

The Natural History of the Toronto Region

ONTARIO, CANADA

EDITED BY ·

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CHAPTER XXII.

INSECTS AND THEIR ALLIES.

By

E. M. WALKER, B.A., M.B.

JUDGING from its insect fauna, Toronto lies approximately on the boundary line between the Transition and Upper Austral Zones of Merriam. A number of species common in the Niagara Peninsula reach their northern limits in about this vicinity, particularly in the Don and Humber Valleys and in the sandy uplands of High Park and the adjoining country.

Ten years ago it was not necessary for the entomologist to travel far beyond the city limits in order to secure a good representation of the species of any order of insects native to the Toronto district. With the rapid growth of the suburbs of late years, however, many of the old hunting grounds have been cut up by new streets and converted into building lots, golf-grounds, etc., so that the entomologist must now go farther and farther afield in order to provide himself with specimens of all the species that once were obtainable within the city limits.

For general collecting the old Belt Line and the Humber, Don and Credit Valleys, Highland and Black Creeks are to be recommended. For species

NATURAL HISTORY, TORONTO REGION

inhabiting sandy fields and open sandy woods High Park is still a good locality, and many other arenaceous forms, particularly among the beetles, may be taken on Toronto Island. Aquatic species may be collected in Grenadier Pond (High Park), the Humber River, Etobicoke Creek, the upper part of the Don and in the lagoons of Toronto Island. Large quantities of material of many species, especially beetles, are sometimes cast up on the beach drift of the Island.

For a city of its size comparatively little collecting has been done about Toronto, and some of the smaller orders have been wholly neglected. The largest general collection is that of the late Dr. Wm. Brodie, now in the Provincial Museum. The list of Hymenoptera is for the most part merely a list of the named species in this collection. It is believed that they were authentically determined, as Dr. Brodie was in the habit of sending his specimens to Ashmead and other specialists at Washington for determination. This is certainly the case in regard to the Chalcidoidea. The list of Cynipoidea and the gall-forming Tenthredinidae were for the most part furnished by Dr. A. Cosens. For the list of Coleoptera I am indebted to Mr. R. J. Crew, who has collected beetles extensively about Toronto. His specimens were determined by Prof. Wickham. The Lepidoptera have been kindly listed by Mr. A. Gibson, of Ottawa, his list being mainly based on his own collections. The Diptera have not been

INSECTS AND THEIR ALLIES

systematically collected by anyone to my knowledge. Most of the names here listed were kindly contributed by Mr. M. C. Van Duzee, of Buffalo, who has, however, collected at Toronto on very few occasions. The Cecidomyiidae were listed by Dr. Cosens. Most of the Syrphidae were collected by Dr. Brodie, and some additional species by the writer. A number of species in other families were also listed from Dr. Brodie's collection, while the Dolichopodidae, in addition to the species taken by Mr. Van Duzee, were collected and determined by the writer. In the Hemiptera, very little collecting has been done, and the few species listed, with the exception of the Aphididae and Coccidae, are in the collection of the Provincial Museum. The Aphididae are nearly all gall-forming species, the list having been kindly furnished by Dr. Cosens. The Coccidae, with one or two exceptions added by the writer, were taken from Mr. T. D. Jarvis's list of the Coccidae of Canada (41st Ann. Rep. Ent. Soc. Ont., 1910, p. 64-77). The Orthoptera and Odonata were collected and determined by the writer and are believed to be fairly complete. The few species belonging to the other orders listed were determined by Messrs. Nathan Banks and W. A. Clemens (Ephemeridae).

In addition to the gentlemen mentioned in the preceding paragraph, I have been ably assisted in the preparation of these lists by Messrs. J. C. Crawford, H. L. Viereck and S. A. Rohwer, who kindly revised

NATURAL HISTORY, TORONTO REGION

the list of Hymenoptera, and by Mr. E. P. Van Duzee, who arranged the list of Hemiptera, exclusive of the Aphididae and Coccidae. To all of these gentlemen I desire to express my sincere thanks.

Class ARACHNIDA.

The Arachnids of the Toronto district have been almost entirely neglected, and are practically unknown. The only records I have found are those of a few mites taken by Mr. J. B. Tyrrell from birds in 1878-1880 and described by Dr. C. Haller in the "Archiv für Naturgeschichte" for 1882. The following is a list of these species, revised by Mr. Nathan Banks:

- Pteronyssus simplex*, Haller.
- Analges digitatus*, Haller.
- " *passerinus*, Linn.
- " *tridentulatus*, Haller.
- Megninia aculeatus*, Haller.
- " *forcipatus*, Haller.
- " *gladiator*, Haller.
- " *pici-majoris*, Buchholz.
- Allanalges gracilepinneata*, Haller.

Class DIPLOPODA and Class CHILOPODA.

Neither the Millipedes nor the Centipedes of the Toronto district have received any attention from zoologists.

INSECTS AND THEIR ALLIES

Class INSECTA.

Order ORTHOPTERA.

Blattidae (Cockroaches).

Ischnoptera pennsylvanica, De G. Not uncommon.

“ *borealis*, Rehn. Rare.

Blattella germanica, Linn. Common in old houses.

Blatta orientalis, Linn. Common in old houses.

Periplaneta australasiae, Fab. Sometimes introduced on bananas.

Nyctibora holosericea, Burm. Introduced on bananas.

“ *sericea*, Burm. Introduced on bananas.

Leucophaea surinamensis, Linn. Introduced on bananas.

Panchlora virescens, Thunb. Introduced on bananas.

Phasmidae (Stick Insects).

Diapheromera femorata, Say. Not uncommon.

Locustidae (Acrididae, Auctt.) (Short-horned Grasshoppers, Locusts).

Tettix granulatus, Kirby. Common in swamps.

“ *ornatus*, Say. Low grounds.

“ *hancocki*, Morse. Not rare. Dry hillsides.

“ *obscurus*, Hanc. Low meadows and swales.

Paratettix cucullatus, Burm. Margins of streams, locally common.

Tettigidea parvipennis, Harr. Common.

NATURAL HISTORY, TORONTO REGION

- Chloealtis conspersa*, Harr. Common.
Orphulella speciosa, Scudd. Common in High Park.
Chorthippus curtipennis, Harr. Common in low grounds.
Mecostethus lineatus, Scudd. Open swamps.
Arphia xanthoptera, Germ. Only one Toronto record.
“ *sulphurea*, Fab. Scrubby, sandy uplands. common.
Chortophaga viridifasciata, De G. Fields, common.
Encoptolophus sordidus, Burm. Dry fields, common.
Camnula pellucida, Scudd. Sandy fields, abundant.
Hippiscus tuberculatus, Beauv. Open sandy hillsides, High Park.
Dissosteira carolina, Linn. Roadsides, abundant.
Spharagemon bolli, Scudd. Dry hillsides, High Park.
Trimerotropis maritima, Harr. Sandy beaches, Toronto Island.
Schistocerca americana, Drury. Once reported, a visitor from the South.
Melanoplus atlanis, Riley. Fields, abundant.
“ *femur-rubrum*, De G. Abundant.
“ *fasciatus*, Walk. Open woods, scarce.
“ *dawsoni*, Scud. Sandy, scrubby fields, High Park. A western species.
“ *islandicus*, Blatchl. Openings in rich woods.
“ *minor*, Scudd. Sandy fields, High Park.
“ *luridus*, Dodge. Dry fields, common.

INSECTS AND THEIR ALLIES

- Melanoplus bivittatus*, Say. Swamps and low grounds, common.
- “ *punctulatus*, Scudd. On pine trees, rare.
- Tettigoniidae** (Locustidae, Auctt.) (Long-horned Grasshoppers and Katydid).
- Amblycorypha oblongifolia*, De G. Trees and bushes, rare.
- Scudderia pistillata*, Brunner. Bushes in swamps, northern.
- “ *furcata*, Brunner. Trees and bushes, common.
- “ *curvicauda*, De G. Trees and bushes, common.
- Conocephalus ensiger*, Harr. Fields and waste places, common.
- Orchelimum vulgare*, Harr. Long grass in low fields, common.
- Xiphidion fasciatum*, De G. Low meadows and swamps, common.
- “ *brevipenne*, Scudd. Weeds and rank vegetation, common.
- “ *saltans*, Scudd. Long grass in dry fields, High Park. A western species.
- “ *nigropleura*, Scudd. Open swamps, High Park, rare.
- Ceuthophilus pallipedes*, E. Walk. Rich woods, not rare.
- “ *neglectus*, Scudd. Rich woods, High Park, rare.
- “ *terrestris*, Scud. Rare.

NATURAL HISTORY, TORONTO REGION

Gryllidae (Crickets).

- Tridactylus apicalis*, Say. Damp sandbars along streams.
- Gryllus pennsylvanicus*, Burm. Abundant.
- “ “ *abbreviatus*, Serv. Abundant.
- “ *domesticus*, Linn. Toronto General Hospital.
- Nemobius griseus*, E. Walk. Sandy fields, High Park.
- “ *fasciatus*, De G. Grassy places, very abundant.
- “ *carolinus*, Scudd. Low pastures, common.
- Oecanthus niveus*, De G. Shade and fruit trees, common.
- “ *nigricornis*, Walk. Bushes and rank vegetation, common.
- “ “ *quadripunctatus*, Beut. Rank vegetation, common.

Order DERMATOPTERA.

Forficulidae (Earwigs).

Labia minor, Scudd. One specimen.

Order PLECOPTERA.

Perlidae.

Nemoura perfecta, Walk.

Isogenus frontalis, Newm.

INSECTS AND THEIR ALLIES

Order EPHEMERIDA.

Ephemeridae.

- Hexagenia bilineata, Say.
- Ephemera simulans, Walk.
- Heptagenia canadensis, Walk.
 - " tripunctata, Banks.
 - " fusca, Clemens (MS).
 - " luridipennis, Burm.
- Ecdyurus maculipennis, Walsh.
 - " lucidipennis, Clemens (MS).
- Blasturus sp. ?
- Caenis diminuta, Walk.
- Siphylurus alternatus, Say.
- Baetis propinquus, Walsh.
 - " sp. nov.
- Callibaetis ferrugineus, Walsh.

Order ODONATA.

Suborder ZYGOPTERA (Damsel flies).

Calopterygidae.

Calopteryx maculata, Burm. Common along streams.

Agrionidae.

- Lestes unguiculatus, Hag. Ponds, common.
- " uncatu, Kirby. Ponds.
- " disjunctus, Hag. Ponds and lagoons, abundant.
- " rectangularis, Say. Ponds, common.
- " vigilax, Selys. Grenadier Pond, abundant.

NATURAL HISTORY, TORONTO REGION

- Argia moesta putrida*, Hag. Bond Lake.
Nehalennia irene, Hag. Common.
Amphiagrion saucium, Burm. Very local.
Agriion resolutum, Selys. Ponds, locally abundant.
Enallagma hageni, Walsh. Very abundant.
“ *calverti*, Morse. Rare; commoner northward.
“ *ebrium*, Hag. Abundant.
“ *exsulans*, Hag.
“ *geminatum*, Kell. Common at Grenadier Pond.
“ *carunculatum*, Morse. Grenadier Pond, common.
“ *antennatum*, Say. Don River, abundant.
“ *signatum*, Hag. Grenadier Pond, common.
“ *pollutum*, Hag. Grenadier Pond.
Ischnura verticalis, Say. Abundant.

Suborder ANISOPTERA (Dragonflies).

Aeshnidae.

- Hagenius brevistylus*, Selys. Very rare.
Ophiogomphus rupinsulensis, Walsh.
Gomphus exilis, Selys. Grenadier Pond.
“ *villosipes*, Selys. Don Valley, not common.
“ *furcifer*, Hag. Grenadier and neighbouring ponds, not uncommon.
Dromogomphus spinosus, Selys. Grenadier Pond, rare.

INSECTS AND THEIR ALLIES

- Basiaeschna janata*, Say. Bond Lake.
Aeshna eremita, Scudd. Grenadier Pond, rare.
" *canadensis*, Walk. Common.
" *verticalis*, Hagen. Common.
" *tuberculifera*, Walk. Hunt Club, Etobicoke
Creek, rare.
" *umbrosa*, Walk. Common.
" *constricta*, Say. Common.
Anax junius, Dru. Very abundant.
Epiaeschna heros, Fabr. Rather scarce.

Libellulidae.

- Epicordulia princeps*, Hag. Grenadier and neighbouring ponds, rather scarce.
Tetragoneuria cynosura, Say. Abundant.
" " *simulans*, Muttk. Abundant.
" *spinigera*, Selys. Grenadier Pond, rare.
Cordulia shurtleffi, Scudd. One specimen; a northern species.
Somatochlora williamsoni, E. Walk. One specimen; commoner northward.
Libellula exusta julia, Uhl. Grenadier Pond, one specimen; abundant northward.
" *luctuosa*, Burm. High Park, common.
" *pulchella*, Dru. Ponds and ditches, abundant.
" *semifasciata*, Burm. Pools, common.

NATURAL HISTORY, TORONTO REGION

- Libellula quadrimaculata*, Linn. Ponds, very common.
- Plathemis lydia*, Dru. Ponds and ditches, abundant.
- Erythemis simplicicollis*, Say. Ponds, common.
- Pachydiplax longipennis*, Burm. Abundant, especially at Grenadier Pond.
- Sympetrum costiferum*, Hag. Don Valley and Island lagoons, common.
- “ *vicinum*, Hag. Ponds and marshes, common.
- “ *semicinctum*, Say. Ponds, rare.
- “ *rubicundulum*, Say. Abundant.
- “ *obtrusum*, Hag. Abundant.
- “ *corruptum*, Hag. Humber River, one specimen.
- Leucorrhinia intacta*, Hag. Very abundant, especially at Grenadier Pond.
- Celithemis eponina*, Dru. Grenadier Pond.
- “ *elisa*, Hag. Grenadier Pond.
- Tamea carolina*, Linn. High Park, one specimen.
- “ *lacerata*, Hag. Grenadier Pond.

Order HEMIPTERA.

Suborder PARASITICA.

Pediculidae (Lice).

Phthirus inguinalis, Leach.

Pediculus capitis, De G.

“ *vestimenti*, Leach.

INSECTS AND THEIR ALLIES

Suborder HOMOPTERA.

Cicadidae (Cicadas).

Okanagana rimosa, Say.

Cicada sayi, Sm. & Gros.

Fulgoridae (Lantern-flies, etc.).

Ormenis pruinosa, Say.

Cercopidae (Spittle Insects).

Aphrophora parallela, Say.

“ *quadrinotata*, Say.

Membracidae (Tree-hoppers).

Ceresa bubalus, Fab.

“ *diceros*, Say.

Thelia godingi, Van D.

Telamona ampelopsidis, Harr.

“ *unicolor*, Fitch.

Smilia camelus, Fab.

Enchenopa binotata, Say.

Tettigoniellidae (Leaf-hoppers).

Oncometopia costalis, Fab.

Helochara communis, Fitch.

Diedrocephala coccinea, Forst.

Draeculacephala mollipes, Say.

Jassidae (Leaf-hoppers).

Scaphoideus immistus, Say.

Typhlocyba comes, Say.

Aphididae (Plant Lice).

Chermes abietis, Chol.

“ *floccus*, Patch.

