

AN ANNOTATED LIST OF THE DIPTERA (FLIES) OF ALBERTA¹

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Importance of Flies

The Order Diptera is one which does not make a very great appeal to the average collector of insects. Vast numbers of species are very similar in appearance and few of those which occur in Canada are sufficiently striking in color or in appearance to attract the interest of an amateur.

For this reason the regional distribution of the flies which inhabit this Dominion is very imperfectly known. This is a serious handicap in connection with many problems of great importance to agriculture and to the health of man and animals. Members of the Order Diptera have a more varied influence upon human welfare than do those of any other Order of insects. Comparatively few feed directly upon living vegetation, though among these are included such serious pests as leather jackets, Hessian flies, fruit flies, and root maggots. On the other hand, to this Order belong many species of the utmost value to the field husbandman. Nearly all of the species in certain families live as parasites or predators on plant-feeding insects. To the family Tachinidae, for instance, must be attributed most of our immunity from severe and continued losses from many species of injurious caterpillars. Other species of flies constitute the most effective biological factor in the control of grasshopper populations. Still others play a most important part in reducing the numbers of plant lice. In addition, many prey upon their blood-sucking relatives and help to hold their numbers in check although, it must be admitted, not always with complete success.

Human interest in the manifold activities of flies undoubtedly centres around those species which, at some stage in their development, feed on the blood of man and livestock. Not only do they cause serious annoyance and pain by their methods of extracting blood, but many of them are also capable of transmitting fatal diseases while so doing. One has but to recall such human fly-borne diseases as malaria, sleeping sickness, or yellow fever to realize the part that disease-transmitting flies have played in the destiny of nations. To these must be added the contaminative diseases spread by houseflies and their associates.

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Finally, we should mention the direct attacks which are made by the larvae of certain flies on the flesh of man and livestock. Myiasis, the infestation of wounds by fly larvae, is becoming increasingly frequent among inhabitants of Alberta, while bot flies of horses, cattle, and sheep are a constant drain on the profits of animal husbandmen.

Tribute must, however, be paid to those fly larvae which have been brought into our province occasionally, in order that they may assist in the cure of bone and other human diseases. All of the species which have been thus employed belong to the native fauna of Alberta. The demand for their employment is, fortunately, not sufficient to warrant the expense entailed in raising "surgical maggots" locally.

The University of Alberta Insect Collection

During the past fifteen years an attempt has been made, at this University, to compile a complete list of all species of insects which have been recorded as occurring within the confines of the province.

With this object in view, extensive collections have been made annually, and records of additional captures have been obtained from other sources, particularly from the Dominion Entomological Laboratory at Lethbridge.

Many specialists, both in Canada and the United States, have generously examined and named material in the University collection. Without their help the compilation of this list would not have been possible; we take this opportunity to thank them for their invaluable assistance.

In addition to extensive collecting, all available literature has been searched for published records of insects which have been captured in Alberta. Such Canadian publications as the *Canadian Entomologist* and the *Entomological Record* naturally have yielded a large number of records, but many which have never appeared in Canadian literature have been found in journals published in the United States.

Species of Diptera Captured in Alberta

The card catalogue of the University of Alberta insect collection shows that nearly fourteen hundred species of flies have been authoritatively determined as belonging to the Albertan fauna. In addition to these, we possess series in several Families in which we have been unable to have determinations made by any specialist. In a number of instances we have been able to name many of the species ourselves, with the aid of the literature and of material from elsewhere which had been classified by specialists. We feel confident that the collection already contains two or three hundred additional species which cannot be named, under existing conditions.

As we have inferred, there are no amateur collectors of Diptera in Alberta. Apart from accounts in the literature, we have practically no records other than those of captures made by people who are associated with this University. As yet, no attempts have been made to collect flies in the less accessible

areas in the northern part of the province. The number of species which are represented by one or two specimens only is an indication that more intensive and extensive collecting in this province should greatly increase the record of captures which are listed here.

We believe, however, that the list is more complete than that of the other prairie provinces would be; it has been compiled as an initial contribution to the very imperfectly known Dipterous fauna of this part of Canada.

