. line tinted with reddish. They agree in the fuscous secondaries and in the comparative evenness of the median lines, while the median space varies a little in width. These latter specimens bear the number 5579.

39. *Hadena divesta* Grote, ante, 215.

Three fresh specimens from Vancouver Island, with the fore wings a little more brown than the Californian type. This handsome species may be recognized by the outward position of the t. p. line and its general straightness. It is allied to *atlantica*, *subjuncta*, etc., but is far prettier and has possibly a nearer European ally.

Vancouver Island, No. 5573, Mr. Hy. Edwards.

59. *Hadena indirecta* Grote.

This species resembles *H. divesta*, but the t. p. line is exerted on the median nervules, below which it runs inwardly, constricting the median space greatly inferiorly. The fore wings are more purely brown; the median space blackish. The W-shaped mark of the subterminal line obsolete, not distinct as in *divesta*. The orbicular is oblique and narrow, not rounded and full as in its ally. The hind wings are fuscous, with the line not as distinct as in *divesta*. There is a dark mark on the subterminal fold of primaries before the subterminal line, and the fold on the median space is also marked. The median lines are geminate, the veins beyond the t. p. line dark marked. There appears to be a dark basal mark continued along vein 1. *Expanse* 36 m. m. Two specimens, the male with simple antennae, in not the best condition, sent by Mr. Hy. Edwards from Vancouver Island, under the number 5588.

60. *Actinotia Stewarti* Grote.

The eyes are naked and the species is congeneric with the Eastern *ramosula*. The basal ray is broader. The pale reniform is closed with a V-shaped outward notch, and situated nearer to the t. p. line, which latter is visible as a continuous dark shade, angulate on the veins, from opposite the cell to internal margin. The orbicular is oblique, not longitudinal pale centered, black ringed, small. The wing is shaded with brown below the basal dash, and also below vein 2. The inferior zigzag portion of the t. a. line is visible. Hind wings darker than in *ramosula*, wholly fuscous. *Expanse* 30 m. m.

California, Mr. Hy. Edwards, No. 4567; named for my assistant, Mr. W. W. Stewart.

ON SOME OF OUR COMMON INSECTS.

THE CYLINDRICAL ORTHOSOMA—*Orthosoma cylindricum*, Fabr.

BY THE EDITOR.

This formidable looking, long-horned beetle, fig. 4, is very common in most portions of Ontario during the month of July. It flies at night with a rapid and noisy flight, entering the open windows of lighted rooms during the evenings, often to the great alarm of nervous inmates. This beetle measures an inch and a quarter, or even more in length, and is about one-third of an inch in width. Its body is long and narrow and of a light brown color, which assumes a darker shade on the head and antennae. The thorax is furnished with three sharp teeth on each side, and each wing case has three slightly raised ribs or lines.

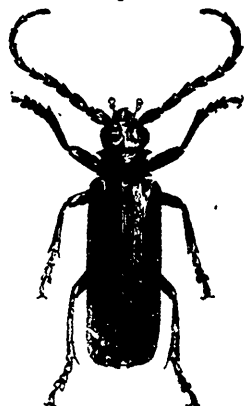
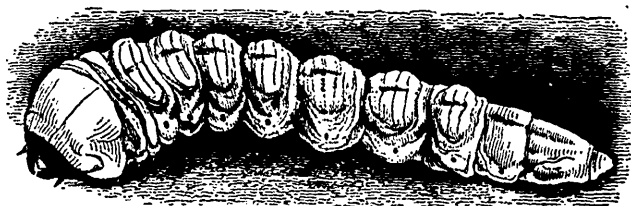


Fig. 4.

The larva of this insect inhabits decaying pine wood, especially pine stumps, and is supposed to be several years in completing its growth; it closely resembles the larva of its near relative, *Prionus laticollis*, shown in fig. 5 (after Riley.) This latter, however, differs somewhat in its habits and appetite,

Fig. 5.



seeming to prefer boring into and feeding on living roots, such as those of the Lombardy Poplar, Balm of Gilead, Apple, Pear, and especially roots of the Grape-vine, in the latter case frequently causing the sudden death of the vines attacked.

