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The Canadian Entomologist.

VOL. IV.

LONDON, ONT., FEBRUARY, 1872.

No. 2

DESCRIPTIONS OF NORTH AMERICAN HYMENOPTERA.

NO. I.

BY E. T. CRESSON, PHILADELPHIA, PA.

Family ICHNEUMONIDÆ.

Genus MESOCHORUS, Grav.

THIS genus belongs to the sub-family "Ophionides," of Holmgren, and is distinguished from all the other genera by the large, rhomboidal areolet, or second submarginal cell, of the anterior wing. The abdomen is oblong-fusiform, slender at base, and more or less compressed at tip, that of the ♂ generally furnished with two slender setæ.

The species are quite small in size, not exceeding three tenths of an inch in length, and are few in number. Those known to me may be tabulated as follows :—

Abdomen entirely black.....	ATRIVENTRIS.
Abdomen black, with apical margin of second segment and the third entirely luteous :	
Large ; face and posterior coxæ blackish.....	AGILIS.
Small ; face dusky, with pale orbits ; posterior coxæ luteous.....	LUTEIPES.
Abdomen black, with most of second and third segments luteous.....	SCITELUS.
Abdomen black, with apical half of second, and the remaining segments, except apical margins, luteous.....	AMERICANUS.
Abdomen luteous or honey-yellow, with first and part of second segments black :	
Thorax above and occiput black ; second abdominal segment black, except narrow apical margin.....	BASALIS.
Thorax and head entirely honey-yellow ; apical half of second abdominal segment honey-yellow.....	TOTONACUS.
Abdomen luteous, with sides of first, and two oblique marks on base of second segment, black.....	OBLIQUUS.
Abdomen, thorax and head entirely honey-yellow.....	MELLEUS.

1. *Mesochorus atriventris*. N. sp.—♂. Head yellowish-white ; anterior orbits, lower half of cheeks, mandibles and palpi, paler ; the front behind antennæ, vertex, occiput, upper half of cheeks and tips of mandibles piceous black ; antennæ nearly as long as the body, slender, blackish,

base rufo-piceous ; thorax laterally and beneath honey-yellow ; mesothorax and scutellum fusco-ferruginous, the former darker laterally ; metathorax piceous-black, the flanks honey-yellow ; tegulæ yellowish-white ; wings hyaline, iridescent, nervures luteo-fuscous, stigma luteous ; legs luteous, posterior tibiæ paler, the extreme base and apex fuscous, their tarsi dusky towards the apex ; abdomen long, slender, polished black, apical margin of third segment obscurely testaceous ; venter luteous. Length $2\frac{1}{2}$ lines.

Hab.—Illinois. Easily distinguished from the other species by the black abdomen.

2. *Mesochorus agilis*, Cresson. *Proc. Ent. Society Phila.*, April, 1865, p. 266.

♀. Black, polished ; most of clypeus, extreme lower portion of cheeks, mandibles except tips, and the palpi, yellowish ; antennæ longer than the body, slender, brown-black ; tegulæ and a spot before pale yellowish ; wings ample, hyaline, iridescent, nervures pale fuscous, yellowish at base of wing, as well as costæ and stigma ; legs obscure luteous, posterior coxæ fuscous, tips of their tibiæ and their tarsi dusky ; abdomen piceous black, polished, apical margin of second segment, and the whole of the third, obscure luteous ; venter stained with yellowish. Length $3\frac{1}{4}$ lines.

Hab.—Colorado. This is the largest species known to me.

3. *Mesochorus luteipes*. *N. sp.*—♀ Black, shining ; face, mouth, and lower part of cheeks luteous ; middle of face and tips of mandibles dusky ; antennæ nearly as long as the body, slender, fuscous, scape pale honey yellow ; prothorax beneath and tegulæ luteous ; wings hyaline, iridescent, nervures and stigma pale fuscous ; legs luteous, posterior coxæ and femora slightly tinged with fuscous, the extreme base and apex of their tibiæ dusky, also more or less of their tarsi ; abdomen above piceous-black, polished, most of the third segment dull luteous, apical segments have a brownish tinge ; venter rufo-testaceous. Length 2 lines.

Hab.—New Jersey. Much smaller than *Agilis*, which it resembles in having the thorax almost entirely black ; it is, however, abundantly distinct.

4. *Mesochorus basalis*. *N. sp.*—♀. Honey-yellow ; spot covering ocelli and confluent with a large transverse mark on occiput, tips of mandibles, mesothorax, scutellar region, metathorax entirely and spot beneath wings, black ; antennæ ferruginous ; face luteous, with small dusky stains ; two faint longitudinal lines on mesothorax and most of scutellum, honey-yellow and concolorous with pleura ; tegulæ pale luteous ;

wings hyaline, iridescent, stigma fuscous, nervures paler; legs pale honey-yellow, coxæ and posterior tibiæ luteous, tips of the latter dusky, as well as most of the tarsi; abdomen honey-yellow, the first, and the second segments except apical margin, black. Length $2\frac{3}{4}$ lines.

Hab.—Massachusetts.

