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The Canadian Entomologist.

VOL. V.

LONDON, ONT., AUGUST, 1873.

No. 8

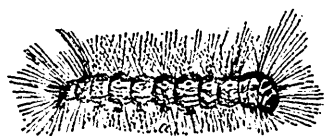
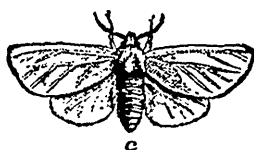
ON SOME OF OUR COMMON INSECTS.

7. THE FALL WEB-WORM—*Hyphantria textor*, Harris.

BY THE EDITOR.

Though extremely abundant and very destructive throughout the whole of this Province, and in the neighboring Northern and Middle

Fig. 16.

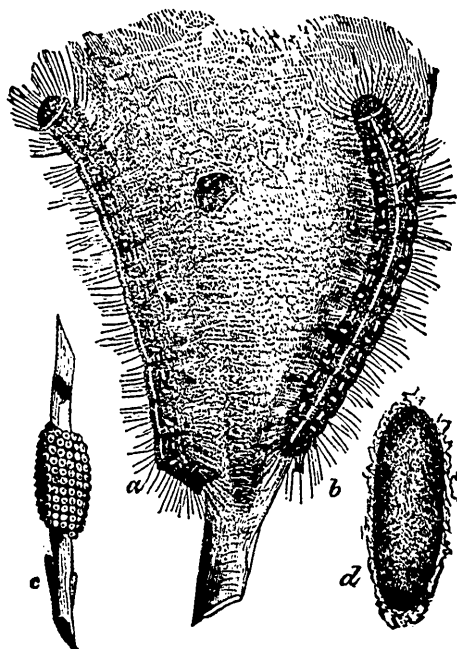


States, this insect (fig. 16) is very commonly confounded with the equally abundant and noxious Tent Caterpillars (*Clisiocampa Americana* and *Syrphica*, Harris) see fig. 17. This confusion arises solely from the fact that all three species spin large webs upon the trees they infest, and therefore, without further obser-

vation, it is taken for granted that they are one and the same. We feel no surprise at a mistake being made between the two species of Tent Caterpillars, as they closely resemble each other in many respects; but the Fall Web-worm differs from both in almost every particular. For instance, the former are hatched from the egg-bracelets very early in the spring before the apple leaves are fully expanded, and very soon spin in the fork of a limb, or upon the side of the trunk, their thick, silvery white, cobweb-like 'tent'; the latter do not appear till the month of August, when they form a loosely-woven, dirty-coloured web over the end of a bough. Were the web and the 'tent' at once upon the same tree there would be no difficulty in distinguishing between them, but few bear

in mind the differences when the one follows the other. Again, the eggs of the Tent Caterpillar are deposited in bracelets of two or three hundred on the twigs of the trees about midsummer, but do not hatch out till the following spring; those of the Web-worm are deposited in little clusters upon the leaves about the middle of June, and hatch out early in August.—

Fig. 17.



The Tent Caterpillars, when fully grown, are over an inch and a half in length, covered with sparse hairs, blackish in colour, ornamented with blue and with either a white stripe or a series of white spots along the back; the Web-worm is much smaller, more hairy, in general colour varying from black to blue and greenish and with a broad blackish stripe

along the back. Further, the moths produced from the former belong to the family Bombycidae, and are of a rusty red or pale brownish colour, with the fore wings crossed in the one species with two pale lines, in the other with two dark ones; the moths of the latter belong to the family Arctiidae, and are of a pure white colour, free from any markings whatever upon the wings. Lastly, the former pass the winter in the egg; the latter in the pupa state.

Having now related the principal characteristics that distinguish *H. taylor* from our two species of *Clisiocampa*, it is unnecessary to give any further description of the insect, any indefiniteness being done away with, we trust, by the illustrations prefixed to this paper.

The Fall Web-worm feeds upon the leaves of a great many kinds of trees, few indeed—except the evergreens—appearing to come amiss to it. It seems to be especially fond of the Wild Cherry, Hickory, Ash, Elm, Willow, Apple, Oak, Birch and Button-wood.

The best, and indeed the only feasible remedy for the ravages of this insect is to cut off and burn, or carefully tread under foot, the whole portion of a branch that is covered with the web. As the worms feed always beneath their web, and do not wander over the tree like the Tent Caterpillars, this method of dealing with them is a sure one. Where it is unadvisable to cut off the branch, as may sometimes be the case with young or dwarf fruit trees, the insect may be got rid of by simply drawing the infested leaves through the hand and crushing the caterpillars upon them.

ON MR. SCUDDER'S SYSTEMATIC REVISION OF SOME
NEW ENGLAND BUTTERFLIES.

[3RD PAPER.]

Continued from Page 63.

BY A. R. GROTE, CURATOR BUFFALO SOCIETY NATURAL SCIENCES.

6. DANAIIS, *Latr.*—It is objected that our species is generally known as *archippus*, to the restitution of the name *plexippus*, given by Linn. to our common species. It is much better to alter a label than to perpetuate an error.

7. BASILARCTIA, *Scudd.*—Together with sixty-eight specimens of *arthemis*, Mr. Chas. Linden took six *proserpina* near Buffalo, N. Y. The material before me makes me feel sure that Mr. Scudder is wrong in referring Edwards' species as a synonym of *ursula*. Traces of the white band and the general size make me suggest that we have possibly to do with a race of *arthemis*. But as yet we must catalogue *proserpina* as distinct. We have a reasonable excuse for preferring *ursula* as the trivial name for our common species. To this genus we must refer *L. weidemeyeri*.