“ *pinicorticis*, Fitch.

NATURAL HISTORY, TORONTO REGION

Aphididae (Plant Lice)—(Continued).

- Chermes similis, Gillette.
- Hormaphis hamamelidis, Fitch.
- “ spinosus, Shiner.
- Pemphigus imbricator, Fitch.
- “ populicaulis, Fitch.
- “ tessellata, Fitch.
- “ ulmi-fusus, Walsh.
- “ vagabundus, Walsh.
- Colopha ulmicola, Fitch.
- Schizoneura lanigera, Hartig.

Aleyrodidae (Aleyrodes).

- Aleyrodes forbesi, Ashm. (Jarvis).

Coccidae (Scale Insects).

- Orthezia insignis, Dougl.
- Kermes pettiti, Ehrh.
- “ pubescens, Bogue.
- Gossyparia spuria, Mod.
- Pseudacoccus citri, Risso.
- Pulvinaria innumerabilis, Rathv.
- Coccus hesperidum, Linn.
- Eulecanium quercifex, Fitch.
- “ cerasifex, Fitch.
- “ vini, Bouche.
- Physakermes piceae, Schr.
- Chionaspis furfura, Fitch.
- “ pinifoliae, Fitch.
- Aspidiotus aesculi, Johns.
- “ ancylus, Putn.
- “ osborni, Newell & Ckll.

INSECTS AND THEIR ALLIES

Coccidae (Scale Insects)—(Continued).

Aspidiotus ulmi, Johns.

Lepidosaphes ulmi, Linn.

Suborder HÉTÉROPTERA.

Thyreocoridae (Negro-bugs).

Thyreocoris unicolor, P.B.

“ *pulicarius*, Germ.

Pentatomidae (Stink-bugs).

Eurygaster alternatus, Say.

Mormidea lugens, Fab.

Chlorochroa persimilis, Horv.

Euschistus filipes, Say.

“ *fissilis*, Uhl.

“ *tristigmus*, Say.

“ *variolarius*, Beauv.

Coenus delius, Say.

Cosmopepla carnifex, Fab.

Perilloides circumcinctus, Stal.

“ *claudus*, Say.

Podisus cynicus, Say.

“ *modestus*, Dall.

Coreidae (Squash-bug Family).

Anasa tristis, De G.

Alydus eurinus, Say.

Lygaeidae (Chinch-bug Family).

Lygaeus turcicus, Fab.

Cymus discors, Horv.

Tingitidae (Lace-bugs).

Corythuca arcuata, Say.

NATURAL HISTORY, TORONTO REGION

Saldidae (Shore-bugs).

Salda coriacea, Uhl.

Reduviidae (Assassin-bugs).

Reduvius personatus, Linn.

Sinea diadema, Fab.

Acholla multispinosa, De G.

Nabidae (Damsel-bugs).

Reduviolus rufusculus, Reut.

Clinocoridae (Bed-bug Family).

Cimex lectularius, Linn.

Miridae (Leaf-bugs).

Adelphocoris rapidus, Say.

Miris dolabratus, Linn.

Phytocoris pallicornis, Reut.

Neurocolpus nubilus, Say.

Lygus pratensis, Linn.

Poecilocapsus lineatus, Fab.

Lopidea media, Say.

Plagiognathus obscurus, Uhl.

Belostomatidae (Giant Water-bugs).

Benacus griseus, Say.

Amorgius americanus, Leidy.

(*Belostoma*, Auctt.)

Belostoma fluminea, Say (*Zaitha*, Auctt.).

Nepidae (Water-scorpions).

Nepa apiculata, Uhl.

Ranatra fusca, P.B.

Notonectidae (Back-swimmers).

Notonecta undulata, Say.

INSECTS AND THEIR ALLIES

Corixidae (Water-boatmen).

Corixa sp.

Order NEUROPTERA.

With the exception of the first four species, which were named by the writer, the determinations were furnished by Mr. Nathan Banks.

Sialidae.

Corydalis cornuta, Linn.

Chauliodes pectinicornis, Linn.

Sialis infumata, Newm.

Hemerobiidae.

Polystoechotes punctatus, Fab.

Hemerobius humuli, Linn.

Hemerobius stigmaterus, Fitch.

Chrysopidae (Lace-winged Flies)

Chrysopa rufilabris, Burm.

“ *ypsilon*, Fitch.

Order TRICHOPTERA (Caddis-Flies).

Practically no collections have been made in this order. A few specimens were sent to Mr. Banks, who determined them as follows:

Phryganeidae.

Phryganea cinerea, Walk.

Neuronia concatenata, Walk.

Limnephilidae.

Limnephilus submonilifer, Walk.

Pycnopsyche guttifer, Walk.

NATURAL HISTORY, TORONTO REGION

Hydropsychidae.

Hydropsyche scalaris, Hag.

Order COLEOPTERA.

Cicindelidae (Tiger-beetles).

Cicindela scutellaris lecontei, Hald.

“ *sex-guttata*, Fab.

“ *purpurea*, Oliv.

“ *vulgaris*, Say.

“ *repanda*, Dej.

“ *12-guttata*, Dej.

“ *hirticollis*, Say.

“ *punctulata*, Fab.

Carabidae (Ground-beetles).

Omophron robustum, Horn.

“ *americanum*, Dej.

“ *tessellatum*, Say.

Cychrus lecontei, Dej.

Carabus sylvosus, Say.

Calosoma scrutator, Fab.

“ *frigidum*, Kirby.

“ *willcoxi*, Lec.

“ *calidum*, Fab.

Elaphrus ruscarius, Say.

Loricera coerulescens, Linn.

Notiophilus aeneus, Hbst.

Nebria pallipes, Say.

Scarites subterraneus, Fab.

Dyschirius aeneolus, Lec.

INSECTS AND THEIR ALLIES

Carabidae (Ground-beetles)—(Continued).

- Dyschirius longulus*, Lec.
“ *sphaericollis*, Say.
“ *integer*, Lec.
Clivina impressifrons, Lec.
Schizogenius lineolatus, Say.
“ *ferrugineus*, Putz.
Nomius pygmaeus, Dej.
Bembidium carinula, Chd.
“ *nitidulum*, Dej.
“ *nitidum*, Kirby.
“ *nigrum*, Say.
“ *rupestre*, Dej.
“ *cordatum*, Lec.
“ *variegatum*, Say.
“ *assimile*, Gyll.
“ *quadrinaculatum*, Linn.
“ *oblongulum*, Mann.
“ *postfasciatum*, Hamilton.
“ *musciola*.
Tachys scitulus, Lec.
“ *nanus*, Gyll.
“ *flavicauda*, Say.
“ *incurvus*, Say.
Patrobus longicornis, Say.
Trechus chalybeus, Mann.
Pterostichus honestus, Say.
“ *coracinus*, Newm.
“ *stygicus*, Say.
“ *sayi*, Brullé.

NATURAL HISTORY, TORONTO REGION

Carabidae (Ground-beetles)—(Continued).

Pterostichus lucublandus, Say.

“ *luctuosus*, Dej.

“ *corvinus*, Dej.

“ *lucotii*, Dej.

“ *erythropus*, Dej.

“ *patruelis*, Dej.

“ *femoralis*, Kirby.

Amara avida, Say.

“ *arenaria*, Lec.

“ *exarata*, Dej.

“ *pallipes*, Kirby.

“ *impuncticollis*, Say.

“ *interstitialis*, Dej.

“ *obesa*, Say.

“ *remotestriata*, Dej.

Diplochila laticollis, Lec.

“ “ *major*, Lec.

“ *impressicollis*, Dej.

Dicaelus teter, Bon.

Badister pulchellus, Lec.

Calathus gregarius, Say.

“ *impunctatus*, Say.

Platynus hypolithus, Say.

“ *decens*, Say.

“ *sinuatus*, Dej.

“ *cincticollis*, Say.

“ *extensicollis*, Say.

“ *decorus*, Say.

“ *auchomenoides*, Rand.

INSECTS AND THEIR ALLIES

Carabidae (Ground-beetles)—(Continued).

- Platynus pusillus**, Lec.
- “ **errans**, Say.
- “ **melanarius**, Dej.
- “ **propinquus**, G. & H.
- “ **cupripennis**, Say.
- “ **excavatus**, Dej.
- “ **mutans**, Say.
- “ **octopunctatus**, Fab.
- “ **placidus**, Say.
- “ **cupreus**, Dej.
- “ **obsoletus**, Say.
- “ **quadripunctatus**, Dej.
- “ **ruficornis**, Lec.
- “ **retractus**, Lec.
- “ **nigriceps**, Lec.

Olisthopus parmatus, Say.

- “ **micans**, Lec.

Atranus pubescens, Dej.

Casnonia pennsylvanica, Linn.

Galerita janus, Fab.

Lebia grandis, Heutz.

- “ **atriventris**, Say.
- “ **tricolor**, Say.
- “ **viridis**, Say.
- “ **pumila**, Dej.
- “ **ornata**, Say.
- “ **scapularis**, Dej.

Dromius piceus, Dej.

Apristus cordicollis, Lec.

NATURAL HISTORY, TORONTO REGION

Carabidae (Ground-beetles)—(Continued).

Blechrus nigrinus, Mann.

Metabletus americanus, Dej.

Axinopalpus biplagiatus, Dej.

Cymindis americana, Dej.

“ *pilosa*, Say.

Brachynus perplexus, Dej.

“ *medius*, Harr.

“ *fumans*, Fab.

Chlaenius erythropus, Germ.

“ *sericeus*, Forst.

“ *hemoralis*, Say.

“ *tricolor*, Dej.

“ *pennsylvanicus*, Say.

“ *niger*, Rand.

“ *tomentosus*, Say.

Brachylobius lithophilus, Say.

Geopinus incrassatus, Dej.

Agonoderus lineola, Fab.

“ *pallipes*, Fab.

“ *partarius*, Say.

Harpalus vulpeculus, Say.

“ *erraticus*, Say.

“ *viridiaeneus*, Beauv.

“ *caliginosus*, Fab.

“ *pennsylvanicus*, De G.

“ *pleuriticus*, Kirby.

“ *basilaris*, Kirby.

Selenophorus opalinus, Lec.

Stenolophus fuliginosus, Dej.

INSECTS AND THEIR ALLIES

Carabidae (Ground-beetles)—(Continued).

- Stenolophus conjunctus*, Say.
- Bradycellus rupestris*, Say.
- Tachycellus nigrinus*, Dej.
- “ *kirbyi*, Horn.
- “ *badiipennis*, Hald.
- Anisodactylus rusticus*, Dej.
- “ *carbonarius*, Say.
- “ *harrisii*, Lec.
- “ *discoideus*, Dej.
- “ *baltimorensis*, Say.
- “ *verticalis*, Lec.
- “ *interstitialis*, Say.

Halipilidae (Halipilids).

- Halipilus fasciatus*, Aubé.
- “ *triopsis*, Say.
- “ *cribrarius*, Lec.
- “ *ruficollis*, Deg.
- Cnemidotus 12-punctatus*, Say.

Dytiscidae (Diving-beetles).

- Laccophilus maculosus*, Germ.
- Bidessus affinis*, Say.
- Coelambus inaequalis*, Fab.
- “ *turbidus*, Lec.
- “ *impressopunctatus*, Sch.
- Hydroporus pulcher*, Lec.
- “ *undulatus*, Say.
- “ *consimilis*, Lec.
- “ *striatopunctatus*, Melsh.
- “ *tartaricus*, Lec.

NATURAL HISTORY, TORONTO REGION

Dytiscidae (Diving-beetles)—(Continued).

- Hydroporus dichrous, Melsh.
- “ modestus, Aubé.
- Ilybius biguttulus, Germ.
- Coptotomus interrogatus, Fab.
- Agabus seriatus, Say.
- “ punctulatus, Aubé.
- “ obsoletus, Lec.
- “ erythropterus, Say.
- Rhantus binotatus, Harr.
- Colymbetes sculptilis, Harr.
- Hydaticus piceus, Lec.
- Dytiscus fasciventris, Say.
- “ hybridus, Aubé.
- “ verticalis, Say.
- “ harrisii, Kirby.

- Acilius semisulcatus, Aubé.
- Thermonectes basilaris, Harr.
- Graphoderes fascicollis, Harr.
- Cybister fimbriolatus, Say.

Gyrinidae (Whirligig-beetles).

- Gyrinus dichrous, Lec.
- “ ventralis, Kirby.
- Dineutes assimilis, Aubé.

Hydrophilidae (Waver-scavenger beetles).

- Helophorus lacustris, Lec.
- “ angustulus, Mann.
- “ lineatus, Say.
- “ tuberculatus, Gyll.
- Hydrochus excavatus, Lec.

INSECTS AND THEIR ALLIES

Hydrophilidae (Waver-scavenger beetles)—(Continued).

- Hydrophilus triangularis, Say.
- Tropisternus nimbatus, Say.
- “ glaber Hbst.
- Hydrocharis obtusatus, Say.
- Berosus striatus, Say.
- Laccobius agilis, Rand.
- Philhydrus ochraceus, Mels.
- “ perplexus, Lec.
- Hydrobius globosus, Say.
- “ fascipes, Linn.
- “ digestus, Lec.
- “ subcupreus, Say.
- Sphaeridium scarabaeoides, Linn.
- Cercyon melanocephalum, Linn.
- “ praetextatum, Say.
- “ unipunctatum, Linn.
- Cryptopleurum vagans, Lec.

Silphidae (Carrion-beetles).

- Necrophorus americanus, Oliv.
- “ sayi, Lapp.
- “ orbicollis, Say.
- “ marginatus, Fab.
- “ pustulatus, Hersh.
- “ vespilloides, Hbst.
- “ tomentosus, Web.
- Silpha surinamensis, Fab.
- “ lapponica, Hbst.
- “ inaequalis, Fab.
- “ noveboracensis, Forst.

NATURAL HISTORY, TORONTO REGION

Silphidae (Carrion-beetles)—(Continued).

- Silpha americana, Linn.
- Choleva basilaris, Say.
- “ clavicornis, Lec.
- Ptomaphagus consobrinus, Lec.
- “ parasitus, Lec.
- “ brachyderus, Lec.
- Liodes globosa, Lec.
- “ obsoleta, Horn.
- “ basalis, Lec.
- Agathidium oniscoides, Beauv.

Scydmaenidae.

- Scydmaenus perforatus, Schaurn.
- “ fossiger, Lec.
- “ clavipes, Say.
- “ consobrinus, Lec.
- “ bicolor, Lec.
- “ salinator, Lec.

Pselaphidae.

- Ceophyllus monilis, Lec.
- Pilopius saginatus, Csy.
- Cedius zieglerei, Lec.
- Ctenistes piceus, Lec.
- Decarthron abnorme, Lec.
- “ strenuum, Brend.
- Batrisus globosus, Lec.
- “ lineaticollis, Aubé.
- Bryaxis brendelii, Horn.
- “ rubicunda, Aubé.
- “ puncticollis, Lec.

INSECTS AND THEIR ALLIES

Pselaphidae—(Continued).

Bryaxis propinqua, Lec.

Staphylinidae (Rove-beetles).

Falagria dissecta, Er.

“ *venustula*, Er.

Lomechusa cava, Lec.

Tachyusa cavicollis, Lec.