5. *Mesochorus americanus*. *N. sp.*—♀. Pale honey-yellow; spot enclosing ocelli, sometimes more or less of occiput, tips of mandibles, mesothorax and more or less of metathorax above, black; antennæ as long as body, slender, varies from rufo-testaceous to fuscous, with the scape luteous; scutellum and region honey-yellow; tegulæ luteous; wings hyaline, iridescent, nervures and stigma pale fuscous; legs pale luteous, almost white, the femora tinged with yellowish, extreme apex of posterior tibiæ blackish; abdomen fusiform, very slender at base, first segment above entirely black, second luteous, with the basal half black, the margin indented anteriorly, so that in some specimens the black is divided into two subquadrate spots, remaining segments luteous, with fuscous apical margins; venter luteous. Length $2\frac{1}{2}$ lines.

Hab.—Pennsylvania, Delaware, Illinois.

6. *Mesochorus totonacus*. *N. sp.*—♀. Pale honey-yellow, metathorax and abdomen darker, smooth and polished; tips of mandibles, antennæ except base, first segment of abdomen and basal half of second, black; wings hyaline, iridescent, nervures and stigma blackish; tips of posterior femora, of their tibiæ and of all the tarsi, dusky. Length $2\frac{1}{4}$ lines.

Hab.—Orizaba, Mexico.

7. *Mesochorus vitreus*, Walsh. *Ins. Inj. to Veg. in Ills.*, p. 36.

“♂. General colour light rufous; eyes and ocelli black; antennæ fuscous, except towards base; upper surface of thorax sometimes fuscous; intermediate and posterior tibiæ with spurs equal to one-fourth of their length, posterior knees slightly dusky, tips of posterior tibiæ distinctly dusky; wings hyaline, nervures and stigma dusky; abdomen, a translucent yellowish-white in its central one-third, the remaining two-thirds piceous-black, with a distinct narrow yellowish annulus at the base of the third joint. The ♀ differs from the ♂ in the head from the mouth upwards being piceous; the thorax and pectus are also piceous-black; abdomen as in the ♂. Length .08—.13 inch.”

Hab.—Illinois. Bred from the Army-worm (*Leucania unipuncta*, Haw). This species is unknown to me. The ♂ seems to be closely allied to that of *scitulus*, *n. sp.*, but the ♀ is entirely different.

8. *Mesochorus scitulus*. *N. sp.*—♂ ♀. Pale honey-yellow or luteous; head broad; spot covering ocelli, and tips of mandibles black; occiput of ♀ more or less fuscous; antennae long and slender, pale testaceous, sometimes slightly dusky, scape paler; mesothorax fuscous in ♀, honey-yellow with dusky sides in ♂; scutellum and region honey-yellow; disk of metathorax more or less blackish or fuscous; tegulae pale luteous; wings hyaline, iridescent, nervures and stigma luteous; legs pale luteous, apex of posterior tibiae and tips of tarsal joints dusky; abdomen fusiform, very slender at base, black above, with a large discal pale luteous spot covering apical half or two-thirds of second, and basal half or two-thirds of third segments; venter pale luteous; apex of ♂ with two long slender setae; ovipositor of ♀ longer than basal segment. Length $\frac{1}{2}$ line.

Hab.—Pennsylvania. Twenty-three specimens, along with four specimens of a *Pezomachus*, bred from a bunch of bright lemon-yellow cocoons, (probably those of a *Microgaster*), found attached to a blade of grass.

9. *Mesochorus obliquus*. *N. sp.*—♀. Pale honey-yellow, orbits and mouth luteous; sides of mesothorax faintly dusky; tegulae white; wings hyaline, iridescent, stigma fuscous, nervures pale; legs pale luteous, posterior femora yellowish, their tibiae fuscous at base and almost black at apex; lateral margins of first abdominal segment and two oblique marks at base of second segment black; extreme sides of third segment dusky. Length 2 lines.

Hab.—Pennsylvania. Distinguished by the two oblique marks at base of the second abdominal segment.

10. *Mesochorus melleus*. *N. sp.*—♂. Uniformly honey-yellow; spot enclosed by ocelli, and tips of mandibles blackish; antennae as long as body, slender, flagellum dusky; wings hyaline, iridescent, stigma fuscous, nervures much paler; legs luteous, extreme base and apex of posterior tibiae and tips of tarsal joints dusky; abdomen robust, honey-yellow, apex somewhat discolored. Length 2 lines.

Hab.—Pennsylvania. Easily distinguished by the immaculate, uniform honey-yellow colour of the body, which is more robust than usual.

THE ANNUAL REPORT ON Insects Noxious or Beneficial to Agriculture, which, by the Statute of Incorporation, is required to be furnished by the Entomological Society of Ontario to the Commissioner of Agriculture, is now in the printer's hands, and will be forwarded to the Members of the Society as speedily as possible.

MICRO-LEPIDOPTERA.

BY V. T. CHAMBERS, COVINGTON, KY.

Continued from page 12.

GRACILLARIA.

5. *Gracillaria (Coriscium?) albinatella*. N. sp.

Second joint of the labial palpi with a distinct tuft at the apex beneath. Head and palpi silvery white. Second joint of the labial palpi brownish-gray, except at the tip. Antennae, thorax and anterior wings pale brownish-gray, in some lights silvery or golden. Thorax with a longitudinal median white streak produced gradually, widening along the dorsal margin of the anterior wings to the basal third, when it is intersected by a somewhat oblique costal white streak. Another oblique costal white streak about the basal fourth; a third one longer and narrower, situated beyond the middle of the costa, and a fourth and large one near the apex, and extending into the ciliae. Opposite the space between the second and third costal streaks is a large white triangular dorsal spot with its internal margin convex. Each of the costal and dorsal streaks is dark margined on both sides and around the apex. In the apex behind the costo-apical white spot is a curved golden-brown streak bordered behind by a brilliant white streak on the dorso-apical margin. Ciliae white, stained at the extreme tip with fuscous, with a rather wide, short, reddish-golden, hinder marginal line at the base of the apical ciliae, and three or four minute fuscous spots in the ciliae beyond it. Posterior wings bluish smoky. Legs golden-brown, spotted and streaked with white. Tarsi white, annulate with brown; posterior tibiae white. *Alar ex.* scarcely $\frac{1}{3}$ inch. Kentucky.