TINEINA FROM TEXAS.

BY V. T. CHAMBERS, COVINGTON, KENTUCKY.

(Continued from page 12),

LAVERNA.

I have only examined the neuration of one of the species which I here place in this genus, but they are all evidently congeneric, and the neuration of *L. lyonetiella* while not that of *L. cephalonhiella*, nor of either of the three species figured in *Ins. Brit.*, v. 3., does not differ therefrom more than they differ from each other. The limits of the genus are perhaps not so clearly defined as might be wished in respect to the neuration and the raised tufts on the primaries, but as the genus is at present recognized, the proper location of these species is in it. The neuration of *L. cephalonhiella* is almost identical with that of *L. Staintoni*, the chief difference being that the cell of the hind wings is closed and the superior branch of the fork of the apical vein goes to the costal instead of the dorsal margin. The neuration of the primaries is identical with that of *Staintoni*, except that the submedian is furcate at both ends. In *L. lyonetiella* the neuration of the primaries is exactly that of *Staintoni*, but the secondaries are narrower, the costal vein is very long, attaining the margin beyond the end of the cell, which is closed; the subcostal is obsolete from the base to the end of the cell, beyond which it is distinct and furcate, one branch going to the apex and the other to the dorsal margin; the median divides into three equidistant branches; the submedian and internal veins are distinct, thus resembling the neuration of *Chauliodus* perhaps as nearly as that of *Laverna*. It is, however, I think nearer that of *L. longiella*.

L. œnothærella. *N. sp.*

Second joint of the palpi silvery white, with a dark brown spot beneath near the tip; third joint silvery white, with the apex and a spot beneath at the base brown. Antennae pale yellowish: face, vertex, thorax and forewings silvery white, except, as follows: there is a spot at the middle of the anterior margin of the thorax, one also at its tip, and four small ones forming a transverse row across the middle, all of which are shining dark brown; there is also a similar spot at the base of the hind margin of the forewings, which to the naked eye appears to be on the margin of the thorax before the tip; and there is another just within the dorsal margin:

of the wing, just before the middle, and a small costal one a little further back. There is an irregular golden spot, sprinkled with brownish and containing a small tuft of raised scales, on the dorsal margin just before the ciliae, which sends backwards two narrow, oblique, golden streaks, one of which passes to the dorsal margin, and the other, which has some brown scales intermixed, passes back towards the middle of the apical part of the wing, where it becomes confluent with a median, short, straight golden or orange streak, and with a rather long, curved, oblique and narrow costal streak, which begins just before the ciliae and is of the same hue with the other streaks, except near the costa, where it is brown. These three streaks proceed no further after their union, stopping short of the apex; but behind them, in the middle of the apical part of the wing and extending along through the apex and apical ciliae, is another large dark brown streak; and on the costal margin are two large, oblique, reddish golden streaks, the first of which touches the three confluent streaks above mentioned and the dark brown streak in the apex; the second one appears to be faintly divided on the costa by a small white streak, and is narrowly margined behind by dark brown scales; and behind it is a triangular white spot in the ciliae. Beyond this white spot in the ciliae are two narrow, dark brown, oblique lines, diverging from a common point and reminding one of the 'hook' in some species of *Gracilaria*, and the similar appearance in *Polyhymno*, to which, in the ornamentation of the apical parts of the wings, this species bears considerable resemblance, as it also does to some species of *Lyonetia* in so far as the arrangement of these marks is concerned. The apical black streak is bordered behind by a short perpendicular streak of the same hue. Dorsal ciliae white, dusted with dark brown. First two pair of legs dark brown; the tarsi of the posterior pair are annulate with yellow, the legs otherwise silvery white, marked with black spots. Abdomen pale stramineous; secondaries pale yellowish fuscous; under side of primaries fuscous. *Al. ex.* nearly half an inch.