Aleochara lata, Grav.

“ *bimaculata*, Grav.

“ *graciliformis*, Fauv.

Oxypoda sagulata, Er.

Gyrophæna corruscula, Er.

“ *socia*, Er.

Gymnusa brevicollis, Grav.

Heterothops fumigatus, Lec.

Quedius fulgidus, Fav.

“ *capucinus*, Grav.

“ *vernix*, Lec.

Listrotrophus cingulatus, Grav.

“ *capitatus*, Bland.

Creophilus villosus, Grav.

Staphylinus badipes, Lec.

“ *vulpinus*, Nordm.

“ *maculosus*, Grav.

“ *mysticus*, Er.

“ *fossator*, Grav.

“ *cinnamopterus*, Grav.

“ *violaceus*, Grav.

“ *viridans*, Horn.

Ocypus ater, Grav.

NATURAL HISTORY, TORONTO REGION

Staphylinidae (Rove-beetles)—(Continued).

- Philonthus aeneus*, Rossi.
“ *laetulus*, Say.
“ *palliatu*s, Grav.
“ *varians*, Payk.
“ *longicornis*, Steph.
“ *discoideus*, Grav.
“ *lomatus*, Er.
“ *aequalis*, Horn.
“ *cyanipennis*, Fab.
“ *sordidus*, Grav.
Actobius sobrinus, Er.
“ *paederoides*, Lec.
Xantholinus cephalus, Say.
“ *obscurus*, Er.
Diochus schaumii, Kraatz.
Stenus bipunctatus, Er.
“ *colon*, Say.
“ *juno*, Fab.
“ *colonus*, Er.
“ *mammops*, Csy.
“ *croceatus*, Csy.
“ *annularis*, Er.
Cryptobium bicolor, Grav.
“ *pallipes*, Grav.
“ *sellatum*, Lec.
Lathrobium punctulatum, Lec.
“ *simplex*, Lec.
“ *parcum*, Lec.
“ *ventrale*, Lec.

INSECTS AND THEIR ALLIES

Staphylinidae (Rove-beetles)—(Continued).

- Scopaeus exiguus, Er.
- Stilicus dentatus, Say.
 - “ biarmatus, Lec.
- Lithocharis confluens, Say.
- Paederus littorarius, Grav.
- Sunius prolixus, Er.
 - “ binotatus, Say.
 - “ longiusculus, Mann.
- Tachinus memnonius, Grav.
 - “ repandus, Horn.
 - “ flavipennis, Dej.
 - “ luridus, Er.
 - “ fimbriatus, Grav.
- Tachyporus jocosus, Say.
 - “ chrysomelinus, Linn.
 - “ brunneus, Fab.
- Erchomus ventriculus, Say.
- Conosoma crassum, Grav.
 - “ pubescens, Payk.
- Boletobius cingulatus, Mann.
 - “ intrusus, Horn.
 - “ anticus, Horn.
 - “ cinctus, Grav.
- Olisthaerus substriatus, Gyll.
- Oxyporus femoralis, Grav.
 - “ vittatus, Grav.
- Bledius fumatus, Lec.
 - “ analis, Lec.
 - “ pleuralis, Lec.

NATURAL HISTORY, TORONTO REGION

Staphylinidae (Rove-beetles)—(Continued).

Platystethus americanus, Er.

Oxytelus rugosus, Grav.

“ *convergens*, Lec.

Apocellus sphaericollis, Say.

Geodromicus brunneus, Say.

Homalium rufipes, Fauv.

Anthobium convexum, Fauv.

Micropeplus cribratus, Lec.

Trichopterygidae.

Trichopteryx haldemanni, Lec.

Scaphidiidae.

Scaphidium quadriguttatum, Say.

Scaphisoma convexum, Say.

“ *suturale*, Lec.

Phalacridae.

Phalacrus consimilis, Marsh.

“ *nitidus*, Melsh.

Corylophidae.

Sacium fasciatum, Say.

“ *lunatum*, Lec.

Corylophus truncatus, Lec.

Sericoderus obscurus, Lec.

Orthoperus scutellaris, Lec.

Coccinellidae (Ladybirds).

Anisosticta strigata, Thunb.

Megilla maculata, De G.

Hippodamia convergens, Guér.

“ *13-punctata*, Linn.

“ *parenthesis*, Say.

INSECTS AND THEIR ALLIES

Coccinellidae (Ladybirds)—(Continued).

Coccinella trifasciata, Linn.

“ *novemnotata*, Hbst.

“ *transversoguttata*, Fab.

“ *sanguinea*, Linn.

Adalia bipunctata, Linn.

Harmonia picta, Rand.

Mysia pullata, Say.

Anatis 15-punctata, Oliv.

Psyllobora 20-maculata, Say.

Chilocorus bivulnerus, Muls.

Brachyacantha dentipes, Fab.

“ *ursina*, Fab.

“ “ *10-pustulata*, Melsh.

Hyperaspis undulata, Say.

“ *signata*, Oliv.

“ *proba*, Say.

“ *bigeminata*, Rand.

Scymnus puncticollis, Lec.

“ *marginicollis*, Mann.

“ *tenebrosus*, Muls.

“ *lacustris*, Lec.

Coccidula lepida, Lec.

Endomychidae (Fungus-beetles).

Phymaphora pulchella, Newm.

Lycoperdina ferruginea, Lec.

Aphorista vittata, Fab.

Mycetina perpulchra, Newm.

Endomychus biguttatus, Say.

NATURAL HISTORY, TORONTO REGION

Erotylidae.

- Languria mozardi, Latr.
- Dacne 4-maculata, Say.
- Mycotretus pulchra, Say.
- Tritoma thoracica, Say.
- “ flavicollis, Lac.

Colydiidae.

- Ditoma quadriguttata, Say.
- Colydium lineola, Say.
- Cerylon castaneum, Say.

Cucujidae.

- Silvanus surinamensis, Linn.
- “ bidentatus, Fab.
- “ imbellis, Lec.
- Catogenus rufus, Fab.
- Pediacus depressus, Hbst.
- Cucujus clavipes, Fab.
- Laemophlaeus biguttatus, Say.
- “ fasciatus, Melsh.
- “ adustus, Lec.
- “ testaceus, Fab.
- Dendrophagus glaber, Lec.
- Brontes dubius, Fab.
- Telephanus velox, Hald.

Cryptophagidae.

- Telmatophilus americanus, Lec.
- Tomarus pulchellus, Lec.
- Atomaria ephippiata, Zimm.
- “ pusilla, Payk.
- “ ovalis, Csy.

INSECTS AND THEIR ALLIES

Mycetophagidae.

- Mycetophagus punctatus, Say.
- “ flexuosus, Say.
- Triphyllus humeralis, Kirby.
- Litargus 6-punctatus, Say.

Dermestidae (Dermestids).

- Byturus unicolor, Say.
- Dermestes caninus, Germ.
- “ lardarius, Linn.
- “ frischii, Kug.
- Attagenus piceus, Oliv.
- Trigoderma ornatum, Say.
- Anthrenus scrophulariae, Linn.
- “ musaeorum, Linn.
- Orphilus glabratus, Fab.

Histeridae.

- Hololepta fossularis, Say.
- Hister merdarius, Hoffm.
- “ interruptus, Beauv.
- “ foedatus, Lec.
- “ bimaculatus, Linn.
- “ subrotundus, Say.
- “ lecontei, Mars.
- “ parallelus, Say.
- Paromalus gilensis, Lec.
- “ estriatus, Lec.
- Saprinus fraternus, Say.
- “ patruelis, Lec.
- Plegaderus sayi, Mars.
- Aeletes politus, Lec.

NATURAL HISTORY, TORONTO REGION

Nitidulidae.

- Cercus pennatus, Mur.
- Carpophilus niger, Say.
- “ brachypterus, Say.
- Colastus semitectus, Say.
- “ truncatus, Rand.
- Epuraea rufa, Say.
- “ avara, Rand.
- Nitidula bipustulata, Linn.
- “ rufipes, Linn.
- Stelidota 8-maculata, Say.
- Prometopia 6-maculata, Say.
- Phenolia grossa, Fab.
- Omosita colon, Fab.
- Cychramus adustus, Er.
- Cryptarcha ampla, Er.
- Ips obtusus, Say.
- “ fasciatus, Oliv.
- “ sanguinolentus, Oliv.
- Rhizophagus sculpturatus, Mann.
- “ remotus, Lec.

Latridiidae.

- Stephostethus liratus, Lec.
- Corticaria serricollis, Lec.
- “ serrata, Payk.
- “ elongata, Hum.
- “ angularis, Lec.
- “ cavicollis, Mann.
- “ pumila, Lec.
- “ picta, Lec.

INSECTS AND THEIR ALLIES

Trogositidae.

- Tenebrioides corticalis*, Melsh.
- “ “ *dubia*, Melsh.
- “ *castanea*, Melsh.
- Calitys scabra*, Thunb.
- Grynocharis 4-lineata*, Melsh.
- Thymalus fulgidus*, Er.

Byrrhidae (Pill-beetles).

- Cytilus sericeus*, Forst.
- Byrrhus americanus*, Lec.
- Limnichus punctatus*, Lec.

Georhyssidae.

- Georhyssus pusillus*, Lec.

Parnidae.

- Dryops fastigiatus*, Say.
- Elmis 4-notatus*, Say.
- Stenelmis crenatus*, Say.
- Macronychus glabratus*, Say.

Heteroceridae.

- Heterocerus substriatus*, Kies.

Dascyllidae.

- Prionocyphon limbatus*, Lec.
- Cyphon ruficollis*, Say.
- “ *obscurus*, Guér.
- “ *variabilis*, Thunb.

Elateridae (Click-beetles, Elaters).

- Tharops ruficornis*, Say.
- Deltometopus amoenicornis*, Say.
- Dromaeolus striatus*, Lec.
- Fornax calceatus*, Say.

NATURAL HISTORY, TORONTO REGION

Elateridae (Click-beetles, Elaters)—(Continued).

Adelocera discoidea, Web.

“ *aurorata*, Lec.

“ *obtecta*, Say.

“ *brevicornis*, Lec.

Alaus oculatus, Linn.

“ *myops*, Fab.

Cardiophorus convexus, Say.

“ *cardisce*, Say.

“ *convexus*, Lec.

“ *gagates*, Er.

Cryptohypnus abbreviatus, Say.

“ *delumbis*, Horn.

“ *exiguus*, Rand.

Oedostethus femoralis, Lec.

Monocephidius auritus, Hbst.

Elater hepaticus, Melsh.

“ *pedalis*, Germ.

“ *pullus*, Germ.

“ *nigricollis*, Hbst.

“ *linteus*, Say.

“ *discoideus*, Fab.

“ *semicinctus*, Rand.

“ *rubricus*, Say.

“ *apicatus*, Say.

“ *obliquus*, Say.

Drasterius elegans, Fab.

Megapenthes rogersii, Horn.

Ludius abruptus, Say.

Agriotes mancus, Say.

INSECTS AND THEIR ALLIES

Elateridae (Click-beetles, Elaters)—(Continued).

- Agriotes stabilis, Lec.
- “ fucosus, Lec.
- Dolopius lateralis, Esch.
- Melanotus fissilis, Say.
 - “ communis, Gyll.
 - “ sagittarius, Lec.
 - “ paradoxus, Melsh.
- Limonius aurifer, Lec.
 - “ confusus, Lec.
 - “ agonus, Say.
- Campylus denticornis, Kirby.
- Athous cucullatus, Say.
 - “ scapularis, Say.
- Oestodes tenuicollis, Rand.
- Sericosomus silaceus, Say.
- Corymbites cylindriformis, Hbst.
 - “ spinosus, Lec.
 - “ tarsalis, Melsh.
 - “ sulcicollis, Say.
 - “ fallax, Say.
 - “ medianus, Germ.
 - “ triundulatus, Rand.
 - “ hamatus, Say.
 - “ propola, Lec.
 - “ hieroglyphicus, Say.
 - “ cruciatus, Linn.
 - “ aratus, Lec.
 - “ metallicus Payk.
 - “ inflatus, Say.

NATURAL HISTORY, TORONTO REGION

Elateridae (Click-beetles, Elaters)—(Continued).

Corymbites rotundicollis, Say.

Asaphes decoloratus, Say.

“ *memnonius*, Hbst.

Throscidae.

Throscus constrictor, Say.

“ *chevrolati*, Bonv.

Buprestidae (Metallic Wood-borers).

Chalcophora virginiensis, Drury.

Dicerca divaricata, Say.

“ *tenebrosa*, Kirby.

Poecilonota cyanipes, Say.

Buprestis lineata, Fab.

“ *consularis*, Gory.

“ *maculiventris*, Say.

“ *fasciata*, Fab.

“ *striata*, Fab.

Melanophila longipes, Say.

“ *fulvoguttata*, Harr.

Anthaxia viridifrons, Lap.

“ *viridicornis*, Say.

Chrysobothris femorata, Fab.

“ *dentipes*, Germ.

Agrilus ruficollis, Fab.

“ *otiosus*, Say.

“ *bilineatus*, Web.

“ *anxius*, Gory.

“ *politus*, Say.

“ *couesii*, Lec.

INSECTS AND THEIR ALLIES

Buprestidae (Metallic Wood-borers)—(Continued).

- Brachys ovata, Web.
- “ aerea, Melsh.

Lampyridae (Fire-flies, etc.).

- Calopteron terminale, Say.
- “ reticulatum, Fab.
- Eros simplicipes, Mann.
- “ aurora, Hbst.
- “ humeralis, Fab.
- Lucidota atra, Fab.
- Ellychnia corrusca, Linn.
- Pyropyga nigricans, Say.
- “ decipiens, Harr.
- Pyraetomena angulata, Say.
- Photinus ardens, Lec.
- “ pyralis, Linn.
- Photuris pennsylvanica, De G.
- Chauliognathus pennsylvanicus, De G.
- Podabrus tricostatus, Say.
- “ rugulosus, Lec.
- “ diadema, Fab.
- “ punctatus, Lec.
- Silis percomis, Say.
- Telephorus fraxini, Say.
- “ carolinus, Fab.
- “ lineola, Fab.
- “ scitulus, Say.
- “ rotundicollis, Say.
- “ tuberculatus, Lec.
- “ bilineatus, Say.

NATURAL HISTORY, TORONTO REGION

Malachidae.

Collops 4-maculatus, Fab.

“ *vittatus*, Say.

Attalus terminalis, Er.

“ *morulus*, Lec.

Cleridae (Checkered Beetles).

Cymatodera bicolor, Say.

“ *inornata*, Say.

Trichodes nuttalli, Kirby.

Clerus nigriventris, Lec.

Thanasimus trifasciatus, Say.

“ *dubius*, Fab.

Thaneroclerus sanguineus, Say.

Hydnocera pedalis, Lec.

“ *verticalis*, Say.

Phyllobaenus dislocatus, Say.

Chariessa pilosa, Forst.

Laricobius erichsoni, Rosen.

Necrobia rufipes, Fab.

“ *violaceus*, Linn.

Ptinidae (Death-watch Family).

Ptinus fur, Linn.

“ *brunneus*, Duft.

Eucrada humeralis, Melsh.

Ernobius mollis, Linn.

Xestobium tessellatum, Fab.