6. *Gracillaria salicifoliella*. N. sp.

Face and palpi white, with the apex of the labial palpi and a spot on the outer surface of the second joint, and one on the third, brown. Vertex white, suffused with brownish in front, and with a blackish patch at the base of the antennae, which are dark brown. Thorax and dorsal portion of the wings to the ciliae, white; costal portion blackish-brown; its line of junction with the white portion *twice indented or scalloped towards the fold*. Five costal white streaks, the first about the middle of the costa, curving backwards, long, and narrowed towards its apex, sometimes

almost overspread with blackish-brown scales on the white ground, produced along the costa towards, but not to, the base; the second is shorter, wider, *suffused with ochreous and blackish; not distinct, and sometimes only distinguishable as a paler spot in the blackish portion of the wing*, produced along the costa to the first streak; the third is larger, distinct, curving backwards to the centre of the apical part of the wing, and gradually narrowing; *it forms the posterior margin of the blackish portion of the wing, which curves around it, narrowing to a point in the centre of the apical part of the wing*. Apical part of the wing, as far as the third costal streak, brownish-ochreous, with an indistinct brown apical spot. Fourth and fifth costal streaks in the brownish-ochreous part of the wing. Ciliae silvery-gray, with two brownish hinder marginal lines, one at the base; the other near the apex, and continued into the "hook." *Alar ex.* $\frac{7}{8}$ inch.

This species resembles the European *G. Kollariella*, as figured in Stainton's *Nat. His. Tin.*, v. 8, p. 128, and plate 3, fig. 3, but probably is nearer still to *G. Gradatella*, and may prove to be that species, the food-plant of which is unknown. The principal differences between it and *Kollariella*, are indicated by the italics.

The larva was not observed until August, and some of the mines were then empty. I found it abundant from that time until the fall of the leaves in November. It mines the upper surface of the leaves of different Willows (*Salix longifolia*, native, and *S. alba* and *S. Babylonica*, foreign species). It does not leave one mine to form another, but continues in one mine until ready to become a pupa; and sometimes the mine covers nearly the entire leaf. It pupates under a dense semi-transparent white web over the midrib; usually of a different leaf, though I have occasionally found it on the under side of the same leaf mined by it. It remains in the pupa state about two weeks, and the imago probably hibernates. Common in Kentucky.

7. *Gracillaria desmodifoliella*, Clem. *Proc. Ent. Soc.* 1865, p. 145; previously described by Dr. Clemens in *Proc. Acad. Nat. Sci., Phila.*, 1860, p. 7, as *G. violacella*. The last description was made to correct the first, but from a single bred specimen in my possession, the first description seems to be as nearly correct as the last. Probably it is a somewhat variable species. It feeds on the leaves of species of *Desmodium*, and if it is ever a miner (as it most probably is), it is so for a very short time only, as the larvae are found, whilst still very small, rolling the leaves from the apex downwards, eating the underside. It frequently leaves one roll

and makes another. It pupates over the midrib under a dense but semi-transparent white web on the upper side of the leaf. Rather an inconspicuous insect; the costal half of the wings yellowish, with a few black spots on the middle of the margin. Dorsal half yellowish-purple, faintly iridescent, with a few small blackish dots along the centre of the disc. *Alar ex.* about $\frac{1}{16}$ inch. Kentucky. Common.

8. *Gracillaria Packardella*. *N. sp.*

Face and palpi snowy-white; the joints of the palpi tipped with golden. Vertex, antennae, thorax, and base of the wings pale lemon-yellow, each antennal joint tipped above with fuscous. Anterior wings pale reddish-orange, with purple and golden reflections, and becoming deeper towards the apex, with a large triangular pale lemon-yellow spot about the middle, very wide on the costa, and its apex almost touching the dorsal margin. Ciliae pale yellowish, faintly flecked with reddish-orange or golden. Anterior surface of the legs reddish-orange, tinged with fuscous. *Scales of the head loose, not appressed.*

Larva and food-plant unknown, but from circumstances, I suspect it to be an Oak-feeding species; and I think that it passes the winter in the pupal state, from finding fresh specimens of it abundant in April and May. *Alar ex.* about $\frac{1}{2}$ inch. Kentucky.

I took it resting upon fences under Beech and Oak trees; on which also, there were a great many of the bracts, or outer reddish envelopes, of the Beech leaf-buds (which were then expanding, and throwing off these envelopes). At a distance of more than a yard it was scarcely possible to distinguish the *Gracillaria* from these envelopes. I have never found a mine or larva of this genus on the Beech; and have found the imago on Oaks at a great distance from any Beech trees.

I have named it in honor of Dr. A. S. Packard, jun., author of the "Guide."

