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The Canadian Entomologist.

VOL. XXVI. LONDON, DECEMBER, 1894. No. 12.

SOME PSYCHODIDÆ FROM LONG ISLAND, N. Y.

BY NATHAN BANKS, SEA CLIFF, N. Y.

Thomas Say described one species of Psychoda from the United States; Walker described another from Hudson's Bay; and Dr. Williston, in Entom. News, 1893, described a third species from New York. I have noticed in the vicinity of Sea Cliff, N. Y., seven species, only on. of which I have identified as previously described. Most of the forms I have collected are probably common elsewhere in the Eastern States and in Canada.

All the forms known to me appear to be congeneric and belong to Psychoda. They have two veins between the forked veins, more or less pointed wings, and the second longitudinal appears to arise beyond the first basal cell. Pericoma, I should consider to consist of species with rounded wings and the second longitudinal arising before the anterior cross-vein. But Eaton, in his paper on the British species, has placed other forms under it; however, from his diffuse table it would be almost impossible to obtain any idea of the characters of Pericoma. I think it much better to use the terminology commonly used in Diptera rather than adopt one taken from another order. The species from Long Island are almost identical in venation, presenting 10 principal veins ending in the margin. The small vein at base is the auxiliary vein. The first longitudinal is simple, the second forked near middle of wing, the third forked close to the base, the fourth forked near middle, the fifth simple, and the sixth or anal consists of two branches. The two small cells at base, I should call the first and second basal cells, each bounded by the usual veins. All the veins are nearly straight, and at about equal distances apart, and bear many hairs. There is a fringe all around the wing, but longest on the posterior margin. The legs appear to be about of the same length and shape in all the species. The antennæ vary in length, and in some species are thicker in the males than in the females. The males have a superior and inferior pair of appendages, which consist of two or three joints.

I desire to thank Mr. A. D. MacGillivray, for kindly acquainting me with Mr. Eaton's classification of the British species.

The species may be tabulated as follows :—

1 { Wings grayish 2
  { Wings blackish 4

2 { Black dots at tips of some veins ..... *alternata.*
  { No dots 3

3 { At least two millimeters long ..... *cinerea.*
  { Less than two millimeters ..... *minuta.*

4 { Black dots at tips of some veins ..... *superba.*
  { No black dots, wings without white hair except in fringe 5

5 { Two distinct median patches of erect black hair, thorax black, fringe around apex whitish ..... *marginalis.*
  { Wings evenly black, fringe not whitish ..... 6.

6 { Thorax white and with white hair ..... *bicolor.*
  { Thorax black and with black hair ..... *nigra.*

Psychoda alternata, Say.

Body nearly white or slightly yellowish, with white and grayish hair; wings thinly clothed with gray hair, indistinctly showing a pale band at middle and one near base; spots of black hair at tips of veins 6, 8, and 10, and usually at ends of 2, 3, and 4; the fringe of gray hair which on posterior margin is three times as long as the width of a cell. Legs pale with white hairs. Antennæ slender and short, not as long as breadth of wing, quite thickly clothed with whorls of white hair; wings moderately narrow, acute at tip. The ♂ genitalia consist of two pairs of appendages; the inferior pair very slender, and as long as the diameter of the tip of the body, approximate at base, gradually separating and then strongly curving toward each other near tip, clothed beneath with long white hair; the superior pair quite wide apart at base, about half as long and less slender than the inferior pair, but little curved and with only short hair. The ventral plate of the ♀ is yellow, nearly twice as long as broad, with an emargination behind as deep as the plate is broad, the rounded branches slightly diverging; the ovipositor scarcely twice as long as the plate, slender and a little curved. Length of wing, 2. to 2.2 mm.

Common in July, on windows and on shrubbery near buildings; Sea Cliff, N. Y.

Psychoda cinerea, nov. sp.

Thorax and abdomen with long gray hair, a tuft of black hair at base of wing; wings with gray hair and fringe, the latter on the posterior margin nearly three times the width of a cell; legs pale with long, gray, and short white hair, and black scales on the tarsi. Antennæ slender, a little longer than the width of the wing, base of joints blackish, each joint with a whorl of white hairs; wings about as broad as in *P. alternata*, acute at tip. The inferior pair of ♂ appendages is long, contracted in the middle, swollen beyond, then growing slender and curving upwards, clothed beneath with white hair; the superior pair much shorter and curved downwards near tip, they are quite suddenly swollen near the middle. Ventral plate of ♀ as broad as long, slightly emarginate behind and with short scales, the ovipositor quite prominent and slightly curved. Length of wing, 2.1 to 2.8 mm.

Common on windows during June and July; Sea Cliff, N. Y.

This species is readily distinguished from the preceding by its slightly darker colour and by the uniform wings.

Psychoda nigra, nov. sp.

Black, with dark brown on the thorax and long black hair on the abdomen, wings evenly and quite thickly covered with long black hair, and with a black fringe, which on the posterior margin is about five times as long as the width of a cell; legs black, with very long black hair on outside of the tibiæ at base. Antennæ slender and a trifle longer than the width of the wing, clothed with white and some black hair, giving them a grayish appearance; wings narrower than in *P. alternata*, and very acute at tip, the posterior margin near tip being almost concave. The ventral plate of the ♀ is blackish, not much longer than broad, broadest at base, and barely emarginate at tip; ovipositor more than twice as long as plate and slightly curved. Length of wing, 2.1 mm.

One female, captured on a currant-bush at Sea Cliff, N. Y. Separated from all the other species by its uniform black appearance.

Psychoda minuta, nov. sp.

Dark, with whitish hair on thorax and gray on abdomen; wings thinly clothed with gray hair and a gray fringe, which at the posterior margin is about twice as long as the width of a cell; legs dark with whitish hair. Antennæ not quite as long as breadth of wing, black at base of joints, and each joint in male with a dense whorl of white, appressed hair, which

gives the antennæ a very heavy and thick appearance; in the female the whorls are quite loose. Wings much broader than in the other species, and more blunt at tip. The inferior pair of ♂ appendages are very long, slender, and gradually tapering, strongly curved upward and nearly black, with white hair beneath, the superior pair not half so long, tapering and diverging. Cannot make out the structure of the ♀ ventral plate. Length of wing, 1.6 mm.

Not uncommon on the bark of large trees in a damp woods, but difficult to capture; near Sea Cliff, N. Y.

Readily known by its small size, uniform gray colour and broad wings, which, when at rest, are folded roof-like over the body.

Psychoda superva, nov. sp.

Black, the thorax clothed in the middle with black hair, and on the sides with snow-white hair, in some cases it appears to be all white-haired; the abdomen with long, dense, black hair; the wings with blackish hair and patches of erect white hair, the tips of the posterior veins with a black dot and a white spot between them, some of the anterior veins also usually tipped with a black dot; most of the fringe on the anterior margin is black, but near tip and on posterior margin, gray or whitish, where it is four times as long as the width of a cell; the legs are black, with black hairs and scales and a few white scales at the tips of the joints. The ♂ antennæ are black, quite thick, shorter than the width of wing, with short black and longer gray, appressed hair; in the ♀ the antennæ are more slender and more sparsely clothed. There are a few patches of white hair on the head. The wings are quite broad, but hardly as acute at tip as in some species. The genitalia are not prominent, being concealed by the long black hair of abdomen. The inferior appendages of the ♂ are black, approximate, short and blunt; they are not much more than one-half as long as the diameter of the tip of the body, and but little up-curved; the superior pair are nearly as large, stout, and tapering to a point; they are wide apart at base, but curve toward each other. The ventral plate of ♀ is broad, yellow at tip, and broadly notched, but the notch is but one-half as deep as wide; the ovipositor is twice as long as plate and a little curved. Length of wing, 2.5 to 2.9 mm.

Common on the bark of large trees in woods. June. Sea Cliff, N. Y.

There is some variation in the arrangement of the white patches on thorax and wings; the legs and antennæ are wholly black, so I do not think it can possibly be a form of *P. Slossonæ*, Will.

Psychoda marginalis, nov. sp.