Sitodrepa panicea, Linn.

Hadrobregmus errans, Melsh.

“ *pumilio*, Lec.

Trichodesma gibbosa, Say.

INSECTS AND THEIR ALLIES

Ptinidae (Death-watch Family)—(Continued).

- Vrilletta convexa*, Lec.
- Xyletinus lugubris*, Lec.
- Dorcatoma setulosum*, Lec.
- Endecatomus rugosus*, Rand.
- Bostrychus truncaticollis*, Lec.
- Amphicerus bicaudatus*, Say.
- Lyctus striatus*, Melsh.

Cupesidae.

- Cupes capitata*, Fab.

Cioidae.

- Cis fuscipes*, Mellié.
- Ennearthron thoracicornis*, Ziegl.

Sphindidae.

- Sphindus americanus*, Lec.

Lucanidae (Stag-beetles).

- Lucanus dama*, Thunb.
- “ *placidus*, Say.
- Dorcus parallelus*, Say.
- Platycerus quercus*, Web.
- “ *depressus*, Lec.
- Ceruchus piceus*, Web.

Scarabaeidae (Dung-beetles, Chafers, etc.).

- Copris anaglypticus*, Say.
- Onthophagus hecate*, Panz.
- “ *janus*, Panz.
- Aegialia conferta*, Horn.
- Ataenius gracilis*, Melsh.
- Dialytes striatulus*, Say.

NATURAL HISTORY, TORONTO REGION

Scarabaeidae (Dung-beetles, Chafers, etc.)—(Continued).

- Dialytes truncatus*, Melsh.
Aphodius fossor, Linn.
 “ *fimetarius*, Linn.
 “ *ruricola*, Melsh.
 “ *granarius*, Linn.
 “ *vittatus*, Say.
 “ *inquinatus*, Hbst.
 “ *leopardus*, Horn.
 “ *pondromus*, Brahm.
Geotrupes splendidus, Fab.
 “ *egeriei*, Germ.
 “ *blackburnii*, Fab.
Trox erinaceus, Lec.
 “ *unistriatus*, Beauv.
 “ *aequalis*, Say.
 “ *scaber*, Linn.
Hoplia trifasciata, Say.
 “ “ *tristis*, Melsh.
Dichelonycha elongata, Fab.
 “ *subvittata*, Lec.
 “ *canadensis*, Horn.
 “ *albicollis*, Burm.
Serica vespertina, Gyll.
 “ *sericea*, Ill.
Macroductylus subspinosus, Fab.
Diplotaxis sordida, Say.
 “ *liberta*, Germ.
Lachnosterna fusca, Fröh.
 “ *marginalis*, Lee.

INSECTS AND THEIR ALLIES

Scarabaeidae (Dung-beetles, Chafers, etc.)—(Continued).

Lachnosterna hirsuta, Knoch.

“ *crenulata*, Fröh.

Cotalpa lanigera, Linn.

Aphonus tridentatus, Say.

Xyloryctes satyrus, Fab.

Euphoria inda, Linn.

Osmoderma eremicola, Knoch.

“ *scabra*, Beauv.

Trichius affinis, Gory.

Spondylidae.

Parandra brunnea, Fab.

Cerambycidae (Longicorn beetles).

Orthosoma brunneum, Forst.

Tragosoma harrisii, Lec.

Asemum moestum, Hald.

Crioccephalus agrestis, Kirby.

Tetropium cinnamopterum, Kirby.

Hylotrupes ligneus, Fab.

Phymatodes amoenus, Say.

Callidium antennatum, Newm.

Romaleum atomarium, Drury.

“ *rufulum*, Hald.

“ *taeniatum*, Lec.

Molorchus bimaculatus, Say.

Callimoxys sanguinicollis, Oliv.

Batyle suturalis, Say.

Cyllene robiniae, Forst.

Plagionotus speciosus, Say.

Calloides nobius, Say.

NATURAL HISTORY, TORONTO REGION

Cerambycidae (Longicorn beetles)—(Continued).

- Arhopalus fulminans*, Fab.
- Xylotrechus quadrimaculatus*, Hald.
- “ *undulatus*, Say.
- Neoclytus muricatus*, Kirby.
- “ *erythrocephalus*, Fab.
- “ *longipes*, Kirby.
- Olytanthus ruricola*, Oliv.
- Microclytus gazellula*, Hald.
- Cyrtophorus verrucosus*, Oliv.
- Euderces picipes*, Fab.
- Encyclops caeruleus*, Say.
- Rhagium lineatum*, Oliv.
- Toxotus vittiger*, Rand.
- Pachyta monticola*, Rand.
- Acmaeops proteus*, Kirby.
- Gaurotes cyanipennis*, Say.
- Typocerus velutinus*, Oliv.
- Leptura propinqua*, Bland.
- “ *plebeja*, Rand.
- “ *subhamata*, Rand.
- “ *lineola*, Say.
- “ *capitata*, Newm.
- “ *americana*, Hald.
- “ *haematites*, Newm.
- “ *subargentata*, Kirby.
- “ *zebra*, Oliv.
- “ *canadensis*, Fab.
- “ *vagans*, Oliv.
- “ *chrysocoma*, Kirby.

INSECTS AND THEIR ALLIES

Cerambycidae (Longicorn beetles)—(Continued)

- Leptura proxima**, Say.
- “ **biforis**, Newm.
- “ **vittata**, Germ.
- “ **pubera**, Say.
- “ **ruficollis**, Say.
- “ “ **sphaericollis**, Say.
- “ **vibex**, Newm.
- “ **mutabilis**, Newm.
- Psenocerus supernotatus**, Say.
- Monohammus titillator**, Fab.
- “ **scutellatus**, Say.
- “ **confusor**, Kirby.
- Goes pulchra**, Hald.
- “ **debilis**, Lec.
- “ **pulverulenta**, Hald.
- “ **oculata**, Lec.
- Leptostylus macula**, Say.
- Lepturges signatus**, Lec.
- Hyperplatys aspersus**, Say.
- Acanthocinus obsoletus**, Oliv.
- Pogonocherus crinitus**, Lec.
- Eupogonius tomentosus**, Hald.
- “ **subarmatus**, Lec.
- Saperda obliqua**, Say.
- “ **calcarata**, Say.
- “ **vestita**, Say.
- “ **tridentata**, Oliv.
- “ **puncticollis**, Say.
- “ **moesta**, Lec.

NATURAL HISTORY, TORONTO REGION

Cerambycidae (Longicorn beetles)—(Continued).

Saperda concolor, Lec.

Oberea bimaculata, Oliv.

“ “ *tripunctata*, Fab.

“ *ocellata*, Hald.

Tetraopes tetraophthalmus, Forst.

Chrysomelidae (Leaf-beetles).

Donacia hypoleuca, Lac.

“ *proxima*, Kirby.

“ *subtilis*, Kunze.

“ *emarginata*, Kirby.

“ *rufa*, Say.

Haemonia nigricornis, Kirby.

Orsodachna atra, Ahr.

“ “ *childreni*, Kirby.

“ “ *luctuosa*, Lac.

“ “ *tricolor*, Melsh.

Zeugophora scutellaris, Suffr.

“ *abnormis*, Lec.

“ *puberula*, Cr.

“ *varians*, Cr.

“ *kirbyi*, Baly.

Syneta ferruginea, Germ.

Lema trilineata, Oliv.

Crioceris asparagi, Linn.

“ *12-punctatus*, Linn.

Anomoea laticlavata, Forst.

Coscinoptera dominicana, Fab.

Babia 4-guttata, Oliv.

Chlamys plicata, Fab.

INSECTS AND THEIR ALLIES

Chrysomelidae (Leaf-beetles)—(Continued).:

- Exema gibber*, Oliv.
Bassareus mammifer, Newm.
 " " *pretiosus*, Melsh.
 " " *luteipennis*, Melsh.
 " *sellatus*, Melsh.
Cryptocephalus 4-maculatus, Say.
 " *quadruplex*, Newm.
 " *venustus*, Fab.
 " *mutabilis*, Melsh.
Pachybrachys othonus, Say.
 " *trinotatus*, Melsh.
 " *atomarius*, Melsh.
 " *femoratus*, Oliv.
 " *hepaticus*, Melsh.
Monachus saponatus, Fab.
Diachus auratus, Fab.
 " *catarius*, Suffr.
Xanthonia 10-notata, Say.
 " *stevensii*, Baly.
Adoxus vitis, Linn.
Glyptoscelis pubescens, Fab.
Chrysochus auratus, Fab.
Paria 6-notata, Say.
Graphops pubescens, Melsh.
 " *marcassita*, Cr.
Chrysodina globosa, Say.
Colaspis brunnea costipennis, Dej.
 " *praetexta*, Say.
 " *tristis puncticollis*, Say.

NATURAL HISTORY, TORONTO REGION

Chrysomelidae (Leaf-beetles)—(Continued).

- Prasocuris varipes*, Lec.
- Labidomera clivicollis*, Kirby.
- Leptinotarsa 10-lineata*, Say.
- Calligrapha similis*, Rog.
- “ *elegans*, Oliv.
- “ *scalaris*, Lec.
- “ *multipunctata bigsbyana*, Say.
- Plagioderma cochleariae*, Gyll.
- “ *viridis*, Melsh.
- Gastroidea polygona*, Linn.
- Lina lapponica*, Linn.
- “ *scripta*, Fab.
- Phyllodecta vulgatissima*, Linn.
- Cerotoma caminea*, Fab.
- Phyllobrotica decorata*, Say.
- “ *discoidea*, Fab.
- “ *limbata*, Fab.
- Luperus meraea*, Say.
- Diabrotica 12-punctata*, Oliv.
- “ *vittata*, Fab.
- Trirhabda tomentosa canadensis*, Kirby.
- Adimonia cavicollis*, Lec.
- Galeruca sagittariae*, Gyll.
- Oedionychis quercata limbalis*, Melsh.
- Disonycha alternata*, Ill.
- “ *pennsylvanica*, Ill.
- “ *triangularis*, Say.
- “ *collaris*, Fab.
- Haltica bimarginata*, Say.

INSECTS AND THEIR ALLIES

Chrysomelidae (Leaf-beetles)—(Continued).

- Haltica carinata*, Germ.
- “ *ignita*, Ill.
- Crepidodera helxines*, Linn.
- “ *cucumeris*, Harr.
- Orthaltica copalina*, Fab.
- Systema hudsonias*, Forst.
- “ *frontalis*, Fab.
- “ *marginalis*, Ill.
- Longitarsus testaceus*, Lec.
- Phyllotreta vittata*, Fab.
- “ *bipustulata*, Fab.
- Mantura floridana*, Cr.
- Chaetocnema denticulata*, Ill.
- “ *parcepunctata*, Cr.
- Dibolia aerea*, Melsh.
- Psylliodes punctulata*, Melsh.
- Microrhopala porcata*, Melsh.
- Odontota horni*, Smith.
- “ *nervosa*, Punz.
- Coptocycla aurichalcea*, Fab.

Bruchidae (Pea-weevil Family).

- Bruchus pisi*, Linn.
- “ *cruentatus*, Horn.

Tenebrionidae (Darkling beetles).

- Phellopsis obcordata*, Kirby.
- Nyctobates pennsylvanicus*, De G.
- Upis ceramboides*, Linn.
- Scotobates calcaratus*, Fab.
- Xylopinus saperdioides*, Oliv.

NATURAL HISTORY, TORONTO REGION

Tenebrionidae (Darkling beetles)—(Continued).

- Tenebrio obscurus, Fab.
- “ molitor, Linn.
- “ tenebrioides, Beauv.
- Blapstinus metallicus, Fab.
- Dioedus punctatus, Lec.
- Gnathocerus cornutus, Fab.
- Uloma impressa, Melsh.
- Paratenetus punctatus, Sol.
- “ fuscus, Lec.
- Diaperis hydni, Fab.
- Hoplocephala bicornis, Oliv.
- Platydema excavatum, Say.
- “ ruficorne, Sturm.
- “ americanum, Lap.
- Hypophloeus parallelus, Melsh.
- Bolitotherus bifurcus, Fab.
- Boletophagus depressus, Rand.

Cistelidae.

- Hymenorus niger, Melsh.
- Isomira quadristriata, Coup.
- Mycetochara fraterna, Say.
- Androchirus erythropus, Kirby.

Lagriidae.

- Arthromacra aenea, Say.

Melandryidae.

- Tetratoma truncorum, Lec.
- Penthe obliquata, Fab.
- “ pimelia, Fab.
- Synchroa punctata, Newm.

INSECTS AND THEIR ALLIES

Melandryidae—(Continued).

- Prothalia undata, Lec.
- Melandrya striata, Say.
- Enchodes sericea, Hald.
- Hypulus simulator, Newm.
- Dircaea liturata, Lec.
- Eustrophus bicolor, Say.
- “ bifasciatus, Say.
- “ tomentosus, Say.
- Hallomenus punctulatus, Lec.
- Orchesia castanea, Melsh.
- Canifa pallipes, Melsh.
- Mycterus scaber, Hald.

Pythidae.

- Pytho americanus, Kirby.
- Rhinosimus viridiaeneus, Rand.

Oedemeridae.

- Nacerdes melanura, Linn.
- Asclera ruficollis, Say.
- “ puncticollis, Say.

Cephaloidea.

- Cephaloon lepturides, Newm.

Mordellidae.

- Anaspis flavipennis, Hald.
- “ rufa, Say.
- Tomoxia bidentata, Say.
- Mordella melaena, Germ.
- “ scutellaris, Fab.
- “ marginata, Melsh.
- “ serval, Say.

NATURAL HISTORY, TORONTO REGION

Mordellidae (Continued).

- Mordellistena scapularis*, Say.
- “ *comata*, Lec.
- “ *tosta*, Lec.
- “ *nigricans*, Melsh.
- “ *fuscata*, Melsh.

Anthicidae.

- Stereopalpus badiipennis*, Lec.
- Corphyra terminalis*, Say.
- “ *fulvipes*, Newm.
- “ *newmani*, Lec.
- “ *lugubris*, Say.
- Macratria murina*, Fab.
- Notoxus anchora*, Hentz.
- Anthicus obscurus*, Laf.
- “ *cinctus*, Say.
- “ *scabriceps*, Lec.
- “ *cervinus*, Laf.
- “ *melancholicus*, Laf.

Pyrochroidae.

- Schizotus cervicalis*, Newm.
- Dendroides canadensis*, Lat.
- “ *concolor*, Newm.
- “ *bicolor*, Newm.

Meloidae (Blister-beetles)

- Meloe niger*, Kirby.
- “ *angusticollis*, Say.
- “ *americanus*, Leach.
- Macrobasis unicolor*, Kirby.
- Epicauta pennsylvanica*, De G.

INSECTS AND THEIR ALLIES

Rhipiphoridae.

Myodites luteipennis, Lec.

“ *zeschii*, Lec.

Rhinomaceridae.

Rhinomacer elongatus, Lec.

Rhynchitidae.

Eugnamptus angustatus, Hbst.

Rhynchites cyanellus, Lec.

Attelabidae.

Attelabus analis, Ill.

Otiorhynchidae (Scarred Snout-beetles).

Hormorus undulatus, Uhl.

Anametis grisea, Horn.

Panscopus erinaceus, Say.