9. *Gracillaria purpuricella*. *N. sp.*

Violaceous, reddish or brownish-purple, according to the light. Face pale violaceous, flecked with brownish-purple. Antennae brown, tinged with purplish, faintly annulate with white at the base of each joint; palpi pale purplish. The triangular white spot about the middle of the costa is nearly equilateral; its anterior margin is a little concave, the apex reaching the fold, and it has four small spots of the general hue situated in it upon the costa. Ciliae bluish fuscous. Posterior femora white at the tip, and with a wide white band about the middle, and its under surface

entirely white. Posterior tibiae and inner surface of intermediate tibiae white. Tarsi pale grayish-fuscous, faintly annulate, with white at the joints. Abdomen purplish-fuscous on a white ground. *Alar ex.* $\frac{1}{2}$ inch.

The larva mines the leaves of the Willow (*Salix longifolia*) for a very short time, then leaving the mine, it rolls the leaves from the tip upwards, into various forms (usually a cone or helix of three spirals). I first found it in September and October, and do not know whether it can be found earlier or not. It frequently leaves one roll and makes another, and when ready to pupate, makes a dense semi-transparent web over it, upon the ground, not on the leaf, as in many species. The imago emerges in the fall, and most probably, hibernates.

I have bred a great many species of Ichneumonides and Chalcidiidæ parasites from the different "Micros." Among others, the following, which I take to be a *Eulophus*, though I can distinguish but *eight* antennal joints. Possibly, however, one of the three terminal joints may be composed of *two* or more *compact* joints, but they are so thickly clothed with blackish hairs that I can not discover it without dissection, which, as I have but the single specimen, I do not wish to resort to. Some allied genera have the terminal joint composed of *three compact* joints; but that would make the antennae in this species *10-jointed*, whereas, in *Eulophus*, they are *9-jointed*.

The antennae are black, and the third, fourth and fifth joints each give off, internally from the base, a plumose branch about as long as the portion of the stalk beyond it. Eyes bronzy brown. Head and thorax bluish-green, densely punctured. Legs and tarsi white, except the posterior *tibiae* and femora, which are pale fuscous; abdomen blackish, with a pale whitish band across the tergum near the base *in* $\frac{3}{4}$ inch. The living insect seemed to be continually expanding and shutting its antennae, and plumes like fans.

Bred from larvae of *Gracillaria purpuriella*, and I call it *Eulophus Gracillariae*.

10. *Gracillaria juglandiella*. *N. sp.*

Palpi white, flecked with dark brown, and second and third palpal joints tipped with brown. Face white; antennae, vertex, thorax and basal third of the anterior wings iridescent, deep blood-brown, purple or violaceous, according to the light. Antennae faintly annulate with whitish, and basal third of the wing faintly flecked with whitish. Trigonal mark faintly outlined, its anterior margin being the posterior margin of the

deep coloured basal third of the wing, and the mark itself being overspread with the same colour as the basal third, but a little paler, and scarcely at all distinguishable from the portion of the wing beyond it. Trigonal mark and apical portion of the wing beyond it, distinctly, but sparsely, flecked with white. The trigonal spot reaches nearly to the dorsal margin, and has two minute white streaks at each of its costal angles, and there is a very small white costal streak at the beginning of the ciliae. Ciliae of the general hue. Posterior wings and ciliae dark bluish-fuscous. Anterior coxae, trochanters, femora and basal half of the tibiae, of the general hue, except a white annulus on the middle of the femora, and two large white spots on its under surface, and a white annulus about the basal fourth of the tibiae. Tarsi and apical half of the tibiae white; tarsal joints tipped with brown; intermediate tarsi white, tipped with brown; posterior legs whitish. *Alar ex.* about $\frac{7}{8}$ inch.

The larva mines the underside of the leaves of the Black Walnut (*Juglans Nigra*) in August and September. After a time, it leaves the mine and goes to the upper surface, where it curls over the edge of the leaf, and passes the remainder of its larval and its pupal states; the imago emerging in the fall, and most probably hibernating.

In general colour it bears some resemblance to *G. purpuricella*, *ante*, but is a slenderer insect, and the trigonal mark, which is scarcely discernible in this insect, is very distinct in that. Kentucky. Rather common.

HEMIPTERA, HETEROPTERA AND DERMAPTERA (ORTHOPTERA) OF AMERICA TO THE NORTH OF THE UNITED STATES.

BY FRANCIS WALKER, F.L.S., LONDON, ENGLAND.

HEMIPTERA, HETEROPTERA.

PART I. Family PACHYCORIDÆ.

HOMÆMUS exilis, *H. Sch.*, Nova Scotia.

Family ODONTOSCELIDÆ.

CORIMELÆNA unicolor, *Pal. Beauv.* Nova Scotia.

do nigra, *Dallas.* Lake Huron. St. Martin's Falls.

Family ASOPIDÆ.

- ARMA modesta, *Dallas*. Nova Scotia.
 ZICRONA cuprea, *Dallas*. St. Martin's Falls.
 do marginella, *Dallas*. do

Family CYDNIIDÆ.

- ÆTHUS bilineatus, *Say*. Canada.
 SEHIRUS ligatus, *Say*. Nova Scotia. Arctic America.

Family PENTATOMIDÆ.

- EUSCHISTUS punctipes, *Say*. Nova Scotia.
 do luridus, *Dallas*. do
 ÆLIA trilineata, *Kirby*. Nova Scotia. St. Martin's Falls.
 EYSARCORIS carnifex, *Fabr.* Nova Scotia.
 PENTATOMA juniperina, *Linn.* Canada. (Inhabits Europe).
 do picea, *Dallas*. St. Martin's Falls.
 RHAPHIGASTER catinus, *Dallas*. Canada.
 ACANTHOSOMA cruciata, *Say*. Nova Scotia. St. Martin's Falls. Arctic America.