Black, head and thorax with white hair, but not very dense; abdomen with black hair, and often a small patch of white hair each side at tip; wings thinly clothed with black and gray hair, and some scattered white ones near base, two prominent patches of erect black hair just beyond the middle of the wing; the fringe dark gray, except near the tip on each side, where it is whitish, giving the appearance of a white margin to a black wing; it is very long, on the posterior margin nearly as long as the breadth of the wing; legs dark with gray hair. Antennæ slender, black, with whorls of gray hair, about as long as the width of wing; wings narrow, acute at tip. The inferior pair of ♂ appendages are long and slender; at first they are parallel, then they diverge and curve upward; they are clothed with fine black hair; the superior pair are very far apart at base, about two-thirds as long as the inferior pair, gradually tapering and but little curved toward each other. Length of wing, 1.8 to 2 mm.

Not uncommon on low herbage near the edge of a swamp. June. Sea Cliff, N. Y. All my specimens seem to be males.

Easily recognized by its general black colour, two black patches on wing, and the apical white fringe.

Psychoda bicolor, nov. sp.

Head and thorax yellowish-white, abdomen black, the former with white, the latter with black hair; wings with black hair, most dense toward base and on costa; fringe black or dark gray behind, where it is about three or four times as long as the width of a cell; legs black, with black hair; antennæ slender, slightly longer than breadth of wing, black, with whorls of dark gray hair; the wings are broader than usual, very oblique behind, and acute at tip. The inferior ♂ appendages are three-jointed, the basal joints nearly united, the second joint tapering and curved upward, about as long as the first joint, at tip with a short, recurved, pointed joint; superior appendages two-thirds as long; widely separated, curved downward, slender at tip. Length of wing, 2.4 mm.

Not uncommon in the same locality as *P. marginalis*; only males known to me. Distinguished by its general black colour, except white head and thorax.

A NEW PERICOPID AND SOME NEW ZYGÆNIDÆ FROM CUBA.

BY E. NEUMOEGEN, NEW YORK.

My esteemed friend, Dr. L. Gundlach, has left to me the task of describing several new Bombyces, which he discovered within the last few years in Cuba. Some of the specimens which are uniques, are, unfortunately, in such a poor state that a thorough description was well-nigh impossible. In one case I had to refrain entirely, on account of the dilapidated condition of the insect. All the types belong to the *Museo Cubano Zoologico de Gundlach*, lately acquired by the Spanish Government.

Daphne, nov. gen.

Head well developed. Eyes large, hairy. Clypeus indentated. Palpi prominent, outwardly curved. Antennæ large, bipectinate, tapering at tip. Legs scaled, the tibiæ well armed and with a large hairy tuft. Abdomen long, slender and tapering. Primaries nearly double as long as broad. Exterior and interior margins rounded. Subcostal nervure arcuated near apex. Median nervules equi-distant. Submedian parallel with interior margin. Secondaries, margins well rounded, 7-veined. Costal nervure curvilinear. The ornamentation is black and steel blue, the veins blackish. The genus is allied to *Gnophœla*, Wlk., and should stand at the head of the Pericopinæ.

Daphne cyanomela, nov. spec.

Head, prothorax and abdomen of bright orange colour. Palpi the same, with black edges above. Eyes and antennæ black. Anal tuft somewhat paler than abdomen. Legs grayish black. Thorax and wings rich metallic blue. Black costa and black broad marginal bands on both wings, reaching to centre of inner and anal margins respectively. Fringes grayish black.

Below the same as above.

Expanse of wings: 46 mm. Length of body: 15 mm.

Type, ♂. No. 131, M. C. Z. de G.

Phaio, nov. gen.

Head and eyes large. Tongue well developed. Antennæ long, bipectinate, somewhat tapering at tips. Front prominent, pilose. Thorax pilose, with large patagiæ. Primaries very long and well drawn

out, more than twice as long as broad. Costa nearly straight, but somewhat curved inwardly at centre. Apices pointed. Exterior margin slightly bent angles, and interior margin somewhat sinuous at centre. Secondaries small, about as broad as long, sharply pointed at apices, and well rounded at anal angle. Abdomen long and well developed, rounded at anus. Legs long and slender.

Phaio longipenuis, nov. spec.

Eyes whitish yellow. Head black. Antennæ shortly pectinated, black, the outer edge and tip being bright yellow. Above thorax and abdomen dark blue, and all wings of blueish-black, fringes concolorous.

Below, wings as above, with red basal dots. Abdomen blackish, with a very peculiar black shield fringed with white hair, and having a yellow lateral dot, covering area of two basal segments. Legs yellow, with exception of coxæ, which are red above and black below.

Expanse of wings: 48 mm. Length of body: 14 mm.

Type, ♂. M. C. Z. de G.

A very peculiar, and in its fresh state, undoubtedly a brilliant insect. I should place it in the Zygaenidæ, between *Illipula*, Butl., and *Ixylasia* Butl.

Cosmosoma Juanita, nov. spec.

The specimen is not very good, and the antennæ are entirely missing. Head and eyes black. Palpi yellowish. Thorax and patagiæ black, the latter with white edges. The slender abdomen above is bright red, with basal two segments and anal segment of black colour, with anal black tuft. Below, bright red, with exception of black anal segment and tufts. Legs red, with white stems at coxæ.

Wings, above and below, vitreous, with black nervules. A broad marginal black band on primaries, forming a large black apical space, and tapering off at angle. Small black marginal bands on secondaries.

Expanse of wings: 23 mm. Length of body: 8 mm.

It is to be regretted that the specimen is not in a better state, the secondaries being nearly entirely demolished. When fresh, it must be a beautiful little insect.

Type, ♂. No. 132, M. C. Z. de G.

It comes very near *C. selecta*, Herr. Sch., but is easily distinguished by the absence of the black discal spots on primaries, and the different ornamentation of the body.

SOME LITTLE KNOWN SPECIES OF GENEIS.

BY H. J. ELWES, COLESBORNE, CHELTENHAM, ENG.

On page 224 of CANADIAN ENTOMOLOGIST, Volume XXVI., Mr. Herman Strecker has some remarks on Chionobas, in which, I am glad to say, he supports my views, except in two points. First, with regard to the *subhyalina* of Curtis, I cannot conceive on what grounds he supposes that the description of *subhyalina* refers to *Erebia fasciata*, and as W. H. Edwards's suggestion that the example from Guenée's collection sent to me by Oberthur as the type of *subhyalina* is not really so, rests on no evidence whatever; I still maintain that *subhyalina* is the proper name for the insect hitherto called *crambis*, Freyer, found, as far as we know at present, from Newfoundland along the Labrador coast to Hudson's Straits and other parts of Eastern Arctic America. It has no resemblance to *Beanii*, Elwes, first sent out under the name of *subhyalina*, by Mr. Bean, and only taken near Laggan. With regard to *alberta*, Mr. Strecker had probably written his notes before seeing W. H. Edwards's further remarks on this species, on page 192 of the same volume. If he had seen the true *alberta*, I do not think he could have supposed that it is a variety or form of *chryxus*. The one species is found in May only, on the prairie; the other always in the mountains, in pine forest, or above timber line, and does not appear, as far as I know, before about the 20th June. One has a well-marked sexual patch on the forewing in the male, the other has no trace of it. The smallest specimens of *chryxus* are considerably larger than the largest of *alberta*. The colour is also totally different on both surfaces, so I can only suppose that Mr. Strecker has never seen *alberta*. I have now received more specimens, including several females, from Mr. Wolley-Dod, and though the variation in colour and number of ocelli is even greater than W. H. Edwards points out, there is not the slightest difficulty in separating any single specimen from any specimen of my large series of *chryxus* and *varuna*. With regard to the latter, a number of specimens sent by Mr. Wolley-Dod, also taken near Calgary, confirm my opinion that it cannot be separated from *Uhleri*, even as a local variety, for though the majority of the specimens have larger and more abundant ocelli than *Uhleri*, from Colorado, there are several which I could not distinguish without the labels. As a rule, however, the band on the under side of the hind wing is better marked in the northern than in Yellowstone or Colorado specimens.

With regard to the single female from Mount Graham, for which Mr. Strecker suggests the name of *Laura*, I can form no opinion whatever.