I have also received specimens of it from Miss Murtfeldt, of St. Louis, who bred it from a larva mining in the stalk of the so-called Primrose (*Oenothera Missouriensis*), and who sends me the following notes:

"The larva of this exquisite little moth may be found during the months of August and September boring the stems of *Oenothera Missouriensis*. It feeds upon the pith, leaving the tunnel in its wake filled with coarse powdery granules, and it does not seem to check the growth of the plant to any great extent.

"The larva is cylindrical in form, with the full complement of very short legs. When mature it measures from 0.45 to 0.50 inch in length, with a diameter of 0.08. Color, pale yellow immaculate, except for the transversely oblong brown spot on the first segment, which represents the cervical shield. The incisions are deep and abrupt, and under the lens the surface appears covered with shallow punctures or stippling. On the dorsum of each segment are two transverse ridges of minute warty elevations, each giving rise to a fine light hair. Head small, oblique, polished, dark, mottled with brown; jaws a few shades paler.

"These larvae remain dormant in the stems over winter and until spring is quite advanced. They then cut holes through the sides of the stem to, but not through, the thin outer bark or cuticle, showing on the latter like a round transparent spot. The place of egress thus provided, the larvae return to the central burrow and enclose themselves in thick, tough cocoons of white silk in the midst of a loose web of the same material. The pupa is rather thick and of a pinkish color, and the wing cases cover only the upper half of the abdomen. This state lasts from 20 to 25 days, the imagines appearing about the last of May."

I have before stated that Miss Murtfeldt has sent me *Gelechia superbella* from St. Louis. St. Louis is on the same parallel that we are on at Covington, but southern insects seem to extend further north along the shores of the Mississippi than along the Ohio. This seems to be especially true as to Southern Illinois. Neither of the two species (*anotherælla* and *superbella*) are found in Northern Kentucky.

L. unicristatella. *N. sp.*

Palpi slender, white, with a narrow, obscure brownish annulation about the middle of the third joint and another near the apex. Head and antennae white. Base of the wings white, except on the costa, the white extending along the dorsal margin to a tuft of raised scales about the middle, but interrupted about the basal fourth by a projection to the dorsal margin of the ochreous and fuscous scales which cover the costal portion of the wing, extending to the fold. The scales of the tuft are white, tipped with dark brown, and immediately before it the white of the dorsal margin projects across the fold into the ochreous and fuscous portion of the wing. In the ochreous and fuscous portion those colors are intermixed with each other and with some white scales, and they spread over the apical part of the wing, where the white is increased in

quantity so as to form an indistinct, pale, irregular fascia at the beginning of the ciliae; at the apex the ochreous brown again prevails over the white. At the base of the costa the ochreous fuscous is very narrow. Posterior wings purplish fuscous; under surface and legs whitish, the legs marked with brownish on their anterior surfaces. *Al. ex.* $\frac{1}{8}$ inch.

L. rufocristatella. *N. sp.*

White; antennae annulate with brown. There is a small reddish ochreous tuft on the disc before the middle of the primaries, behind which the wing is suffused with reddish ochreous; a larger tuft nearly opposite to the first one, and nearer to the dorsal margin, of the same hue with the first one, and another just within the dorsal margin opposite the beginning of the ciliae. Between this last tuft and the costa, and thence to the apex, the wing is suffused with reddish ochreous, sparingly dusted with fuscous. *Al. ex.* $\frac{1}{8}$ inch. Season, July.

L. ignotilisella. *N. sp.*

No raised tufts on the wings. Silvery white, the costal margin about the middle dusted with pale purple and ochreous scales: an irregular streak or sinus of spots, which are connected by ochreous brown dusting, begins before the middle of the disc, and extends backwards, spreading over the apical part of the wing. *Al. ex.* $\frac{1}{8}$ inch. Season, September.

