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The Canadian Entomologist.

VOL. III. LONDON, ONT., SEPTEMBER, 1871. No. 6.

DESCRIPTIONS OF LEPIDOPTERA FROM ALABAMA.

BY AUG. R. GROTE.

I have collected the following Lepidoptera in the country about Demopolis, Ala., lying at the junction of the Tombigbee and Black Warrior Rivers. It has been my aim to make as complete a collection as possible of the insects inhabiting this district, in which my residence has been lately fixed, but the time at my disposal for the purpose has been cruelly limited by other duties. The summer heats preclude much exertion during the best part of the day. Nevertheless, a great many Butterflies may be taken on the flowers of the wild mint and iron-weed, without much trouble or exposure. Our commonest Butterfly everywhere is *Terias nicippe*. Throughout the entire summer it swarms in myriads. It seems to take the place here that *Colias philodice* fills in the Northern States.—This latter I have never seen here; I have taken a specimen of *C. Eurytheme*. *Papilio thoas* is not uncommon, but its strong flight makes it difficult to capture. *P. ajax* and *P. philenor* are common; *P. asterias* and *P. turnus* are more infrequent; the specimens I have seen of the latter are large sized, the female always black (*P. glaucus*). *Junonia coenia* is very common. I have seen no species of *Argynnis*, but one *Eresia*, while *Euptoieta claudia* is frequently met with and I have reared it through all its stages. *Libythea bachmanii* is found in July and August on the banks of the rivers and about damp places on roads. *Apatura celtis* is commonly seen, *Limenitis ursula* more rarely. *Callidryas Eubule* becomes plentiful at the beginning of August: it is apparently double brooded.—*Meganostoma caesonia* is infrequent. The commonest *Hesperiid* is *Syrichthus oileus*, while I have seen but a single specimen of *Heteropterus marginatus*, so common in the north. At some future time I hope to give a list of all the Butterflies I have taken. In the Sphingidæ I have only seen *Sesia diffinis*, *Darapsa myron*, *Chærocampa tersa*, *Macrosila carolina*, *M. cingulata* and *Sphinx eremitus*. The Bombycidæ seem very poor in numbers and species, while the Noctuidæ are exceedingly rich in both.

So far, I cannot separate this region, zoologically speaking, from the middle States. Everywhere I meet familiar insects, and, although I miss many Northern species and find new ones, I see that I am still collecting in the Atlantic District of the United States. For the present paper I select the following Lepidoptera from my collections:

THECLA DOLICHOS (*Atteliides dolichos*, Hubner Zutraege.) Male. The ground color of the wings above is a dead black, but this is nearly entirely overlaid with a most brilliant deep and changeable metallic blue. On the primaries, the external margin narrowly and apices are of the ground color as well as an outwardly vaguely defined ovate discal spot.- On the Secondaries, the costal region about the apices is largely and the external margin very narrowly black. There are two tails: The first, obsolete at the extremity of the 2nd m. nervule; the second, long (6 m. m.) and flexile at the end of 3rd m. nervule. Below this, to anal angle, the wing is outwardly produced, and this exserted portion is medially cleft and shows golden powdery scales on paler blue interspaceal black-margined shade spots. Internal margin clothed with long blackish hair. Beneath the wings are dead black. The fore wings show two white dots at base and a median longitudinal metallic blue shade extending over, beyond and about median-nervule; costal edge scarlet at base. Secondaries with two scarlet basal patches; internal margin shaded with pale metallic blue; an interrupted pale metallic blue shade line runs along and within the external edge interruptedly from 1st m. nervule to the anal angle; on the exserted portion of the wing this is powdered with golden scales. Inside of this, below 2nd m. nervule, is a very dark red band interrupted by the veins.- Inside of this a narrow line of golden atoms, very narrowly separated by the ground color of the wing from an inner golden similarly interrupted band, widening on the last interspace. Body above, metallic changeable blue, greenish (as is the base of the primaries) in certain lights, with longer hairs at the base of the thorax. Beneath the abdomen is scarlet, the thorax and legs black with white spots. Head black with a white spot on vertex; eyes margined with white: palpi black, white at the base.- Base of the head white: the ocular marginations are interrupted, forming lines on the front and spots behind. Antennæ rather stout, gradually swelled, black. Expanse, 42 m. m.

A single specimen taken on July 28th, on the outskirts of an open grassy wood. Its flight was short and heavy, but this may have been

owing to its evidently having recently left the chrysalis, its freshness showing off the incomparable beauty of the species.

ACIDALIA PERSIMILATA *Grote.* ♂ ♀. This species, which I described originally from a specimen taken in Buffalo, N. Y., I have found in Alabama. The male antennæ are finely pectinate. The wings above are of a dirty greenish grey, mottled in appearance. The outer line alone is tolerably distinct: this is whitish, waved, preceded by a dark linear shade and connecting a series of minute nervular dots. There is a row of whitish interspaceal sub-luniform dots on the terminal space tolerably evident. Fringes greyish. In shape, the primaries are triangulate, with determinate apices: secondaries reduced. There is a very fine dark terminal line on both wings which, as usual, agree in appearance. This is a frail species, readily losing its greenish tint. Exp., 19-20 m. m. In Mus. Peabody Academy of Science, Salem, Mass.