Phyxelis rigidus, Say.

Otiorhynchus sulcatus, Fab.

“ *ovatus*, Linn.

Pandeletejus hilaris, Hbst.

Cyphomimus dorsalis, Horn.

Scythropus elegans, Coup.

Barypithes pellucidus, Boh.

Curculionidae (Curculios, Weevils),

Sitones flavescens, Marsh.

Ithycerus noveboracensis, Forst.

Podapion gallicola, Riley.

Phytonomus punctatus, Fab.

“ *nigrirostrus*, Fab.

Lepyrus geminatus, Say.

Listronotus sordidus, Gyll.

“ *callosus*, Lec.

NATURAL HISTORY, TORONTO REGION

Curculionidae (Curculios, Weevils)—(Continued).

Listronotus appendiculatus, Boh.

“ *latiusculus*, Boh.

Macrops delumbus, Gyll.

“ *sparsus*, Say.

“ *porcellus*, Say.

“ *solutus*, Boh.

Pissodes strobi, Peck.

“ *affinis*, Rand.

Hylobius pales, Hbst.

Lixus rubellus, Rand.

“ *concaevus*, Say.

Stephanocleonus plumbeus, Lec.

Dorytomus laticollis, Lec.

“ *brevicollis*, Lec.

“ *hirtus*, Lec.

Grypidius equiseti, Fab.

Erycus puncticollis, Lec.

Onychilis nigrirostris, Boh.

Endalus limatulus, Gyll.

“ *ovalis*, Lec.

Anchodemus angustus, Lec.

Lissorhoptrus simplex, Say.

Otidocephalus scrobicollis, Boh.

Magdalis lecontei, Horn.

“ *pandura*, Say.

“ *armicollis*, Say.

“ *pallida*, Say.

Anthonomus quadrigibbus, Say.

“ *nebulosus*, Lec.

INSECTS AND THEIR ALLIES

Curculionidae (Curculios, Weevils)—(Continued).

- Anthonomus profundus*, Lec.
“ *scutellatus*, Gyll.
“ *signatus*, Say.
“ *sycophanta*, Walsh.
“ *corvulus*, Lec.
“ *pusillus*, Lec.
“ *crataegi*, Walsh.
Orchestes minutus, Horn.
“ *niger*, Horn.
“ *ephippiatus*, Say.
Eleschus ephippiatus, Say.
Proctorus armatus, Say.
Thysanocnemis fraxini, Lec.
Gymnetron teter, Fab.
Conotrachelus juglandis, Lec.
“ *nenuphar*, Hbst.
“ *crataegi*, Walsh.
“ *posticatus*, Boh.
“ *anaglypticus*, Say.
Rhyssematus lineaticollis, Say.
Acamptus rigidus, Lec.
Tyloderma aereum, Say.
Cryptorhynchus parochus, Hbst.
“ *bisignatus*, Say.
“ *lapathi*, Linn.
Copturus operculatus, Say.
Acoptus suturalis, Lec.
Cnemogonus epilobii, Payk.
Ceutorhynchus rapae, Gyll.

NATURAL HISTORY, TORONTO REGION

Curculionidae (Curculios, Weevils)—(Continued).

Ceutorhynchus sulcipennis, Lec.

“ *decipiens*, Lec.

“ *cyanipennis*.

“ *septentrionis*, Gyll.

Rhinoneus pericarpus, Linn.

“ *pyrrhopus*, Lec.

Baris transversa, Say.

Madarus undulatus, Say.

Stethobaris tubulatus, Say.

Balaninus nasicus, Say.

“ *rectus*, Say.

Brentidae.

Eupsalis minuta, Drury.

Calandridae (Bill-bugs).

Sphenophorus ochreus, Lec.

“ *costipennis*, Horn.

“ *sculptilis*, Uhl.

Calandra oryzae, Linn.

Dryophthorus corticalis, Say.

Cossonus platalea, Say.

“ *corticola*, Say.

Rhyncholus brunneus, Mann.

Stenoscelis brevis, Boh.

Scolytidae (Engraver-beetles, etc.).

Gnathotrichus materiarius, Fitch.

Pityophthorus minutissimus, Zimm.

Pityogenes sparsus, Lec.

Xyloterus bivittatus, Kirby.

“ *politus*, Say.

INSECTS AND THEIR ALLIES

Scolytidae (Engraver-beetles, etc.)—(Continued).

- Xyleborus celsus, Eich.
- Tomicus caelatus, Eich.
- “ calligraphus, Germ.
- “ pini, Say.
- Eccoctogaster rugulosus, Ratz.
- Hylesinus aculeatus, Say.
- Phloeosinus dentatus, Say.
- Dendroctonus valens, Lec.
- Hylurgops pinifex, Fitch.

Anthribidae.

- Allandrus bifasciatus, Lec.
- Cratoparis lunatus, Fab.
- Brachytarsus variegatus, Say.

Order LEPIDOPTERA.

Superfamily PAPILIONOIDEA (Butterflies).

Papilionidae (Swallow-tails).

- Iphioides ajax, Linn.
- Papilio glaucus, Linn, var. turnus, Linn.
- “ troilus, Linn.
- “ thoas, Linn.
- “ polyxenes, Fab.
- Laertias philenor, Linn.

Pieridae (Pierids).

- Pontia protodice, Bd.-Lec.
- “ napi, Linn.
- “ rapae, Linn.
- Zerene caesonia, Stoll.

NATURAL HISTORY, TORONTO REGION

Pieridae (Pierids)—(Continued).

Eurymus eurytheme, Bdv.

“ *philodice*, Godart.

Nymphalidae (Fritillaries, Angle-wings, etc.).

Euptoieta claudia, Cram.

Speyeria idalia, Drury.

Argynnis cybele, Fab.

“ *aphrodite*, Fab.

“ *atlantis*, Edw.

Brenthis myrina, Cram.

“ *bellona*, Fab.

Euphydryas phaeton, Drury.

Charidryas nycteis, D. & H.

“ *ismeria*, B. & L.

Phyciodes tharos, Drury.

“ *batesii*, Reak.

“ *carlota*, Reak.

Polygonia interrogationis, Fab.

“ *comma*, Harris.

“ *progne*, Cramer.

Eugonia j-album, B. & L.

Euvanessa antiopa, Linn.

Aglais milberti, Godart.

Vanessa atalanta, Linn.

“ *huntera*, Fab.

“ *cardui*, Linn.

“ *caryae*, Hbn.

Junonia coenia, Hbn.

Basilarchia arthemis, Drury.

“ *archippus*, Cramer.

INSECTS AND THEIR ALLIES

Agapetidae (Satyridae) (Meadow-browns).

Cercyonis alope, Fab. var. *nephele*, Kirby.

Satyrodes canthus, Linn.

Cissia eurytris, Fab.

Lymnadidae (Milkweed Butterflies, etc.).

Anosia plexippus, Linn.

Libytheidae (Long-beaks).

Hypatus bachmani, Kirkland.

Lycenidae (Blues, Coppers, Hairstreaks).

Thecla acadica, Edw.

“ *edwardsii*, Saund.

“ *calanus*, Hbn.

“ *ontario*, Edw.

“ *liparops*, B. & L.

Incisalia niphon, Hbn.

Erora laeta, Edw.

Strymon titus, Fab.

Feniseca tarquinius, Fab.

Chrysophanus thoe, Bdv.

Epidemia epixanthe, B. & L.

Heodes hypophlaeas, Bdv.

Rusticus scudderi, Edw.

Cyaniris ladon, Cram., vars. *lucia*, Kirby,

marginata, Edw., *violacea*, Edw., and

neglecta, Edw.

Everes comyntas, Godt.

Hesperilidae (Skippers).

Ancyloxypha numitor, Fab.

Atrytone hobomok, Harr.

Anthomaster leonardus, Harr.

NATURAL HISTORY, TORONTO REGION

Hesperiidae (Skippers)—(Continued).

- Thymelicus brettus*, B. & L.
" *otho*, S. & A., var. *egeremet*,
Scudd.
" *mystic*, Scudd.
" *cernes*, B. & L.
Polites peckius, Kirby.
" *baracoa*, Lucas.
Euphyes vestris, Bdv., var. *metacomet*,
Harr.
Phycanassa viator, Edw.
Epargyreus tityrus, Fab.
Thorybes pylades, Scudd.
Pholisora catullus, Fab.
Thanaos brizo, B. & L.
" *icelus*, Lint.
" *persius*, Scudd.
" *martialis*, Scudd.
" *juvenalis*, Fab.

Superfamily SPHINGOIDEA.

Sphingidae (Hawk-moths or Sphinxes).

- Hemaris diffinis*, Bdv.
" *thysbe*, Fab.
Amphion nessus, Cram.
Specodina abbotti, Swainson.
Deilephila galii, Rott.
" *lineata*, Fab.
Pholus pandorus, Hbn.
" *achemon*, Drury.

INSECTS AND THEIR ALLIES

Sphingidae (Hawk-moths or Sphinxes)—(Continued).

Ampelophaga choerilus, Cram.

“ *myron*, Cram.

“ *versicolor*, Harr.

Phlegethontius quinquemaculata, Haworth.

Sphinx kalmiae, S. & A.

“ *drupiferarum*, S. & A.

“ *gordius*, Stoll.

“ *luscitiosa*, Clemens.

“ *chersis*, Hbn.

“ *eremitus*, Hbn.

Ceratomia amyntor, Geyer.

“ *undulosa*, Walk.

Lapara bombycoides, Walk.

Marumba modesta, Harris.

Smerinthus jamaicensis, Drury.

“ *cerysii*, Kirby.

Paonias excaecatus, S. & A.

“ *myops*, S. & A.

Cressonia juglandis, S. & A.

Superfamily SATURNOIDEA.

Saturniidae (Saturnians).

Samia cecropia, Linn.

Callosamia promethea, Dru.

Tropaea luna, Linn.

Telea polyphemus, Cram.

Automeris io, Fab.

NATURAL HISTORY, TORONTO REGION

Ceratocampidae (Royal-moths).

Anisota virginiensis, Dru.

“ *rubicunda*, Fab.

Superfamily BOMBYCOIDEA.

Syntomidae (Syntomids).

Scepsis fulvicollis, Hbn.

Lycomorpha pholus, Dru.

Otenucha virginica, Charp.

Lithosiidae (Footman-moths).

Crambidia casta, Sanborn.

Hypoprepia miniata, Kirby.

Arctiidae (Tiger-moths).

Eubaphe brevicornis, Walk.

“ *quinaria*, Grt.

Haploa lecontei, Bdv.

“ *confusa*, Lyman.

Estigmene acraea, Dru.

Hyphantria textor, Harris.

Isia isabella, S. & A.

Phragmatobia fuliginosa, Linn.

Diacrisia virginica, Fab.

“ *latipennis*, Stretch.

Apantesis virgo, Linn.

“ *virguncula*, Kirby.

“ *parthenice*, Kirby.

“ *persephone*, Grt.

“ *arge*, Dru.

“ *phyllira*, Dru.

“ *vittata*, Fab.

INSECTS AND THEIR ALLIES

Arctiidae (Tiger-moths)—(Continued).

- Arctia caia*, Linn.
- Ammalo tenera*, Hbn.
- Euchaetias egle*, Dru.
- Halisidota tessellaris*, S. & A.
- “ *maculata*, Harris.
- “ *caryae*, Harris.

Agaristidae (Wood-nymph Moths).

- Alypia octomaculata*, Fab.

Noctuidae (Owlet-moths).

- Panthea furcilla*, Pack.
- Demas flavicornis*, Smith.
- Charadra deridens*, Gn.
- Raphia frater*, Grt.
- Apatela americana*, Harris.
- “ *bastulifera*, S. & A.
- “ *dactylina*, Grt.
- “ *innotata*, Gn.
- “ *morula*, Grt.
- “ *interrupta*, Gn.
- “ *clarescens*, Gn.
- “ *superans*, Gn.
- “ *funeralis*, Grt.
- “ *fragilis*, Gn.
- “ *brumosa*, Gn.
- “ *impressa*, Walk.
- “ *impleta*, Walk.
- “ *illita*, Sm.
- “ *oblinita*, S. & A.
- Arsilonche henrici*, Grt.

NATURAL HISTORY, TORONTO REGION

Noctuidae (Owlet-moths)—(Continued).

Harrisimemna trisignata, Walk.

Microcoelia diptheroides, Gn.

Jaspidia lepidula, Grt.

Chytonia palliatricula, Gn.

Baileya ophthalmica, Gn.

Catabena lineolata, Walk.

Crambodes talidiformis, Gn.

Balsa malana, Fitch.

Caradrina multifera, Walk.

Oligia festivoides, Gn.

Hadena modica, Gn.

“ *mactata*, Gn.

“ *fractilinea*, Grt.

“ *passer*, Gn.

“ *apamiformis*, Gn.

“ *lateritia*, Hbn.

“ *dubitans*, Walk.

“ *impulsa*, Gn.

“ *devastatrix*, Brace.

“ *arctica*, Bdv.

“ *verbascoides*, Gn.

“ *lignicolor*, Gn.

Dryobota illocata, Walk.

Hyppa xylinoides, Gn.

Feralia major, Sm.

Momophana comstocki, Grt.

Euplexia lucipera, Linn.

Dipterygia scabriuscula, Linn.

Actinotia ramosula, Gn.

INSECTS AND THEIR ALLIES

Noctuidae (Owlet-moths)—(Continued).

- Pyrophila pyramidoides, Gn.
- “ trogopoginis, Linn.
- Heliotropha reniformis, Grt.
- Homohadena badistriga, Grt.
- Psaphidia grotei, Morr.
- Rhynchagrotis gilvipennis, Grt.
- “ anchocelioides, Gn.
- “ alternata, Grt.
- Adelphagrotis prasina, Fab.
- Platagrotis pressa, Grt.
- Eueretagrotis sigmoides, Gn.
- “ perattenta, Grt.
- Semiophora tenebrifera, Walk.
- Agrotis ypsilon, Lott.
- “ geniculata, G. & R.
- Peridroma occulta, Linn.
- “ saucia, Hbn.
- Noctua smithii, Snellen.
- “ normaniana, Grt.
- “ bicarnea, Gn.
- “ c-nigrum, Linn.
- “ phyllophora, Grt.
- “ fennica, Tausch.
- “ plecta, Linn.
- “ collaris, G. & R.
- “ haruspica, Grt.
- “ clandestina, Harr.
- Feltia ducens, Walk.
- “ jaculifera, Gn.

NATURAL HISTORY, TORONTO REGION

Nectuidae (Owlet-moths)—(Continued).

Feltia herilis, Grt.

“ *venerabilis*, Walk.

“ *volubilis*, Harr.

Porosagrotis vetusta, Walk.

Euxoa velleripennis, Grt.

“ *scandens*, Riley.

“ *detersa*, Walk.

“ *messoria*, Harris.

“ *mollis*, Walk.

“ *insulsa*, Walk.

“ *albipennis*, Grt.

“ *tessellata*, Harr.

“ *ochrogaster*, Gn.

“ *redimacula*, Morr.

Anytus privatus, Walk.

Ufeus satyricus, Grt.

Mamestra nimbose, Gn.

“ *imbrifera*, Gn.

“ *purpurissata*, Grt.