L. albocapitella. *N. sp.*

Head, thorax and base of the dorsal margin of the wings pure snowy white; antennae purplish fuscous, iridescent; palpi white, stained externally with pale purplish fuscous; the white patch at the base of the dorsal margin of the primaries is posteriorly narrowly margined with dark brown, containing a small raised tuft on the margin. The remainder of the primaries are of an indescribable hue, composed of grayish brown ochreous and white scales intermixed, the former hue predominating, or rather, it is brown streaked with ochreous and sprinkled with white; there are three small tufts of dark brown raised scales, each anteriorly margined with white, the white followed by a margin of dark brown; two of them are on the disc before the middle, the other further back and nearer the dorsal margin, and behind it is a fourth tuft also near the dorsal margin; there is a short dark brown streak in the apical part of the wing, within the dorsal margin, and a small dark brown spot about the end of the disc. *Al. ex.* $\frac{1}{8}$ inch. Season, September.

L. parvicristatella. *N. sp.*

White, suffused with purplish brown; the second joint of the palpi suffused with purplish brown, and a brown annulus about the middle; antennae annulate with pale brown; primaries suffused with purplish brown, with an oblique brown streak beginning on the costa near the base, and extending nearly across the wing; another about the middle, crossing the wing, and a third less oblique and shorter about the beginning of the costal ciliae, and produced backwards along the middle of the apical part of the wing, interrupting an indistinct, angulated white fascia; these streaks are not continuous, but are rather composed of small purplish brown spots of slightly raised? scales, with a more distinct raised tuft near the dorsal margin in each of the first two streaks, and between the small spots the wing is more deeply suffused than elsewhere. Dorsal ciliae silvery, those of the apex suffused with purplish; there is a narrow streak of dark brown scales along the middle of the apex. *Al. ex.* $\frac{1}{8}$ inch.

L. misccalonella. *N. sp.*

White, suffused with ochreous yellow, with a raised tuft of the same hue in the middle of the disc on the primaries; basal third of the primaries (except the base of the dorsal margin) brown, with reddish ochreous scales intermixed, and containing two tufts of dark brown raised scales, one of which is close to the dorsal margin, and before it to the base the margin is of the general hue (white, suffused with reddish ochreous), dusted a little with reddish fuscous; opposite to the dorsal tuft, just within the costal margin, is another larger raised tuft; the middle part of the wing is yellowish white, and behind it the wing is deeply suffused with reddish ochreous, containing about its middle a tuft of dark brown scales; apical part of the wing suffused with reddish ochreous and fuscous; second joint of the palpi pale ochreous yellow, externally fuscous, and the third joint is dark fuscous, except at the base and extreme tip. *Al. ex.* $\frac{1}{2}$ inch. Season, May.

L. fuscocristatella. *N. sp.*

White; second joint of the palpi with two pale fuscous annulations; antennae white, annulate with fuscous; head and upper surface of the thorax white; there is a small dark brown spot on each side of the thorax, over the base of the wings; primaries white, with two small dark brown spots on the extreme costa at the base, two other larger ones just

within the costa behind them, one behind the other, and a small spot opposite the space between them, beneath the fold; the portion of the wing from the basal fourth to the end of the disc, included between the costa and the fold, is suffused with bluish fuscous scales, each of which under the microscope appears tipped with hoary, and the extreme costa is black; the wing beneath the fold is whitish; just before the middle is a lunate streak of dark brown raised scales, extending from the dorsal margin to the fold, and margined with white in the concavity behind; at the end of the disc are two other larger tufts of bluish brown raised scales, margined before by yellow ochreous, and opposite to them is a long, narrow, very oblique white costal streak, margined behind by a narrow, dark brown line, which separates it from a somewhat wider yellow ochreous streak, containing three small white costal streaks or spots; behind the tufts the wing is ochreous, streaked with fuscous. *Al. ex.* $\frac{1}{2}$ inch. Season, June.