ACIDALIA PURPURISSATA *Grote.* ♂ ♀. Size, small or moderate: external margin of wings rounded, apices of primaries indeterminate. Wine color, with a purple shade. Primaries crossed by three irregular, transverse yellowish lines, darkly defined inwardly; a faint series of subterminal interspaceal maculations is visible superiorly. The outer of the three lines is slightly projected over the median nervules, curving inwardly opposite the disc. The costal region is shaded with pale yellow, and this color is continued over the collar and thorax in front. A very fine terminal black line edges both wings, interrupted by pale dots on the nervules. Fringes, rosy wine color, brighter than the wings. Secondaries crossed by two lines corresponding with the outer two of the primaries. Discal streaks on both wings analogous to the transverse lines. Beneath, paler, washed with rosy wine color, the secondaries almost wholly whitish with a roseate terminal shade. Abdomen above and thorax behind concolorous with wings, the former with yellowish dorsal marks. Antennæ simple. Hind legs with a single reduced pair of spurs. Body, pale beneath. Exp., 17-19, m. m. Types in Mus. Peabody Academy of Science, Salem, Mass. Resembles the description of *Acidalia pannaria* Guenee, but differs in detail. Two specimens taken in the latter part of July.

BOTYS PLUMBICOSTALIS *Grote.* ♂. Bright yellow. Costal region of primaries broadly dark plumbeous from base to tip. Terminal space outwardly filled with the same shade tapering to internal angle. This

terminal dark shade is outwardly rounded along its inner margin, and this is widely and everywhere nearly equi-distant from the external transverse line; at the internal angle there is a slight projection corresponding with the inward inferior inflection of the external line. The orbicular spot is reduced and absorbed above by the dark costal region, as is the reniform: the latter is small, constricted, with a dark annulus, and very narrow pale centre; both spots concolorous with the dark costal region. There is a short, dark, inner transverse line. The only other, the external, runs slightly *inwardly* below costa, then outwardly over the m. nervules, where it is slightly interspaceally dentate; thus, in its upper half it is sinuate or somewhat S-shaped. At 4th m. nervule, it runs, as usual, inwardly, thence transversely, to internal margin. The fringes are dark, concolorous with the terminal shade. A single line crosses the secondaries, projects over the disc, and corresponds to the external line of the primaries. A distinct discal dot. Apical angle shaded with plumbeous: fringes, pale. Beneath, whitish, iridescent, markings of the upper surface faintly reflected. Legs white; anterior and middle femora, marked with black. Palpal tips, front and vertex, and sides of thorax in front, dark. Thorax, clear yellow. Abdomen above, yellowish, with a dark dorsal shade; beneath the body, parts are white. Hind legs entirely white, with two pair of unequal spurs. Exp., 30 m. m. August. Type in Mus. Peabody Academy of Science, Salem, Mass. Nearly as large as *B. flavidalis* Guenee, and very conspicuous by the dark shades of anterior wings.

Botys anticostalis *Grote.* ♂ ♀. Bright yellow, with deeper ochreous tinges. This species has the markings and appearance of *Botys plumbicostalis.* Costa of primaries broadly plumbeous, but shading to yellowish towards the tips. Ordinary spots larger, annulate, freer from the costal shade; their centers are whitish iridescent; the ♂ has no orbicular, in its place the tegument is somewhat pellucid and impressed. The two transverse lines are fainter and wider apart; the transverse exterior differently shaped. This is *outwardly* rounded at costa, where it is twice interspaceally lunulate, and there is always here a narrow space between it and the terminal dark shade. This latter fills in the entire terminal space superiorly, (except as above mentioned) between the external line and the margin, but is obsolete inferiorly below 3rd m. nervule, appearing as a spot at internal angle. Secondaries with a distinct discal spot and single transverse line. Apices with the commencement of

a dark terminal shade. Fringes on both wings pale. ♂ abdomen pointed at the tip, elongate with dark dorsal shade: ♀ yellow above. Thorax yellow; bread, palpal tips, sides of thorax before insertion of wings, dark as in *B. Plumbicostalis*. Legs whitish; anterior and middle pair shaded with blackish. Exp. 25 m. m. July- August. Types in Mus. Peabody Academy of Science, Salem. Mass.

Smaller than *Botys plumbicostalis*, but greatly resembling it at first sight. On a comparison the difference above detailed are quite apparent.

Besides the foregoing two species of *Botys*, I have taken the following Pyralidæ in the same locality. the two first in single specimens: *Botys laticlavia* G. R., *Botys plectilis* G. R., *Conchylodes platinalis* Lederer. *Stenophyes scrinalis* Lederer. *Phakellura hyalinata* Milding, *Phakellura nitidalis* G., *Desmia maculalis* Westw., a species of *Crocidophora* allied to and perhaps the same as *C. pustuliferalis* Lederer. and *Cindaphia bicoloralis* (*Asopia bicoloralis* Guenee).

LIST OF COLEOPTERA.

TAKEN AT GRIMSBY, ONT., BY J. PETTIT.

Continued from page 151, vol. ii., CAN. ENT.

CERAMBYCIDÆ.