Family ALYDIDÆ.

- ALYDUS calcaratus, *Linn.* Nova Scotia. Arctic America. Inhabits Europe.

DERMAPTERA (ORTHOPTERA).

- ISCHNOPTERA Pensylvanica, *Deg.* Canada.
 GRYLUS luctuosus, *Serv.* Canada.
 NEMOBIUS vittatus, *Harris*. Nova Scotia.
 ONTHOPHILUS maculatus, *Say*. do
 DECTICUS sphagnum, *Barnst.* St. Martin's Falls. Hudson's Bay.
 XIPHIDIUM fasciatum, *Deg.* Nova Scotia.
 PHANEROPTERA curvicauda, *Deg.* do
 PHYLLOPTERA myrtifolia, *Serv.* Canada. Nova Scotia.
 CALOPTENUS femur-rubrum, *Deg.* Nova Scotia. Arctic America.
 do bivittatus, *Say*. Canada. Nova Scotia. St. Martin's Falls.
 do borealis, *Fieber*. Labrador.
 do fasciatus, *Barnst.* St. Martin's Falls.
 do extremus, *Walk.* Arctic America.
 do arcticus, *Walk.* do do
 PODISMA septentrionalis, *Sauss.* Labrador.

- (ÆDIPODA Carolina, *Linn.* Canada. Nova Scotia.
 do sulphurea, *Fabr.* Nova Scotia. Arctic America.
 do phœnicoptera, *Germ.* St. Martin's Falls. Arctic America.
 do rugosa, *Scudder.* Nova Scotia.
 do corallipes, *Hald.* Arctic America.
 STENOBOTHRUS curtipennis, *Harris.* St. Martin's Falls. Nova
 Scotia. Newfoundland. Arctic America.
 do maculipennis, *Scudder.* Arctic America.
 TETRIX granulata, *Kirby.* St. Martin's Falls. Arctic America.
 do ornata, *Harris.* Nova Scotia. St. Martin's Falls.

Jan., 1872.

INSECTS OF THE NORTHERN PARTS OF BRITISH AMERICA.

COMPILED BY THE EDITOR.

From Kirby's Fauna Boreali-Americana: Insecta.

(Continued from page 233, Vol. iii.)

207. BUPRESTIS (STENURIS) DIVARICATA *Say.*—Length of body 10 lines. Taken in Canada by Dr. Bigsby; I received both sexes also from Massachusetts by the kindness of Dr. Harris.

[155.] Body below copper-bronzed, above dusky-bronzed; glossy; confluent punctured and wrinkled. Head with numerous branching, levigated, narrow spaces; eyes yellow surrounded with a black orbit; mandibles black at the tip; front longitudinally impressed in the centre: prothorax with numerous levigated spaces, obsoletely channelled; sides anteriorly rounded with a slight sinus near the base; basilar angles diverging: elytra very obsoletely furrowed, reticulated with numerous elevated lines, many scattered levigated spaces; bicarinated at the apex, the inner ridge being very short; suture terminating in a point; at their truncated extremity the elytra are divaricated and suddenly attenuated: the first segment of the abdomen, and the breast bones are hollowed out into a longitudinal channel: prosternum linear. [Exceedingly common in Canada; the larva bores into cherry and beech, and probably other trees. Belongs to the genus *Dicera* Esch.]

208. BUPRESTIS (STENURIS) TENEBROSA *Kirby.* — Length of body 7¾ lines. Several taken in Lat. 65°, and in the Rocky Mountains.

Very like the species just described but much smaller. Body confluent punctured, upper surface black, with only the elevated parts glossy, lower bronzed-copper and glossy. Mouth and antennae bronzed; eyes black; front sculptured as in *St. divaricata*: prothorax uneven with shallow impressions and a broad dorsal channel; distinctly bisinuate at the base; surface with levigated elevations: scutellum very minute, impressed: elytra divaricated and suddenly attenuated at the apex, which is rounded and has a single ridge; surface rough with many concatenated and levigated irregular elevations, side of the tip bronzed: breast channelled underneath, but the first segment of the abdomen less conspicuously, prosternum nearly an isosceles triangle: hypopygium with three short teeth. [Taken in Canada, but not very common; "abundant at Lake Superior" (Le Conte). Belongs to *Dicerca*.]

209. [156.] BUPRESTIS (STENURIS) TENEBRICA Kirby.—Length of body $7\frac{3}{4}$ —9 lines. Several taken in Lat. 54° and at Cumberland-house.

This species differs principally from *St. tenebrosa*, which in other respects it greatly resembles, in having the prothorax without any levigated elevations, and with the impressions, except the channel which is better defined, more obsolete. The elytra are distinctly furrowed, especially next the suture, with punctured furrows, and there is only a series of levigated elevations near the lateral margin; the attenuated apex of the elytra is longer, rather truncated, and underneath of a dark blue: the prosternum is linear, and the base of the abdomen scarcely channelled: the teeth of the hypopygium are longer and of a brilliant ruddy-copper.

VARIETY B. Smaller, upper surface black-bronzed. [Probably synonymous with *Dicerca lacustris* Lec., a species taken at Point Kewenan, on Lake Superior.]