Ecological Areas in Alberta

In recording localities of captures, it is the usual custom to give the name of a town or village in the vicinity of which the insects were taken. Many of the villages near which collections have been made are so small that residents in other parts of the province may be unaware of their location, or of their existence. Such records, therefore, are of very little value. The province can, however, be divided into a number of moderately well-defined ecological areas.

The southeast portion lies in the Transition Zone of the Austral Region. It is typically a short-grass "prairie" country, adapted to the production of hard spring wheat.

At the extreme southeast of this Zone there is an intrusion of the Cypress Hills, in which the flora and fauna closely resemble those of the Rocky Mountains in the southwest of the province. They differ considerably from those of the mountainous regions further north.

The remainder of the province lies in the Boreal Region and is almost entirely in the Canadian Zone, though it merges into a Mountainous Zone in the west through a foothill area, and into the Hudsonian Zone in the extreme north.

Variations in precipitation further divide the province into a series of dry areas in the east, as opposed to more humid western areas.

The soil is moderately uniform in the southeastern areas (Transition Zone); elsewhere it is so variable that any attempt to subdivide areas of prevailing vegetation and precipitation, on the basis of soil types, would necessitate the definition of over one hundred such areas. The flora is similar throughout each of the large northern areas outlined on the map (Fig. 1), though naturally it varies locally on the smaller areas of diverse soil. This variation is not as great as might be anticipated, since with the exception of part of area 15 comprising the "Peace River District", all northern soils are grouped into what are known as "Gray wooded soils". Throughout this vast territory nearly all the soluble chemicals have been leached out of the soil, whatever its physical texture may be.

Insect species which have been taken only in a particular locality in these areas are recorded as "12 sandy", "15 muskeg", etc.

The areas, as outlined, have been established with the assistance of Dr. E. H. Moss, of the Department of Botany, and of Dr. F. A. Wyatt, of the

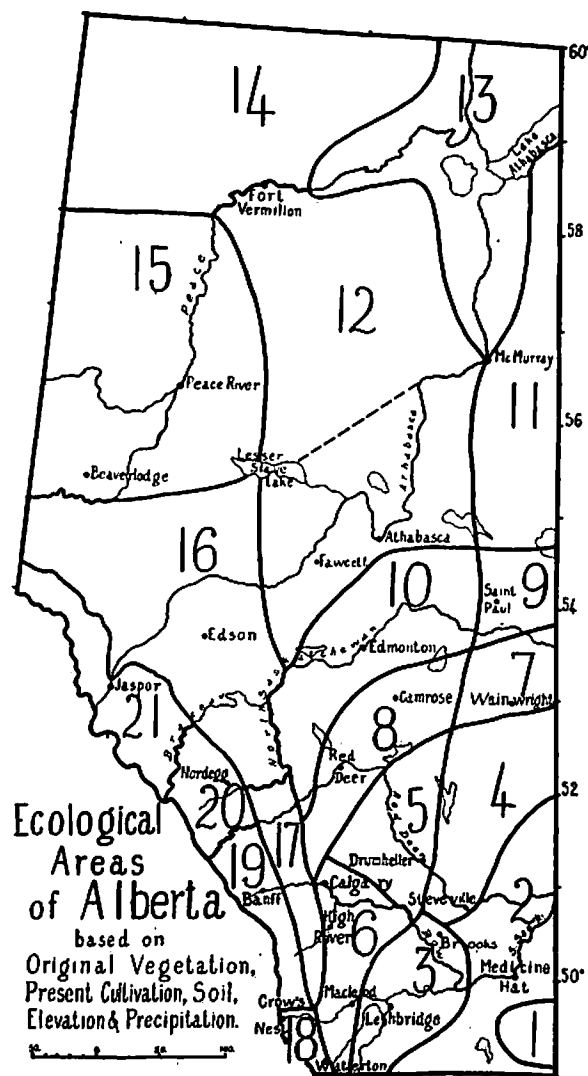


FIG. 1

Department of Soils. The compiler has had to introduce a number of compromises between such areas as would be defined entirely on botanical considerations on the one hand, and on edaphic considerations on the other.