8. DOX-OCOPA, *Hubn.*—It is not disputed, or at least should not be, that we have no true *Apatura* known from the Atlantic district.

9. GRAPTA, *Kirby.*—The retention of Kirby's term is defensible on general grounds.

10. NYMPHALIS, *Latr.* 11. PAPILIO, *Linn.*, restr. *Scudd.*—Schrank's limitation of the term originally used for all the butterflies by Linn. is referred to by Latreille, *Insecta Pterodictica*, p. 198, where *vanessa* is

considered as the equivalent. I believe that Fabricius' use of the term *Papilio* will not allow us to follow Mr. Scudder's. I remain of the opinion that the older writers before Schrank sufficiently expressed their ideas as to the typical section of the genus, and that the term should be used for a genus of which the European *P. machaon* is the type. As we cannot use *Eugonia*, Hubn., of which *angelica*, Cramer, is the type, I propose the term *Scudderia* for the *Pap. antiopa* of Linnæus.

12. AGLAIS *Dalm.*—This I think we may adopt without hesitation and be thankful for the pretty name.

13. VANESSA, *Fabr.* 14. JUNONIA, *Hubn.* 15. EUPTOIETA, *Doubl.*—The values of these terms have not been altered. The seven genera among which our fritillaries are divided, I think we must agree are tenable. To *Euphydryas* I refer *Melitæa chalcedon*, Boisd., from California.

23. LIBYTHEA, *Fabr.*—We are unfeignedly glad Kirtland's term is retained and that we are not to be vexed by another of Boisduval and Leconte's unfulfilled intentions.

24. CALEPHELIS, *G. & R.*—Mr. Scudder uses erroneously *Polystichtis*. In the *Verzeichniss*, Hubner identifies with an exclamation mark *Papilio fatima*, Cram., 271, A. B., and regards this as the type of *Polystichtis*. It is from Surinam. Our two species from the Atlantic District are generically distinct from the S. American forms. Hubner considers that "*Pap. cereus*" of Linn. is this species of Cramer's, and prefers that name, but this identification may not be correct. Retain *Polystichtis* for the S. American forms, but there is no excuse for stating that "*Papilio cænius*" is the "type" of *Polystichtis*. We were familiar with Hubner some time ago. We doubt that Linnæus intended our *N. pumila* under his "*cereus*," "*cerea*," or "*cænius*." We propose to designate our two species as *Cal. pumila* and *C. borealis*.

So far as we have proceeded some few generic changes seem impossible to be avoided. Many of Hubner's genera are excellently well limited (e. g. *Nisoniades*), even according to our present views. Perhaps it is not hazarding too much to say that his genera are not in the present state of science, more incongruous than those of any one author of or before his time. It is difficult to say on what plea we shall ignore him. The prejudice has been strong that has hitherto neglected him.

As we must adopt *Oeneis*, Hubner, we propose the term *Callæncis* as

a substitute for Mulsant's synchronic term. *C. pusilla* is from Nebraska.

Hubner's subsequent use of the term *Engonia* in the Phalaenidæ cannot be defended. I propose the term *Eriplatymetra* for our *E. coloradaria* and the European *E. angularia*.

LIST OF COLEOPTERA OF ST. LOUIS COUNTY, MISSOURI.

BY S. V. SUMMERS, M. D., NEW ORLEANS, LA.

(Continued from Page 134.)

CARABIDÆ.

- | | |
|---|-----------------------------|
| LOPHOGLOSSUS, <i>Lec.</i> (<i>continued.</i>) | purpuratus, <i>Bon.</i> |
| strenuus, <i>Lec.</i> | sculptilis, <i>Say.</i> |
| scrutator, <i>Lec.</i> | ovalis, <i>Lec.</i> |
| AMARA, <i>Bon.</i> | simplex, <i>Dej.</i> |
| avida, <i>Say.</i> | elongatus, <i>Dej.</i> |
| lacustris, <i>Lec.</i> | ANOMOGLOSSUS, <i>Chaud.</i> |
| angustata, <i>Say.</i> | emarginatus, <i>Say.</i> |
| impuncticollis, <i>Say.</i> | pusillus, <i>Say.</i> |
| fallax, <i>Lec.</i> | CHLÆNIUS, <i>Bon.</i> |
| obesa, <i>Say.</i> | aestivus, <i>Say.</i> |
| musculus, <i>Lec.</i> | erythropus, <i>Germ.</i> |
| chalcea, <i>Dej.</i> | fuscicornis, <i>Dej.</i> |
| BADISTER, <i>Clair.</i> | laticollis, <i>Say.</i> |
| notatus, <i>Hald.</i> | rufipes, <i>Dej.</i> |
| pulchellus, <i>Lec.</i> | sericeus, <i>Fors.</i> |
| ferrugineus, <i>Dej.</i> | prasinus, <i>Dej.</i> |
| DIPLOCHILA, <i>Bru.</i> | chlorophanus, <i>Dej.</i> |
| laticollis, <i>Lec.</i> | cordicollis, <i>Kirby.</i> |
| major, <i>Lec.</i> | nemoralis, <i>Say.</i> |
| impressicollis, <i>Dej.</i> | pennsylvanicus, <i>Say.</i> |
| obtusus, <i>Lec.</i> | tricolor, <i>Dej.</i> |
| DICÆLUS, <i>Bon.</i> | brevilabris, <i>Lec.</i> |
| dilatatus, <i>Say.</i> | impunctifrons, <i>Say.</i> |
| splendidus, <i>Say.</i> | niger, <i>Rand.</i> |