PARANDRA, *Latr.*
brunnea, *Fabr.*
ORTHOSOMA, *Serv.*
cylindricum, *Fabr.*
TRAGOSOMA, *Serv.*
Harrisii, *Lec.*
EBURIA, *Serv.*
quadrigeminata, *Say.*
CHION, *Newm.*
garganicum, *Fabr.*
ELAPHIDION, *Serv.*
*atomarium, *Drury.*
vicinum, *Hald.*
ELAPHIDION, *Serv.* *(continued).*
mucronatum, *Say.*
villosum, *Fabr.*
parallelum, *Newm.*
*pubescens, *Hald.*
*unicolor, *Hald.*
notatum, *Er.*
CRIOCEPHALUS, *Muls.*
rusticus, *Linn.*
agrestis, *Kirby.*
ASEMUM, *Serv.*
moestum, *Hald.*

*Species marked with an asterisk have not before been included in the list of Canadian Coleoptera.

ARHOPALUS, *Serv.*
fulminans, *Fabr.*
CALLIDIUM, *Fabr.*
violaceum, *Linn.*
lignum, *Fabr.*
*amoenum, *Say.*
janthinum, *Lec.*
PHYMATODES, *Muls.*
proteus, *Kirby.*
TYLONOTUS, *Hald.*
bimaculatus, *Hald.*
PHYSOCNEMUM, *Hald.*
brevilineum, *Say.*
CLYTUS, *Fabr.*
speciosus, *Say.*
nobilis, *Harris.*
flexuosus, *Fabr.*
erythrocephalus, *Oliv.*
luscus, *Fabr.*
campestris, *Oliv.*
hamatus, *Say.*
*4-maculatus, *Hald.*
CYRTOPHORUS, *Lec.*
verrucosus, *Oliv.*
OBRIUM, *Serv.*
*rubrum, *Newm.*
EUDERCES, *Lec.*
picipes, *Fabr.*
STENOPTERUS, *Illig.*
sanguinicollis, *Oliv.*
MOLORCHUS, *Fabr.*
mellitus, *Say.*
HELIOMANES, *Newm.*
bimaculatus, *Say.*
ACANTHODERES, *Serv.*
decipiens, *Hald.*
GRAPHISURUS, *Kirby.*
*pusillus, *Kirby.*
fasciatus, *Geer.*
AEDILIS, *Serv.*
obsoletus, *Oliv.*
LEPTOSTYLUS, *Lec.*
aculiferus, *Say.*
variegatus, *Hald.*
commixtus, *Hald.*
macula, *Say.*
LIOPUS, *Lec.*
*alpha, *Say.*
symmetricus, *Hald.*
*signatus, *Lec.*
*rusticus, *Lec.*
*querci, *Fitch.*
maculatus, *Hald.*
aspersus, *Say.*
ECYRUS, *Lec.*
*dasycerus, *Say.*
EUPOGONIUS, *Lec.*
*vestitus, *Say.*
subarmatus, *Lec.*
POGONOCHERUS, *Meg.*
mixtus, *Hald.*
*nubilus, *Lec.*
MONOHAMMUS, *Latr.*
dentator, *Fabr.*
confusor, *Kirby.*
scutellatus, *Say.*
GOES, *Lec.*
tigrinus, *Oliv.*
oculatus, *Lec.*
TETRAOPES, *Dalm.*
tornator, *Fabr.*
PSENOCERUS, *Lec.*
pini, *Oliv.*

DORCASCHEMA, *Lec.*
nigrum, *Say.*
SAPERDA, *Fabr.*
calcarata, *Say.*
tridentata, *Oliv.*
vestita, *Say.*
CYRTINUS, *Lec.*
*pygmaeus, *Hald.*
OBEREA, *Meg.*
amabilis, *Hald.*
tripunctata, *Fabr.*
DESMOCERUS, *Serv.*
cyaneus, *Fabr.*
RHAGIUM, *Fabr.*
lineatum, *Oliv.*
TOXOTUS, *Serv.*
decoloratus, *Harr.*
trivittatus, *Say.*
*cylindricollis, *Say.*
*Schaumii, *Lec.*
ENCYCLOPS, *Newm.*
coeruleus, *Say.*
EVODINUS, *Lec.*
monticola, *Rand.*
ACMAEOPS, *Lec.*
proteus, *Kirby.*
ANTHOPHYLAX, *Lec.*
malachiticus, *Hald.*
*alternatus, *Lec.*
STRANGALIA, *Serv.*
subhamata, *Rand.*
bicolor, *Swed.*
quagga, *Germ.*
fugax, *Fabr.*
lugubris, *Say.*
lineola, *Say.*
*cruentata, *Hald.*
LEPTURA, *Linne.*
canadensis, *Oliv.*
biforis, *Newm.*
vittata, *Oliv.*
vagans, *Oliv.*
sphaericollis, *Say.*
mutabilis, *Lec.*
pubera, *Say.*
8-notata, *Say.*
scalaris, *Say.*
subargentata, *Kirby.*
*propinqua, *Bland.*
proxima, *Say.*
capitata, *Newm.*
ruficollis, *Say.*

THE NUMBER OF INSECTS.—The number of described species of insects is estimated by Gerstaecker at above one hundred and sixty thousand, viz.: Coleoptera, ninety thousand; Hymenoptera, twenty-five thousand; Diptera, twenty-four thousand; Lepidoptera, twenty-two to twenty-four thousand.—*Nature.*

CLASSIFICATION OF MOTHS.—The great work by the Messrs. Felder on the Lepidoptera of the Novara (an Austrian) Exploring Expedition, will be completed this year. It will contain a complele classification of the moths, and will supplement Guenee's work on them.—*American Naturalist.*

MICRO-LEPIDOPTERA.