RECENT NOTES ON THE PHYLLOXERA FROM FOREIGN SOURCES.

[FROM "ENTOMOLOGICAL RECORD," BY TOWNEND GLOVER, IN MONTHLY REPORT OF THE U. S. DEPARTMENT OF AGRICULTURE.]

In November last, information was received from Henry Emi, United States consul at Basle, Switzerland, that the *Phylloxera vastatrix* had made its appearance near Geneva, and in December the following letter was received, which is published in full:

Referring you to my dispatch No. 95, about the appearance of the grape-root louse at Pregney, near Geneva, the riddle received lately an important solution, for the insect was discovered in the grape-houses of the Baron Rothschild, at his villa near Geneva. It is proved that some of these grape-vines were imported from England, in 1869, where the disease occurred in grape-houses as early as 1863. From these facts the origin of the grape-louse at Pregney appears obvious.

At the meeting of the French Academy, on the 19th of October last, Professor Dumas stated that two substances had now been discovered

capable of destroying the Phylloxera: 1st, the sulpho-carbonate of potassa, and 2d, coal-tar. Neither of these would injure the grape-plant. Experiments made on a large scale at Cognac and Montpellier, France, by delegates of the academy, were highly efficient. Both ingredients are cheap, for the price of a kilogram of each does not exceed one franc. The sulpho-carbonate of potassa is dissolved in water up to 37° Baumé, and 80 cubic centimeter ($\frac{1}{10}$ liter) poured upon every diseased grape-root. The best time is in November and March, the ground at that time being moist and the insect sure to be in winter quarters. The expense per vine amounts to about 10 centimes. Applying coal-tar, each root receives about 2 kilograms of this liquid, when it will penetrate the ground about 2 feet deep. In both cases the grape-louse is effectually killed.

I am, sir, &c.,

H. ERNI, United States Consul.

We also give extracts from the report of the international congress of vineyardists, at Montpellier, France, October 28, 1874, on the same subject, from the Journal d'Agriculture Pratique, No. 46:

The floor was taken by Mr. H. Marès, permanent secretary of the agricultural society of Herault, and president of the ministerial commission. He commenced by recalling to mind the experiments of 1872 and 1873, with the Phylloxera, which were unsatisfactory on account of the invasion of the "pyrale." In 1872 a new experimental field was selected, near Montpellier, belonging to M. Michel Termand. The experiments commenced the 6th July, and comprise fifty-one methods, applied to squares of 25 vines each, the squares being separated by two rows of untreated vines, left to serve as means of comparison, and to prevent confusion in the effects of various modes of treatment. One hundred and forty methods have since been tried in the same vineyard, of which thirty-three were beneficial and nine injurious; the others appeared to have no effect. The most beneficial were as follows, the soil being chalky and ferruginous: Potassium sulphate dissolved in urine; a mixture of the sulphurized manure of Berre, colza cake, and ferric sulphate; potassium sulphate dissolved in water; potash soap dissolved in water; soot; a mixture of farm-dung, wood-ashes, and ammonium hydrochlorate; cow-urine alone or with the addition of gas-tar. All the methods which have proved advantageous are also manurial, especially the salts of potash and ammonia. The injurious methods are those insecticides not manures, as carbonic sulphide, turpentine, petroleum, gas-tar, and phenic

acid not diluted. The committee came to this conclusion : that manures, especially those rich in potash and nitrogenous substances, benefitted the affected vines.

The trials were continued in 1874 on the thirty-three squares already improved, one-quarter of each being left to see if the improvement was permanent. The total number of experiments made was two hundred and fifty-nine, extending over two and one-half hectares. The squares which were benefitted in 1872 and 1873 have in some cases this year almost returned to their original vigor, but the Phylloxera has not disappeared.