In computing rainfall, the "Long Time Average Annual Precipitation" chart published by the Searle Grain Co., has been utilized. Any precipitation (chiefly snowfall) between Nov. 1 and March 31 is not included in the chart. Most of this constitutes "run-off" and has little biological significance, except in so far as it may increase the breeding areas for aquatic larvae in the spring, and protect the underlying soil from intense freezing during the winter. Generally speaking, areas in the Transition Zone are bare for the greater part of the winter, whereas elsewhere the ground is covered with a foot or more of snow from early in November till the middle of March.

A brief description of each of the 21 selected areas is as follows:—

TRANSITION ZONE

1. Cypress Hills

Vegetation:— About 50% forested; lodgepole pine, spruce, aspen and willow. Remainder; long grass. Very little cultivation.

Elevation:— Up to 4,500 ft.

Soil:— Very dark brown. Summit of hills never glaciated.

Rainfall:— 10–11.5 in.

Remarks:— Flora and fauna are very similar to those of Waterton Area, No. 18. No intensive insect collections have been made here.

2. Southern Prairie (Dry) (Medicine Hat)

Vegetation:— Short grass. A few poplars in river bottoms. Cactus and sage in driest localities. Crops: chiefly grain. Much deserted land, which has grown up to mustard or Russian thistle.

Soil:— Fine brown clay, inclined to be sandy in eastern half.

Rainfall:— Less than 10 in.

Remarks:— Fauna near Medicine Hat includes scorpions, solpugids, white ants, horned toads and rattlesnakes. Nowhere else, east of the Rocky Mountains, do these forms extend into Canada. Little insect collecting in this area except in the vicinity of Medicine Hat.

3. Southern Prairie (About 50% Irrigated) (Lethbridge)

Resembles Area No. 2. Vegetation on dry areas similar, irrigated parts carry a greater variety of crops, among which alfalfa and beets predominate. Soil a little heavier.

Remarks:— Extensive collections of insects have been made in this area, particularly around Lethbridge.

TRANSITION ZONE—concluded.

4. *Northern Prairie (East) (Vermilion)*

Vegetation:— Short to moderately long grass. Much deserted land.

Crops: almost entirely grain.

Soil:— Dark brown loam.

Rainfall:— Less than 10 in. Very light in eastern half.

Remarks:— Little insect collecting. The "badlands" of the Red Deer River are in the southwest corner of this area, near Steeveville; but no collections have been made here to date.

5. *Northern Prairie (West) (Drumheller)*

Vegetation:— Moderately long grass. Crops: grain.

Soil:— Heavy clay "gumbo" to dark brown loam.

Rainfall:— 10–11.5 in.

Remarks:— Very little insect collecting except near Drumheller.

6. *Northern Prairie (Southern Extension) (Calgary)*

Vegetation:— Moderately long grass, occasional groves of willow and aspen. About 50% under cultivation. Crops: grain and hay.

Soil:— Dark brown loam.

Rainfall:— 10–11.5 in.

Remarks:— Spasmodic insect collecting has been conducted around Calgary, little elsewhere.

INTERMEDIATE BETWEEN TRANSITION AND CANADIAN ZONES

7. *Parkland (East) (Wainwright)*

Vegetation:— About 30% wooded; aspen and willow groves. Remainder; moderately long to short grass. Crops: grain.

Soil:— Dark brown loam, with large areas of almost pure sand.

Rainfall:— Less than 10 in.

Remarks:— Few insects have been collected here; chiefly in the sand-dune country.

8. *Parkland (West) (Red Deer)*

Vegetation:— Originally about 50% wooded; mainly aspen. Remainder; long grass. Now about 70% cleared. Crops: grain and hay.

Soil:— Dark brown loam.

Rainfall:— 10–13 in.

Remarks:— Scattered insect collections have been made throughout this area, most intensively a few miles west of Red Deer.

CANADIAN ZONE

9. *Poplar (East) (Saint Paul)*

Vegetation:— Originally balsam poplar, aspen, and willow, with some spruce. Less than 50% cleared. Crops: chiefly oats.

Soil:— Black loam.

Rainfall:— About 10 in.

Remarks:— Practically no insect collections have been made here.

