

ART. XII. NOVA SCOTIAN COLEOPTERA. PART I. BY J. MATTHEW JONES, F. L. S.

To form a complete list of any particular order of insects inhabiting a country of some extent, requires the united labour of divers entomologists, and that continuous for several years; but in a new, and I may almost say, untouched field * like the province of Nova Scotia presents, the isolated entomologist can look forward to nothing better than a meagre addition from time to time to the small collection he is able to form. It is to be hoped, however, that our Institute is gradually maturing the work it was designed to effect, viz.: the engendering in the minds of our people a love of nature; and that ere a few years have elapsed, some of its members will take up the study of entomology, and render service in the cause of promoting a knowledge of that interesting branch of Natural History.

The services of an entomologist, who can set before the inhabitants of the land in which he lives the various injuries done by certain species, and the direct benefits conferred by others, are of great value; and as there is no country in the world in which the people do not suffer in a greater or lesser degree from damage to growing crops, produce in bulk, clothing materials, and in fact almost every thing capable of being injured by the myriad forms of insect life which everywhere exist, a knowledge of insects, their habits, haunts, and economy, is very desirable, as it may be the means of saving much valuable property, even to the extent of many thousand pounds per annum. Indeed, a writer in a recent American magazine asserts that "*taking one year with another the United States suffer from the depredations of noxious insects to the annual amount of \$300,000,000.*"

Under these circumstances, therefore, it is a matter of some importance to ascertain whether injurious insects are to be found abundantly or otherwise in the country we live in; and hence, the necessity of publishing lists of native insects as often as the dili-

* I am not aware of any collection ever having been made in this country and scientifically described, save that of Lieut. Redman, who some 40 years ago collected for the British Museum, and in the cabinet of which institution it may now be seen still in an excellent state of preservation. It is chiefly composed of *Diptera*.

gence of collectors will allow of such publications. If for this and no other reason this present incomplete list of the Coleoptera of the province is offered to the Institute I trust it will be received as a small contribution to our monthly papers, and that (D. V.) I may be allowed to continue the subject at some future time.

I must not omit to express the obligation I feel myself under to the Rev. C. J. S. Bethune, of Credit, Ontario (Secretary to the Entomological Society of Canada), who very kindly identified nearly the whole of the species comprised in this list; and to Melsheimer's Catalogue of United States Coleoptera, and Mr. Ritchie's excellent Catalogue of Montreal Coleoptera, published in the 'Canadian Naturalist,' I owe my synonyma.

Fam. CICINDELIDÆ.

Gen. CICINDELA.

1. *Cicindela vulgaris*, Say.

C. obliquata, Dej.

C. Tranquebarica, Herbst.

Common in the interior of the country, particularly on the highroads about Truro. It is not so common, however, in the neighborhood of the Atlantic coast, where *C. 12 guttata* is more abundant.

2. *Cicindela albilabris*, Kirby.

C. longilabris, Say.

This species, which seems to be rare in the Northern United States and Canada West, is of frequent occurrence in the neighborhood of Halifax: indeed, I may almost say more abundant than *C. vulgaris*. There can be no mistake as to the insect, for the lengthened light coloured labrum is peculiar to this species. From the fact of its being, as far as I have observed, only common over the more barren portions of this province, coupled with the knowledge of its also frequenting the barren shores of the Arctic Sea in lat. 70° N., where it was taken by Sir John Richardson, as also Fort Simpson, on the Mackenzie River; it would appear that the rocky and uncultivated districts of North America, in the vicinity of the sea, sparsely clothed with vegetation, are more suited to its habits. Of eight specimens now before me, some have the white dots and

angular medial marking on the elytra much more distinct than others. It makes its appearance in spring earlier than any of our Cicindelas, as I have taken it at the end of April.

3. *Cicindela* 12, *guttata*, Dej.

C. Proteus, Kirby.

This may be considered the most common species in the neighborhood of Halifax, where, in open spots, and more especially "Halifax Common," it may be taken in hundreds. On that portion of this open plain called "Camp Hill," those parts which are destitute of grass, are perfectly riddled with the larval holes of this insect. In damp, foggy, or rainy weather, I have observed it lying partially torpid beneath surface stones.

4. *Cicindela* ———? Of this rare species I have only three specimens, which I have not yet identified.

5. *Cicindela* ———? Another species, rare, and undetermined.