[157]. 210. BUPRESTIS (ODONTOMUS) TRINERVIA Kirby.—Plate ii., fig. 9.—Length of the body $5\frac{1}{3}$ — $5\frac{3}{4}$ lines. Several specimens taken in Lat. 54° and 65° and in the Rocky Mountains.

Body punctured, above black-bronzed, below copper-coloured and glossy. Head obscurely copper, confluent punctured and wrinkled, with a pair of levigated irregular elevations between the eyes; nose bilobed with divaricated lobes forming an obtusangular sinus; antennae copper with a testaceous pedicel: prothorax transverse, confluent punctured with several levigated spaces; lightly and widely impressed, impressions faintly gilded; disk channelled; sides very slightly emarginate; base with a double sinus, scutellum triangular, acuminate: elytra with the de-

pressed parts confluent punctured and very faintly gilded; with three subinterrupted longitudinal ridges connected by transverse levigated elevations; the two external ridges become confluent and proceed as a single ridge to the apex; lateral margin towards the apex minutely serrulate: back of the abdomen of a fine silky green: underside of the body thinly planted with hoary hairs; prosternum constricted in the middle and terminating towards the anus in a dilated trilobed point: shoulders much incrassated, armed below with a stout tooth; cubits clubbed at the apex; four anterior tibiae bent or bowed: hypopygium bidentate. [Belongs to the genus *Chrysobothris* Esch. Taken in Canada, and, according to Dr. Le Conte, in the following localities: "Lake Superior, Lake Winnipeg, Oregon and Washington Territories." He states that "the colour beneath is somewhat variable, and that he has a ♂ with the body entirely green, and a ♀ in which it is coppery, with purple spots at the sides of the abdomen. The sides of the thorax are sometimes straight, sometimes rounded, but it is never obviously wider in front."]

211. BUPRESTIS (ODONTOMUS) PROXIMA Kirby.—Length of body $5\frac{1}{2}$ lines. A single specimen taken in the Expedition.

[158.] Body minutely and thickly punctured: above black-bronzed obscure; underneath cupreous with the gloss obscured; except near the anus, clothed with numerous rather long decumbent hoary hairs. Head somewhat cupreous, hoary from decumbent hairs; nose green, bilobed with divaricated lobes, including a somewhat obtusangular sinus; antennae green; vertex channelled: prothorax embossed in the disk, impressed and wrinkled at the sides; depressed parts punctured and reflecting a faint lustre of copper: scutellum an isosceles triangle, depressed and green at the base, elevated part black: elytra embossed, with a ridge extending from the apex where it is broader, by the side of the suture towards the base where it is abbreviated: the depressed spaces have a faint lustre of copper and bronze, and are thickly punctured; apex rounded and obsolete serrulated: shoulders incrassated with a short robust tooth: all the tibiae are bent or bowed; cubit not dilated at the extremity: hypopygium with a deep sinus.

This nearly resembles *B. O. trinervis*, but is sufficiently distinguished by having only a single ridge on the elytra, and the posterior tibiae as well as the other pairs, bowed: the prothorax also is not channelled and its sides are rounded. [Belongs to *Chrysobothris*. Is not included in Le Conte's List.]

[159.] 212. BUPRESTIS (TRACHYPTERIS) DRUMMONDI Kirby.—Plate

ii., fig. 8, var. B.—Length of body $4\frac{3}{4}$ lines. Several specimens taken in Lat. 54° and 65° , and in the Rocky Mountains.

Body as it were reticulated with numerous punctures, bronzed, more obscurely on the upper surface, more glossy on the lower. Head very thickly punctured, obsolete and slenderly channelled; apex of the nose levigated: prothorax transverse, with a double sinus in the basilar margin; obsolete channelled, impressed on each side nearer the base, covered with innumerable scratches variously drawn, those of the disk being somewhat concentric; sides punctured: scutellum very minute, transverse: elytra very thickly punctured, and also exhibiting an appearance of granulations, slanting at the apex; the disk of the elytra, nearer the apex than the base, is marked with three yellow roundish dots arranged in an obtuse-angled triangle with the vertex towards the side: underside of the abdomen towards the anus less thickly punctured.

VARIETY B. Elytra with four yellow dots, a minute one, but varying in size, being placed outside the anterior one. [Belongs to *Melanophila* Esch. "Oregon and Washington Territories, abundant, straying into California and Alaska." (Le Conte).]

213. BUPRESTIS (TRACHYPTERIS) UMBELLATARUM *Fabr.*—Length of body $2\frac{3}{4}$ lines. Several specimens taken near Cumberland-house, Lat. 54° .

[160.] The description that Fabricius and Olivier have given of *B. umbellatarum* is so extremely brief, that I am by no means certain that the insect I here give under that name is really synonymous with it. As far as their description goes it corresponds, and also with Olivier's figure, but that is very indistinct. It has been found in Barbary, Portugal, and Provence. Fabricius says it affords no characters except its colour and smooth elytra; but it will be found upon a close inspection, I speak with regard to the American specimens, to exhibit several.

Body black-bronzed, covered all over as it were with a fine network, produced by minute lines as if scratched by a pin or needle; above dull, below glossy. Antennae much shorter than the prothorax: prothorax transverse with rounded sides, and longitudinal basilar impressions near each posterior angle: scutellum triangular: elytra with three very slight impressions arranged longitudinally; an obsolete series of punctures runs parallel with the lateral margin; apex obtuse and very minutely serrated: prosternum acuminate.