THE COLEOPTERA OF CANADA.

BY H. F. WICKHAM, IOWA CITY, IOWA.

VI. The Endomychidæ and Erotylidæ of Ontario and Quebec.

These two families immediately follow the Coccinellidæ in our lists, and are evidently related to them in many respects, the former, perhaps, the more closely, especially in tarsal structure. In habits there are, however, wide differences, the Coccinellidæ, as already stated in a former paper, being chiefly aphidivorous, while the Endomychidæ and Erotylidæ are mostly fungivorous.

Taking up the groups separately, we may consider the Endomychidæ first. These may be defined as Coleoptera, usually rather small in size, less convex and more elongate than typical Coccinellæ, and differing also in having much longer antennæ, the last three joints of which form a distinct club. The tarsi are four-jointed, the third joint often minute and anchylosed to the fourth. The claws are simple, the first ventral segment without coxal lines; the elytra cover the dorsal segments and the wings are without long fringes. The larvæ of the more typical genera, such as *Epipocus* and *Aphorista*, are moderately elongate, only slightly convex, scaly above, the sides of the body with appendages as shown in the figure (fig. 53, larva; fig. 54, pupa of *A. vittata* after Smith). That of *Mycetæa* is, however, of a different shape, as shown by Westwood, who figures it as of elongate form, the segments with deeply incised sutures and armed laterally with numerous bristles, the terminal segment with about nine bristles along the hind margin.

Fig. 53.

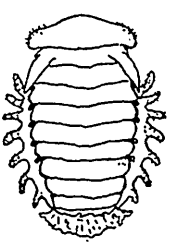

Fig. 54.

The Endomychid genera found in the provinces named may be thus known :—

A. Tarsi distinctly four-jointed; smaller species.

b. Body oval, pointed behind; surface pilose..... *Mycetæa.*

bb. Body oblong, or subparallel; surface glabrous.

Elytra black, shoulders and apex red; thorax unspotted.. *Rhanis.*

Elytra reddish or yellowish, with two black fasciæ; thorax with black spot..... *Phymaphora.*

AA. Tarsi apparently three-jointed; larger species.

c. Thorax and elytra uniformly piceous-black above, except the obscurely ferruginous margin.....*Lycoperdina.*

cc. Thorax black, elytra red, each with 2 black spots.*Endomychus*

ccc. Thorax reddish, elytra black, each with two red spots.....*Mycetina.*

cccc. Thorax variable, elytra striped.

Above pubescent.....*Epipocus.*

Above glabrous.....*Aphorista.*

Only one species of each of these genera has been reported in the Canadian lists, but a short descriptive note is appended in order that should others be found they may be recognized as new to the fauna and accorded further study.

MYCETÆA, Stephens.

M. hirta, Marsh., occurs both in America and Europe. I have seen no specimens, but it is described by Stephens as being a rusty red insect of small size (about .06 in.), and oblong-ovate, convex form, the antennæ and legs pale dull red; the elytra are deeply sub-seriately punctured and pilose. It is found in fungi or on grassy banks.

RHANIS, Lec.

The only species, *R. unicolor*, Ziegl., is narrow, elongate, nearly glabrous, shining, about .14 in. long; the colour is reddish, the elytra black with the shoulders often indistinctly and the apex very broadly red.

PHYMAPHORA, Newm.

P. pulchella, Newm., is a beautiful little species; .15 in. long, elongate in form, the thorax red with discoidal black spot, the elytra reddish with two transverse black fasciæ, the anterior of which is very broad and nearly median in position, the other less distinct and nearly or quite apical. The male antennæ have an immense club.

LYCOPERDINA, Latr.

A neat piceous-black species, .19 to .21 in. long, the margin of the body and the legs more or less distinctly brownish-red, is *L. ferruginea*, Lec. It may be found under stones or logs early in the spring and on fungi later in the season.

APHORISTA, Gorham.

A. vittata, Fabr. (fig. 53, larva; fig. 54, pupa; fig. 55, beetle), is a smooth shining insect, about a quarter of an inch in length, in colour reddish above, the elytra with a common sutural black stripe, and each with a shorter lateral one. The antennæ are nearly black.

Fig. 55.

MYCETINA, Muls.

The little *M. perpulchra*, Newm., belongs here, and well deserves the name. It is .16 in. long, the head is black, the thorax red, either with or without a discoidal vitta. The elytra are black, each with two red spots, the anterior subhumeral in position and transversely elongate in form. This species is represented in fig. 56. *M. Hornii*, Cr., will doubtless be taken in British Columbia, and differs in having a triangular humeral spot.

Fig. 56.

EPIPOCUS, Germ.

Probably through error, the Texan *E. cinctus*, Lec., is in the Canadian lists. It is a large ferruginous pubescent species, .4 in. long, the thorax with four black marks, the elytra with the disk (except sometimes the sutural region) black. In Texas I have found it under logs near fungi and have described and figured the early stages, which resemble those of *Aphorista vittata*.

ENDOMYCHUS, Panz.

Fig. 57.

E. biguttatus, Say (fig. 57), has the thorax black, the elytra red, with two black spots on each, the posterior larger. Length, .16 in.

The *Erotylidæ* are allied to the *Endomychidæ*, but the tarsi are four or five-jointed, never three-jointed, as is apparently if not actually the case in the latter family. The pronotum has not the sub-basal transverse impression and two longitudinal lines so often seen in the Endomychidæ, and the form is usually more elongate and more convex. Comparatively little is known of the larvæ of our native species; that of *Languria* (fig. 58, *Languria Mozardi* in all stages) is elongate, and, in the species figured, about .32 in. long; the form is subcylindrical, only the anal segment being narrower than the preceding joint; the colour is light yellow, the mandibles and anal horns (which are acute and curved upwards) brown. It feeds in the stems of clover, and

may do noticeable damage. The larva of *Tritoma humeralis*, Fabr., is nearly white, the head yellowish, the form moderately elongate, nearly cylindrical, but tapering to each end, the ninth segment with two short, erect, slightly recurved hooks or processes; it lives in fungi, going under ground to pupate, remaining in this state eight days. The pupa is .20 in. long, very bristly and with a stout spine on the tip of the abdomen.

The genera are not in all cases readily separable by a beginner, being sometimes (as in *Tritoma* and *Mycotretus*) much alike in general form and appearance; however, a careful attention to the specific descriptions ought to do away with any doubt that may arise. The following table will show the points of difference in the Erotylid genera and enable those found with us to be recognized.

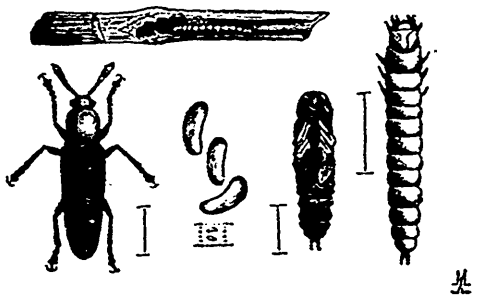

Fig. 58.

A. Form very elongate, parallel, front coxal cavities open...*Languria.*

AA. Form more robust, front coxal cavities entire.

b. Tarsi distinctly five-jointed.

Size small (.12 in.).....*Dacne.*

Size large (.50–.80 in.).....*Megalodacne.*

bb. Tarsi apparently four-jointed, the fourth joint very small.

c. Last joint of palpi widely securiform, thorax with black spots.....*Ischyrus.*

cc. Last joint of palpi oval or slightly triangular. Thorax unspotted.

Middle area of mentum large, transverse...*Mycotretus.*

Middle area of mentum small, triangular.....*Tritoma.*

LANGURIA, Latr.

The species of this genus are found under logs and stones early in the spring, later they may be swept from plants. Two species, one of which divides into two varieties, are known from our region.

Thorax red, elytra bluish or greenish (.22–.31 in.).....*Mozardi*, Latr.

Thorax red with discoidal dark stripe (.35–.40 in.)...*gracilis*, Newm.
Thorax entirely greenish-black. .....*v. inornata*, Rand.