Fam. CARABIDÆ.

Gen. ELAPHRUS.

Elaphrus ruscarius, Say.

E. Americanus, Dej.

The only specimen I have seen, is one in the possession of Mr. Arthur Silver, by whom it was taken at River Bank, Preston.

Gen. CALOSOMA.

Calosoma calidum, Fabr.

C. lepidum, Lec.

This carab cannot be considered as abundant in the neighborhood of Halifax, although fine specimens may be obtained in the heat of summer on "the Common" hunting amid the scanty herbage for prey. I have never observed it in the forest. It appears to be partial to the colder regions of North America, and specimens have been taken as far north as the Mackenzie and Slave Rivers, between lat. 58° and 65° N.

Gen. CYCHRUS.

Cychnus Lecontei, Dej. Rare. I have only taken one specimen.

Gen. PTEROSTICHUS.

1. *Pterostichus lucublandus*, Lec.

Feronia lucublandus, Say.

Poecilus lucublandus, Kirby.

Common under stones; Halifax common. A pungent odour emanates from it when handled.

2. *P. chalcites*, Lec.

Feronia chalcites, Say.

Poecilus Sayü, Brulle.

Poecilus chalcites, Kirby.

Poecilus micans, Chand.

Very common in gardens during the hottest days of summer.

3. *Pterostichus* ———? A large species; rare.

4. *Pterostichus* ———? Rare.

Gen. PLATYNUS.

1. *Platynus extensicollis*, Lec.

Feronia extensicollis, Say.

Anchomenus extensicollis, Ibid.

A. Lecontei, Dej.

—var. *proximus*, Harris, New. Eng. Farmer.

Common under stones on the shores of Halifax harbour, near tidal marks. This insect must be able to lead a partially amphibious life, for I find the places it frequents perfectly wet with the salt water.

2. *Platynus cupripennis*, Lec.

Feronia cupripennis, Say.

Agonum cupripenné, Dej.

Very common in gardens, where it may be found all day and also in the darkness of night, busily searching for food.

3. *Platynus* ———? This, and two or three other species in my collection, yet undetermined.

Gen. AMARA.

Amara obesa, Say.

Percosia obesa, Lec.

Of this carab I have only obtained one specimen, and consider it rare about Halifax.

Fam. DYTISCIDÆ.

Gen. DYTISCUS.

Dytiscus marginalis, Linn.

Not uncommon in the lakes with which this province abounds. It answers in every particular the characteristics of the European species.

Gen. HYDATICUS.

1. *Hydaticus* ——? Species undetermined. It appears early, as I have observed it moving about in a lake on the 4th of April.
2. *Hydaticus* ——? Species undetermined.

Fam. GYRINIDÆ.

Gen. GYRINUS.

Gyrinus ——? Very common on all our lakes and streams, appearing about the last week of April.

Fam. SILPHIDÆ.

Gen. NECROPHORUS.

1. *Necrophorus Americanus*, Oliv.

N. grandis, Fabr.

N. virginicus, Frölich Natf.

Common in putrid carcasses of animals.

2. *Necrophorus orbicollis*, Say.

N. Hallü, Kirby.

N. 4 maculatus, Dej.

var. *tibialis*, Lec.

Not quite so common as the preceding species, in similar situations.

3. *Necrophorus velutinus*, Fabr.

N. tomentosus, Web.

Not common.

4. *Necrophorus* ——? A fine species somewhat larger than *N. orbicollis*; rare.

5. *Necrophorus* ——? A small species; rare.

Gen. SILPHA.

Silpha Surinamensis, Fabr.

Necrodes Surinamensis Oliv, et Herbst.

Common in putrid flesh, with the *Necrophori*. Some specimens are of a light chesnut colour and smaller than the darker ones.

2. *Silpha Americana*, Linn.

Oiceoptoma affine, Kirby.

Necrophila peltata, Lec.

Scarabeus peltatus, Cates.

By far the most common of our *Silphæ*.

3. *Silpha marginalis*, Fab.

Oiceoptoma marginata, Kirby.

O. noveboracensis, Forst.

Common.

4. *Silpha lapponica*, Linn.

Thanatophilus caudatus, Say.

T. tuberculata, Germ.

T. Californica, Mann.

T. granigera, Chevr.

Rare about Halifax. This species appears to have a wide range in North America, having been taken at Lake Superior, and as far north as the Mackenzie and Slave rivers.