BY V. T. CHAMBERS, COVINGTON, KY.

[Continued from page 88.]

LITHOCOLLETIS.

Sub-div. b, with an apical streak instead of spot.

* With a basal streak.

† *With dorsal and costal streaks.*

11.—*L. crataegella* Clem., *loc. cit.*

All of my specimens have a very pronounced though rather short white *dorso-basal* streak, which is sometimes continuous with a longitudinal median white streak upon the thorax, and in all of them the *median* basal streak is continuous with a white line across the anterior margin of the thorax, which is extended backwards over the tegulae. The dorso-basal streak and the markings of the thorax and tegulae are not mentioned by Dr. Clemens. But these thoracic markings are very variable in a great many species. In some specimens of some species no trace of them is visible; in others they are very faint; and in others they are pronounced and distinct.

The larva mines the leaves of the Apple, Wild Cherry *(Prunus serotina)*, Haw *(Crataegus)* and Sweet-scented Crab *(Pyrus coronaria)*, on the under side. It is of the first group, and the mine is tentiform. Dr. Clemens records of it, that it quits one mine to form another—in which it is singular.

There is considerable variation in the shades of coloring, some species being much more golden than others, and the same specimen varies in this respect with the light. *Al. ex.* $\frac{5}{16}$ to $\frac{6}{16}$ inch.

Common in Kentucky, and probably wherever in America its food plants are found.

Sub.-div. c. No apical spot. Apex dusted.

* No basal streak.

† *No fascia, but with dorsal and costal streaks.*

12.—*L. nonfasciella. N. sp.*

Face and palpi white, tuft white, mixed with pale golden; antennae white, each joint tipped with fuscous above; thorax and anterior wings

mixed whitish and pale golden, with a few dispersed fuscous scales, and some irregular patches more thickly dusted with fuscous, especially in the apical portion of the wing, which is dusted with fuscous. The anterior and lateral margins of the thorax and the wing along the fold and across the middle are paler than the other portions, but not sufficiently so, nor definite enough in outline, to call them streaks or fasciae. *Al. ex.* ¼ inch. Two specimens captured in May in Kentucky. Larva unknown. The style of coloration is that of a *Bucculatrix*, but it has palpi.

13.—*L. Bethunella. N. sp.*

Face and palpi silvery white; antennae silvery white beneath, brownish banded with white above: tuft golden, interspersed with white; thorax and anterior wings reddish-orange, with three costal and three dorsal silvery streaks, all dark margined externally. First costal and first dorsal small, the dorsal being the largest and nearer to the base, whilst the costal is a little oblique and at about the base[illegible] 3 of the wing. The second dorsal and second costal about the mid[illegible]e, opposite each other, and a little oblique, the dorsal being the longest, and almost meeting the costal near the costa, whilst their dark margins do meet and are posteriorly angulated and produced to the space between the third dorsal and third costal. The third dorsal and third costal are a little behind the apical ⅓, opposite, straight, and the dorsal is the longest. Apex dusted with blackish on a white ground. Ciliae fulvous, with a dark-brown hinder marginal line at their base. *Al. ex.* a little over ¼ inch. It bears a strong resemblance to, but is not by any means identical with, the species next mentioned. *L. Caryæfoliella*, in some of the varieties of *L. Caryæfoliella*.

The larva is of the second (flat) group. It is yellowish, and the maculae are ferruginous-brown. The mine is an oval blotch on the upper surface of the leaves of Black Oaks (*Quercus tinctoria*). Kentucky: rare.

I take the liberty of naming it in honor of the Editor of the CANADIAN ENTOMOLOGIST.

†† *With one or more fasciae.*

14.—*L. Caryæfoliella.* Clem., *loc. cit.*

This is a variable species. Sometimes the first fascia is not a fascia at all, but is only a long oblique dorsal streak not quite attaining the

costal margin. Sometimes the second fascia is distinctly interrupted near the costa, and frequently its dark margin is not produced. *Al. ex.* ¼ in.

Larva of the second group; makes a flat mine on the upper surface of leaves of Hickories *(Carya)*, and when complete the mine is drawn into a pucker along the middle.

Wisconsin, Kentucky, Pennsylvania. Common.

15.—*L. tri-tæniatella. N. sp.*

Face and palpi white; tuft and thorax golden; antennæ white-banded above with fuscous; anterior wings reddish saffron, with three white fasciæ, each narrowly dark-margined *internally*, the first before the middle, the second about the middle, and the third about half-way between it and the apex, and slightly angulated posteriorly. Apex slightly dusted with brown on a white ground. *Al. ex.* about ¼ inch.

A single specimen, captured in April in Kentucky. Larva unknown.