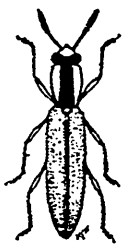

Fig. 59.

We give figures of *L. Mozardi* in all stages (Fig. 58) and the beetle of *L. gracilis* (Fig. 59). I have a specimen of *L. convexicollis*, Horn, with the label "B. C." It may be known from *L. Mozardi* by the larger size (.47 in.) and the entirely black under surface.

DACNE, Latr.

A small, black insect (*Dacne 4-maculata*, Say,) .12 in. long, the clypeus and a humeral and apical spot on each elytron reddish or yellowish, represents this genus. At times the apical spots may extend over the entire tip of the elytra.

MEGALODACNE, Crotch.

Two very fine species of this genus are found in Canada. They are large insects with black thorax, the elytra banded with black and orange-red in a manner recalling certain carrion beetles (*Necrophorus*), and are found in fungi. The two Canadian species resemble each other very closely, differing thus :—

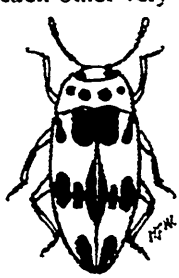

Fig. 61.

Smaller (.50–.60 in.). Elytra finely seriately punctate, thorax shorter.....*fasciata*, Fabr.
Larger (.64–.80 in.). Elytra not punctate (Fig. 60).....*heros*, Say.

Fig 60.

ISCHYRUS, Lac.

I. quadripunctatus, Oliv. (Fig. 61), is about .30 in. long, black beneath, the side margins of thorax and abdomen marked with yellow or reddish. Above it is fulvous, the head black, the thorax with a series of four transverse spots across the middle, the elytra with black bands and spots as shown in the figure.

MYCOTRETUS, Lac.

Small red and black insects found on fungi or dead wood. Two species with one varietal form occur here and may be known thus :—

Thorax black, scutellum and elytra red (.16–.18 in.).*sanguinipennis*, Say.
Thorax and scutellum black, elytra bicolored.
Apical third of elytra obliquely black. (.14 to .16 in.)..*pulchra*, Say.
Black mark on elytra, angulate anteriorly.....*v. dimidiata*, Lac.

TRITOMA, Fabr.

Some of the species of this genus are very common in fungi during the summer and autumn; they resort to such places for the purpose of laying eggs which produce the somewhat maggot-like larvæ previously described. The beetles may be separated by the appended table :—

A. Entirely black above. (.16–.20 in.)..... ..... *unicolor*, Say.

AA. Above bicolored.

b. Elytra with humeral reddish spot. (.10–.16 in.)..*humeralis*, Fabr.

bb. Elytra with broad, central, reddish-yellow band. (.18–.20 in.) .....*festiva*, Lac.

bbb. Elytra unicolorous, black or bluish, thorax reddish.

c. Body beneath reddish.

Antennæ entirely black, elytral interstices obsoletely punctulate. (.22 in.)..... .....*macra*, Lec.

Antennæ black, red at base, elytral interstices very evidently though sparsely punctate. (.18–.20 in.).....*thoracica*, Say.

cc. Body beneath black. (.12–.16 in.)..... .... *flavicollis*, Lac.

Fig. 62.

We give figures of *T. humeralis* (Fig. 62, the larva, and Fig. 63, the beetle). The last four species are of more elongate form.

Fig. 63.

The chief papers bearing on the North American species are as follows :—

1853. Leconte, J. L. Synopsis of the Endomychidæ of the United States. Proc. Acad. Nat. Sci. Phil., VI., pp. 357–360.

1854. Leconte, J. L. Synopsis of the Erotylidæ of the United States. Proc. Acad. Nat. Sci. Phil., VII., pp. 158–163.

1858. Gerstæcker, A. Monographie der Endomychiden, Leipzig, pp. xiv. + 433, 3 plates.

1873. Crotch, G. R. Synopsis of the Erotylidæ of Boreal America. Trans. Am. Ento. Soc., IV., pp. 349–358.

1873. Crotch, G. R. Synopsis of the Endomychidæ of the United States. Trans. Am. Ento. Soc., IV., pp. 359–363.

A NEW ATTID SPIDER FROM JAMAICA.

BY T. D. A. COCKERELL, N. M. AGR. EXP. STA.

Saitis Annæ, n. sp.—Length 3½ mm.; width of abdomen, 1 mm. Cephalothorax, about as long as, but perhaps not quite so broad as abdomen. Abdomen broadly oval. Cephalothorax, about 1½ times as long as broad; broadest between 2nd and 3rd rows of eyes. General colour grayish brown, not metallic.

Cephalothorax with a broad black V, the truncate base of which corresponds to the base of the cephalothorax; and the arms extend forwards and outwards to the border between the latitude of the 2nd and 3rd rows of eyes.

Abdomen above with a black V-shaped mark on its posterior half, pointing towards its tip. In the V-mark of the cephalothorax, the arms become attenuate; but in this abdominal V-mark, the base is attenuate and the arms become greatly broadend towards their truncate ends. This V is bordered posteriorly on each side by a conspicuous patch of white hairs, and at the truncate ends of the arms, in striking contrast with the black, is on each side a white (or dirty white) patch, surrounded in front by a dark ring. On the side of the abdomen, below this patch, starts a whitish band, running forwards. Between the arms of the V are obscure markings which faintly indicate the arrow-head marks of such species as *Neon Nellii*, *Zygoballus Bettini* and *Hasarius Hoyi*. On the anterior half of the abdomen, the subdorsal region presents a band, bordered inwardly (dorsad) by whitish marks.

Legs ringed at intervals with blackish.

The terminal portion of the palpi is red-brown, becoming black at the end, but the middle portion bears a tuft of very conspicuous shining white hairs, which in certain lights appear yellowish-silvery. The front of the cephalothorax, below the eyes, also bears some silvery hairs; and there are whitish rings round the anterior eyes.

Middle eyes almost touching, outer eyes of first row almost touching them. Diameter of outer eyes about half that of middle eyes. Eyes of second row very small.

Sternum black, oval. Coxæ shining, translucent, hind coxæ close together.

Hab.: Manchester Cottage, Kingston, Jamaica, Feb. 26, 1893, among dead leaves. The type specimen is with Mr. Peckham.

I described this species when it was found, about 18 months ago, and named it after my wife. The description has remained in MS., as I expected that Mr. Peckham would publish the species, but he now states that he will not be writing on the group to which it belongs at present, and advises me to proceed.

This appears to be the third Attid recorded from Jamaica (the other two being *Anoka Peckhamii*, Ckll., and *Menemerus melanognathus*, Lucas, of which the former is endemic, but the latter cosmopolitan in the tropics), but possibly a dozen more have been collected, and will be described in course of time by Mr. and Mrs. Peckham.

P. S. to p. 284. Although it has nothing to do with the present subject, it will be well to mention here that the food-plant of *Tachardia cornuta*, Ckll., proves to be *Parthenium incanum*, H. B. K.

ENTOMOLOGICAL NOTES.

BY PROF. C. H. FERNALD, AMHERST, MASS.

In the CANADIAN ENTOMOLOGIST, Vol. 26, page 184, the Rev. Thomas W. Fyles described a moth as new, under the name of "*Botys urticaloides*." Mr. Fyles has been so kind as to lend me his type for examination, and it proves to be identical with *Metrea ostreonalis*, described by Grote in "Papilio," Vol. 2, p. 73, where he states that the type was taken by Mr. L W. Goodell, in Amherst, Mass., and that he also had a New York specimen in his collection. I have seen the Grote specimen, and also another one taken in Bangor, Maine, by Mr. Fred. Eddy. The habitat of the specimen in the National Museum, mentioned by Mr. Fyles, is not given, and perhaps is not known. It is, undoubtedly, a rare species at present, as these are all that are known to me.

The genus Botys (not Botis, as Swainson and some others have written it) was established by Latreille, in 1805, in his Histoire Naturelle des Crustaces et Insectes, Tome 14, page 230, under which he placed *purpuraria* and *potamogata*. The former of these species is a geometrid moth, and has been placed in Huebner's genus *Lythria*. The second species, *potamogata*, is not the species of Linneus by that name, but *stagnata*, Don.