- tomentosus, *Say*.
 viduus, *Horn*.
 lithophilus, *Say*.
 ATRANUS, *Lec*.
 pubescens, *Dej*.
 ANATRICHIS, *Lec*.
 minuta, *Dej*.
 OODES, *Bon*.
 fluvialis, *Lec*.
 americanus, *Dej*.
 amaroides, *Dej*.
 cupræus, *Chaud*.
 GEOPINUS, *Lec*.
 incrassatus, *Dej*.
 CRATACANTHUS, *Dej*.
 dubius, *Beaur*.
 AGONODERUS, *Dej*.
 lineola, *Dej*.
 comma, *Lec*.
 pallipes, *Fabr*.
 partarius, *Chaud*.
 DISCODERUS, *Lec*.
 parallelus, *Hald*.
 ANISODACTYLUS, *Dej*.
 rusticus, *Dej*.
 carbonarius, *Say*.
 harrisii, *Lec*.
 melanopus, *Hald*.
 nigrita, *Dej*.
 discoideus, *Dej*.
 baltimorensis, *Say*.
 laetus, *Dej*.
 coenus, *Say*.
 sericeus, *Harris*.
 XESTONOTUS, *Lec*.
 lugubris, *Dej*.
 SPONGOPUS, *Lec*.
 verticalis, *Lec*.
 AMPHASIA, *Nesom*.
 interstitialis, *Say*.
 EURYTRICHUS, *Lec*.
 piceus, *Lec*.
 terminatus, *Say*.
 GYNANDROPUS, *Dej*.
 hylacis, *Say*.
 BRADYCELLUS, *Er*.
 vulpeculus, *Say*.
 badiipennis, *Hald*.
 rupestris, *Say*.
 tantellus, *Chaud*.
 HARPALUS, *Latr*.
 gagatinus, *Dej*.
 dedicularius, *Dej*.
 caliginosus, *Fab*.
 testaceus, *Lec*.
 erraticus, *Say*.
 viridiæneus, *Beaur*.
 faunus, *Say*.
 pennsylvanicus, *De Geer*.
 compar, *Lec*.
 erythropus, *Dej*.
 pleuriticus, *Kirby*.
 herbivagus, *Say*.
 nitidulus, *Chaud*.
 rufimanus, *Lec*.
 vagans, *Lec*.
 STENOLOPHUS, *Dej*.
 carbonarius, *Bru*.
 fuliginosus, *Dej*.
 conjunctus, *Say*.
 ochropezus, *Say*.
 dissimilis, *Dej*.
 PATROBUS, *Dej*.
 longicornis, *Say*.
 BEMBIIDIUM, *Er*.
 paludosum, *St*.

inaequale, <i>Say.</i>	lævigatum, <i>Say.</i>
coxendix, <i>Say.</i>	TACHYS, <i>Ziegl.</i>
nitidulum, <i>Dej.</i>	proximus, <i>Say.</i>
nitidum, <i>Kirby.</i>	scitulus, <i>Lec.</i>
americanum, <i>Dej.</i>	corruscus, <i>Lec.</i>
fugax, <i>Lec.</i>	lævus, <i>Say.</i>
cordatum, <i>Lec.</i>	nanus, <i>Gyll.</i>
dorsale, <i>Say.</i>	flavicauda, <i>Say.</i>
patruele, <i>Dej.</i>	capax, <i>Lec.</i>
pictum, <i>Lec.</i>	xanthopus, <i>Dej.</i>
affine, <i>Say.</i>	incurvus, <i>Say.</i>
texanum.	pulchellus, <i>Ferte.</i>
frontalis, <i>Lec.</i>	dolosus, <i>Lec.</i>
4-maculatum, <i>Linn.</i>	PERICOMPSUS, <i>Lec.</i>
pedicellatum, <i>Lec.</i>	ephippiatus, <i>Say.</i>

(To be Continued.)

MICRO - LEPIDOPTERA.

BY V. T. CHAMBERS, COVINGTON, KENTUCKY.

Continued from Page 128.

CLYMENE and CYLLENE.

C. aegerfasciella, ante p. 114, and *C. minutissimella*, ante p. 125.

When the generic and specific characters of these insects were written—more than a year ago—I placed them, with much doubt, among the Micro-Lepidoptera. Subsequent examination has only served to increase those doubts, or rather, has convinced me that they are allied to the *Hydroptilidæ*, and are Trichopterous, if *Hydroptila* is Trichopterous. At the same time, it was partly because I was unable satisfactorily to place them in *Hydroptila*, or any allied genus heretofore described, that I was induced to place them among Micro-Lepidoptera. These minute species of supposed Trichopterous affinities are so little known; the characters of families, genera, and species are so vague; and so much confusion prevails about them, that I take the liberty of suggesting that the *Hydroptilidæ* are more Lepidopterous than Trichopterous or Neuropterous—at

least if these two species are true *Hydroptilidæ*. I am, however, no-Trichopterist, and am not competent to decide the question. It seems to me, however, from an examination of such specimens as I have seen, and from such study as I have been able to give to Trichoptera, that they are more nearly allied, for instance, to *Tineæ* than to *Phryganea*, that they do not differ from other *Tineina* more than other genera of that family differ from each other, and that they differ from other Trichoptera fully as much as they do from any *Tineina*. I speak only of the imago—for the larvæ of *Clymene* and *Cyllene* are unknown—Trichoptera, and especially *Hydroptila*, seems to me a very heterogeneous assemblage.