10. *Poplar (West) (Edmonton)*

Vegetation, as No. 9, but with considerable stands of spruce and pine locally. About 70% cleared. Crops: largely wheat and oats, some hay.

Soil:— Black loam, with a high humus content.

Rainfall:— Over 13 in.

Remarks:— Insects have been collected intensively in this area, particularly in the vicinity of Edmonton and around several lakes further west.

11. *Mixed Forest with Eastern and Sub-arctic Intrusions*

Vegetation:— Aspen, balsam poplar, spruce, jack pine, balsam fir, tamarack, willow, birch, and alder.

Soil:— Gray wooded, with extensive areas of sand.

Rainfall:— Probably 10–11.5 in. No complete records.

Remarks:— This area is not well known. No insect collections have been made here.

12. *Mixed Forest, with Cordilleran (Rocky Mountain) Intrusions (Fawcett)*

Vegetation:— Chiefly forested with aspen, balsam, poplar, spruce, pine, etc. Numerous lakes and large areas of muskeg. A little cultivation in the south. Crops: chiefly oats.

Soil:— Gray wooded, very variable in texture.

Rainfall:— 11.5 to over 13 in.

Remarks:— In the present state of our knowledge there appear to be no factors on which this large area can be subdivided. On the map we have inserted a broken line to divide it, provisionally, into a northern and a southern "sub-area".

Insects have been collected, in rather small numbers, at a few places to the south and east of Lesser Slave Lake, particularly around Fawcett. None have been taken in the northern sub-area.

CANADIAN ZONE—concluded.

13. *Mackenzie Lowlands*

Vegetation:— Mixed forest, as in No. 11, with more numerous Alpine-arctic species. Long grass and sedges in open spaces. No cultivated land.

Soil:— Incompletely surveyed, all gray wooded.

Rainfall:— No record, probably around 13 in.

Remarks:— Only about a dozen Dipterous insects have been received from this area.

14. *Mixed Forest with Some Parkland, and Alpine-arctic Intrusions*

Vegetation:— Similar to Nos. 12 and 15. No cultivation.

Soil:— Incompletely surveyed, all gray wooded.

Remarks:— This country is not well known. No insect collections have been made here.

15. *Mixed Forest and Parkland (Beaverlodge)*

Vegetation:— Large mixed forest areas interspersed with long-grass open plains. Crops: chiefly grain and hay.

Soil:— About 10–15% black loam; remainder gray wooded, with scattered patches of sand.

Rainfall:— 10–13 in.

Remarks:— Insects have been collected moderately intensively in the cultivated parts of the Peace River District.

FOOTHILL ZONE

16. *Foothills (Northern)*

Vegetation:— This is an extensive area in which the flora is intermediate between that of the northern Rocky Mountains and the mixed forest of northern Alberta. Much of this area is incompletely surveyed. In a small portion of the eastern half some grain and hay are produced.

Soil:— Gray wooded. Believed to be very variable.

Rainfall:— Over 13 in.

Remarks:— No insect collections have been made in this area.

17. *Foothills (Southern)*

Vegetation:— Aspen, spruce, lodgepole pine, willow, with open prairie southward.

Soil:— Gray wooded in northern portion, dark brown to black in south.

Rainfall:— 13 in. in northern part to less than 10 in. in south.

Remarks:— This is possibly the least uniform area of those selected, even though it is one of the smallest. Very few insects have been collected here.

MOUNTAIN ZONE

The four areas into which this zone has been divided each includes a district in which moderately intensive insect collections have been made.

Vegetation:— This naturally varies greatly with the altitude of the montane, submontane, subalpine and alpine territory, also with topography, rock and soil. Montane territory is dominated by lodgepole pine and white spruce. Douglas fir is locally abundant. Subalpine territory is characterized by Engelmann spruce, alpine fir, and other conifers, as well as by mountain heaths.

From Area 18 to Area 21 there is a gradual and irregular replacement of southern and western species by certain boreal and arctic species. The same characteristics appear to apply to the insect fauna.

18. *Southern Rocky Mountain (Waterton and Crow's Nest Pass)*

Vegetation:— Strong intrusions of southern and western species. These extend to about the northern limits of this area.