In 1802, Schrank established the genus *Nymphula* in his Fauna Boica, with *potamogalis* as the type, but this has also proven to be *stagnata*, Don; therefore, the genus *Botys* of Latreille, if *purpuraria* be taken as the type, must be referred to the Geometridæ; but if *stagnata*, Don., be taken as the type, it must fall as a synonym of *Nymphula*, Schr. In either case we have no right to use it as a genus of the Pyralids, and for this reason I did not use it in Smith's List of the Lepidoptera of Boreal America, nor have Meyrick and Ragonot used it in their late works on the Pyralids.

LIST OF THE DRAGONFLIES OF CORUNNA, MICHIGAN.

BY D. S. KELLICOTT, COLUMBUS, O.

Corunna is the capital of Shiawassee County, in the central part of the Lower Peninsula, and approximately in 43° north latitude. The town is situated on the Shiawassee River, which traverses the county and enters the Saginaw, as a chief branch. At present there are very few permanent small streams and ponds in the vicinity, but a mill-dam across the river at the town causes sluggish, deeper water for a mile or more. This stretch of water is locally known as the "Pond." It abounds in aquatic life, thus affording the most favourable conditions for the nymphs of the "snake feeders." The collections on which this list is based were made about this "pond," and for a mile along the river below. The time of collection extends from June to September, and I feel confident that few species remain undiscovered. The list, therefore, fairly represents the Odonata of a favourable inland locality in Central Michigan.

It has occurred to me, again and again, how restricted many species are in their flight. In consequence, an abundant species of a given district may be wholly overlooked by the collector, if its special habitat is not discovered. For example, certain species occur almost exclusively at the "pond," others by the river, whilst still others are equally common in either situation. Thus, the emerald-eyed *Macromia Illinoiensis* is numerous about the rapids of the river, but is seldom seen at the "pond," whilst *Libellula incesta* is common at the latter, and as rarely seen by the former. Other illustrations will be given in notes under the several species.

The systematic arrangement followed is that of Philip P. Calvert, in the "*Catalogue of the Odonata of Philadelphia.*" The specimens are in the collection of the Ohio State University.

CALOPTERYX, Leach.

Maculata, Beauv.—Common in former years along the river and small streams. It is now seldom seen, owing, I think, to the draining of morasses and ponds, and the consequent drying up in summer of the meadow brooks.

Apicalis, Burm.—Rare, about the river.

HETÆRINA, Hagen.

Americana, Fabr.—Exceedingly abundant in August, by the river, especially where it flows rapidly over beds of bowlders and the margins are overhung by the long, coarse tussock grasses and the silvery sprays of the willow.

LESTES, Leach.

Unguiculata, Hagen.—Not uncommon.

Uncata, Kirby.—Common.

Disjuncta, Selys.—Less common than the preceding.

Rectangularis, Say.—Abundant.

Vigilax, Selys.—Fairly common.

Inequalis, Walsh.—Rare.

The first four species occur among the herbage of low lands and meadows, often long distances from the streams; the last two, on the other hand, are seldom seen away from the lily pads or bordering flags and rushes.

ARGIA, Rambr.

Putrida, Hagen.—Abundant.

Violacea, Hagen.—Abundant.

Tibialis, Rambr.—Not common.

Apicalis, Say.—Not common.

NEHALENNIA, Selys.

Posita, Hagen.—Not uncommon.

ENALLAGMA, Charp.

Civile, Hagen.—Few seen first week in August.

Ebrinus, Hagen.—Rare.

Divagans, Selys.—Common on the pond, resting on floating aquatics.

Exsulans, Hagen.—Abundant.

Signatum, Hagen.—Common. The last week in August it was the only abundant species of the genus.

ISCHNURA, Charp.

Verticalis, Say.—Exceeding abundant. The orange female is common.

HAGENIUS, Selys.

Brevistylus, Selys.—Common, July and August.

GOMPHUS.

No species of the genus has been taken in the locality; *G. vastus*, *exilis*, *fraternus* and *villosipes* are known to occur a few miles south.

DROMOGOMPHUS, Selys.

Spinosus, Selys.—Common in July; disappears about the 1st of August.

EPIÆSCHNA, Selys.

Heros, Fabr.—Not common.

FONSCOLOMBIA, Selys.

Vinosa, Say.—Rare. One taken July 31.

ÆSCHNA, Fabr.

Constricta, Say.—Abundant.

Clepsydra, Say.—Much less common than *Constricta*.

ANAX, Leach.

Junius, Dury.—Abundant.

MACROMIA, Rambur.

Illinoiensis, Walsh.—Common along the river and in open groves at considerable distances from the water.

EPICORDULIA, Selys.

Princeps, Hagen.—Common.

LIBELLULA, Linné.

Basalis, Say.—Very abundant.

Incesta, Hagen.—Common about the "pond" in July.

Quadrimaculata, Linné.—Rare.

Semifasciata, Burm.—Rare.

Pulchella, Drury.—Abundant.

PLATHEMIS, Hagen.

Trimaculata, De Geer.—Common.

CELITHEMIS, Hagen.

Eponina, Drury.—Not common.

LEUCORHINIA, Brittinger.

Intacta, Hagen.—Common.

DIPLAX, Charp.

Rubicundula, Say.—Very abundant.

Obtrusa, Hagen.—More abundant than the preceding.

Semicincta, Say.—Not common.

Vicina, Hagen.—Abundant.

PERITHEMIS, Hagen.

Domitia, Drury.—Not common about the "pond."

MESOTHEMIS, Hagen.

Simplicicollis, Say.—Abundant.

PACHYDIPLAX, Brauer.

Longipennis, Burm.—Abundant.

NOTES ON ALYPIA MARIPOSA.

BY JOHN B. LEMBERT, YOSEMITE, CAL.

Food plant.—*Clarkia elegans*, etc.

Egg.—Shaped like a white table squash without the scollops; usually laid on the flower buds, the young larva feeding inside on the parts of the flower; hatched in eight to eleven days.

First Stage.—Head bilobed, glossy black; body smooth, with a few fine bristles, when emerging dark on the upper side, which shade disappears, leaving the body a pale amber in a few hours; from the third segment the body slopes at an angle of forty-five degrees to the anal claws, which gives the third segment a humped appearance; the thoracic legs, six in number, are black; eight abdominal legs and two anal claws, the latter light with dark lines surrounding them. Length, 2 mm. This stage lasted three days, with one day more for moulting.

Second Stage.—Head bilobed, with a few bristles; colour black and glossy, with light marks appearing about the head; the body darker amber coloured, with pointed tubercles, each having a light-coloured bristle protruding from it; the thoracic legs black; legs and claws as in former stage. This stage lasted three days, with one more for moulting. The larva looped in both stages when walking, but ceased to do so in the next stage. Length, 3 mm.

Third Stage.—Head as before; a white, bell-shaped spot in the centre, with two narrow short bands on each side of the head, one over the mouth parts; a white line down the back, below this a dull dark band on each side, below these a white band, then a dark band running along the legs from the head to the anal claws; tubercles black, round and pointed at the tip, bristle light and fine, becoming longer in each stage; thoracic legs, abdominal legs and claws black. This stage lasted three days, with one day more for moulting. Length, 5 mm.

Fourth Stage.—Head bilobed, the white band joining over the centre of head above the bell-shaped spot; the rest of the body as in the former stage. This stage lasted three days, with thirty hours in moulting. Length, 9 mm.

Fifth Stage.—Head as before, the white band broader, more distinct and longer than the others in proportion; the first thoracic segment white with eight black round dots near the neck and a black narrow band back of the white, becoming yellow on the top of the segment, enough to cover four of the black dots, the body markings increasing in breadth, the white

bands on each side covering two longitudinal rows of tubercles; in the upper row a minute dot appeared in front of each tubercle, and two buff-coloured spots appeared in two upper dark longitudinal bands on the third segment, one on each side of the white line. Thoracic legs black, abdominal legs black, shielded on the outside; the claws have white and buff-coloured markings; the abdomen from the last pair of thoracic legs down the ventral surface to the claws has triangular joined markings; between the claws and abdominal legs are two lateral rows of short bristled tubercles, and between the abdominal and thoracical legs are two more rows. This stage lasted eight days, and three and three-quarters more for moulting. Length, 13 mm.