Referring the reader to the published accounts of *Clymene* and *Cyllene* on previous pages of this volume, I add the following notes as bearing on their Trichopterous affinities. :--

The most striking character of both species, and that which first suggested doubts of their Lepidopterous affinities, is the clothing. Both are clothed with short stiff or scale-like hairs, instead of true scales, of which I have not been able to denude the wings except by boiling in potash. Many of these hairs are reversed, looking as if brushed backwards; and, in *Clymene* especially, the Patagia are comparatively naked and are clothed with rather long stiff hairs or bristles. I have found both species in the same localities in company with each other and with *Gelechia*, *Lithocolletis* and other true Lepidoptera, resting upon fences and trunks of trees, in the driest situations to be found in this well watered region. Of *Cyllene* I have dissected both ♂ and ♀; of *Clymene* only the ♀. In both the antennæ are moniliform.

Cyllene.—Anterior tibia spurless; intermediate ones with two apical spurs, one of which is small; posterior with one long median spur, and two short apical ones, one of which is very short. Basal joint of the antennæ small; ocelli none; maxillary palpi 3 (or 4?) jointed (if four the basal one is very minute and indistinct), the last joint being slender and longer than either of the others. I was not able to detect the presence of labial palpi, even when the head was severed carefully from the body and boiled over the lamp on a glass slip under the thin glass cover. Anterior wings pointed; posterior wings with the costa excised from before the middle to the tip; cilia long.

Clymene.—Basal joint of the antennæ swollen; ocelli none. In the diagnosis, ante p. 114, I have stated that there is no tongue. This is scarcely correct; there is a minute, conical, fleshy protuberance which I

think is a rudimentary tongue, and on each side of it a smaller and more corneous projection, which I take to be the representatives of the maxillæ. Maxillary palpi three-jointed, the joints simple and of nearly equal length; labial palpi small, simple, one (or two?) jointed (if two the basal one is minute and indistinct.) Anterior tibia without spurs; intermediate tibia with one short median, and one short and one long apical spur; posterior tibia with two median spurs, one of them small, and two rather long apical spurs.

The ciliæ, especially of the hind wings, are very long in both insects. The neuration is obsolete in *Cyllene*; in *Clymene* it resembles closely that of *Hydroptila tincoides* Dalman, as figured by McLachlan in *Trans. Ent. Soc. Lond.*, Ser. 3, v. 5, plate 5, fig. 7. Indeed that of the forewings is almost identical, whilst the hind wings differ somewhat both in shape and neuration.

The specific description of *C. aegerfasciella* should be corrected by adding the statement that the hairs around the mouth are dark brown.

By comparing the above account of these insects with McLachlan's account of the family *Hydroptilida* and its two genera, *Agraylea* and *Hydroptila*, *loc. cit.*, the differences to which I have alluded will be observed.

BUCCULATRIX.

This genus is usually associated with *Lithocolletis* and allied genera; but the fact that it is an external feeder, except for a very brief period; the absence of palpi and tongue, and the different neuration of the wings seem to me to remove it from that association.

In addition to the points of structure just mentioned, a *Bucculatrix* has the basal joint of the antennæ expanded, forming an eye-cap which almost conceals the eyes. The face is smooth and there is an erect tuft upon the vertex, and the antennæ are nearly as long as the wings.

A—Species having a brownish spot on the dorsal margin of the anterior wings.

* Having an apical spot.

1. *B. trifasciella*, Clemens. *Proc. Ent. Soc. Phila.*, 1865, p. 147.

Unknown to me except by Dr. Clemens' description. Wings ochreous with three silvery costal streaks.

2. *B. capitabellula*. *N. sp.*

Face and tuft snowy white; antennæ silvery white; anterior wings snowy white, with a few scattered ochreous brown scales about the middle of the basal half. Just before the middle is a pale yellowish costal streak passing obliquely backwards to the middle of the wing and widest on the costa, where it is dusted with brown. A similar but less oblique streak just behind the middle. On the dorsal margin, opposite the space between these streaks, is a rather large yellowish spot internally margined by a small raised patch of dark brown scales. On the base of the costal ciliae is a patch of pale yellowish dusted with brownish; a streak of the same hue around the base of the dorsal ciliae, containing a minute brown spot at the beginning of the ciliae and another at the apex of the wing. Ciliae white, flecked with brownish at the extreme tip.

Alar ex. a little over $\frac{1}{4}$ inch. A single specimen taken in Kentucky. Larva and food plant unknown.

3. *B. pomifoliella*, Clem. *Proc. Acad. Nat. Sci., Phila., 1860, p. 211.*

This is our commonest species. It feeds on the leaves of Apple trees. Wings whitish dusted with brown. A brownish costal streak widest on the costa passes obliquely across the wing to the dorsal ciliae.

* * No apical spot.