16.—*L. guttifinitella.* Clem., *loc. cit.*

Dr. Clemens describes this species as follows: "Front silvery, with a reddish hue; tuft and thorax reddish orange; antennæ blackish brown; fore-wings rather deep reddish orange, with two silvery bands black margined behind, one in the middle nearly straight, the other midway between this and the base of the wing obliquely placed. Before the costo-apical cilia is a costal silvery spot, black-margined on both sides, with an opposite dorsal spot black-margined behind. The apical portion of the wing is dusted" (thickly so) "with dispersed blackish scales" (on a white ground), "with a white silvery spot near the tip above the middle of the wing." (*The position of this spot or streak is variable; it is anywhere near the apex.*) "There are two hinder-marginal lines, one, the margin of the dispersed scales, the other dark-brownish in the ciliæ." The costal and dorsal white spots near the apex are sometimes straight and sometimes more or less oblique, and the dorsal one is frequently confluent with the apical spot. Usually there is no basal streak, but frequently the anterior margin of the thorax is pale, or even white, that color being produced back over the tegulæ to the base of the wings, forming a small median basal streak which is occasionally dark-margined. The first fascia is sometimes distinctly interrupted near the costa, and the second fascia is sometimes dark-margined *internally* on the costa. Sometimes the costal spot (near the apex) is faint, or even entirely wanting, Sometimes the whole apical portion of the wing is dusted, and sometimes the dusting is

confined to the dorsal margin. The larva is of the second group, and is described in the table appended. It makes a flat *whitish* mine on the upper surface of the leaves of the Poison Ivy or Oak *(Rhus toxicodendron)*. Sometimes there is only a single larva in a mine, and then the mine is either an irregular blotch or a narrow band, like the mark made by a drop of water running over a smooth surface. But usually there are several larvae in a mine—frequently six or seven—and then the mine covers nearly the entire upper surface. The pupa lies in a small circular depression in the mine, in an oval flat white cocoon.

Variety *L. Esculisella. Var. nov.*

The imago is not distinguishable from that of *L. guttifinitella*, but the larva differs decidedly in its markings, as shown by the table annexed, and approaches more nearly the larva of variety *Ostryaella* of the next species *(L. Corylisella)*, (the larvae of which differ also, that of *L. Corylisella* resembling that of *Guttifinitella*). I have never found more than one larva of this variety in a mine. The mine is a narrow band and *blood-brown* in color, thus differing from the above. The mines and larvae, therefore, differ, while the imagines are the same. These differences, not great, are constant. *Al. ex.* ¼ inch. Kentucky, Pennsylvania.—Abundant. Mines upper surface of leaves of the Buckeye *(Æsculus glabia)*.

17.—*L. Corylisella. N. sp.*

The only difference between this species and *L. guttifinitella* in the imago is, that this has a straight dorsal white streak at the inner angle, internally dark-margined, and the apical dusting is much less dense and much paler, and, in some lights, scarcely visible. The mine is an irregularly *circular* blotch, *brownish-yellow* in colour, with a pale yellow border on the upper surface of the leaves of the Hazel *(Corylus Americana)*; thus differing from both of those above-named. The larva resembles that of *guttifinitella* rather than its variety, *Esculisella*, but differs from both, as shown by the annexed table.

Al. ex. ¼ inch. Wisconsin. Kentucky. Common.

Variety *Ostryaella*, mines the upper surface of the leaves of *Ostrya virginica*. The mine and the imago are not distinguishable from those of *L. Corylisella*. But the larva differs from it, and bears the same relation to it that var. *Esculisella* does to sp. *guttifinitella*. Kentucky. Common.

The following table shows the differences in the larvae above-mentioned:

L. Corylisella.	*L. guttifinitella.*	*L. Esculisella.*	*L. Ostryaeella.*
Blueish, smoky, except the head and anal segment, which are yellowish.	Blueish, smoky, except head, 1st, 8th and following segments, which are yellowish.	Whitish yellow, not at all smoky.	Same as *Esculisella.*
Translucent spots on segments, 1, 2, 3, 6, 7 and 8.	Translucent spots, as in *Corylisella.*	Translucent spots indistinct.	Translucent spots not visible.
Macula of seg. 1 indistinct.	Macula more distinct.	Macula not visible.	Only posterior angles of the macula visible.
Macula on segs. 2 to 9 distinct.	Macula on segs. 2 to 7 distinct.	Macula visible on all the segments.	Sides of macula of seg. 2 obsolete, others all distinct.
Maculæ of segs. 1, 2 and 3 trapezoidal, 4 and 5 elliptical, 6, 7, 8 and 9 parallelograms.	Maculæ 1, 2, 3, trapezoidal, the others parallelograms.	Same as *guttifinitella.*	Same as *guttifinitella.*
Maculæ dark brown, except first and last ones.	Maculæ 1 to 7 dark-brown, the others yellowish.	Maculæ pale brownish.	Maculæ all brownish.
Maculæ solid.	Maculæ hollow.	Maculæ hollow.	Maculæ hollow.

These differences I have found to be constant, and that in the general colour is striking.

THE NISONIADES BUTTERFLIES.

BY H. W. PARKER, AMHERST, MASS.

I WRITE no less to elicit information, than to offer such as my limited material affords. In a very interesting and original paper on Asymmetry, published by the Boston Soc. Nat. Hist. 1869-71, Messrs. Scudder and Burgess describe and figure the genital armor of all our species of *Nisoniades*, making seventeen species, of which nine are new. Their *Virgilius* I have not, and doubt its validity, my specimens of *Horatius* having a mixture of the characters of the two species; the specimens differ somewhat from each other in armor, and, what is puzzling, are very different in size, though wonderfully alike in colouring, and very unlike

all our Northern species in one respect to be mentioned. If my observations are correct, much the same may be said of the armor of *Ennius* and *Juvenalis*, which latter species is separated as Southern by Messrs. Scudder and Burgess, but seems to be identifiable as a variety found in Amherst, Mass.: and these two appear to intergrade somewhat in style of markings.