Sixth Stage.—Head and first segment as before; instead of dark longitudinal bands, irregular ovate, reniform and heart-shaped markings appeared on and between each segment; there were three wedge-shaped markings, one of them joining the other markings, altering their shape somewhat, with a wine-coloured surrounding about all these markings, there being two such rows on each side of the white dorsal band, a black line in the suture in front of third last segment and one in the suture above the claws, which are now of an amber colour with firm black line on the outer rims of the joints, the abdominal legs similarly marked and coloured, the posterior thickly marked with buff and white; instead of a dark band above the legs, there were three dots on each segment and above the legs some were single and others joined to resemble a heart form. The predominating colour white as the larva matured. This stage lasted seven and a-half days. Length in twenty-four hours after moulting, 24 mm.; when mature, 39 mm. At noon of the eighth day the larva ceased feeding, after evacuating all the solid food. Towards sundown it picked out a place to gnaw out a hibernaculum in rotten wood; finding its mandibles too tender for the work, the larva crawled up on the cork of the glass jar and rested for the night; about 8 a.m. it came down again on the wood to the place it had selected, and began steadily to work with its mandibles to excavate a round hole, and as long as it could the powdered material was raked out with its thoracic legs; afterwards, as the hole grew deeper, the powdered rotten wood was lifted up with the back of its head and neck by bending these in a hook form; by 1 p. m. the hole was complete; the larva then turned round and commenced to gnaw around the mouth of its hibernaculum, raking some inside, and then afterwards it formed a rim until it was just able to draw in its head, then the powdered wood was

lifted up, and with a mucilagenous matter the wood was mixed and cemented, and the mouth of the hibernaculum was sealed up by 2 p. m. As long as the seal was soft, the larva's efforts could be plainly seen keeping it up with its mouth parts. On the third and fifth day I found the larva was in the same condition as when it entered. On the seventh day I opened the hibernaculum further back—the larva had cemented the other places—and found that it was a larva still. On the tenth day, however, the larva had pupated.

Pupa.—Colour reddish-brown over the wing parts and abdomen ; over the head parts and upper and lower sides of the thoracic region, of a darker shade. The proboscis case prominent; the neuration of the wings plainly visible. On each side of the abdomen are seven black round and raised spots, which are glossy white, the rest is finely granulated. Cremastral spines and a flattened area at the end of the abdomen, black. Length, 15 mm.

NOTES ON QUEBEC COLEOPTERA.

BY A. W. HANHAM, WINNIPEG, MAN.

These notes relate chiefly to species taken in the vicinity of Quebec City, all to species taken in the Province of Quebec during 1892–1893. I am greatly indebted to Mr. W. H. Harrington for the identification of many of the following :

Cicindela longilabris, Say. June 5 and 8. Fort woods, Levis.

Cicindela limbalis, Kl. (Two.) Aug. 28. Near Lake Beauport.

Cicindela hirticollis, Say. (One.) Aug. 28. Near Lake Beauport.

(*C. repanda*, *C. purpurea* and *C. vulgaris*, very abundant on this date.)

Cychrus Lecontei, Dej. Spring and Fall, abundant under dead leaves in damp woods. St. Romauld's, May 8, seven captured on wooded hill side. Gaspé Basin, May 14, a pair.

Carabus serratus, Say. Aug. 22. St. Joseph's de Levis. A pair under stones on hill side.

Blethisa Julii, Lec. May 10. One specimen in road near Fort No. 1, Levis. Aug. 13. Same locality, four, dug out of earth under thick, dry moss, edge of woods. Associated with this beetle were numbers of *Platynus cupripennis*, Say.

Notiophilus sibiricus, Mots? Aug. 13; Sept. 10, 17, 24; Oct. 30, etc. Isle d'Orleans. Under dead leaves, damp spots in woods; generally in pairs.

Trechus rubens, Fab. Oct. 15. Isle d'Orleans. A pair in dead leaves, edge of woods.

Pterostichus Luczotii, Dej. May 14. Gaspé. Several.

Cymindis cribricollis, Dej. May 15. Gaspé. Common at Quebec.

Brachylobus lithophilus, Say. (One.) Aug. 13. Fort woods, Levis.

Bradycellus cognatus, Gyll. (One.) May 20. Gaspé.

Quedius molochinus, Grav. May 8. St. Romauld's. Under dead leaves, wooded hill side.

Staphylinus fossator, Grav. (One). Aug. 10. Isle d'Orleans.

Choleva clavicornis, Lec. May 27. Isle d'Orleans. A few specimens in the shell of a dead *Mesodon dentiferus*, Birm.

Adalia frigida, Schn. Fall. Isle d'Orleans. One in dead leaves.

Cytilus trivittatus, Melsh. May 15. Gaspé.

Byrrhus americanus, Lec. June 8. Several in ruts of sandy road through open woods.

Campylus denticornis, Kirby. June 11. A small specimen, by beating, woods near St. David's.

Oestodes tenuicollis, Rand. One or two early in the year in the city.

Oestodes, sp. (perhaps *puncticollis*, Horn.) (One.) June 25. By beating, woods near St. David's.

Corymbites resplendens, Esch. June 11th. One specimen, living, under horse droppings on sandy road through woods, near St. David's.

Corymbites æripennis, Kirby. (One.) May 13. Isle d'Orleans. In dead leaves. Sept. 3. A pair under log near St. Joseph's.

Corymbites spinosus, Lec. (One.) June 11. By beating, woods near St. David's.

Corymbites triundulatus, Rand. May 18; June 11, etc. Fairly common.

Eros coccinatus, Say. (One.) June 11. By beating, woods near St. David's.

Geotrupes Egeriei, Germ. Isle d'Orleans. Aug. 30. Burying around fungus. Sept. 10, 24, and Oct. 1. Very abundant, crawling across road through woods, or resting in the sun.

Geotrupes Blackburnii. Fab.? Aug. 10. Isle d'Orleans. Several in manure.

Hoplia trifasciata, Say. June 11. Plentiful on blossom, woods near St. David's.

Rhagium lineatum, Oliv. June 11. One specimen off pine stump, same locality.

Anthophilax malachiticus, Hald. Isle d'Orleans. A dead specimen picked up in woods, May 26.

Achmæops pratensis, Laich. June 11, etc. In great variety and abundance, by beating off blossom.

Leptura zebra, Oliv. (One.) July 16. By beating, woods near St. David's.

Leptura chrysocoma, Kirby. June 25; July 9, 13, etc. This handsome "long-horn" is often to be met with on the flowers of *Chrysanthemum leucanthemum*.

Leptura proxima, Say. July 16. By beating, woods near St. David's.

Leptura vibex, Newm. June 11. A few by beating, woods near St. David's.

Saperda cretata, Newm. Aug. 6. Isle d'Orleans. One specimen off thorn.

Adimonia rufosanguinea, Say. May 18. Gomin swamp. Very common, by beating off blue-berry blossom.

Chelymorpha argus, Licht. Conspicuous, hibernating in dead leaves spring and fall.

Phellopsis obcordata, Kirby. May 8. St. Romauld's. Seven taken from under bark of rotten stump. May 18. One example at Gaspé Basin.

Cephaloon lepturoides, Newm. June 11. Abundant by beating off blossom of wild black cherry, woods near St. David's.

Schizotus cervicalis, Newm. (One.) June 11.

Pomphopœa Sayi, Lec. June 11. Woods near St. David's. Several off blossoms of wild black cherry (*Prunus serotina*, Ehrhart.) June 12. One on wing, Isle d'Orleans.

Hormorus undulatus, Uhler. June 11. Woods near St. David's. One specimen off blossom of choke-berry (*Pirus arbutifolia*).

Otiorhynchus rugifrons, Gyll. May 20. Gaspé. Hibernating.

Phytonomus nigrirostris, Fab. (One.) May 18. Gomin swamp Beating off blue-berry blossom. Also found hibernating.

