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## An Annotated List of the Hemiptera (S.L.) of Alberta

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Despite the recognized economic importance of many members of the order Hemiptera the majority of species in this group are not of great interest either to the economic entomologist or to the general collector. For this reason relatively little is known about the distribution of many species throughout Canada. This lack of information is evident with regard to records of captures which have been made in Alberta. During the many years in which the Entomological Record was published, less than 80 entries referred to Albertan Hemiptera. Of these, only eleven concerned the suborder Homoptera. The order, as a whole, has fared hardly better in the Canadian Entomologist. Apart from a list by H. H. Knight<sup>8</sup>, recording Anthocharidae and Miridae collected by J. H. McDunnough at Waterton and Nordegg, and three papers by the present writer discussing Fulgoridae<sup>10</sup> and Chermidae<sup>11, 13</sup> which are native to Alberta, there are only incidental references to the fact that other species of Hemiptera have been captured anywhere in this province.

A number of those which occur here, though they have never been so recorded in the literature, have been shown to be either of direct or indirect economic importance elsewhere. It appears, therefore, to be desirable that such data as are now available be brought together for publication.

In the University collection, with the addition of all records we have found in the literature, there appear to be approximately 560 authoritatively determined species and varieties native to this province. These are almost equally divided between the Heteroptera and the Homoptera. Of these, less than a third have been so recorded in American literature.

The following list, admittedly, must be a very incomplete representation of the total number of species which actually inhabit this province. It is hoped that its presentation will, at the least, serve as a contribution to a better knowledge of the distribution of members of this order in Canada while it may prove to be an incentive to more intensive collecting in it.

### Acknowledgments and methods of recording captures

Species represented in the University collection are preceded by an asterisk. Each such name is followed by initials indicating the authorities who made the determinations for us. The initials so employed refer to the following collaborators to whom grateful acknowledgement is made for their invaluable assistance. (A.B.) A. R. Brooks; (B.B.) B. P. Beirne; (E.B.) E. D. Ball; (H.B.) H. G. Barber; (R.B.) R. H. Beamer; (C) J. S. Caldwell; (D.) C. J. Drake; (DeL.) D. M. DeLong; (G.) W. G. Gerhart; (H.B.H.) H. B. Hungerford; (H.M.H.) H. M. Harris; (K.) H. H. Knight; (P.M.) P. W. Mason; (Z.M.) Z. P. Metcalf; (McD.) J. H. McDunnough; (McG.) Mrs. McGillivray; (P.) H. M. Parshley; (E.S.) E. H. Strickland; (E.H.N.S.) E. H. N. Smith; (V.D.) E. P. VanDuzec; (W.) G. S. Walley.

Records not preceded by an asterisk but which are followed by the initials of a determinor refer to entries which have been generously supplied to us by

the Dominion Division of Entomology, while those of which we have literature records only are listed without further data than those of locality and months of capture.

In order to save space, localities are given by a system of Arabic numerals. These conform with the ecological areas into which the province was divided, and which were mapped and described in some detail, by the writer in his list of the Diptera of Alberta<sup>12</sup>. These descriptions, together with the map, were reproduced by Bowman, in his list of the Lepidoptera taken in Alberta. A town, or feature, is selected in each of these relatively small areas. Since the surrounding country is moderately uniform, the numerical locality designations can, therefore, be interpreted as follows:—

1. *Cypress Hills*; An isolated plateau in S. E. Alberta, over 150 miles to the east of the Rocky Mountain foothills; partly treed, elevation up to 4,800 feet. Has never been glaciated.

2. *Medicine Hat*, 3. *Lethbridge*; Short-grass prairie; first area dry, second about 50% irrigated.

4. *Coronation*, 5. *Drumheller*, 6. *Calgary*; Short to long-grass prairie.

7. *Wainwright*, 8. *Red Deer*; Parkland, about 50% aspen groves.

9. *Saint Paul*, 10. *Edmonton*; Mixed aspen and spruce, about 75% cleared.

12. *Athabaska*, 15. *Beaverlodge*; Mixed northern forest and parkland.

16. *Edson*, 17. *Cochrane*; Foothill zones.

18. *Waterton*, 19. *Banff*, 20. *Nordegg*, 21. *Jasper*; Mountainous zones.

The months during which adults have been captured are designated by Roman numerals. Thus, the first record, "*Homaemus aeneifrons extensus* Wly. (W.) = *aeneifrons* Say (G.) 1, 8, 10, 12, 17-20. VI-VIII" is interpretable as "Is represented in the University collection; so determined by G. S. Walley, also as *H. aeneifrons* Say by W. J. Gerhart; taken in the vicinity of Cypress Hills, Red Deer, Edmonton, Athabaska, Cochrane, Waterton, Banff and Nordegg from June to August."

With the exception of Miridae, Corixidae, Cicadellidae, Aphidae and Coccidae, all species are listed, in so far as this is applicable, in the order in which they appear in Van Duzee's 1916 list<sup>14</sup>. Despite the fact that revisions in certain groups have appeared subsequent to this publication, it still serves as the only comprehensive list for the entire order. Where modifications in generic concepts or in specific synonymy have gained general acceptance since the appearance of Van Duzee's list, the substituted names are employed. References to the authority for so doing are included in the bibliography.

Occasional notes on the habits of individual species refer to observations which have been made locally.

#### Suborder HETEROPTERA

##### *Scutelleridae*

\**Homaemus aeneifrons extensus* Wly. (W.) = *aeneifrons* Say (G.)  
1, 8, 10, 12, 17-20. VI-VIII.

Feeds extensively on timothy grass flowers.

\**Eurygaster alternatus* Say (G.) 1-3, 6, 15, 17. VI-VIII.