Mr. Lintner is expected to publish a full description of several of the species previously ascertained by him. Meantime, our Northern species may perhaps be characterised in a few words.

SIZE. *Ennius*, *Juvenalis* and one *Horatius (?)* are the largest, and all about 1 1/2 inch. *Brizo* is next, 1 5/8 to 1 5/8. *Martialis* next, 1 1/4. Then *Persius* and *Lucilius*, 1 3/8. Lastly, *Icelus*, 1 1/8 to 1 1/4.

MARKINGS. *Icelus* alone is without white (transparent) dots; *Brizo* none in the male, or obsolete; *Persius* alone has the sub-apical dots in a straight line. *Juvenalis*, *Brizo* and *Persius* incline to fine pencilling on the primaries; the rest to blotchiness; *Icelus* somewhat to both. *Brizo* alone has the inside of the extra-discal band of spots forming an almost continuous and nearly straight dark line on the primaries. Only in *Brizo* and *Icelus* the light spots on the secondaries tend to appear small, sharp and bright on the upper surface, at first glance. *Horatius* alone has the submarginal spots on the secondaries so far straightened as to lose the form of a broad W, observable in the other species mentioned, and all the cloudings of both wings melt more into the ground color. *Persius*, when fresh, has the primaries much darker than in the other species: and *Martialis* has the cloudings much stronger.

In the above, I speak only of the upper surface of the males of northern species. The females I have sorted with less confidence; two specimens have the spots of the secondaries arranged as in the male *Horatius*.

HINTS FOR PACKING. In sending pupæ or eggs by mail it is best to wrap them lightly in thin tissue paper and then pack the box with cotton wool. Do not put the latter, next to the pupæ or eggs, as it is very apt, by getting worked into the crevices, to be the means of somewhat injuring the specimens. We are indebted for this hint to Dr. G. M. Levette, of Indianapolis, and our own experience fully confirms the wisdom of his suggestion. ED. CAN. ENT.

INSECTS OF THE NORTHERN PARTS OF BRITISH AMERICA.

COMPILED BY THE EDITOR.

From Kirby's Fauna Boreali-Americana: Insecta.

(Continued from page 94.)

[90.] 125. ALEOCHARA PALLITARSIS. *Kirby.* Length of body 2 lines. Locality unknown.

The species of this genus of minute *Brachelytra* are so extremely numerous, nearly 200 having been discovered in Britain alone, and so difficult to discriminate, that it is not with great confidence that I give this as a nondescript. I have many undescribed species in my cabinet that come very near it, but I cannot find one that altogether agrees with it.

Body black, gloss deadened by short inconspicuous hairs. Head rather spherical, narrower than the prothorax, very minutely punctured; antennae shorter than the prothorax, rather robust, intermediate joints turbinate, last joint ovate, acute: prothorax sub-orbicular with the sides deflexed, very minutely and thickly punctured; dorsal channel nearly obsolete; a large punctiform impression just above the scutellum: elytra longer and rather wider than the thorax, piceous-black, extreme tips rufous, very minutely and thickly punctured: legs piceous-black with rufous tarsi.

126. TACHYPORUS ACUDUCTUS. *Kirby.*—Length of body 1 line. Taken near Cumberland-house, lat. 54°.

[91.] Body dark-piceous, naked, smooth, glossy. Antennae and mouth testaceous: prothorax very smooth, wider than the elytra, posterior angles testaceous: elytra longer than the head and prothorax together, piceous with the external apical angle testaceous; if viewed under a good magnifyer, they appear covered, especially next the suture, with minute branching scratches, as if made by a pin or needle, intermixed with very small punctures; abdomen very short and conical, scarcely margined, piceous with the segments paler at their tip.

127. TACHYPORUS AFFINIS *Kirby.*—Length of body, 1 line. Taken with the preceding species. This species is extremely similar to *T. acuductus*, but the posterior angles of the prothorax are not testaceous; the elytra are palish-chestnut and thickly covered with very minute punctures, without any scratches.

128. PHILONTHUS POLITUS *Linn.*—Length of body, 5 lines. Taken in Nova Scotia by Capt. Hall.

[92.] Body very black, hairy. Head orbicular, scarcely narrower than the prothorax, naked with the exception of a few long lateral bristle-like hairs, slightly bronzed, very glossy, smooth with a few punctures on each side in the occiput; antennæ shorter than the prothorax, last joint emarginate at the tip; prothorax, rather narrowest before and transverse, rounded behind, slightly bronzed, very glossy and smooth, with a few long hairs on each side, on the disc is a double series, each consisting of four punctures, there are three or four others in the sides; elytra bronzed, thickly punctured, with a long hair issuing from each puncture; claws of the tarsi ferruginous. [In LeConte's List, put down as a male and synonymous with *P. aeneus* Rossi a species taken in Canada.]

129. PHILONTHUS MANDIBULARIS *Kirby*. Length of body 5 lines. Locality unknown.

[93.] This species differs from the preceding chiefly in the shape of the head, and the color of the mandibles, agreeing in the former particular with *P. politus* of modern Entomologists, from which it differs, besides their colour, in having the mandibles shorter than the head: the intermediate joints of the tarsi also are rufo-piceous. [Inserted in LeConte's List as the female of the preceding species.]