As regards the fruit, the following treatment has given the best results : 1, Yard-dung, wood-ashes, and sal ammoniac. 2, Yard-dung, wood-ashes and fat lime. 3, Cow-urine and fish oil. 4, Cow-urine alone. 5, Oil-cake. 6, Potassium sulphate and urine. 7, Cow-urine and gas-tar. 8, Soot. 9, Sulphur, salt of Berre, ferric sulphate and colza cake. The vines surrounding the squares treated were also visibly affected.

The experience of 1874 confirms and completes the results of 1872 and 1873, showing a diseased vine may at least temporarily be restored to vigor by energetic treatment. The commission considers itself justified in asserting that manures, rich in potash and nitrogen, mixed with alkaline or earthy sulphates, refuse of salt-works, soot, wood-ashes, ammonia, or fat lime, have increased the productiveness of the vines and allowed the fruit to ripen.

According to M. Marès the vine-disease is the result of combined causes, and subject to several conditions, viz.: 1. The nature of the soil, as it effects the vine and the insect, frequently a determining condition. 2. The influence of climate on the vine, and also whether or not it favors the extension of the insect. 3. The strength or vigor of growth of the vine itself, which varies according to the variety and mode of culture. The wild vine does not perish ; the stock nearest approaching it is hardly attacked.

M. Laliman spoke next, affirming that rooted American cuttings had been cultivated in localities where the Phylloxera had as yet failed to appear, either on the American or native stocks.

M. Planchon then discussed the American vines, dividing them into three principal groups : 1. The *Labrusca* ; berries with foxy taste. 2. *Œstivalis* ; berries small ; leaves deeply indented ; wooly on the veins. 3. *Cordifolia*, of which the *Clinton* is a variety ; leaves smooth, berries

small. The Scuppernong, derived from the Cordifolia, attains a prodigious development, one stock covering one-third of a hectare, but it is too wild. All these resist the Phylloxera better than our varieties, perhaps because they have not been so long in a state of cultivation. The insect does not extend its ravages beyond the small roots of the American varieties. But while the American vines do extremely well in France, they should not be imported where Phylloxera is unknown, for fear of introducing it, as the speaker is decided in asserting that it originated in America.

M. Max Cornu gave a summary of his experiments. He confined himself to substances giving off poisonous vapors, among which sulpho-carbonates gave the best results.

M. Bouchet de Bernard, in a communication, advocated grafting French vines on American stocks, thus obtaining good vines and roots capable of resisting the attacks of the Phylloxera. M. Leissoniere supported these ideas, asserting the positive inferiority of the American vines. M. Terrel de Chênes stated that during five or six weeks the Phylloxera left its subterranean abode and crawled up the stock, hiding under the bark six inches above the ground. M. Douysset told how well the American vines grew at Roquemaure. And the session terminated with a communication from M. Petit, of Nimes, who lauded the value of coal-tar against the Phylloxera.

At 8 o'clock, 29th October, the members assembled at Comedy Square, to visit the field of Las Sorres, and view with their own eyes the results spoken of by M. Marès. The experimental field should give some consolation to our brethren of the South, for the squares of green vines in the middle of general desolation show that the genius of man may triumph over the Phylloxera, as it already has over the Oidium.

The cellar of Saporta, belonging to M. Vialla, was visited, and the excursion terminated at the vineyard of M. Gaston Bazille, near Lattes. His yards join others not yet treated for the Phylloxera, and we can hardly describe the extraordinary difference in the vines. Here they are digging up the stocks to throw away; there they are covered with leaves and vigorous branches. A part were treated with cow-urine and calcium sulphate, a part with urine alone. In another place, submersion has been tried with success, and new ditches are now being dug.