“ *meditata*, Grt.

“ *distincta*, Hbn.

“ *atlantica*, Grt.

“ *radix*, Walk.

“ *nevadae*, Grt.

“ *subjuncta*, G. & R.

“ *grandis*, Bdv.

“ *trifolii*, Lott.

“ *rosea*, Harv.

“ *picta*, Harr.

INSECTS AND THEIR ALLIES

Noctuidae (Owlet-moths)—(Continued).

- Mamestra assimilis*, Morr.
- “ *latex*, Gn.
- “ *adjuncta*, Bdv.
- “ *legitima*, Grt.
- “ *lilacina*, Harv.
- “ *renigera*, Stephens.
- “ *olivacea*, Morr.
- “ *lorea*, Gn.
- Morrisonia*, *confusa*, Hbn.
- “ *sectilis*, Gn. var. *vomerina*, Grt.
- Nephelodes minians*, Gn.
- Heliophila unipuncta*, Haw.
- “ *pseudargyria*, Gn.
- “ *luteopallens*, Sm.
- “ *albilinea*, Hbn.
- “ *insueta*, Gn.
- “ *commoides*, Gn.
- “ *phragmatidicola*, Gn.
- Orthodes crenulata*, Butler.
- “ *cynica*, Gn.
- “ *vecors*, Gn.
- Himella contrahens*, Walk.
- Crocigrapha normani*, Grt.
- Graphiphora alia*, Gn.
- Tricholita signata*, Walk.
- Lithomoia germana*, Morr.
- Xylina disposita*, Morr.
- “ *laticinerea*, Grt.
- “ *grotei*, Riley.

NATURAL HISTORY, TORONTO REGION

Nectuidae (Owlet-moths)—(Continued).

- Xylina ferrealis*, Grt.
- “ *innominata*, Sm.
- “ *bethunei*, G. & R.
- “ *semiusta*, Grt.
- “ *fagina*, Morr.
- “ *unimoda*, Lintner.
- “ *pezata*, Grt.
- Litholomia napaea*, Morr.
- Calocampa nupera*, Lint.
- “ *curvimacula*, Morr.
- Cucullia convexipennis*, G. & R.
- “ *asteroides*, Gn.
- “ *intermedia*, Speyer.
- Sphida obliqua*, Walk.
- Achatodes zeae*, Harris.
- Gortyna velata*, Walk.
- “ *nictitans*, Bork.
- Papaipema cataphracta*, Grt.
- Pyrrhia umbra*, Hufn.
- “ *experimens*, Walk.
- Xanthia flavago*, Fab.
- Brotolomia iris*, Gn.
- Trigonophora periculosa*, Gn.
- Eucirroedia pampina*, Gn.
- Scoliopteryx libatrix*, Linn.
- Cosmia discolor*, Walk.
- Orthosia bicolorago*, Gn.
- “ *euroa*, G. & R.
- Parastichtis discivaria*, Walk.

INSECTS AND THEIR ALLIES

Noctuidae (Owlet-moths)—(Continued).

- Scopelosoma moffatiana, Grt.
- “ ceromatica, Grt.
- “ tristigmata, Grt.
- “ walkeri, Grt.
- “ morrisoni, Grt.
- Glaea inulta, Grt.
- Homoglaea hircina, Morr.
- Heliiothis armiger, Hbn.
- Rhodophora florida, Gn.
- Schinia marginata, Haw.
- Euthisanotia unio, Hbn.
- “ grata, Fab.
- Plusiodonta compressipalpis, Gn.
- Calpe canadensis, Bethune.
- Panchrysia purpurigera, Walk.
- Plusia aerea, Hbn.
- “ aeroides, Grt.
- “ balluca, Geyer.
- Euchalcia contexta, Grt.
- “ venusta, Walk.
- Autographa bimaculata, Steph.
- “ biloba, Steph.
- “ precationis, Gn.
- “ rogationis, Gn.
- “ brassicae, Riley.
- “ octoscripta, Grt.
- “ rectangula, Kirby.
- “ viridisignata, Grt.
- “ epigaea, Grt.

NATURAL HISTORY, TORONTO REGION

Noctuidae (Owlet-moths)—(Continued).

- Autographa ampla**, Walk.
- “ **falcigera**, Kirby.
- “ **simplex**, Gn.
- Abrostola urentis**, Gn.
- Ogdoconta cinereola**, Gn.
- Marasmalus inficita**, Walk.
- Rivula propinqualis**, Gn.
- Eustrotia albidula**, Gn.
- “ **synochitis**, G. & R.
- “ **moscoscula**, Gn.
- “ **carneola**, Gn.
- Chamyris ceraintha**, Treit.
- Tarache erastrides**, Gn.
- Metathorasa monitifera**, Gn.
- Euherrichia mollissima**, Gn.
- Hyamia sexpunctata**, Grt.
- Homopyralis discalis**, Grt.
- Drasteria erectea**, Cramer.
- Euclidia cuspidea**, Hbn.
- Meliopotis limbolaris**, Geyer.
- Catocala viduata**, Gn.
- “ **relecta**, Grt.
- “ **obscura**, Strecker.
- “ **insolabilis**, Gn.
- “ **relecta**, Walk.
- “ **cara**, Gn.
- “ **amatrix**, Hbn.
- “ **concumbens**, Walk.
- “ **unijuga**, Walk.

INSECTS AND THEIR ALLIES

Noctuidæ (Owlet-moths)—(Continued).

- Catocala briseis*, Edw.
“ *parva*, Gn.
“ *ultronia*, Hbn.
“ *ilia*, Cram.
“ *neogama*, S. & A.
“ *cerogama*, Gn.
“ *antinympha*, Hbn.
“ *habilis*, Grt.
“ *crataegi*, Saund.
Euparthenos nubilis, Hbn.
Panapoda rufimargo, Hbn.
Parallelia bistriaris, Hbn.
Remigia repanda, Fab.
Zale horrida, Hbn.
Pheocyma lunata, Dru.
“ *nigricans*, Bethune.
“ *duplicata*, Bethune.
Ypsia undularis, Dru.
Erebus odora, Linn.
Thysania zenobia, Cram.
Epizeuxis americalis, Gn.
“ *aemula*, Hbn.
“ *lubricalis*, Geyer.
Zanclognatha laevigata, Grt.
“ *pedipilalis*, Gn.
“ *marcidilinea*, Grt.
Hormisa absorptalis, Walk.
Philometra eumelusalis, Walk.
Chytolita morbidalis, Gn.

NATURAL HISTORY, TORONTO REGION

Noctuidae (Owlet-moths)—(Continued).

- Renia flavipunctalis*, Geyer.
- Bleptina caradrinalis*, Gn.
- Palthis angulalis*, Hbn.
- Bomolocha baltimoralis*, Gn.
- “ *albilinealis*, Walk.
- Plathypena scabra*, Fab.
- Hypena humuli*, Harris.

Notodontidae.

- Melalopha albosigma*, Fitch.
- Datana ministra*, Dru.
- “ *drexelii*, Hy. Edw.
- “ *integerrima*, G. & R.
- Hyperaeschra stragula*, Grt.
- “ *georgica*, H.-S.
- Notodonta basitriens*, Walk.
- “ *simplaria*, Graef.
- Pheosia dimidiata*, H.-S.
- Lophodonta ferruginea*, Pack.
- “ *angulosa*, S. & A.
- Nadata gibbosa*, S. & A.
- Nerice bidentata*, Walk.
- Symmerista albifrons*, S. & A.
- Dasylophia thyatiroides*, Walk.
- Heterocampa manteo*, Dbd.
- “ *umbrata*, Walk.
- “ *guttivitta*, Walk.
- Schizura ipomoeae*, Dbd.
- “ *concinna*, S. & A.
- “ *unicornis*, S. & A.

INSECTS AND THEIR ALLIES

Notodontidae (Continued).

- Schizura badia, Pack.
- “ leptinoides, Grt.
- Cerura occidentalis, Lint.
- Harpyia cinerea, Walk.
- “ scolopendrina, Bdv.
- Fentonia marthesia, Cramer.
- Gluphisia septentrionalis, Walk.
- Ellida caniplaga, Walk.

Thyatiridae.

- Habrosyne scripta, Gosse.
- Pseudothyatira cymatophoroides, Gn.
- “ expultrix, Grt.

Liparidae (Tussock-moths).

- Notolophus antiqua, Linn.
- Hemerocampa leucostigma, S. & A.
- Olene plagiata, Walk.

Lasiocampidae (Tent-caterpillar Family).

- Tolyte velleda, Stoll.
- Malacosoma americana, Fab.
- “ disstria, Hbn.
- Epicnaptera americana, Harr.

Platypterygidae (Hook-tip Moths).

- Eudeilinea herminiata, Gn.
- Drepana arcuata, Walk.
- Falcaria bilineata, Pack.

Geometridae (Geometrids, Measuring-worms).

- Dyspteris abortivaria, H.-S.
- Nyctobia limitaria, Walk.

NATURAL HISTORY, TORONTO REGION

Geometridae (Geometrids, Measuring-worms)—(Contin'd)

- Cladora atroliturata*, Walk.
- Alsophila pometaria*, Harr.
- Eudule mendica*, Walk.
- Tallegda tabulata*, Hulst.
- Nannia refusaria*, Walk.
- Heterophleps triguttaria*, H.-S.
- Eupithecia indistincta*, Taylor.
- Eucymatoge intestinata*, Gn.
- Venusia cambrica*, Curtis.
- Trichodezia albovittata*, Gn.
- Epirrita dilutata*, D. & S.
- Hydria undulata*, Linn.
- Eustroma diversilineata*, Hbn.
- Rheumaptera hastata*, Linn.
- “ *sociata*, Bork.
- Percnoptilata fluviata*, Hbn.
- Mesoleuca ruficillata*, Gn.
- “ *lacustrata*, Gn.
- “ *vasiliata*, Gn.
- Hydriomena autumnalis*, Strom.
- “ *multiferata*, Walk.
- “ *latirupta*, Walk.
- Triphosa indubitata*, Grt.
- Gypsochroa designata*, Hufn.
- Xanthorhoe ferrugata*, Clerck.
- Haematopsis grataria*, Fabr.
- Cosymbia lumenaria*, Hbn.
- Synelys ennucleata*, Gn.
- Chlorochlamys chloroleucaria*, Gn.

INSECTS AND THEIR ALLIES

Geometridae (Geometrids, Measuring-worms)—(Contin'd)

- Eucrostis incertata*, Walk.
- Aplodes miniosaria*, Gn.
- Eufidonia notataria*, Walk.
- Corycia vestaliata*, Gn.
- Physostegania pustularia*, Gn.
- Gueneria basiata*, Pack.
- Deilinia variolaria*, Gn.
- “ *erythremaria*, Gn.
- Sciagraphia granitata*, Gn.
- “ *mellistrigata*, Grt.
- Philobia enotata*, Gn.
- Macaria bisignata*, Walk.
- Diastictis ribearia*, Fitch.
- Homochlodes fritillaria*, Gn.
- Apaecasia deterrenta*, Gn.
- “ *defluata*, Walk.
- Nepytia semiclusaria*, Walk.
- Paraphia subatomaria*, Wood.
- Selidosema humaria*, Gn.
- Melanolophia canadaria*, Gn.
- Ectropis crepuscularia*, D. & S.
- Lycia ursaria*, Walk.
- “ *cognataria*, Gn.
- Nacophora quernaria*, S. & A.
- Paleacrita vernata*, Peck.
- Phigalia titea*, Cramer.
- Erannis tiliaria*, Harr.
- Cingilia catenaria*, Dru.
- Anagoga pulveraria*, Linn.

NATURAL HISTORY, TORONTO REGION

Geometridae (Geometrids, Measuring-worms)—(Contin'd)

- Therina fiscellaria*, Gn.
- Metrocampa perlata*, Gn.
- Eugonobapta nivosaria*, Gn.
- Ennomos subsignarius*, Hbn.
- “ *magnarius*, Gn.
- Xanthotype crocataria*, Fab.
- Plagodis phlogosaria*, Gn.
- “ *serinaria*, H.-S.
- Hyperetis amicaria*, H.-S.
- Ania limbata*, Haw.
- Gonodontis hypocharia*, H.-S.
- “ *duaria*, Gn.
- “ *obfirmaria*, Hbn.
- Euchlaena effectaria*, Walk.
- “ *marginata*, Minot.
- Eutrapela alciphearia*, Walk.
- Metanema inatomaria*, Gn.
- “ *determinata*, Walk.
- Pero honestarius*, Walk.
- Caberodes confusaria*, Hbn.
- Tetracis crocallata*, Gn.
- Sabulodes lorata*, Grt.
- “ *transversata*, Drury.
- Abbotana clemataria*, S. & A.
- Brephos infans*, Moeschl.

Limacodidae (Slug-caterpillar Moths).

- Euclea delphinii*, Bdv.
- Natada nasoni*, Grt.
- Tortricidea testacea*, Pack.

INSECTS AND THEIR ALLIES

Thyridae (Window-winged Moths).

Thyris maculata, Harris.

Cossidae (Carpenter-moths).

Cossus centerensis, Lint.

Prionoxystus robiniae, Peck.

Sesiidae (Clear-wing Moths).

Bembecia marginata, Harris.

Sesia tipuliformis, Clerck.

“ *acerni*, Clemens.

Pyralidae (Pyralids).

Desmia funeralis, Hbn.

Blepharomastix ranalis, Hbn.

Pantographia limata, G. & R.

Diaphania quadristigmalis, Gn.

Hellula undalis, Fab.

Evergestis straminealis, Hbn.

Crocidophora serratissimalis, Zeller.

Nomophila noctuella, D. & S.

Loxostege chortalis, Grt.

“ *nasonialis*, Zeller.

Phlyctaenia ferrugalis, Hbn.

“ *acutella*, Walk.

Pyrausta fissalis, Grt.

“ *illibalis*, Hbn.

“ *fodinalis*, Led.

“ *signatalis*, Walk.

“ *funebri*, Strom.

Nymphula icciusalis, Walk.

“ *badiusalis*, Walk.

Pyralis farinalis, Linn.

NATURAL HISTORY, TORONTO REGION

Pyralidae (Pyralids)—(Continued).

- Hypropygia costalis*, Fab.
- Schoenobius forficellus*, Thunb.
- Crambus girardellus*, Clemens.
- “ *laqueatellus*, Clemens.
- “ *albellus*, Clemens.
- “ *hortuellus*, Hbn.
- “ *perlellus*, Scop.
- “ *elegans*, Clemens.
- “ *vulgivagellus*, Clemens.
- “ *trisectus*, Walk.
- “ *alboclavellus*, Zeller.
- Argyria nivalis*, Drury.
- “ *auratella*, Clem.
- Galleria mellonella*, Linn.
- Acrobasis betulella*, Hulst.
- Mineola indiginella*, Zeller.
- Ephestia kuchniella*, Zeller.
- Plodia interpunctella*, Hbn.

Pterophoridae (Plume-moths).

- Oxyptilus periscelidactylus*, Fitch.
- “ *tenuidactylus*, Fitch.
- Platyptilia marginidactyla*, Fitch.
- Pterophorus monodactylus*, Linn.
- “ *eupatorii*, Fern.

Tortricidae (Tortricids).