130. PHILONTHUS PICATUS *Kirby*.—Length of body 3 lines. Two specimens taken in Lat. 54°.

Body piceous, as usual in the genus somewhat hairy. Head ovate, naked, and very glossy, with a few scattered punctures on each side behind the eyes and four between them; antennæ as long as the head and thorax, scape testaceous; prothorax naked and very glossy; dorsal rows consisting of six punctures, there are five more punctures near the anterior margin arranged in two oblique rows between them and the lateral margin, and three or four other punctures are discoverable nearer the base: elytra chestnut, hairy; tips of the abdominal segment and anus rufous: legs testaceous. [Previously described as *Staphylinus (Philonthus) brunneus* Grav. Taken on the north shore of Lake Superior by Agassiz's Expedition.]

131. PHILONTHUS FULVIPES? *Grav.*—Length of body about 3 lines. A single specimen taken in lat. 54°.

Body black, hairy, except the head and prothorax which are naked, and very glossy. Head sculptured like that of *P. picatus;* antennae with the two first joints testaceous: prothorax sculptured with regard to the dorsal series as in that species, then follow about five punctures in an irregular wavy series extending from near the base towards the apex, between which and the anterior angle are two placed obliquely, and several besides are discoverable in the lateral and posterior margins: [94] the scutellum is black: the elytra punctured, testaceous, and hairy: the abdomen is entirely black; the legs are testaceous with the posterior coxae black; the hands are not dilated. [Taken at Grimsby, Ont., by Mr. Pettit.]

132. STAPHYLINUS CERYSURUS. *Kirby.* Length of body 5½ lines. Taken in Nova Scotia by Dr. MacCulloch.

Body underneath black, somewhat glossy, sprinkled with yellow hairs. Head suborbicular, scarcely wider than the prothorax, confluently punctured, bronzed, and covered not thickly with short pale-yellow hairs, which give it a cinereous tint, with several indistinct blackish spots; rhinarium and upper-lip pale yellow; mandibles rufous at the base; stalk of the antennae testaceous, the six last joints are brown and larger than the rest, so as to form a clava: prothorax sculptured, cloathed, and coloured like the head, but more distinctly spotted and clouded with black, widest behind with a slight lateral sinus near the base: scutellum almost covered by a heart-shaped velvetty black spot: elytra, as to sculpture, cloathing, and general colour, resembling the head and prothorax, but they are differently spotted with black; in the centre of the base is an oblique oblong spot, then follows an angular interrupted band, and lastly, is a sickle-shaped band with the handle towards the lateral margin, the blade is very broad and includes an insulated cinereous spot; neither of these bands reach the suture or the lateral margin, which is tawny-yellow: the two last segments of the abdomen, especially the penultimate, are thickly covered with short decumbent hairs, which in certain lights reflect a brilliant golden lustre; the after-breast is covered with hairs if possible still more brilliant; the legs are testaceous, but the thighs except their tip, and a dorsal line, are black.

This species resembles *St. hybridus* and *maculosus*, but is sufficiently distinguished by its golden tail and breast: it is one of the smallest of the genus. [Previously described as *Leistotrophus cingulatus* Grav. Not uncommon throughout Ontario.]

MISCELLANEOUS NOTES.

ANNUAL MEETING.—In accordance with the Act of Incorporation, the annual meeting of the Entomological Society of Ontario will be held at Kingston, Ont., on Wednesday evening, Sept. 27th, 1871, when the annual Report will be read, with the Treasurer's statement, and officers for the ensuing year will be elected.—ED. CAN. ENT.

FRIENDLY NOTES.—I see you have published a little scrap in No. 3 CAN. ENT., "by C. V. Riley, State Entomologist of Missouri, St. Louis." I had to laugh at the mountain you have made of the mole heap, and, in future, if you care to use any of my scribblings in print, I must insist that you follow copy, and omit the "handles." I have no particular fondness for the latter, and they seem to be especially out of place at the head of trifling communications.

While spending a few hours with Mr. Scudder, recently, I found, upon comparing notes, that he had not observed the difference in length in the larval horns of *Disippus* and *Ursula*, and that, if anything, his descriptions made those of the former longer than those of the latter—or the exact converse of what I described in the article above referred to. I mention this fact that you may note it in your future observations, and perhaps it would be well to call attention to it in the CAN. ENT., that others may also give us their experience. Mr. Scudder had, however, remarked the differences in the pupal humps; but, in describing, he speaks of the "posterior and anterior sides" of this hump instead of "upper and lower edges"—thereby imagining the pupa in a detached and horizontal, instead of the suspended vertical position as I have done. Mr. Scudder has noticed some other differences in the two pupæ, and I draw your attention to these differences, in order that you may make further comparisons. He finds that, while in *Ursula* the shoulder (basal wing tubercle) is rounded off and partially suppressed, in *Disippus* it is produced into a minute conical point, directed outwards (and in *Arthemis* [one specimen only observed] less pointed and directed backwards). In *Disippus* he finds the dorsal portion of the "anal button," within the marginal ridge, to be longer than wide, while it is more nearly square in *Ursula*. He also thinks the latter is a little stouter and more constricted at the mesothorax, viewed dorsally. From an examination of several empty pupa shells of both species, I doubt whether any of these characters, taken singly, are of as much value as those I have given, but they will all help us to separate

the two species in their preparatory stages. Characters of single specimens are of little value, and true distinction can only be arrived at by the examination of many individuals. Thus, I possess one *Ursula* pupa, so conspicuously marked with black spots and streaks on the edges of the dorsal hump, of the wing and leg sheaths, of the shoulder, and of the ear-like prominences of the head, that, taken singly, these would form striking characters: but in others, again, these marks are either illy defined, or entirely obsolete.