In the session of October 30, M. Lichtenstein continued an essay by M. Roessler, delegate of the Austrian government. In his country the

grape-growers believe the Phylloxera came from America. They are opposed to destroying the vines, and believe in studying the insect and fighting it with manure and phosphates, ammonia, and potash. This treatment succeeds in porous soils, and to obtain this porosity the learned delegate had made use of dynamite, raising the ground thus from a great depth without injuring the vines. He then puts some chalk and phosphorus at the foot of the stock and irrigates. A gas is disengaged by the humidity, which destroys great quantities of insects, and by this means he obtains a crop. M. Lichtenstein added to this communication the result of his personal observations, that from the 15th August to the 15th September the Phylloxera takes wing and departs. He was not able to distinguish the sexes, but there was a time when the insect laid an egg which gave birth to the mother of the legions which devastate the vineyards. At this time the insect is within reach, and should be destroyed. In studying the Phylloxera of the vine the speaker discovered the Phylloxera of the oak.

Viscount de Saint Trivier, delegate from the Rhone, gave a history of the progress of the Phylloxera in his neighborhood, where it appeared three years ago. He pulled up some vines in April and June, but found no Phylloxera; but in July they appeared, which fact made him think, with M. Cornu, that the temperature must be at least 15° cent. He obtained good results by covering the stocks with a sort of paste made of saw-dust and coal-tar. M. Denis employed boiling water, to which he added one-tenth of tobacco-waste.

M. Loubet did not believe in medicines, but advocated patient re-planting till the disease disappeared of itself, as he believed it soon would.

CORRESPONDENCE.

INTERESTING CAPTURES.

Last summer, while camping out with a party of friends on some of the small lakes north of Lake Ontario, ostensibly for the purpose of fishing, I kept on the alert for entomological rarities, and was rewarded by the discovery of two specimens of a *Grapta*, which I immediately recognized as *G. satyrus* Edw., though much astonished at the occurrence of the species so far from its usual habitat—the Pacific coast and Sierras of California—and hitherto not found at all on this side of the Rocky Mountains. Yet they were unmistakably *satyrus*, and Mr. Edwards, on receiving one of the specimens, corroborated my opinion in the matter.

With a somewhat quickened pulse I cautiously approached the first specimen noticed, and successfully netted it; the other was secured with more difficulty, being very wild and frequently flying far into the woods, and then after a few moments returning to the patch of milkweeds where first found.

The two specimens were taken on the 22nd of July, on the shores of Cameron Lake, in Victoria County, Ont., and were the only ones seen during a stay of over a month in the neighbourhood. They were found in company with many *G. progne* and *comma* of both varieties (*dryas* and *Harrisii*.) *Argynnis cybele* and *aphrodite* were found in considerable and about equal numbers, and several specimens of *Thecla strigosa* were taken at the same place. *G. satyrus* is readily distinguished from *comma* by the honey-yellow under surface and great distinctness of the tawny fulvous marking above, that of the hind wings never being obscured by shades of deeper brown. Several specimens of *Arctia (Euprepia) Americana* were taken at our camp fires at various times during our stay; it was necessary to wait, net in hand, and pounce upon them before they were able to reach the fire, as their motions were quite rapid. The first specimen obtained was fished out from the frying-pan while culinary operations were going on—of course ruined—but others were secured in good condition by holding lighted birch-bark torches out a little distance from the shore; the moths flew down into the water and were readily captured. Several hundred eggs were laid by females pinned in the collecting box, and quite a number of the larvæ lived till winter and are now hibernating; they showed no preference as to food, but like most Arctians, devoured almost any green thing within their reach. If they survive the winter I will hereafter give an account of their transformations.

THEODORE L. MEAD, Ithaca, N. Y.

Mr. Knetzing, of this city, has discovered a locality for *B. infans*. They are found in a clump of White Birch, north of the village of Hochelaga. I believe this is the first record of its occurrence in this Province. *B. infans* is closely allied to *B. parthenais* of Europe, the caterpillars of which also feed on White Birch.

Mr. Pearson, one of our members, was fortunate in procuring a fine specimen of *Samia Columbia* from a cocoon found by him at Hochelaga.

Biston ursarius was as prolific as ever last season on the Lombardy Poplar, while the trees were as leafless as in mid-winter.

WM. COUPER, 67 Bonaventure St., Montreal, P. Q.