4. *B. obscurafasciata*. *N. sp.*

Face yellowish white; tuft reddish orange, becoming almost rufous on top; antennae yellowish silvery, dotted with brown above; anterior wings pale golden at the base, deepening towards the apex, with two tolerably distinct but not well defined costal white spots or streaks before the middle, the first continuing as a very indistinct band obliquely across the wing and slightly angulated posteriorly near the dorsal margin, where it is bounded behind by a distinct dark brown spot containing raised scales. At near the apical third is an indistinct whitish fascia with a few dark brown scales before it on and near the costa. Ciliae pale stramineous. Apex and ciliae sparsely flecked with pale fuscous. A dark brown hinder marginal line in the ciliae. Under surface and legs yellowish silvery with the anterior surface of the tarsi annulate with fuscous. *Alar ex.* about $\frac{1}{4}$ inch. Larva and food plant unknown. Captured May 23rd.

Dr. Clemens' description of his *B. coronatella* seems to resemble this insect, except that he does not mention the dorsal spot and the 1st fascia is represented in that species by a costal and opposite dorsal spots.

5. *B. luteella*. *N. sp.*

Face, tuft and antennae white; thorax and anterior wings pale creamy white suffused with pale orange, which in some places is condensed into blotches or bands; sparsely dusted with pale fuscous, and with a very small patch of raised scales about the middle of the inner margin of the anterior wings. Ciliae stramineous. *Alar ex.* $\frac{1}{4}$ inch. Kentucky. Larva and food plant unknown. Captured in March.

6. *B. agnella*. Clem., *loc. cit.*

Wings whitish, washed with luteous brown, especially towards the tip. Costa dark fuscous from the base, giving off about the middle a short fuscous streak. Imago in May. Unknown to me except by Dr. Clemens' description.

B—No dorsal spot.

7. *B. Packardella*. *N. sp.*

Face and eye-caps white, lower portion of the face tinged with pale golden, sparsely flecked with pale brownish. Tuft white below, tipped above with yellowish and brownish. Antennae pale yellowish, dotted with brown. Thorax white, well dusted with brown, and *with a small brown spot on each side near the apex*. Wings, basal half white flecked with brown, faintly streaked with orange chrome upon the fold, and with a narrow line of the same along the costal margin flecked with brownish and widening towards the middle, whence it spreads over the apical half of the wing, which is a decided orange chrome, with a short, faint, narrow curved white streak running through it from the middle of the wing to the base of the dorsal ciliae, and a small oblique white streak about the middle of the apical portion of the wing, which is dusted with brownish along the costa, and in the ciliae forming an approach to two hinder marginal lines in the ciliae, which are yellowish stramineous. *Alar ex.* $\frac{1}{4}$ inch. Larva and food plant unknown. Taken in April.

8. *B. coronatella*, Clem. *Proc. Acad. Nat. Sci., Phila., 1860, p. 13.*

Unknown to me except from the description of Dr. Clemens. See *B. obscuvo-fasciella*, *ante.*

9. *B. Thuiella?* Packard.

Unknown to me except from the figure in the "American Naturalist," v. 5, p. 427, which does not indicate a dorsal nor an apical spot, though Dr. Packard says that it resembles *B. pomifoliella*. I place it doubtfully in this section.

These, I believe, are the only described American species.

CORRESPONDENCE.

MONTREAL, JULY 14TH, 1873.

DEAR SIR,—

I should like to be informed how to distinguish the sexes of moths and butterflies when there is no dissimilarity in the markings of the wings, &c. ; also, how to distinguish *A. cybele* from *A. aphrodite*, and also to recognize *A. atlantis* and *A. montinus*, as in Harris they are not described at all, and Packard only mentions their names. I should also like to know how to preserve spiders and bugs, &c., in the best way.

Yours, &c.,

H. H. L., Montreal, P. Q.

In the larger moths the sexes may be distinguished frequently by the structure of the antennæ, they being more widely pectinate in the male than in the female. Where no distinguishing features of this kind present themselves, the relative size of the bodies will enable one to decide this matter, the bodies of the females being usually distended with eggs. A more accurate method would be to examine the character of the generative organs, for the structure of which we would refer our correspondent to Packard's Guide, p. 16, 170, 237.

In answer to the queries relating to *cybele*, *aphrodite* and *atlantis*, we quote the following from that excellent work of Mr. W. H. Edwards': "The Butterflies of North America":—

"Cybele is the larger, and the difference in color between the sexes is much less than in Aphrodite. In the latter the male is much smaller in proportion to the female, is brighter colored than Cybele, and has very little brown at base of wings. The black markings are noticeably more

delicate, the marginal lines on primaries nearer together, more or less excluding the fulvous spots which, in Cybele, are distinct along the whole margin. The margin of secondaries also has an edge line like the primaries; the median band is formed of small crescents, separated by wide spaces and obsolete on costal margin; and there is no black space between the costal and subcostal as in Cybele. On the under side the silver marginal and costal spots are decided, while in Cybele they are usually wanting, or indicated by a few scales only; the basal color of secondaries is cinnamon-brown, and the band is more or less encroached on by the ground color; the pyriform spot of third row is cut by the arc as in Cybele, but the smaller spot thus made is edged above with black and is in effect a distinct spot. Comparing the females, Cybele is luteous, very dark at base, heavily marked with black. Aphrodite is suffused with a rich red tint that seems as if in the very texture of the wing, and that makes living specimens conspicuous; the under side of primaries is red fulvous, of secondaries deep ferruginous, and the band is almost wholly crowded out."