- Retinia austriana*, Cosens.
- Exartema exoletum*, Zeller.
- Olethreutes campestrana*, Zeller.
- Eucosma cataclystiana*, Walk.

INSECTS AND THEIR ALLIES

Tortricidae (Tortricids)—(Continued).

- Eucosma abbreviatana*, Walsm.
- “ *scudderiana*, Clemens.
- “ *pergandeana*, Fern.
- Thiodia striatana*, Clem.
- Proteopteryx costomaculana*, Clem.
- Imetocera ocellana*, Schiff.
- Ancylys discigerana*, Walk.
- “ *semiovana*, Zeller.
- Enarmonia interstinctana*, Clemens.
- “ *saundersana*, Kearf.
- Carpocapsa pomonella*, Linn.
- Archips rosaceana*, Harris.
- “ *purpurana*, Clemens.
- “ *cerasivorana*, Fitch.
- “ *fervidana*, Clemens.
- “ *melaleucana*, Walk.
- Tortrix albicomana*, Clemens.
- “ *fumiferana*, Clemens.
- “ *semipurpurana*, Kearf.
- Eulia quadrifasciana*, Fern.
- “ *pinatubana*, Kearf.
- Phalonia vitellinana*, Zeller.

Yponomeutidae.

- Plutella maculipennis*, Curtis.

Gelechiidae.

- Gnorimoschema gallaesolidaginis*, Riley.
- “ *gallaeasteriella*, Kell.
- Metzneria lappella*, Linn.

NATURAL HISTORY, TORONTO REGION

Gelechiidae (Continued).

Anacampsis lupinella, Busck.

Ypsolophus ligulellus, Hbn.

œcophoridae.

Machimia tentoriferella, Clemens.

Depressaria atrodorsella, Clemens.

“ *heracliana*, DeGeer.

Blastobasidae.

Holocera purpurocomella, Clemens.

Elachistidae.

Stagmatophora ceanothiella, Cosens.

Coleophora fletcherella, Fern.

Lymnaecia phragmitiella, Stainton.

Mompha brevivittella, Clemens.

Tineidae (Clothes-moths, etc.).

Nepticula pomivorella, Pack.

Bucculatrix canadensisella, Chamb.

Tineola bisselliella, Hummel.

Tinea pellionella, Linn.

Trichophaga tapetzella, Linn.

Hepialidae (Ghost-moths).

Sthenopis argenteomaculatus, Harris.

“ *quadriguttatus*, Grt.

Order HYMENOPTERA.

Species marked (B) were taken from Dr. Brodie's MS. notes and were determined chiefly by Ashmead; those marked (C) were contributed by Dr. Cosens;

INSECTS AND THEIR ALLIES

the others are in the collection of the Provincial Museum, collected by Dr. Brodie.

Superfamily TENTHREDINOIDEA.

Lydidae (Saw-flies).

Anoplolyda luteicornis, Nort.

Tenthredinidae (Saw-flies).

Allantus cinctus, Linn.

Strongylogaster annulosus, Harr.

Dolerus aprilis, Nort.

“ *similis*, Nort.

Lagium atroviolaceum, Nort.

Tenthredella albifrons, Prov.

“ *melanosoma*, Harrington.

“ *mellicoxae*, Prov.

“ *mellina*, Nort.

“ *rufopecta*, Nort.

“ *signata*, Nort.

“ *varipes*, Nort.

“ *varipicta*, Nort.

“ *verticalis*, Say.

Macrophya epinota, Say.

“ *flavicoxae*, Nort.

“ *trisyllaba*, Nort.

Tenthredo basilaris, Say.

“ *unicinctulus*, D. T.

Trichiosoma triangulum, Kirby.

Cimbex americana, Leach.

Euura serissimae, Rohwer (C).

NATURAL HISTORY, TORONTO REGION

Tenthredinidae (Saw-flies)—(Continued).

- Euura s-gemina*, Walsh (C).
- “ *s-ovum*, Walsh (C).
- Pontania crassicornis*, Rohwer (C).
- “ *desmodioides*, Walsh (C).
- “ *hyalina*, Norton (C).
- “ *lucidae*, Rohwer (C).
- “ *pisum*, Walsh (C).
- “ *pomum*, Walsh (C).
- Pteronidea ribesi*, Scop.
- Nematus erichsonii*, Hartig (Walker).
- Arge scapularis*, King.

Siricidae (Horn-tails).

- Tremex columba*, Linn. (Walker).

Superfamily CYNIPOIDEA.

Cynipidae (Gall-flies, etc.).

- Synergus quercus-lanae*, Fitch (B).
- “ *lignicola*, O. S. (B).
- “ *oneratus*, Harr. (B).
- Ceroptres ficus*, Fitch (B).
- “ *petiolicola*, O. S. (B)
- “ *tuber*, Fitch (B).
- “ *frondosae*, Ashm. (B).
- Philonyx erinacei*, Beut. (C).
- “ *hirta*, Bass. (C).
- “ *nigra*, Gillette (C).
- Biorhiza forticornis*, Walsh (C) (B).
- Neuroterus batatus*, Fitch (C) (B).

INSECTS AND THEIR ALLIES

Cynipidae (Gall-flies, etc.)—(Continued).

- Neuroterus majalis*, Bass. (C).
- “ *minutus*, Bass. (C).
- Dryophanta lanata*, Gill. (B).
- “ *palustris*, O. S. (C).
- “ *vesicula*, Bass. (B).
- Holcaspis bassetti*, Gillette (C).
- “ *globulus*, Fitch (C).
- “ *mamma*, Walsh (C).
- Cynips* (?) *constricta*, Stebbins (C).
- Amphibolips coccineae*, Harr. (B).
- “ *confluens*, Harr. (C) (B).
- “ *inanis*, O. S. (C).
- “ *nubilipennis*, Harr. (B).
- Andricus futilis*, O. S. (B).
- “ *impricariae*, Ashm. (C).
- “ *lana*, Fitch (C).
- “ *petiolicola*, Bass. (C) (B).
- “ *piger*, Bass. (C).
- “ *punctatus*, Bass. (C).
- “ *seminator*, Harr. (C).
- “ *singularis*, Bass. (C).
- “ *topiarus*, Ashm. (C).
- Solenozopheria vaccinii*, Ashm. (C).
- Diastrophus cuscutaeformis*, Ashm. (C) (B)
- “ *fusiformis*, Ashm. (C).
- “ *turgidus*, Ashm. (C) (B).
- Aylax glecomae*, L. (C).
- Aulacidea nabali*, Brodie (C) (B).
- “ *tumida*, Bass. (C).

NATURAL HISTORY, TORONTO REGION

Cynipidae (Gall-flies, etc.)—(Continued).

- Rhodites dichlocerus*, Harr. (C).
- “ *globulus*, Bent. (C).
- “ *gracilis*, Ash. (C) (B).
- “ *ignotus*, O. S. (C).
- “ *multispinosus*, Gill. (C).
- “ *nebulosus*, Bass. (C) (B).
- “ *radicum*, O. S. (B).
- “ *rosae*, L. (C).

Superfamily ICHNEUMONOIDEA.

Braconidae (Braconids).

- Macrocentrus uniformis*, Cress. (B).
- Meteorus vulgaris*, Cress. (B).
- Rogas intermedius*, Cress (B).
- Microbracon dorsator*, Say (B).

Ichneumonidae (Ichneumon-flies).

- Orthopelma diastrophii*, Ashm.
- Ceratogastra fasciata*, Cress.
- Exetastes suaveolens*, Walsh.
- Opheltes glaucopterus*, Linn.
- Sagaritis dubitata*, Cress.
- Campoplex valida*, Cress.
- Exochilum morio*, Fab. (*mundum*, Say).
- Enicospilus purgatus*, Say.
- Thyreodon morio*, Fab.
- Ophion bilineatus*, Say.
- Allocamptus macrurus*, Linn.
- Mesoleius submarginatus*, Cress.

INSECTS AND THEIR ALLIES

Ichneumonidae (Ichneumon-flies)—(Continued).

- Tryphon communis, Cress.
- Conoblasta erratica, Cress.
- Itoplectis conquisitor, Say.
- “ marginatus, Prov.
- Epiurus pterelas, Say.
- Eremochila indagatrix, Salsh.
- Iseropus inquisitoriella, D. T.
- Pimpla pedalis, Cress.
- Ephialtes irritator, F.
- “ tuberculatus, Fourc.
- Megarhyssa atrata, F.
- “ lunator, F.
- Rhyssa persuasoria, Linn.
- Lissonota americana, Cress.
- “ varia, Cress.
- “ exilis, Cress.
- “ rufipes, Cress.
- “ frigidus, Cress.
- “ humeralis, Prov.
- Arotes vicinus, Cress.
- Mesostenus thoracicus, Cress.
- “ arvalis, Cress.
- Cryptus americanus, Cress.
- “ extrematis, Cress.
- “ limatus, Cress.
- “ persimilis, Cress.
- “ ruficornis, Prov.
- “ rufoannulatus, Prov.
- Hemiteles humeralis, Prov.

NATURAL HISTORY, TORONTO REGION

Ichneumonidae (Ichneumon-flies)—(Continued).

Phygadeuon rotundiceps, Prov.

Ichneumon acerbas, Cress.

- “ **brevicinctor**, Say.
- “ **bronteus**, Cress.
- “ **caliginosus**, Cress.
- “ **canadensis**, Cress.
- “ **coeruleus**, Cress.
- “ **comes**, Cress.
- “ **creperus**, Cress.
- “ **duplicatus**, Cress.
- “ **flavicornis**, Cress.
- “ **flavizonatus**, Cress.
- “ **grandis**, Brullé.
- “ **hebrus**, Cress.
- “ **helvipes**, Cress.
- “ **jucundus**, Brullé.
- “ **laetus**, Brullé.
- “ **milvus**, Cress.
- “ **paratus**, Say.
- “ **parvus**, Cress.
- “ **puerilis**, Cress.
- “ **restrictus**, Cress.
- “ **rufiventris**, Brullé.
- “ **stygicus**, Cress.
- “ **subcyaneus**, Cress.
- “ **subdolus**, Cress.
- “ **unifasciatorius**, Say.
- “ **vescus**, Prov.

Amblyteles montanus, Cress.

INSECTS AND THEIR ALLIES

Ichneumonidae (Ichneumon-flies)—(Continued).

Amblyteles nubivagus, Cress.

“ *subrufus*, Cress.

“ *suturalis*, Say.

“ *ultus*, Cress.

Trogus elegans, Cress.

“ *obsidianator*, Brullé.

“ *vulpinus*, Grav.

Evaniidæ.

Gasteruption montanus, var. *incertus*, Cress.

“ *tarsatorius*, Say.

Superfamily CHALCIDOIDEA.

Callimomidae (Torymidae).

Callimome brevissimicauda, Ashm. (*brevicauda*, O. S.) (B).

“ *bedeguaris*, Linn. (*magnifica*, O. S.) (B).

“ *splendidulus* (Barnstorf)
Walker (B).

Syntomaspis brodiei, Ashm. (B).

“ *elegantissima*, Ashm. (B).

Megastigmus canadensis, Ashm. (B).

Ormyrus vaccinicola, Ashm. (B).

“ *ventricosus*, Ashm. (B).

Diomorus biorhizae, Ashm. (B).

Eurytomidae.

Eurytoma diastrophi, Walsh (B).

“ *gigantea*, Walsh (B).

NATURAL HISTORY, TORONTO REGION

Eurytomidae (Continued).

- Eurytoma prunicola, Walsh (B).
- “ solenozopheriae, Ashm. (B).
- “ studiosa, Say (B).
- Decatoma varians, Walsh (B).

Chalcididae.

- Leucospis affinis, Say.

Perilampidae.

- Perilampus platygaster, Say (B).

Pteromalidae.

- Catolaccus rosae, Say (B).

Encyrtidae.

- Encyrtus bucculatricis, How. (B).
- Copidosoma gelechia, How. (B).

Eulophidae.

- Tetrastichus racemariae, Ashm. (B).
- Sympiesis dolichogaster, Ashm. (B).

Superfamily PROCTOTRYPOIDEA (Proctotrypids).

Pelecinidae.

- Pelecinus polyturator, Drury.

Superfamily FORMICOIDEA (Ants).

The ants have not been studied. The only species we have determined is *Camponotus herculeanus pennsylvanicus*, De G.

Superfamily VESPOIDEA (Wasps).

Tiphidae.

- Tiphia inornata, Say.

INSECTS AND THEIR ALLIES

Chrysididae (Cuckoo-flies).

Hedychrum violaceum, Brullé.

Eumenidae (Solitary Wasps).

Eumenes fraternus, Say.

Odynerus (*Symmorphus*) *debilis*, Sauss.

“ (*Ancistrocerus*) *capra*, Sauss.

“ “ *uncinatus*, Say.

“ (*Odynerus*) *arvensis*, Sauss.

“ “ *catskilli*, Sauss.

“ “ *foraminatus*, Sauss.

“ (*Stenodynerus*) *pennsylvanicus*,
Sauss.

Vespidae (Social Wasps).

Polistes pallipes, Lep.

Vespula consobrina, Sauss.

“ *diabolica*, Sauss.

“ *germanica*, Fab.

“ *maculata*, Linn.

“ *vulgaris*, Linn.

Psammocharidae.

Pseudagenia mellipes, Say.

Psammochares aethiops, Cress.

“ *philadelphicus*, Lep.

“ *griseus*, Prov.

Pompiloides marginatus, Say.

Episyron biguttatus, Fab.

Ceropales bipunctata, Say.

“ *fraterna*, Smith.

“ *robinsonii*, Cress.

NATURAL HISTORY, TORONTO REGION

Pemphredonidae (Pemphredonids).

Psen niger, Pack.

Passalaeus mandibularis, Cress.

Sphécidae (Thread-waisted Wasps, Mud-daubers, etc.).

Sceliphron cementarium, Dru.

Chalybion coeruleum, Linn.

Sphex communis, Cress.

“ *conditor*, Smith.

“ *luctuosa*, Smith.

“ *procera*, Dahlb.

Ammobia ichneumonea, L.

Isodontia philadelphica, Lep.

Philanthidae (Philanthids).

Cerceris clypeata, Dahlb.

“ *nigrescens*, Smith.

Eucerceris zonatus, Say.

Philanthus bilunatus, Cress.

“ *solivagus*, Say.

Bembecidae (Bembecids).

Stictica ventralis, Fab.

Bembex fasciata, Fab.

Microbembex monodonta, Say.

Gorytidae (Gorytids).

Gorytes epphippiatus, Pack.

Crabronidae (Crabronids).

Crabro pegasus, Pack.

“ *aciculatus*, Prov.

Solenius singularis, Smith.

“ *interruptus*, St. Farg.

INSECTS AND THEIR ALLIES

Oxybelidae.

Oxybelus brodiei, Prov.

Larridae.

Astata unicolor, Say.

Trypoxylidae.

Trypoxylon clavatum, Say.

Superfamily APOIDEA (Bees).

Halictidae (Sharp-tongued Burrowing Bees).

Halictus confusus, Smith.

“ *discus*, Smith.

“ *distinguendus*, D. T.

“ *imitatus*, Smith.

“ *laevissimus*, Smith.

“ *ligatus*, Say.

“ *pilosus*, Smith.