Macrops sparsus, Say. May 20. Gaspé. Hibernating.

ON THE GEOGRAPHICAL DISTRIBUTION OF SOME COMMON SCALE INSECTS.

BY L. O. HOWARD, WASHINGTON, D. C.

Owing to the extensive commerce in nursery stock and fruits, which has been carried on all over the world for many years, it has become a matter of very considerable difficulty to form any adequate idea of the original Coccid fauna of any given part of the globe. Restriction of the importation of diseased nursery stock and fruit is new, and for years plants and fruit, carrying thousands of scale insects, have been landed almost daily at most large seaports. It is, however, not too late to ascertain many facts of importance, and since the apparent confusion is growing worse day by day, it becomes necessary to make an immediate endeavour not only to ascertain the original home of all species of economic importance, but to place on record all the facts which can be ascertained regarding their spread down to the present time. Many injurious species are still more or less restricted, and the necessity for quarantine laws is as great as it has ever been. If horticulturists will not demand, for their own personal good, a clean bill of health from dealers from whom they purchase plants, it behoves local and State governments to pass such regulations as will effectually prohibit the introduction of new insect enemies, particularly of this class of scale insects.

To point this moral to which I have more particularly referred in No. 3 of Vol. VII. of Insect Life, we have only to glance at the history of several prominent orchard scales, now more or less well-known to most fruit growers.

The Oyster-shell Bark-louse of the Apple (*Mytilaspis pomorum*, Bouché).—This widespread species, now found practically all over the world, so far as our information goes, was apparently originally a European species, at least it was known to European entomologists in the early part of the eighteenth century. At the present day it occurs abundantly throughout the United States and Canada, with the exception of the far south-west. It was imported into the New England colonies at some time during the last century. The first American account of the insect was written by Mr. Enoch Perley, of Bridgeport, Maine, in 1794. By 1835 it had spread through New England; in 1854 it was already abundant throughout New York, Pennsylvania and Ohio, and parts of

Wisconsin, but at that date had not penetrated farther west than the districts bordering upon Lake Michigan. It reached northern Illinois about 1852, and then spread gradually westward and southward, reaching the Mississippi River in the early '60's. In 1868 it had invaded Iowa and Northern Missouri; in 1872 it had extended south from Missouri into Mississippi and had made sporadic appearances in Georgia, towards which point it had, in the meantime, been spreading down the Atlantic coast. In 1872 it had also made its appearance in Eastern Kansas, and since that date it has appeared in Washington, Oregon and British Columbia, south to some extent in California, and in several of the fruit-growing regions of Colorado and Nebraska. At the present time it is seen in Nebraska, and is not known, so far as our information goes, in Louisiana and New Mexico.

Can Canadian entomologists trace its spread through the Dominion?

The Scurfy Bark louse (*Chionaspis furfurus*, Fitch).—Unlike the preceding species, the scurfy bark-louse is a native of America. It occurs from Maine to Nebraska, through all the northern States, and south nearly to the Gulf of Mexico. Recently it has been imported into England on currant bushes from America. It is a hardy species, but coming into more or less direct competition with the oyster-shell bark-louse, it has, in many localities, been supplanted by the latter. Does this insect occur abundantly in Canada, and what is its Canadian distribution?

The Greedy Scale (*Aspidiotus camelliæ*, Sign.).—From our present information, it seems probable that this insect is indigenous to Southern Europe. It is known also in New Zealand, Australia and the Sandwich Islands, into which countries it was probably imported directly or indirectly from South Europe. In the United States it was first found in California, where it was probably introduced from Australia, and where it was first known in the vicinity of Santa Barbara, from which point it has spread north to Washington, and south to Mexico. From California it has been introduced into New Mexico. It is also found occasionally on hot-house plants in the north-eastern States. and rarely out of doors in Florida. In the latter State it has been found upon one food-plant only, and it is impossible to surmise whether this is the result of a direct importation from California or from Europe.

The so-called English Walnut Scale (*Aspidiotus juglans-regiæ*, Comstock).—For all we know to the contrary, this species is indigenous to the United States. It occurs in California, New Mexico, Florida, Texas,

Louisiana, Mississippi, District of Columbia and New York. In its more northern localities it is scarce. In the south, where attention has only recently been drawn to its injuries, it multiplies rapidly, and becomes a serious enemy to the peach and pear.

The New Peach Scale (*Diaspis lanatus*, Morgan & Cockerell).—This species seems to be indigenous to the West Indies, where it has been found in Jamaica, Trinidad, Martinique, Barbadoes, Santo Domingo and Grand Cayman. In the West Indies it occurs upon a great variety of food-plants. In Ceylon it has been found to affect cultivated geranium plants. In the United States, it is now known in one locality in Florida, another in Georgia, and in the District of Columbia, doing very considerable damage in each of these localities to peach trees. Its introduction from the West Indies into the United States is apparently rather recent.

The San José or Pernicious Scale (*Aspidiotus perniciosus*, Comstock).—This insect is known positively to occur in Australia, Chili and Hawaii, outside of the United States. In the United States it made its first appearance rather more than twenty years ago in the vicinity of San José, Cal. It was probably introduced at that point through importations of fruit trees and shrubs made by Mr. James Lick. Its original home is not yet known. The supposition that it is a Chilian insect, originally made by Mr. Alexander Crow, seems negatived by recent evidence, and it is probable that it reached Chili from the United States. It spread through California, reaching British Columbia within the last two years, and spreading eastward, it reached Idaho on the north, and Nevada, Arizona and New Mexico on the south, also within the last few years. A chance importation of California nursery stock has also established it at one point in Missouri, one in Florida, one in Virginia, one in Indiana, three in Maryland, two in Pennsylvania, one in New York State proper, and several in Long Island, and many in New Jersey.

The Red Scale of Florida (*Aspidiotus ficus*, Ashmead).—This scale is probably of West Indian or South American origin. For many years in the United States it was known only in the State of Florida, where it was introduced first into an orange grove near Orlando upon a sour orange tree brought from Havana, Cuba. Investigations made by Comstock in 1880 showed that it was an abundant species in the public gardens of the City of Havana. From the introduction at Orlando, the species spread rapidly through the orange-growing regions of Florida. Until recently it was supposed to have been introduced into Louisiana during the New

Orleans cotton exposition of 1884–5, but late investigations by Professor Morgan show that it is most prevalent in an orchard into which citrus plants from Brazil have been introduced, and that from this nursery nearly all the orange plants in the City of New Orleans have been sent out. This indicates a South American introduction into Louisiana independent of the West Indian introduction into Florida. Late advices show that it has established itself at Galveston Island, Texas. We have also seen specimens from Tampico, Mexico.

STAPHYLINUS CÆSAREUS, CEDERH., AND S. ERYTHROPTERUS, LINN., IN CANADA.

BY W. HAGUE HARRINGTON, F. R. S. C., OTTAWA.

Staphylinus erythropterus, Linn. This beetle has been but once recorded in America, the specimen being noted from Detroit. I have now to record it as inhabiting this section of Canada, and, at the same time, to correct an error which has been put in circulation through my agency. When Dr. LeConte visited me in July, 1883, he named a beetle for me as *S. cæsareus*, Cederh. (*ornaticauda*, Lec.), remarking that it has only once been found in America. The species was, therefore, inserted in my list of Ottawa Coleoptera (Ott. Field. Nat. Club, Trans., vii., p. 191), and in my Additions to Canadian Lists of Coleoptera (Can. Ent. xvi., p. 46). These records are quoted by Dr. Hamilton in his catalogue of the Coleoptera common to North America, Northern Asia and Europe. The capture of examples of *S. badius* (not on my list) proved to me that a slip had been made by Dr. LeConte (his examination of my collection having necessarily been hurried), and that the insect labelled *cæsareus* was only really *badipes*. I, therefore, determined to strike the name off my list, and to take the first opportunity of correcting the error, but soon after, by a curious coincidence, I found (Apl. 23rd, 1892) under a stone at the margin of a swamp a Staphylinus, which seemed to be a genuine *cæsareus*. My determination was made by Dr. Horn's monograph of the genus (Trans. Am. Ent. Soc. vii., p. 191), in which, following the description of the species, he says :—"Easily known from every other species at present occurring in our fauna, by the spots of golden pubescence at the sides of ventral segments above and beneath." On informing Dr. Hamilton of my capture, he kindly sent to me a *cæsareus* from Europe for comparison. This was much larger, and had the elytra more pubescent, and the abdomen more coarsely sculptured and hairy, giving the beetle a coarse

facies. Still, the difference was not nearly so marked as the variations found in many of our beetles, and, relying upon the golden spots upon the abdomen as the test of the species, I remained of opinion that my insect belonged to it.