I am really rejoiced to see your little work prospering so well and improving so much. I am glad to see that Mr. V. T. Chambers is taking up the Micros. It is a vast and most interesting field, and I hope Mr. C. will prove a second Clemens to us, for we are sadly in need of one! There is something rather incoherent in Mr. Wm. Couper's articles, and he has committed some serious errors. Firstly, if he wishes to instruct in Entomology, he must not talk of the "family of Hymenoptera" (p. 35, l. 24). Secondly, he ought to know that curculionidous larvae do not spin silken cocoons; and by referring to the third Missouri Entomological Report, he will find that we do know something of the habits of quite a number of our snout-beetles. The larva in acorns which he describes on page 65 is, as I am quite convinced from his text, no Curculionid at all, but an inquilinous moth-larva, in which he has rather carelessly overlooked the legs. It produces a little ash-gray moth, characterized chiefly by having on the front wings two distinct discal spots on an usually silvery gray ground, and a transverse pale stripe across the basal third of the wing, well relieved posteriorly by a dark median shade. It varies much in size and conspicuity of markings, but the average expanse is about 3/4ths of an inch. The moths issue all along from the end of April till Sept. The larva is found in all kinds of acorns, especially in those that have been injured or infested by the acorn weevil (*Balaninus rectus*, Say), and the small [it is generally 0.05 inch in diameter] circular hole, observed by Mr. Couper, and supposed by him to be made by the parent for the deposition of its egg (!), is but the hole by which the *Balaninus* larva escaped to go into the ground, and which the inquilinous moth-larva covers up with silk after it comes to occupy the acorn. I took specimens of this moth to Europe with me, but could not find that it was described. It apparently belongs to the genus *Gelechia*, and I propose for it the name of *G. glandulella*. I have found its larva (in company with those of a

Cecidomyia and of another *Tinean*) in acorns of *Quercus ilicifolia* which were still on the tree, and which were infested with a little pip-like gall, between the acorn and the cup.*

To one who has watched with interest, the writings of Messrs. Scudder, Lintner, and Edwards on *Grapta interrogationis*, Fabr., the article by the latter gentleman on page 70, is extremely gratifying. From the fact, that in Europe, *Grapta C-album* shows three very distinct variations, and from my own breeding experience with *interrogationis*, I felt convinced that the black-winged and red-winged forms were but varieties of the one species, and so informed Mr. Lintner, over a year ago. I am glad Mr. Edwards has anticipated me in demonstrating it in print. Such facts ought to give impetus to the rearing of insects; for though the artificial method of making species out of every little individual variation may be very amusing to those who choose to indulge in it, yet such work will never give us a natural system, and much of it will have to be undone by subsequent investigators who acquaint themselves with the adolescent as well as the perfect forms of a species.

C. V. RILEY.

St. Louis, Sept., 10th, 1871.

HOW TO PRESERVE EPHEMERIDÆ.—In drying, the color and form of Ephemeridæ soon change. Color is of little importance, even in fresh examples; but form is necessary to the distinguishing of the species. They are, therefore, best preserved in a liquid. It is sufficient for ordinary purposes to dip the fresh killed specimen into diluted spirits, and then transfer it to a tube, or homœopathic globule bottle, partly filled with water. Next, Price's glycerine is added to the water—one or two drops a day—until the bottle is gradually filled. A small drop of acetic acid may be added finally, to prevent the growth of mould. The name of the species may be written on the disk of the cork, the date and locality of capture round its side. Hind wings of the species of Baetis and Centroptilum should be mounted on slips of grass, for microscopical examination. Pinned specimens are often difficult to determine, in consequence of their shrinking; to card them is to render them fit for nothing.—EATON'S *Ephemeridæ*.

* This little gall is undescribed. In company with Mr. H. F. Bassett, of Waterbury, Ct., I found it so abundant last month, that the acorns were very generally destroyed. Strange as it may appear, from observations made by Mr. Bassett, this gall will, in all probability, prove to be but the summer form of the wooly gall known as *quercus operator*—so little do we know yet of some of Nature's secrets!

EXCHANGES, &c.

The undersigned would be pleased to open communications with any Entomologist in Canada, United States or England with a view to exchanging specimens. Address JAMES COLWELL, care of A. CHOUN. Kingston, Ont.

THE undersigned would be pleased to correspond with Lepidopterologists (Southern and Western U. S. preferred), with a view to exchanges. Address EDW. L. GRAEF, 40 Court St., Brooklyn, N. Y., U. S.

LEPIDOPTERA, &c.—I have a collection of Birds' Eggs, Lepidoptera (including some from Florida) and Coleoptora, duplicates of which I should like to exchange, giving preference to the two first named. JOSEPH E. CHASE, Lock Box 46, Holyoke, Mass.

An American Entomologist, who has made a speciality of Lepidoptera, would like to correspond with collectors in any part of the world.—Address H. K. Morrison, care of E. K. Butler, 68, Pearl-street, Boston, Mass.

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