214. BUPRESTIS (OXYPTERIS) APPENDICULATA *Fabr.*—Length of body

4¼—5¼ lines. Several specimens in the Rocky Mountains, and near Cumberland-house.

[161.] Body black, not glossy. Head minutely and thickly punctured, channelled, on each side of the channel between the eyes is an impression; antennae nearly as long as the prothorax: prothorax scarcely wider than long, channelled, with a large but shallow impression on each side; sides thickly punctured so as to resemble net-work; rounded with the basilar angles depressed and a little diverging: scutellum nearly heart-shaped, acute: elytra rough with very minute and numerous granules, and several very slight shallow impressions, between which runs an obsolete obtuse ridge from the shoulder towards the apex, serrulated at the apex, and terminating in a very sharp point: breast minutely and thickly punctured; prosternum a little constricted in the middle, point triangular. [Though, as Le Conte remarks, this species here described is very closely related to the European insect to which it is referred by Kirby, it is Says' *Melanophila longipes*—a species not at all uncommon in Ontario, and taken also in such widely separated localities as Pennsylvania, Kansas and Lake Superior.]

215. *AGRILUS BIVITTATUS* Kirby.—Length of body 4 lines. Taken in Canada by Dr. Bigsby.

[Previously described as *Buprestis (Agrilus) bilineatus* Weber; for description *vide* Say's Ent. Works, i. 386 and ii. 596. This very pretty species is not uncommon in Canada, and is taken throughout the United States.]

[162.] 216. *TRACHYS AURULENTA* Kirby.—Length of body 3 lines. Taken in Canada by Dr. Bigsby.

Body obovate, black-blue, glossy. Sinus of the head deeper than in the other species; face nearly covered with glittering copper-coloured decumbent hairs; antennae shorter than the prothorax: prothorax transverse, repand on each side at the base with a central lobe, concave at the apex; anteriorly in the middle very convex; sides and base depressed; surface impunctured and tessellated with ruddy-copper hairs like those of the head: scutellum at the base transverse, with the vertex terminating in a long and sharp acumen: elytra with three ridges, the two inner ones less distinct, parallel, obtuse and abbreviated at each extremity, the external one distinct, acute running from the shoulder in an undulated line nearly to the apex of the elytrum; several rows of larger punctures are discernible, and several spaces thickly punctured with minute ones; the elytra are

also spotted with several hairy ruddy-copper spots, and ornamented with four or five undulated hairy indistinct silver bands: underneath the tint of blue is very faint and the disk of the breast is bronzed; the mesosternum is hollowed out into a deep channel. [Previously described as *Buprestis (Brachys) ovatea* Weber. Rather rare in Canada; taken in the Eastern, Middle and Southern States.]

MISCELLANEOUS NOTES

SMERINTHUS MODESTUS.—Several specimens of this very rare and beautiful sphinx have been captured in the neighbourhood of London during the past season.—W. S.

CAPTURES AT NORTH DQURO, CO. OF PETERBORO, ONT.—Having, in accordance with my invariable custom, taken notes during the past year of such entomological specimens as I have captured in this neighbourhood, I herewith furnish you with a list which, as the season for collecting has expired—save only with respect to those who search for insects in their *hibernacula*—may perhaps find some small vacant space upon the pages of our Magazine.

March 24.—A fine specimen of *Attacus Polyphemus* was hatched in a box in my library. In emerging from the cocoon, it made a noise similar to, and as loud as, that made by a mouse behind a wainscot. It was, in fact, by this scratching sound that my notice was first attracted to the box.

March 29.—I captured a "small tortoise-shell butterfly"—*Vanessa Milberti*. It was fluttering on the snow-covered ground, tempted abroad by a bright gleam of sunshine, the thermometer indicating, at the time, 30° Fahrenheit.

April 8.—I discovered, in a piece of decayed wood, a larva of a Fire-fly—*Photinus corruscus*. It emitted a very pretty pale-green light.

May 9.—Mosquitoes made their first appearance; all through this year they were less troublesome than I have ever known them previously.

May 21.—Swarms of Flea-beetles—*Haltica*—appeared on some cabbage plants growing in boxes. I watered the plants with tobacco-water, soon after which the beetles left them and gathered on the edges

and sides of the boxes, suffering, evidently, from *narcosis*. I killed hundreds of them, while in this condition, without difficulty.

I also, on the same day, poured tobacco-water into some ants' nests on my lawn, and the ants disappeared.

May 25.—Black-flies—*Simulia molesta*—put in their most unwelcome appearance, covering, positively darkening, trees and fences and sides of houses.

May 27.—*Papilio asterias*, *P. turnus* ♂ and ♀, *Vanessa antiopa*, and *Thyreus nesusus*.

May 29.—*Chalcophora virginiensis*.

June 6.—Another specimen of *C. virginiensis* and *Chrysobothris femorata*.

Finding my currant and gooseberry-bushes infested with caterpillars, I watered them with hellebore and alum—1 oz. powdered hellebore and 2 oz. powdered alum, to a gallon of water—which I find an unfailing remedy.

June 9.—*Polyommatus Americana*.

June 10.—A friend brought me a "Cucumber-beetle"—*Diabrotica vittata*, with some of its eggs, which, with a look almost of triumph at the discovery, he assured me was a "Colorado Potato Bug." Nor could I convince him of his error until I showed him in my collection a specimen of the *Diabrotica* captured some years ago, long before the Colorado Beetle was heard of in Canada. I may here mention that on two subsequent days, two neighbours brought me specimens of the *Ancylochira fasciata* and the *Clytus speciosus* respectively, with the assertion, very emphatic in the case of the second, that they were the veritable much-dreaded "bugs."