On October 27th last, Mr. Fletcher and I made a hunt in Dow's Swamp (near the Experimental Farm), on the borders of which I had found the specimen in 1892, and while digging around the roots of trees for such beetles as might have gone into winter quarters, it was my good fortune to obtain two specimens, and around the same stump were taken about a dozen examples of *badipes*. Both specimens when alive showed beautifully the golden spots on the abdomen, but when they were taken out of the bottle of sawdust, in which they were killed, it was found that the spots had mostly been rubbed off. With this new material I was anxious to definitely settle the question of species, and accordingly sent one to Dr. Hamilton, who replied that:—"The insect you sent is a good example of *S. erythropterus*. I have five examples of both *erythropterus* and *cæsareus* from Sweden, and there is no difficulty whatever in the determination by comparison. *Cæsareus* is much larger, and has the thorax and head much more coarsely punctured. The golden abdominal spots are about the same in both, but seemingly more readily lost in *erythropterus*, one half of mine having them about as in yours."

An early fall of snow prevented us from searching for more material until to-day (Nov. 17th), when I spent about two hours carefully searching in the swamp, which was very wet, and more or less covered with snow, and was rewarded by obtaining one specimen, also at the root of a tree under moss, etc., four or five inches beneath the surface.

The American record for *S. erythropterus* will, therefore, rest on the specimen from Detroit, U. S., and my four specimens from Ottawa, Can., the species being apparently able to perpetuate itself in this country, and inhabiting swamps.

The record for *S. cæsareus* will rest on Mr. Ulke's example taken in Canada (locality not quoted), and possibly that specimen, if re-examined, might prove to belong to the preceding species.

I regret that Dr. Hamilton's new edition of his catalogue is printed, and that, therefore, the records therein cannot be amended.

BOOK NOTICES.

THE BUTTERFLY HUNTERS IN THE CARIBBEES, by Dr. Eugene Murray-Aaron. New York, Charles Scribner's Sons, 1894. Pp. 269.

It is a novel event in literature to have a boy's book of adventure written by an Entomologist; we were, therefore, prepared to peruse with interest the volume which Dr. Murray-Aaron has just published. Belonging, perhaps, to those whom he characterizes as the "younger old people," we were charmed beyond measure with the book, and read it through from beginning to end with as much avidity and enjoyment as any adventure-loving school-boy. It relates in pleasant, easy style, the expedition made by a couple of boys, under the guidance of their naturalist friend, "the Doctor." During the early winter months they visited several of the islands of the Bahamas, and then made a more venturesome excursion across Haiti and into Santo Domingo, winding up with a flying visit to Jamaica. Their object was to collect butterflies especially, and at the same time to gather all the animal and vegetable curiosities that they conveniently could. For an account of their success and the various "dodges" they had recourse to, especially when in pursuit of *Papilio Homerus*, we must refer the reader to the book itself. It is not, however, a mere record of the doings of collectors; a great deal of interesting information is given regarding the condition of the negro races in their barbarism where left to themselves, and their happy condition when under British rule. Much pleasant instruction may also be gained regarding the geography, scenery and government of the various islands that were visited. If any paterfamilias is looking for a book to put in his boy's Christmas stocking, he cannot do better than purchase a copy of this. If his boy has any taste for Natural History, it will delight him beyond measure. The book is handsomely printed and bound, and illustrated with several well-executed plates. The entomologist may be disappointed at the absence of lists, or names of species, and pictures of butterflies; but the book is not meant for a scientific treatise, though its statements may be relied upon as strictly accurate, the author being well-known as the Editor for a time of *Papilio*, and Curator of the American Entomological Society, at Philadelphia, as well as a valued contributor to this magazine.

THE BUTTERFLIES OF NORTH AMERICA, by W. H. Edwards. Third Series, Part XV.

This part, like its immediate predecessor, is of especial interest to Canadian Entomologists, as it is chiefly devoted to the illustration of some of our most interesting species of butterflies, and more than maintains the very high standard of excellence to which Mr. Edwards has accustomed us. The first plate is devoted to two rare species of Argynnis from the Rocky Mountains of Alberta, the first being *Astarte*, for so many years practically unknown, save to those having access to the type in the British Museum, the locality whence it was received being even in doubt. True, it had been figured as to its upper side, in Doubleday, Hewitson & Westwood's great work "The Genera of Diurnal Lepidoptera," but that was not sufficient to identify it, so when it was re-discoveerd by Mr. Thomas E. Bean on the mountain summits near Laggan, it was very naturally re-described, or rather re-named, by Mr. Edwards, as *Argynnis Victoria*. The species is quite unlike any other North American species of this genus, and Mr. Bean's notes on its habits are very interesting. There is a slight clerical error in the reference to the plate in Doubleday's work, as it should be 23 instead of 53, as given by Mr. Edwards at the head of his article. The second species treated of is *A. Alberta*, a most distinct and interesting species belonging to the *Chariclea* sub-group, which also was discovered by Mr. Bean on the mountains near Laggan, in 1888. The sexes differ considerably in colour, and so far as known the imago only appears every second season, being found in the even numbered years.

The second plate is devoted chiefly to another butterfly discovered by Mr. Bean at Laggan, a species of *Chionobas*, which Mr. Edwards regards as identical with *C. Subhyalina*, Curtis, described in the Appendix to Ross's Narrative of his Second Voyage, the solitary type of which was taken in Boothia Felix. This identification, however, not being altogether satisfactory, and the species having been described by Mr. Elwes in the Trans. Ent. Soc., London, as *C. Beanii*, it will doubtless be known by the latter name.

In connection with this, it may be mentioned that the specimens in the British Museum collection, under the name *Subhyalina* are different from the form from Laggan, and seem to agree more closely with Curtis's description. A specimen from Hudson's Straits similar to those

in the B. M. is also in my collection. The other species figured on this plate is *Chionobas Norna*, well-known in Scandinavia, but of which Mr. Edwards has received several female examples from Alaska.

The male from Finland figured on the plate is certainly very different from the figure of that sex in Boisduval's "Icones," and the male is assuredly sometimes of the same type as the female, as shown by specimens from Norway in my collection.

The third plate of this magnificent part is an exceedingly fine one, crowded with figures illustrating *C. Semidea* from the White Mountains, Pike's Peak and Hudson's Strait.

The egg, young larva, larva after 1st moult and mature, and the chrysalis are fully illustrated.

The letter-press accompanying this plate extends to 11 pages, and is very full and interesting, though the author has apparently overlooked certain facts of interest, especially in connection with the discovery of an egg parasite of the genus Telonomus, as published in the Report of the Ent. Soc., Ontario, for 1892, pp. 32-35.

It is greatly to be hoped that the talented author will be able to carry on the third series of his grand work to twenty parts, as suggested in his "advertisement" to the current volume. H. H. LYMAN.

NORTH AMERICAN HEMIPTERA, by E. P. Van Duzee.

We desire to call the attention of those of our readers who are interested in this order to some recent publications by Mr. Van Duzee, viz., "A List of the Hemiptera of Buffalo and vicinity," and "Descriptions of some new North American Homopterous Insects," which were published in Vol. V., Part 4, of the Bulletin of the Buffalo Society of Natural Sciences; and "A Catalogue of the described Jassoidea of North America," which appeared in the Transactions of the American Entomological Society, Vol. XXI., pp. 245–317 (Philadelphia, July–September, 1894). These papers, which betoken much industry on the part of their able and enthusiastic author, are of especial value, inasmuch as so little work of the kind has been done in most of the families of the order that are found in North America.

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