Augochlora pura, Say.

Agapostemon radiatus, Say.

“ *virescens*, Fab.

Sphecodes scabrosus, Prov.

Andrenidae (Sharp-tongued Burrowing Bees).

Andrena erythrogastra, Ashm.

Panurgidae.

Perdita octomaculata, Say.

Calliopsis 4-lineata, Prov.

Nomadidae (Cuckoo Bees).

Nomada bisignata, Say.

Euceridae.

Melissodes aurigenia, Cress.

NATURAL HISTORY, TORONTO REGION

Anthophoridae (Solitary Bees).

Anthophora bomboides, Kirby.

Prosopidae.

Prosopis affinis, Smith.

Megachilidae (Mason Bees, Leaf-cutting Bees).

Megachile brevis, Say.

“ *vidua*, Smith.

“ *latimanus*, Say.

Osmia distincta, Cress.

Ceratinidae (Small Carpenter Bees).

Ceratina dupla, Say.

Xylocopidae (Large Carpenter Bees).

Xylocopa virginica, Dru.

Apidae (Honey-bees, Humble Bees)

Psithyrus ashtoni, Cress.

“ *laboriosus*, F.

Bombus consimilis, Cress.

“ *fervidus*, F.

‘ *ternarius*, Say.

“ *terricola*, Kby.

“ *vagans*, Smith.

Apis mellifera, L.

Order DIPTERA.

Species marked (V) were taken by Mr. M. O. Van Duzee; those marked (B) are in the Provincial Museum, Toronto, collected by Dr. Brodie; those marked (C) were contributed by Dr. A. Cosens; those marked (W) by the writer.

INSECTS AND THEIR ALLIES

Tipulidae (Crane-flies).

- Discobola argus, Say (V).
- Dicranomyia longipennis, Schu. (V)
- “ immodesta, O. S. (V).
- Limnobia immatura, O. S. (V).
- Rhamphidia flavipes, Macq. (V).
- Rhypholopus meigenii, O. S. (V).
- Erioptera straminea, O. S. (V).
- “ chlorophylla, O. S. (V).
- “ venusta, O. S. (V).
- “ armata, O. S. (V).
- “ armillaris, O. S. (V).
- “ caloptera, Say (V).
- Epiphragma fascipennis, Say (V).
- Limnophila quadrata, O. S. (V).
- Rhaphidolabis flaveola, O. S. (V).
- Bittacomorpha clavipes, F. (W).
- Amalopsis inconstans, O. S. (V).
- Stygeropsis fuscipennis, Loew (V).
- Tipula grata, Loew (V).
- “ speciosa, Loew (V).

Dixidae (Dixa-midges).

- Dixa clavata, Loew (V).

Psychodidae (Moth-like Flies).

- Psychoda minuta, Banks (V).
- “ marginalis, Banks (V).
- Psychoda alternata, Say (V).

Chironomidae (Midges).

- Tanypus monilis, Linn. (V).
- Chironomus flavisingula, Walk. (V).

NATURAL HISTORY, TORONTO REGION

Chironomidae (Midges)—(Continued).

- Chironomus dux*, Johans. (V).
- “ *albipennis*, Meig. (V).
- “ *modestus*, Say (V).
- “ *aberrans*, Johans. (V).
- “ *nigricans*, Johans. (V).

Calicidae (Mosquitoes).

- Anopheles punctipennis*, Say (W).
- Culex cantans*, Meig. (Theobald).
- “ *restuans*, Theob. (Theobald).
- “ *nemorosus*, Theob. (Theobald).
- Aedes fuscus*, O. S. (Theobald).
- Sayomyia punctipennis*, Say (V).
- “ *trivittata*, Loew (V).

Mycetophilidae (Fungus-gnats).

- Leia opima*, Loew (V).
- Sciara nigricans*, Johans. (V).

Cecidomyiidae (Gall-gnats).

- Lasioptera asterifoliae*, Beut. (C).
- “ *corni*, Felt. (C).
- “ *farinosa*, O. S. (C).
- “ *impatentifolia*, Felt. (C).
- “ *muhlenbergiae*, Martin (C).
- Neolasioptera perfoliata*, Felt. (C).
- Rhabdophaga batatas*, Walsh (C, W).
- “ *brassicoides*, Walsh (C, W).
- “ *cornu*, Walsh (C).
- “ *gnaphaloides*, Walsh (C).
- “ *siliqua*, Walsh (C).

INSECTS AND THEIR ALLIES

Cecidomyiidae (Gall-gnats)—(Continued).

- Dasyneura solidaginis*, Loew (C).
- “ *serrulatae*, O. S. (C, W).
- Rhopalomyia anthrophila*, O. S. (C).
- “ *alticola* (C).
- Mayetiola destructor*, Say (W).
- Cecidomyia albiovittata*, Walsh (W).
- “ *balsamicola*, Walsh (C) (Bolton, Ont.)
- “ *bedeguar*, Walsh (C).
- “ *bullae*, Walsh (C).
- “ *erigerontis*, Brodie (Brodie).
- “ *helianthi*, Brodie (C).
- “ *impatiens*, O. S. (C).
- “ *majalis*, O. S. (C).
- “ *ocellaris*, O. S. (C).
- “ *pellex*, O. S. (C).
- “ *pilulae*, Walsh (C).
- “ *poculum*, O. S. (C).
- “ *triticoides*, Walsh (C, W).
- “ *verrucicola*, O. S. (C).

Bibionidae (March-flies).

- Biblio albipennis*, Say (V).
- “ *xanthopus*, Wied. (V).

Rhyphidae (False Crane-flies).

- Rhyphus punctatus*, Fab. (V).

Stratiomyidae (Soldier-flies).

- Geosargus viridis*, Say (V).
- “ *decorus*, Say (V).

NATURAL HISTORY, TORONTO REGION

Stratiomyidae (Soldier-flies)—(Continued).

- Microchrysa polita*, Linn. (V).
- Euparyphus tetraspilus*, Loew (V).
- Stratiomyia apicula*, Loew (B).
- “ *badia*, Walk. (B).
- “ *discalis*, Loew (B).
- “ *norma*, Wied. (B).
- Odontomyia cincta*, Oliv. (B).
- “ *interrupta*, Oliv. (B).
- “ *pilimanus*, Loew (B).

Tabanidae (Horse-flies)

- Chrysops fallax*, O. S. (V).
- “ *fugax*, O. S. (B).
- “ *niger*, Macq. (B).
- “ *striatus*, O. S. (V).
- “ *univittatus*, Macq. (B).
- “ *vittatus*, Wied. (V).
- Tabanus atratus*, Fab. (B).
- “ *lasiophthalmus*, Macq. (B).
- “ *lineola*, Fab. (B).

Leptidae (Snipe-flies).

- Xylophagus rufipes*, Loew (V).
- Xylomyia pallipes*, Loew (V).
- Leptis plumbea*, Say (V).
- “ *scapularis*, Loew (V).
- Chrysopila ornata*, Say (V).
- “ *quadrata*, Say (V).

Bombyliidae (Bee-flies).

- Anthrax alternata*, Say (V).

INSECTS AND THEIR ALLIES

Therevidae (Stiletto-flies).

- Psilocephala pictipennis*, Wied. (V).
- “ *haemorrhoidalis*, Macq. (V).

Asilidae (Robber-flies).

- Leptogaster flavipes*, Loew (V).
- Dasyllis grossa*, Fab. (B).
- “ *posticata*, Say (B).
- Laphria sericea*, Say (B).
- Promachus bastardi*, Macq. (V).
- “ *quadratus*, Wied. (B).
- Proctacanthus philadelphicus*, Macq. (B).
- Asilus notatus*, Wied. (V, B).
- “ *novaescotiae*, Macq. (B).

Dolichopodidae (Long-legged Flies).

- Psilopodinus scobinator*, Loew (W).
- “ *sipho*, Say (W).
- Campsicnemis hirtipes*, Loew (W).
- Porphyrops melampus*, Loew (V, W).
- “ *rotundiceps*, Loew (V).
- Neurigona lateralis*, Say (V).
- “ *maculata*, M. VanDuzee (V).
- Medeterus veles*, Loew (V).
- Dolichopus albiciliatus*, Loew (W).
- “ *bifRACTUS*, Loew (V, W).
- “ *comatus*, Loew (V, W).
- “ *cuprinus*, Wied. (V, W).
- “ *brevimanus*, Loew (V).
- “ *detersus*, Loew (V).
- “ *gratus*, Loew (W).
- “ *lobatus*, Loew (W).

NATURAL HISTORY, TORONTO REGION

Dolichopodidae (Long-legged Flies)—(Continued).

- Dolichopus remifer, Loew (V).
- “ scoparius, Loew (W).
- “ setifer, Loew (V).
- “ splendidus, Loew (W).
- “ tonsus, Loew (W).
- “ xanthocnemus, Loew (W).
- Gymnopternus barbatulus, Loew (V, W).
- “ politus, Loew (W).
- Tachytrechus vorax, Loew (W).
- Pelastoneurus vagans, Loew (V, W).

Empididae (Dance-flies).

- Platypalpus discifer (V).

Lonchopteridae (Spear-winged Flies).

- Lonchoptera riparia, Meig. (V).
- “ lutea, Panz. (V).

Pipunculidae (Big-eyed Flies).

- Pipunculus nitidiventris, Loew (V).

Syrphidae (Syrphus-flies).

- Chrysotoxum ventricosum, Loew (B).
- Chrysogaster pictipennis, Loew (V, W).
- Pipiza pisticoides, Will. ? (V).
- Paragus tibialis, Loew (W).
- Chilosia sp. (W).
- Baccha fascipennis, Wied. (B).
- Ocyptamus fuscipennis, Say (V).
- Platychirus quadratus, Say (V, B, W).
- Melanostoma mellinum, Linn. (V, B, W).
- “ obscurum, Say (B, W).
- Didea fasciata, Macq. (W).

INSECTS AND THEIR ALLIES

Syrphidae (Syrphus-flies)—(Continued).

- Didea laxa*, O. S. (B).
Syrphus abbreviatus, Zett. (B).
 “ *americanus*, Wied. (V, B, W).
 “ *arcuatus*, Fall. (B, W).
 “ *lesueurii*, Macq. (V, B, W).
 “ *ribesii*, Linn. (B, W).
 “ *torvus*, O. S. (B, W).
Allograpta obliqua, Say (B, W).
Mesogramma geminata, Say (B, W).
 “ *polita*, Say (W).
 “ *marginata*, Say (V).
Sphaerophoria cylindrica, Say (V, B, W).
Sphegina lobata, Loew (B, W).
Neoascia globosa, Walk. (V).
Rhingia nasica, Say (B, W).
Volucella evecta, Walk. (B, W).
Sericomyia chrysotoxoides, Macq. (B, W).
 “ *militaris*, Walk. (B, W).
Eristalis bastardi, Macq. (V, B, W).
 “ *dimidiatus*, Wied. (B, W).
 “ *flavipes*, Walk. (B, W).
 “ *meigenii*, Wied. (B, W).
 “ *tenax*, Linn. (B, W).
 “ *transversus*, Wied. (B, W).
Tropidia quadrata, Say (B, W).
Helophilus conostomus, Will. (V, B, W).
 “ *laetus*, Loew (B, W).
 “ *latifrons*, Loew (B).
 “ *similis*, Macq. (B, W).

NATURAL HISTORY, TORONTO REGION

Syrphidae (Syrphus-flies)—(Continued).

- Mallota posticata*, Fab. (B, W).
- “ *cimbiciformis*, Fall (B).
- Syritta pipiens*, Linn. (B, W).
- Xylota chalybea*, Wied. (V).
- “ *curvipes*, Loew (W).
- “ *ejuncida*, Say (W).
- “ *elongata*, Will. (V).
- “ *fraudulosa*, Loew (W).
- “ *pigra*, Fab. (V, B).
- “ *vecors*, O. S. (W).
- Criorhina analis*, Macq. (W).
- “ *intersistens*, Walk. (W).
- Spilomyia fusca*, Serv. (B).
- “ *quadrifasciata*, Say (B).
- Temnostoma alternans*, Loew (B, W).
- “ *bombylans*, F. (B, W).

Conopidae (Thick-head Flies).

- Oncomyia abbreviata*, Loew (V).

Oestridae (Bot-flies).

- Gastrophilus equi*, Clark (B, W).

Tachinidae (Tachina-flies).

- Metachaeta helymus*, Walk. (V).
- Peleteria tessellata*, Fab. (B).
- Archytas analis*, Fab. (B).
- Echinomyia algens*, Wied. (B).
- Bombyliomyia abrupta*, Wied. (B).

Sarcophagidae (Flesh-flies).

- Sarcophaga sarraceniae*, Riley (W).

INSECTS AND THEIR ALLIES

Muscidae (House-fly Family).

- Pollenia rudis, Fab. (V, W).
- Calliphora vomitoria, Linn. (W).
- Lucilia caesar, Linn. (W).
- Musca domestica, Linn. (W).
- Stomoxys calcitrans, Linn. (W).
- Haematobia serrata, Desv. (W).

Anthomyidae (Anthomyia Flies).

- Coenosia nudisetia, Stein (V).
- Lispa albitarsis, Stein. (V).

Scatophagidae (Dung-flies).

- Cordylura confusa, Loew (V).
- Parallelomma varipes, Walk. (V).
- Scatophaga furcata, Say (V).

Helomyzidae.

- Helomyza nemorum, Meig. (V).

Borboridae.

- Limosina limosa, Meig. (V).
- Borborus equinus, Fall. (V).

Sciomyzidae.

- Neuroctena anilis, Fall. (V).
- Tetanocera rotundicornis, Loew (V).
- “ velida, Loew (V).
- “ lineata, Day (V).
- Sepedon fuscipennis, Loew (V).

Sapromyzidae.

- Sapromyza decora, Loew (V).
- “ vulgaris, Fitch (V).
- “ fraterna, Loew (V).
- “ macula, Loew (V).

NATURAL HISTORY, TORONTO REGION

Ortaliidae.

- Rivellia viridulans*, Desv. (V).
- “ *bosicii*, Desv. (W. H. Piersol).
- “ *pallida*, Loew (V).
- Melieria similis*, Loew (V).
- Pseudotephritis vau*, Say (V).
- Chaetopsis aenea*, Wied. (V).
- Seoptera vibrans*, Linn. (V).

Trypetidae (Fruit-flies, etc.).

- Straussia longipennis*, Wied. (V).
- Trypeta ruficoda*, Fab. (V).
- Euaresta bella*, Loew (V).
- Eurosta solidaginis*, Fitch (Cosens).

Sepsidae.

- Sepsis violacea*, Meig. (V).
- Nemopoda cylindrica*, Fab. (V).

Ephydriidae (Salt-water Flies).

- Dichaeta caudata*, Fall. (V).
- Ochthera mantis*, De G. (V).
- Scatella stagnalis*, Fall. (V).

Oscinidae (Grass-stem Flies).

- Chlorops versicolor*, Loew (V).
- Eurina exilis*, Coqu. (V).

Drosophilidae (Little Fruit Flies).

- Drosophila amoena*, Loew (V).

Geomyzidae.

- Scyphella flava*, Linn. (V).

Agromyzidae.

- Traginops irrorata*, Coqu. (V).

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