Fam. STAPHYLINIDÆ.

Gen. CREOPHILUS.

Creophilus villosus, Grav.

Staphylinus villosus, Kirby.

S. fasciatus, Lap.

Not uncommon in decayed animal, and more particularly, vegetable matter, cattle droppings, &c. This species is also known in the Hudson's Bay Territory.

Gen. LEISTOTROPHUS.

Leistotrophus cingulatus, Perty.

Staphylinus cingulatus, Grv.

S. speciosus, Mann.

S. chrysurus, Kirby.

Not common.

NOTE.—Two or three other Staphylinæ undetermined.

Fam. HISTERIDÆ.

Gen. HISTER.

1. *Hister* ———? Undetermined; rare.
2. *Hister* ———? Another species; rare.

Fam. DERMESTIDÆ.

Gen. DERMESTES.

Dermestes lardarius, Linn.

Very common. A perfect nuisance to the collector, whose zoological specimens are never safe from its ravages.

Fam. BYRRHIDÆ.

Gen. BYRRHUS.

- Byrrhus* ———? Not determined.
Byrrhus ———? Not determined.

Fam. SCARABÆIDÆ.

Gen. APHODIUS.

1. *Aphodius fossor*, Fabr.
Scarabæus fossor, Linn.
Common in cattle droppings.
2. *Aphodius fimetarius*, Hald.
A. nodifrons, Rand.
Scarabæus fimetarius, Linn.

Very common. It is one of the first insects to appear in spring as soon as the frost disappears, frequenting the highroads, where it alights upon the cattle droppings. It is identical with the British species, being of similar size to those I have taken in North Wales; but smaller than those taken in Dorsetshire.

3. *Aphodius scybalarius*, Fabr.

This European form is not uncommon about Halifax in company with the preceding species. There can be no doubt as to its identity, for I have English specimens of my own collecting for comparison. I do not find it in any of the American catalogues.

Gen. SERICA.

Serica vespertina, Lec.*Melolontha vespertina*, Schon.*Omaloplia vespertina*, Har.*Camptorhina atricapilla*, Kirby.

Very common, It hibernates in the ground, and many specimens may be procured where ploughing is going on late in the autumn.

Gen. DIPLLOTAXIS.

Diplotaxis liberta, Germ.*D. moesta*, Say.*D. tristis*, Kirby.

Not common.

Gen. LACHNOSTERNA.

Lachnosterna fusca, Lec.*Melolontha fusca*, Frohl.*M. quercina*, Kroch.*M. fervens*, Gyll.

Gen. OSMODERMA.

Osmoderma scabra, Dej.*Trichius scabra*, Beauv.*Gymnodus foveata*, Kirby.

Rare ; taken by Mr. Arthur Silver, at River Bank, Preston.

Gen. TRICHIUS.

Trichius piger, Fabr.*T. rotundicollis*, Kirby.*T. Drummondü*, Gor et Perch.

Common ; on the wild rose and other flowering shrubs.

Fam. BUPRESTIDÆ.

Gen. DICERCA.

Dicerca divaricata, Lec.*D. dubia*, Melsh.*Buprestis divaricata*, Say.*Stenuris divaricata*, Kirby.

Not uncommon.

Gen. ANCYLOCHEIRA.

1. *Ancylocheira maculiventris*, Lec.

Buprestis maculiventris, Say.

B. sexnotata, Lap.

Anoplis rusticorum, Kirby.

Not uncommon.

2. *Ancylocheira fasciata*, Dej.

A. sexmaculata, Herbst.

Rare; taken by Mr. Arthur Silver, at River Bank, Preston.

3. *Ancylocheira* ———? Rare; a very beautiful species about the size of *A. maculiventris*. Elytra grooved longitudinally between five ridges, including suturals. Outer margin deeply indented, cupreous. Suture broadly margined with cupreous, expanding anteriorly. The two central grooves metallic green. Thorax punctured, cupreous, metallic green.

Gen. CHALCOPHORA.

Chalcophora virginica, Drury.

C. virginiensis, Herbst.

Buprestis mariana, Linn.

Common.

Fam. ELATERIDÆ.

Gen. ELATER.

1. *Elater nigricollis*, Herbst.

Not uncommon.