However, on the 4th of the following month, July, I was shown, by another neighbour, some larvæ, discovered on a potato-patch in his garden, of the true *Doryphora 10-lineata*.

June 29.—"Locust-tree Carpenter-moth"—*Xyleutes Robinia*. *Limenitis arthemis* ♂.

July 1.—A "Buprestis"—*Ancylochira fasciata*.

July 3.—*Clytus speciosus*.

July 8.—"Common 3-striped Potato-beetle"—*Lema trilineata*. Three specimens.

July 25.—*Clytus speciosus*. *Hypercompa Lecontei*.

July 26.—The “Hellgrammite Fly”—*Corydalus cornutus*.

August 3.—*Dicerca lurida*; $8\frac{1}{2}$ tenths of an inch long.

September 1.—*Chrysomela scalaris*.

September 11.—“Black-flies” made their *second* appearance: an unusual occurrence. Several children were rather severely bitten by them.

It may not prove uninteresting to your readers if I superadd the following brief atmospheric notes:—

November 10.—First fall of snow. 16.—Sleighting. 28.—The river Otonabee, a rapid stream, frozen across from side to side. 30.—Thermometer 13° below zero—a somewhat extraordinary record for the month of November.—V. CLEMENTI, B.A.

“POLYHISTOR?”—I cannot pass Mr. Couper’s remarks on pp. 178—9, Vol. iii., unnoticed, though I have no quarrel with that gentleman. First, he takes too much unction to his soul in supposing that by qualifying too sweeping an assertion (see p. 158), I have in any way weakened the assertion that he mistook the above Lepidopterous larva for that of a Coleopter. I know positively that the *Balaninus* larva spins no web, while the *Holococera* larva does. The first leaves the acorn to burrow in the ground, with rare exceptions, in the fall of the year; and any one who collects infested acorns on the last of March, as did Mr. Couper, will be morally certain to find 999 of them containing the *Holococera* where one contains the *Balaninus*. Mr. Cooper’s description on p. 65 also shows plainly that his larvae were moth-larvae, for in those of *Balaninus* the thorax is not “chestnut colour,” and there are not numerous dots on the body. Feeling pretty sure that Mr. Couper had made a mistake, I drew attention to it for truth’s sake, and if Mr. Couper writes for truth rather than victory, he will plainly tell the readers of the ENTOMOLOGIST, as he promised to do, whether or not he bred moths from those larvae which he obtained in March. Too much error creeps into entomological literature by careless description, and the settlement of the point in dispute between us is quite important. I have already stated that I know of no curculionidous larva in the United States that spins a cocoon. If Mr. Couper’s larvae were really curculionidous, we shall have at least one exception; but I submit in all earnestness that no proof has yet been given.

With regard to the other strictures in his article on p. 178, I have little to say. I still claim that Mr. Couper should not use the term “Family” in the sense of “Order,” as he did on p. 35; and whether Mr. Pettit, of

Grimsby, "comes to his aid," or not, in reference to the species of *Balaninus* infesting acorns, may be judged of by the following letter which Mr. Pettit wrote after reading my communication on the subject, as published in the October number:—

MY DEAR SIR,—Your letter in reference to the Acorn weevil was duly received, and I feel greatly indebted to you for it. I did not intend to refer the Acorn weevil to Say's *nasicus*, but supposed it to be known under that name, as it is the only one of the genus in our Canadian list. I was under the impression that Say's species were irrecognisable from the briefness of his descriptions, but after examining the few specimens in my collection under the light of your letter, I am convinced that you have given the true reading. Of eight captured specimens, all, with one exception, belong to *nasicus* as defined by you, and the six remaining specimens bred from acorns agree with your description of *rectus*. Two of these you will find enclosed herewith. Yours very truly, J. PETTIT.

Grimsby, Oct. 17, 1871.

C. V. RILEY, St. Louis, Mo.

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NOTICE.—The following scale for advertisements has been decided upon by the Editors:—

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COLLECTING TOUR IN LABRADOR.—When I penned the notice of my proposed tour to Labrador, I had no idea that there would be so much demand for Entomological material from this Northern quarter. But since the notice has appeared, letters have been received from Mr. P. S. Sprague, Boston Natural History Society; Mr. Samuel Henshaw, Boston; Mr. Geo. D. Smith, Boston, for *Coleoptera*; and Dr. Theodore L. Mead, New York; Mr. Herman Strecker, Reading, Pa.; Mr. G. M. Levette, Assist. Geolog. Survey, Indianapolis, for *Lepidoptera*; and having neglected to

give my full address, possibly other letters may have gone astray. I want only 12 subscribers for *Lepidoptera*, and the terms are settled by correspondence. I am anxious to put the *Coleoptera* into the hands of one person, or an institution, who could work and determine the material, in order to put the matter in some form for future reference. I will supply notes with every species collected.—WM. COUPER, 38 Bonaventure St., Montreal.

PLATYSAMIA COLUMBIA.—I will give in exchange for a good example of this moth one hundred specimens of *Lepidoptera* of various genera from California, Southern and Atlantic United States, S. America, Europe, East Indian Archipelago, &c., or double the number for two examples; or, if it is preferable, I will pay in money. HERMAN STRECKER, BOX 111, Reading P. O., Berks Co., Pa. U. S.

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