"Atlantis is readily distinguished from Aphrodite by its smaller size, duller color, broad black margins, confluent median band of secondaries and color of same wings below; also by the longer and narrower fore wings."

Spiders may be preserved in diluted alcohol in bottles. Bugs (*Hemiptera*) are pinned in the usual way.

We received from our esteemed correspondent, W. H. Edwards, Esq., a few days since, a letter in which he informed us that he had received from Labrador, from Mr. Wm. Couper, specimens of a *Papilio* which has already been several times referred to in our journal. With the writer's consent we have much pleasure in inserting the following note, which has just come to hand.—ED. C. E.

COALBURGH, W. VA., 24TH AUG., 1873.

DEAR SIR,—

I have taken the *Papilio*'s from Anticosti from drying blocks, and have compared with all the allied species that I had with me; also, have compared with the description of *Brevicauda*, Saunders, and I have no doubt that the species is a good one and its name is *Brevicauda*. It is allied to *Zolicaon* and *Machaon*.

But the above is seen to differ in this, that the hind wings are black from base to yellow band beyond the cell, while in all the others named the color of that section of the wing is yellow. Also, the body is black spotted with yellow, in longitudinal lines, as in *Asterias*, while in the before named species the wings are black with yellow stripes, not spots. There are other differences, but these are enough to mention.

The yellow spots of *Brevicauda* are replaced with fulvous to a remarkable extent, but that peculiarity is not unusual in the group, nor in the *Asterias* group. These specimens from Anticosti differ greatly in this respect, though in all I have seen the fulvous is confined to the lower side. They also differ in length of tail, though the longest is short compared with the average *Asterias*.

Yours truly,

W. H. EDWARDS.

MISCELLANEOUS.

TENT CATERPILLARS (*Clisiocampa*).—These pests were very numerous here this season, swarming on the trees of both orchard and forest. I observed one Thorn tree on Montreal Mountain that had been completely stripped of its leaves by them, leaving nothing but a few old webs that one might fancy were banners left to mark the path of a victorious army. A little farther on I found another horde encamped upon two Thorn trees that were growing one on each side of a large rock; not finding the leaves of the tree on which their parent had placed them to their taste, they made a path across the rock to the tree at the other side, and upon which they climbed by two or three leaves that rested against the edge of the rock. Now, if it had not been for the leaves touching the rock the caterpillars would have had to crawl down one tree and up the other whenever they needed food, and their instinct seemed to have taught them so, for although the whole nestful of hungry caterpillars crossed the leaves every time they went to feed, not one of them attempted to eat their bridge, but passed farther on before commencing their meal. In former seasons any of these caterpillars that I observed spinning up, chose the shelter of a fence or crevices in bark or some such place to make their cocoons in, but this season I found them rolling up leaves and making their cocoons inside them, and in some cases I found two cocoons in the same leaf. I found them spun up in almost every kind of leaf, Linden,

Oak, Maple, Butternut, Thorn, Sweet Briar, Asclepias, Fern, &c. On Asclepias and Fern they only rolled one edge of the leaf, and sometimes spun up on the leaf exposed without any covering. I also found several spun between stalks of grass, indeed they selected some most extraordinary places, for a friend of mine showed me one in a bird's nest. The nest was built in a Fir tree and contained four eggs, over which the cocoon was spun and attached firmly to the sides of the nest; it would not have been so strange if the nest had been on any of its food plants and built low down, but this was on a Fir tree and a good height from the ground. I suppose it may be set down as one of the freaks of Nature. I selected cocoons from leaves of various trees and plants, and all of them proved to be *Clisiocampa sylvatica*, Harris.

RARE CAPTURES.—*Debis portlandia*.—I found a locality for this butterfly in a sunny opening in a wood at Lachine, nine miles west of this city.

Erebis odora, Cram.—I received a specimen of this splendid moth, taken in this city in July of this year. It was attracted into a room by light. I believe this is the farthest north that it has been taken. Both these species were kindly determined for me by Mr. Herman Strecker, of Reading, Pa.—FRANK B. CAULFIELD, Montreal, P. Q.

REDUVIUS RAPTATORIUS.—One night at the end of April I caught one of these swift-footed insects, and while holding it between my finger and thumb it managed to insert its proboscis into the latter member and gave me, much to my surprise and disgust, a most savage sting. The pain was very great—much more than that caused by a mosquito, and it continued for about five days, although the thumb did not swell. I put the *R. R.* into a jar of water in which, for a fortnight, I had been keeping a large water-beetle (*Dytiscus*), feeding it with flies, ectobias and other insects; but this Hemiptera was too much for the poor beetle. It refused to be quietly killed and eaten, but instead, pierced the hard shell which in the morning was floating dead upon the water, while the victor still lived. The mode of the beetle's attacking its prey was very interesting; it would make a sudden dash, seize the quarry with its strong mandibles, then dive down and swim about beneath the surface as if to drown its victim; then after a time it would rise to the top and there quietly crunch up its food, discarding the wings as too dry eating.—R. V. ROGERS, Kingston.