2. *Elater* ———? A species having two buff patches on outer margin of elytra. Taken under dead spruce bark in Point Pleasant Woods.

Gen. MELANOTUS.

Melanotus scrobicollis, Lec.

Not common.

Gen. CORYMBITES.

Corymbites hieroglyphicus, Say.

Selatosomus hieroglyphicus, Steph.

Not uncommon; taken by Mr. Arthur Silver, at River Bank, Preston.

2. *Corymbites aeripennis*, Lec.

Elater aeripennis, Kirby.

E. appropinquans, Rand.

3. *Corymbites* ———? Species undetermined.

NOTE.—Four or five other species of small size, undetermined.

Gen. ASAPHES.

Asaphes memnonius, Herbst.

Not uncommon.

Fam. LAMPYRIDÆ.

Gen. PHOTINUS.

Photinus corruscus, Lac.

Lampyrus corrusca, Linn.

Ellychnia latipennis, Motsch.

E. corrusca. White. (Brit. Mus. Cat.)

Pyractomena fenestralis, Melsh.

Very common. This species is widely distributed over the northern parts of America, and is found as far west as Lake Winnipeg.

Gen. PHOTURIS.

1. *Photuris Pennsylvanica*, Lec.

Lampyrus versicolor, Fabr.

L. Pennsylvanica, De Geer.

Our common fire fly. The light emitted is sufficient to enable the collector to read the lines of his note book when the insect is held close over it. It generally appears about the end of June, but I have seen it much earlier. It seems to delight in dark nights with a close humid atmosphere.

2. *Photuris* ———? A small species, undetermined.

Fam. TENEBRIONIDÆ.

Gen. UPIS.

Upis ceramboides, Fabr.

U. reticulata, Say.

Tenebrio ceramboides, Linn.

Not common. This species extends as far north as lat. 63°, near the southern confine of the Arctic Circle, and as far west as the Mackenzie River.

Gen. IPHTHINUS.

Iphthinus serratus, Mann.

Nyctobates serratus, Beit.

Not common.

Gen. TENEBRIO.

Tenebrio obscurus, Fabr.

Not common.

Tenebrio molitor, Linn.

Not common.

Fam. MELOIDÆ.

Gen. MELOE.

Meloe angusticollis, Say.

Halifax Common ; abundant about the first week in June, when the sexes pair.

Fam. OEDEMERIDÆ.

Gen. NACERDES.

Nacerdes melanura, Schmdt.

N. notata, Fabr.

N. analis, Oliv.

N. apicalis, Say.

Cantharis melanura, Linn.

Rare.

Gen. CANTHARIS.

1. *Cantharis* ———? Rare ; Taken by Mr. Arthur Silver, at River Bank, Preston.

2. *Cantharis* ———? Rare ; Taken in the same locality.

3. *Cantharis* ———? Rare ; Taken in the same locality.

Fam. CURCULIONIDÆ.

Gen. PISSODES.

Pissodes nemorensis, Germ.

Rare. Taken by Mr. Silver, at River Bank, Preston.

Gen. HYLOBIUS.

1. *Hylobius pales*, Herbst.*H. macellus*, Germ.

Very common, frequenting wooden dwellings and out-houses. This beetle in the larva state is probably more destructive to our pine trees than any other in the province. Its ravages in certain parts of the United States are very great, and the observant naturalist Wilson many years ago, endeavoured to befriend the family of woodpeckers, by proving the vast amount of good they did in consuming numberless larvæ of this insect.

1. *Hylobius* ———? Species undetermined.2. *Hylobius* ———? Species undetermined.

Fam. CERAMBYCIDÆ.

Gen. CRIOCEPHALUS.

1. *Criocephalus agrestis*, Kirby.

Common.

2. *Criocephalus* ———? A smaller species undetermined.

Not common.

Gen. CALLIDIUM.

Callidium violaceum, Fabr.*Cerambyx violaceus*, Linn.

Rare. This is another insect destructive to the pine trees, and is common to Europe and America.

Gen. CLYTUS.

1. *Clytus caprœa*, Say.*C. elevatus*, Lap.*C. gibbicollis*, Ibid.

Not common.

2. *Clytus* ———? Another species undetermined, rare; taken by my eldest boy W. Salton Jones.

Gen. MONOHAMMUS.

Monohammus titillator, Fabr.