Soil:— Contains a relatively higher percentage of lime than does that of the more northern mountain areas.

Rainfall:— Over 13 in.

Remarks:— Intensive collections have been made in Waterton Park, at the extreme south of this area. Smaller collections from Crow's Nest Pass appear to be similar in composition.

19. *Central Rocky Mountain (Banff)*

Vegetation:— Typical for that of the Mountain Zone described above, with few southern or arctic intrusions.

Soil:— Very variable in texture, all gray wooded.

Rainfall:— Over 13 in.

Remarks:— Insect collections have been made at Banff, and to a lesser extent at Lake Louise. Elsewhere the fauna is practically unknown.

20. *North Central Rocky Mountain (Nordegg)*

Vegetation:— Similar to that of No. 19. Among the grasses are several species which appear to be rather typical of the Labrador flora. Mr. Kenneth Bowman, who has collected Lepidoptera in this area for many years, has taken a number of species in this Order which also were formerly considered to be peculiar to the Labrador fauna also.

Soil and Rainfall:— As in No. 19.

Remarks:— Small collections of Diptera have been made in this area in the immediate vicinity of Nordegg.

MOUNTAIN ZONE—concluded.

21. Northern Rocky Mountain (Jasper)

Vegetation:— As in Nos. 19 and 20, but with strong intrusions of arctic and boreal species.

Soil and Rainfall:— As in No. 19.

Remarks:— Little insect collecting has been accomplished at Jasper to date. Practically no flies have been received from here.

Collections of Diptera have not been made at a distance of more than about 50 miles from the town named (in brackets) in the above headings. Occasional specimens, received from elsewhere in these areas, have invariably belonged to species which have been taken in the neighbourhood of these towns. Should it be desired to make reference to a definite locality, in referring to any particular capture, the name of the town can safely be employed as an alternative to the number of the Area in which it is located.

Explanation of Terms Employed in This List

All species which are represented in the University of Alberta collection are marked with an asterisk (*). Following the name of each such species are given the initials of the authority who made the determination.

The full names to which these initials refer are as follows:—

- J.A. The late J. M. Aldrich, U.S. National Museum, Washington.
- C.A. C. P. Alexander, Massachusetts Agricultural College, Amherst.
- J.B. J. C. Bequaert, School of Tropical Medicine, Harvard University.
- F.C. F. R. Cole, Redlands, California.
- C.C. C. H. Curran, American Museum of Natural History, New York.
- C.F. C. L. Fluke, University of Wisconsin, Madison, Wis.
- D.H. D. E. Hardy, Brigham Young University, Utah.
- E.H. The late E. Hearle, Dominion Entom. Laboratory, Kamloops, B.C.
- H.H. H. C. Hockett, Long Island Research Farm, New York.
- C.J. The late C. W. Johnson, Boston Natural History Museum, Boston.
- F.M. F. O. Morrison, University of Alberta, Edmonton.
- R.M. R. B. Miller, University of Alberta, Edmonton.
- C.S. C. W. Sabrosky, East Lansing, Michigan.
- R.S. R. C. Shannon, Cornell University, Ithaca, New York.
- F.S. F. M. Snyder, Minnesota State College, St. Paul, Minn.
- A.S. A. Stone, Bureau of Entomology, Washington.
- E.S. E. H. Strickland, University of Alberta, Edmonton.
- G.S. G. E. Shewell, Entomological Branch, Ottawa.
- C.T. C. R. Twinn, Entomological Branch, Ottawa.
- G.W. G. S. Walley, Entomological Branch, Ottawa.

No data regarding the authority who made the determination are given with records obtained from the literature, or with those from other sources if the species is not represented in the collection. These are often unknown and the inclusion of the literature references would increase the size of this publication without a corresponding advantage. A few of the records from Lethbridge (Area 3) and from Waterton (Area 18) have been obtained from Mr. H. L. Seamans of the Dominion Entomological Laboratory at Lethbridge, and have not appeared previously in print.

No attempt has been made to give the names of collectors. Nearly all of the species recorded from the University collection have been taken by the compiler. Other collectors who have donated material to this collection are Owen Bryant, the late F. S. Carr (Medicine Hat, Area 2), the late Eric Hearle (Mosquitoes from Banff, Area 19), and a few university students.