VENOMOUS CATERpillARS.—Mr. R. Benson, of Madras, India, gives the following account, in a recent number of *Nature*, of pain inflicted by a caterpillar:—"In 1868, when travelling in company with Capt. Street in

the Burmese forests on a botanical trip, and whilst in the act of detaching a specimen plant of *Dendrobium farmerii* from the naked branch of a tree, I felt a severe and painful sting on my thumb. On examination I noticed I had seized hold of a large caterpillar, lodged amongst the roots of this orchid. It was about two inches long, clothed with erect hairs; its colour was a reddish brown, the lower part of the abdomen being darker, with well-developed legs. My thumb continued painful for three days; it was considerably swollen, the skin having a drawn glazed appearance. The Burmese told me that this kind of caterpillar was exceedingly venomous, and one fellow was particularly consoling by informing me that unless the pain subsided in three days the sting might prove fatal. I am inclined to think that the caterpillar for self-protection has the power of detaching these hairs; whether any propelling force is present at the time of detachment it would be difficult to prove. I found steeping my hand in Eau de Cologne gave me the greatest relief."

MR. ALBERT MÜLLER communicated the following notes at a meeting of the Ent. Soc. of London, England:—

1. *Aræocerus coffeæ* at Basle.—“On the 29th of September, 1862, while attentively watching the unpacking of some freshly-imported bags of Java coffee, in a warehouse at Basle, a very lively specimen of this beetle came tumbling out of one of the bags. I secured it and kept it alive for some days. In a letter dated the 14th of March, 1873, which I have just received from my lynx-eyed friend Herr H. Knecht, of the same city, he tells me that he can now get this species in any quantity at Basle. It is well known that this species of Anthribidæ feeds in the larval state on raw coffee-berries; hence its introduction and capture in commercial emporia on the coasts of different continents need cause little surprise; but the two facts here recorded illustrate once more the indubitable axiom that insects living on merchandise are spread chiefly along the main trade-route, and become acclimatised along their whole course, Basle being one of the chief markets where Central Europe stores and disposes of the purchases derived from Mediterranean and Atlantic ports.”

2. *Tribolium ferrugineum* in Ground-nuts.—“In the summer of 1863 a cargo of ground-nuts (*Arachis hypogæa*) arrived in the port of London direct from Sierra Leone. On arrival the usual samples were drawn, when it turned out that the husks were riddled by countless holes, while the

kernels were half eaten up by myriads of larvæ and imagines of *Tribolium ferrugineum*. So completely had they done their noisome work that in the numerous samples examined scarcely an intact kernel could be found. If a nut was opened the whole interior was often found to be converted into a living conglomerate of larvæ, pupæ and imagines of *Tribolium* accompanied by the larvæ and perfect insects of a *Rhizophagus* preying on the former, the whole mass being wrapped up in a layer of cast-skins and excrement. As no purchaser could be found, owing to the deplorable state of the cargo, the work of destruction continued through the months of August, September and October, the owners being unwilling to take a considerably lower price than had been calculated upon. A fresh proof how the marketable value of an article can become reduced through delay and ignorance on the part of its owner."—*The Zoologist*.

THE WAXY EXUDATION OF HOMOPTERA.—An exudation, corresponding to that which is characteristic of *Aphis Fagi*, is common to all the several thousand species of Homopterous insects, and appears more or less, and in various forms, throughout the tribes, from the singing Cicada to the stationary Coccus, and often serves as a defence. In Cicada it is slight and powdery; in some of the tribe, of which the lantern-flies are the most conspicuous representatives, it is excessive, and forms waxy filaments which surpass the body in length. It hardly appears as an emanation from the frog-hoppers; but in the next family, or Psyllidæ, it may be often witnessed in gardens by the multitude of white flecks which proceed from *Psylla Buxi* on the box-trees, and fall in showers when the branches are shaken. Next come the Aphides, of which the types are distinguished by two pipes, whence the streams of honey flow. The beech *Aphis*, or *A. Fagi*, is less typical and less multiplying than many others, and is more sheltered than them from the oviposition of *Aphidius* by the fleecy or gummy substance which it emits. The American blight, which belongs to this family, is defended by the abundance of its cottony covering. The wax-insect, or Coccus of China, has been mentioned in several books, and a Coccus in Arabia produces a substance which is called manna, and is supposed by some persons to be identical with the manna in the wilderness.—*Francis Walker, in Newman's Entomologist*.

THE COLORADO POTATO BEETLE VARYING ITS FOOD.—A generally received opinion in regard to the Colorado Potato Beetle, *Doryphora 10-lineata* (Say), is that its food is confined to plants of the family Solanaceæ. I have found it this season (June 19, 1872) at Port Austin,

Michigan, sparingly feeding on grass, on which it had also deposited its eggs. Later in the season (July 20), at Fort Gratiot, Michigan, I encountered it in large numbers, in both the larva and perfect states, in the vicinity of potato fields (where it had committed terrible depredations), devouring the younger leaves and flower buds of the common thistle (*Cirsium lanceolatum*, Scop.), which it was rapidly stripping even to its thick stem so that the entire top of the plant hung down, almost severed. In the same neighborhood I also saw it on pigweed (*Amarantus retroflexus* L.), hedge mustard (*Sisymbrium officinale* Scop.), the cultivated oat, smart-weed (*Polygonum hydropiper* L.), and the red currant and tomato of the gardens, as well as the common night-shade (*Solanum nigrum* L.), the last two its more legitimate food. But of the last mentioned plants, with the exception of the night-shade, it ate only the young leaves, and of them very sparingly. The thistle it seemed particularly to relish. Could its attention be diverted from the potato to the Canada thistle it would encounter an object worthy of its prowess; and the curses which have been heaped upon its striped back would be turned to blessings. But, I fear, little good can be hoped from the capacity, thus evinced, to diversify its food, and so accommodate itself to circumstances. This can only be regarded as another obstacle in the way of its extermination.