Very common. Numbers of these insects may be obtained in the forest about August, where the Weymouth Pine (*Pinus strobus*)

has been cut down. I have never, however, met with them on any species of *Abies*, although some lay near the pines. From this circumstance I am inclined to believe that the larva lives in our common pine.

2. *Monohammus scutellatus*, Say.

M. resutor, Kirby.

Very common. Also taken on the newly fallen Weymouth Pine. This species has an extensive range in British America, being found as far north as lat 63°, and as far west as the Mackenzie River.

Monohammus ———? A very handsome species, rather larger than *M. titillator*, with elytra and thorax prettily dappled with patches of white and yellow hairs, and the whole shining with a gloss as if varnished. I have only one specimen in my collection taken at Mount Uniacke, and kindly given me by the hospitable owner of that charming retreat, the Rev. Fitzgerald Uniacke.

Gen. SAPERDA.

Saperda candida, Fabr.

S. bivittata, Say.

Rare. In the larval state this is the well known apple tree borer of the northern United States, which commits such sad ravages in the orchards. The only specimen I possess was taken at the foot of an apple tree at Ashbourne. In the apple growing districts of Annapolis and Cornwallis it may be more common than it is near Halifax, where these fruit trees are not much cultivated.

Gen. RHAGIUM.

Rhagium lineatum, Kirby.

Stenocorus lineatus, Oliv.

Common.

Gen. TYPOCERUS.

Typocerus fugax, Fabr.

Strangalia fugax, Sch.

Leptura tenuior, Kirby.

Extremely common; frequents the yellow blossoms of the Golden Rod (*Solidago*) and other flowers.

Gen. LEPTURA.

1. *Leptura elegans*, Lec.
Strangalia elegans, Dej.
Rare.
2. *Leptura vittata*, Oliv.
L. abbreviata, Germ.
L. semivittata, Kirby.
Rare.
3. *Leptura auripilis*, Lec.
Not uncommon.
4. *Leptura Canadensis*, Oliv.
L. tenuicornis, Hald.
Common.
5. *Leptura erythroptera*, Kirby.
L. cinnamoptera, Hald.
Rare.
6. *Leptura chryscoma*, Kirby.
Rare.
7. *Leptura* ———? Species undetermined; rare.
8. *Leptura* ———? Small species undetermined; rare.

Fam. CHRYSOMELIDÆ.

Gen. CHRYSOMELA.

1. *Chrysomela Philadelphica*, Linn.
Calligrapha Philadelphica, Chev.
Rare.
2. *Chrysomela polygoni*, Linn.
This European form is very common in the neighbourhood of Halifax on grass stalks in waste ground.
3. *Chrysomela elegans*, Oliv.
Rare. Taken by Mr. A. Silver at River Bank, Preston. The vertical yellow stripes on the elytra and the marginal band of the same colour around the thorax, are sometimes deep orange.
4. *Chrysomela* ———? A species of the size of *C. Philadelphica*, undetermined.
5. *Chrysomela* ———? Undetermined; rare.

Fam. COCCINELLIDÆ.

Gen. COCCINELLA.

1. *Coccinella trifasciata*, Linn.

C. perplexa, Muls.

Common.

2. *Coccinella bipunctata*, Linn.

Adalia bioculata, Say.

Extremely abundant.

Gen. HIPPODAMIA.

Hippodamia 13 punctata, Linn.

H. tibialis, Say.

Rare. Taken by Mr. A. Silver at River Bank, Preston. This species has a wide range over British America, being found at Lake Superior, and as far to the north-west as Great Bear Lake in lat 69° N. long 120° W.

Gen. MYSIA.

Mysia 15 punctata, Muls.

Coccinella 15 punctata, Oliv.

Anatis mali, Say.

A. labiculata, Ibid.

I have only taken one specimen of this insect.

ART. XIII. EXPLORATIONS IN THE PICTOU COAL FIELD, IN 1867 AND 1868. BY R. G. HALIBURTON, F. S. A.,
Sec'y of Nova Scotia Coal Owners Association.

(Read Dec. 14, 1868.)

SINCE my paper appeared in the Transactions for 1866-7, explorations in the Pictou coal field have been somewhat limited in consequence of the temporary depression which has taken place in the coal trade, the result of the heavy duty imposed by Congress upon our coal, and the low price of fuel in the United States.

On the Montreal and Pictou Company's property, on the west