Arabic numerals which follow each insect name refer to the Ecological Areas in which the species is known to occur. Roman numerals refer to the months in which the adults have been taken.

Thus:— “**Tabanus astutus* O.S. (A.S.) 12, 20, 21. VII–VIII.” is interpreted as follows:—

“*Tabanus astutus* O.S. is represented in the University collection, classified by Dr. A. Stone of Washington, D.C. Adults have been taken in Ecological areas 12, 20 and 21, during July and August.”

Further, it can be deduced from the map that this species occurs in Lesser Slave Lake, Nordegg, and Jasper districts.

“* *Epistrophe sexpunctatus* Walk. ? (C.C.) . . .” indicates that Dr. Curran doubtfully referred material in our collection to this species.

“* *Helina obscurata* Mg. (H.H.) (= *nasoni*) . . .” indicates that the species has been recorded under both names as occurring in Alberta. In the majority of instances this indicates synonymy, but in some cases it refers to a misidentification of the species on the part of one writer.

PTYCHOPTERIDAE. False Crane flies

- * *Ptychoptera metallica* Walk. (C.A.) 10. VII.

On two occasions we have received larvae, probably of this species, which were numerous in spring water piped into buildings.

TRICHO CERIDAE. Winter Crane flies

- Trichocera maculipennis* Fab. 10. V.

TIPULIDAE. Crane flies

The majority of the species recorded are the result of a very intensive collection made by Mr. Owen Bryant in 1924. These have already been published by Dr. C. P. Alexander in the *Canadian Entomologist*, Vol. 59, 1927. The comparatively small University collection contains only a few additional records in this Family. Dr. Alexander has, very kindly, examined this collection and has sent us a complete record of Tipulidae which are known to occur in Alberta.

ASTEIIDAE.

- * *Asteia nr. beata* Ald. (F.M.) 10. VI.
Shewell states that this species is undescribed.

AGROMYZIDAE.

- * *Cerodontha dorsalis* Lw. (C.C.) 2. VI.
- * *Agromyza angulata* Lw. (G.S.) 10, 20. VII.
- * *artemisiae* Kalt. (C.C.) 2. V.
- * *laterella* Zett. (G.S.) 10. VIII.
- * *neptsi* Lw. (G.S.) 10. VI.

PHYLLOMYZIDAE.

- * *Hypaspistomyia halteralis* coq. (G.S.) 3. V-VII.
- * *Phloeomyia indecora* Lw. (C.C.) 2, 3. V-VI.

CHLOROPIDAE, (OSCINIDAE). Frit flies and stem maggots

- * *Meromyza americana* Fit. (C.S.) 3, 18. VI-VII.
Adults common in southern Alberta. No records of damage to wheat.
- * *lineola* Curr. (E.S.) 15.
marginata Beck. 15. VIII.
- * *Chloropisca glabra* Mg. (C.S.) 3, 5, 8, 10. V-VII.
Puparia taken in very large numbers from wheat stubble at Drumheller.
Predator on root aphids.
- * *grata* Lw. (C.S.) 3, 8. VII.
- * *pulla* Lw. (C.S.) 3, 8. V-VI.
- * *variceps* Lw. (C.S.) 8, 10, 12. IV-V and VIII-IX.
Adults swarm on outside walls and windows. Often enter houses. Most abundant in autumn.
- * *Epichlorops exilis* Coq. (C.S.) 10. VII.
This large species is taken freely in slough grass.
- * *Chlorops ingrata* Curr. 3. *Catharopurga ingrata* Will.
- * *producta* Lw. (C.C.) 2. VI.
- * *sulphurea* Lw. (C.C.) 2. VI.
- * *Gaurax festivus* Lw. 3. VII.
Bred from a circular leaf mine in cottonwood poplar at Lethbridge.
- * *Madiza cinerea* Lw. 3, 5. V-VII.
- * *oscinina* Fall. (C.S.) 15. VI.
parva Adam. "Alberta".
- * *Oscinella coxendix* Fit. (C.S.) 2, 3. VI.
- * *pullicornis* Sab. (C.S.) 3, 10. V-VII.
- * *frit* L. (C.S.) 3, 8. VI.
Not common. No damage to grain noted.