Since writing the above I have found the beetle feeding on the maple-leaved goosefoot (*Chenopodium hybridum* L.), lamb's quarters (*C. album* L.), and thoroughwort (*Eupatorium perfoliatum* L.); and August 8, 1872, I saw it in the larva and perfect states, voraciously eating the black henbane (*Hyoscyamus niger* L.), on which was also to be seen an abundance of the eggs.—HENRY GILLMAN, Detroit, Michigan, September, 1872, in *American Naturalist*.

THE ANT-LION.—While in the Indian Ladder Region, Albany Co., N. Y., in August, 1871, I found a large colony of ant-lions. It is situated near the head of the "Ladder Road," at the base of the cliffs and extends for several rods along the path to the "Tory House." The cliffs here hang over the paths, so that it is almost impossible for rain to reach the spot. The soil is composed of disintegrated limestone, extremely fine, but mingled with minute fragments of stone as well as larger pebbles.

In Aug., 1871, the colony numbered rather more than 600 individuals, but on July 6, 1872, there were scarcely half that number. Perhaps at

this last date some were in the chrysalis, as of several specimens thus obtained most of them entered that state in a short time, while those taken in August remained until the following spring.

Food was very scarce in this colony, as it was rare to see more than four or five victims in the lions' dens at one time. On several occasions I noticed a strong and active insect, having ventured over the edge of the pit, run swiftly down and up the other side, leaving the ant-lion wildly snapping its jaws, as the intended victim mounted the steep side of the pitfall.

The ant-lion does not, as far as my observation goes, throw up sand to bring down its prey, but throws it up in every direction in order to keep its jaws free to seize the insect when it reaches the bottom of the den.

In 1871 there was another colony (which I did not visit in 1872) near the "Paint Mine." It consisted of some 300 members. I call it a colony, although, of course, there was no friendly intercourse between the inhabitants of the settlement. On the other hand, in the most crowded portions, the chief employment of the insects was to throw out the dirt which their active neighbors were depositing on their own premises.—E. A. BIRGE, Williams College, in *American Naturalist*.

DESTRUCTION OF DRAGON-FLIES BY BIRDS.—Mr. Gould, in a communication to the Entomological Society of London, says, "I believe that the larger dragon-flies are very liable to the attacks of birds, and have no doubt that the hobby and kestrel occasionally feed upon them; with regard to the small blue-bodied species (*Agrionidæ*) frequenting the sedgy bank of the Thames, I have seen smaller birds, sparrows, etc., capture and eat them before my eyes, after having carefully nipped off the wings, which are not swallowed. This must take place to a considerable extent, as I have observed the tow-path strewn with the rejected wings."—This has been observed by Mr. J. L. Hersey of New Hampshire (see the following note):—EDS.

BEEES AND KING-BIRDS.—For the last ten years I have carefully noted the habits and movements of the king-birds, and have come to the following conclusion, viz.: that they do eat the honey bee, and so does the purple martin; but instead of being destroyed for it, they should be protected and allowed to build their nests near the farm-house, because they drive off the hawks, crows and other plundering birds from the

poultry yard. Warm afternoons in July and August, when the drone bees are out, we have seen the martins come down within ten feet of the hive and snap up the drone bees, thus relieving the workers from the necessity of expelling them from the hive and biting off their wings to prevent them from getting back to the hive. The king-bird also, we find, selects the drone, and will come afternoons and take his position on a stake in front of the hive, and when a drone bee comes along will make a rush for him, come back to the stake, give him a pick or two and swallow him. But says an objector, "What do they subsist on before the drone bees fly out?" This point I settled by shooting one in the month of May, and I found in his crop the wings and legs of May-bugs. By watching their movements, I find the dragon-fly is also a favorite food for them.—J. L. HERSEY, *American Bee Journal*.

AGRICULTURAL ANTS.—Mr. Moggridge has observed at Menton, France, two species of ants (*Aphenogaster*) carrying into their nests, during the winter months, the seeds of certain late fruiting plants. He has traced their burrows to a spherical chamber filled with the seed of a grass which he had seen the ants in the act of transporting. "Outside the channels there was generally a heap of the husks of the various seeds, and sometimes one of those heaps would fill a quart measure. These husks had had their farinaceous contents extracted through a hole in one side. He purposely strewed near the nests large quantities of millet and hemp seeds. After the lapse of a fortnight many of these seeds, previously conveyed into the nests, had been brought out again, they having evidently commenced to germinate, and he then found that the radicle was gnawed off from each seed, so as to prevent further growth, and, this being effected, the seeds were carried back again. The cotyledons of germinated seeds were removed from the nest."—*Trans. Entomological Society of London, 1871*.

ADVERTISEMENTS.

EXCHANGE.—I am desirous to exchange English for Canadian or American Lepidoptera. J. C. WASSERMAN, Beverly Terrace, Cullercoats, North Shields, England.

COLEOPTERA FOR SALE.—A number of Rocky Mountain Coleoptera will soon be for sale in sets by JOHN AKHURST, 19, Prospect Street, Brooklyn, N. Y.