EPHYDRIDAE. Brine flies

- * *Psilopa compta* Mg. 3. V.
- * *Ochthera mantis* deG. (E.S.) 2, 10. IV-VI and X.
- * *Parydra bituberculata* Lw. (C.C.) 2, 10. VI and IX.
- * *Notiphila scalaris* Lw. (C.C.) 3, 10. VI.
- * *Philygra fuscicornis* Lw. 3. V-VI.

This record from Canadian Entomological Record, 1916. The genus is not included in Curran's Diptera of North America.

BORBORIDAE. Small dung flies

- * *Sphaerocera subsultans* Fab. (C.C.) 5, 10, 15, 18. V-VII.
Larvae and adults very abundant in soil of well-manured seed bed of cabbages at Edmonton. No damage.
- * *Leptocera atra* Adam. (C.C.) 3, 10. VI-VIII.
- * *fontinalis* Fall. (C.C.) 2, 3. IV-VI.
- * *limosa* Fall. (C.C.) 2, 10, 20. IV-VII.
- * *lutosa* Stn. (C.C.) 2, 10, 20. VI-VII.
- * *Borborus equinus* Fall. (C.C.) 3, 10, 20. V-VII.
Adults very common, frequently almost cover fresh horse droppings.

CLUSIIDAE.

- * *Clusiodes melanostoma* Lw. (E.S.) 10, 15. VI.

CHAMAEMYIDAE.

- * *Leucopsis americana* Mall. (E.S.) 10. IX.
Swept from potatoes heavily infested with Psyllids and a few aphids, at Edmonton. Larvae recorded as predators on aphids.
- * *Plunomia elegans* Hall. (G.S.) 10. VI.

TETANOCERIDAE (SCIOMYZIDAE). Marsh flies

- * *Sciomyza simplex* Fall. (E.S.) 8, 10. VI-VII.
- * *Pteromicra canadensis* Curr. 19. V.
- * *Melina albocostata* Fall. (C.C.) 2. VI.
- * *nana* Fall. (E.S.) 10. VI-VIII.
- * *obtusa* Fall. (C.C.) 3. VIII.
- * *schoenherri* Fall. (E.S.) 10. VII.
- * *vitalis similis* Cress. (E.S.) 10. VIII.
- * *Sepedon armipes* Lw. (E.S.) 8, 10. VI and IX.
- * *fuscipennis* Lw. (C.C.) 3. VIII.
- * *pacifica* Cress. (E.S.) 3. VIII.
- * *pusillus* Lw. (E.S.) 10, 12, 15. VI and IX.
- * *Dictya umbroides* Curr. (E.S.) 9, 19, 20. VII.
- * *Hedroneura lineata* (? = *rufa*) (E.S.) 10, 15. VI-VIII.
- * *Tetanocera papillifera* Mel. (C.C.) 2. VIII.
- * *phyllophora* Mel. (E.S.) 20. VII.
- * *plebeia* Lw. (C.C.) 20. VII.
- * *rotundicornis* Lw. (E.S.) 10. VI.
- * *silvatica* Mg. (E.S.) 8. VI.
- * *triangularis* Lw. (C.C.) 3, 10. VIII.
- * *valida* Lw. (E.S.) 7, 10. VI.
- * *vicina* Macq. (C.C.) 3, 10, 20. VI-VIII.
- * *Limnia saratogensis* Fit. (E.S.) 8, 9. VI.
- * *ottawensis* Mel. (E.S.) 10. VII.

CHYROMYIDAE.

- * *Trixoscelis fumipennis* Hall. (G.S.) 10, 12. VI.

PSILIDAE.

- * *Pseudopsila perpolita* Joh. ? (G.S.) 12. IX.
- * *Psila atrata* Mel. ? (F.M.) 15. VI.

HELOMYZIDAE.

- * *Suilla nemorum* Mg. (C.C.) 10, 15. VI-VII.
- * *Pseudoleria vulgaris* Garr. (E.S.) 3. VI.