\**Fokkeria producta* V.D. (F.H.N.S.) 2. III & VII.

\**Phimodera torpida* Wlk. (F.S.) 2. VIII.

\* *binotata* Say (H.M.H.) 2, 3, 6, 10. V-VII.

Taken repeatedly from under stones.

*Vanduzeeina borealis* V.D. 18. VII.

*Cydnidae.*

- \**Galgupha atra* A. & S. (H.M.H.) 2, 8, 10. VI-VII.  
Taken on plantains and barley.
- \**nitiduloides* Wolf. (E.S.) 3, 8, 10. VI-IX.  
Taken on plantains.
- \**Corimelaena nigra* Dall. (E.S.) - *T. anthracinus* Uhl. 10, 20. VIII.
- \**pulicaria* Germ. (H.M.H.), (W.) 2, 3, 8, 9, 17. VI-VIII.
- \**Schirus cinctus* P.B. (H.M.H.), (W.) 3, 8, 10. V-VIII.  
Nymphs and adults have been taken in large numbers  
on dandelions in alfalfa fields.

*Pentatomidae.*

Since these relatively large bugs are readily observed by the general collector it is probable that the following list is nearly complete for this province.

- \**Sciocoris microphthalmus* Flor. (H.M.H.) 2, 17. VII.
- \**Brochymena quadripustulata* Fab. (E.S.) 2. V & IX.
- \**Peribalus abbreviatus* Uhl. (G.), (H.M.H.) 2, 3, 10, 15. V-VIII.
- \**limbolarius* Stal. (G.) 3. V.
- \**tristis* V.D. (H.M.H.) 2, 17. VII.
- \**Trichopepla atricornis* Stal. (H.M.H.), (W.) 1, 3, 6, 18-20. VI-IX.  
Taken on wild carrot.
- \**Rhytidolomia viridicata* Wlk. (H.M.H.) 2, 3. IX. /
- \**faceta* Say (G.), (H.M.H.) 3. VIII.
- \**Chlorochroa uhleri* Stal. (H.M.H.), (W.), (G.), (E.H.N.S.) 1-6, 8, 15, 18.  
I-XII.

A somewhat serious pest of wheat in certain years. It sucks the contents from developing grain.  
(sayi Stal. 2-6. I-XII.)

This, undoubtedly, is the same species as that listed above as *uhleri*. Only one of these two species occurs here but it is recorded in economic literature as *sayi* with the statements that it first appeared in Alberta in about 1935 as a migrant from further south. Identical specimens are, however, present in a collection made by the writer at Lethbridge in 1913. In 1951, a specimen was submitted to us from the Yukon Territory and it was taken 100 miles N.W. of Whitehorse.

- \**ligata* Say (H.M.H.) 2, 3, 19. VII.
- \**Carpocoris remotus* Horv. (G.), (H.M.H.) 2-3. III-VII.  
Feeds on wheat but is nowhere abundant.
- \**Euschistus euschistoides* Voll. (H.M.H.) 2-3. VII.  
Feeds on alfalfa.
- \**Coenus delius* Say (H.M.H.), (W.) 2, 3, 10, 18. VI-VIII.
- \**Aelia americana* Dall. (H.M.H.) 2, 3, 8, 10, 15, 17. V-VII.
- \**Neottiglossa undata* Say (H.M.H.) 1, 2, 6, 8, 15, 18. VI.
- \**trilineata* Kby. (G.) 12. VIII.
- \**Cosmopepla bimaculata* Thom. (H.M.H.), (W.) 3, 8, 10. VI-VII.  
A rather general feeder, breeds abundantly on fireweed (*E. angustifolium*) at Edmonton. The adults often annoy housewives by congregating on laundry.
- \**Thyanta rugulosa* Say (G.) 5, 17. VII-VIII.  
Taken most frequently on wild gooseberries.

- \**Banasa dimidiata* Say (G.), (H.M.H.) 1, 3, 5, 8, 18. V-VII.
- \**Meadorus lateralis* Say (G.), (H.M.H.) 3, 10, 15. VIII.
- \**Elasmotherus cruciatus* Say (H.M.H.), (W.) 8, 10, 15, 17. VI-VIII.
- \**Perillus bioculatus* Fab. (H.M.H.), (W.) 2, 3, 12. VII-IX.

Feeds rather freely on the larvae of *Lina scripta* in addition to those of *Leptinotarsa decemlineata*.

- \* *clanda* Say (H.M.H.) 2, 3, 5, 8. VII-IX.
  - \* *exaptus* Say (G.), (H.M.H.) 1-3, 8, 10. V-VII.
- Rhacognathus americanus* Stal. 19.
- \**Apateticus bracteatus* Fit. (G.), (H.M.H.) = *crocatu*s Uhl. (W.) 1-3. VIII.
- Predatory of Lepidopterous larvae and adults, capturing the latter when they visit flowers.
- Podisus maculiventris* Say (W.) 3. V.
- \* *modestus* Dall. (G.), (H.M.H.) 2, 8, 10, 12. V-VIII.
  - \* *placidus* Uhl. (E.S.) 3, 17. VI.
- Predatory on tent caterpillars (*Malacosoma* spp.) and on the larvae of the leaf-beetle, *Galerucella decora*.

#### *Coreidae*<sup>2</sup>

- \**Merocoris distinctus* Dall. (H.M.H.), (E.H.N.S.) 8, 10. VI-VII.
  - \**Leptoglossus occidentalis* Heid. (E.S.) 2. VI.
  - \**Chelinidea vittiger* Uhl. (H.M.H.) 2. V-VIII.
- Very abundant on cactus, (*Opuntia* sp.)
- Nissoscolopocerus apiculatus* Barb. 2. IV.
- \**Coriomeris humilis* Uhl. (G.), (H.M.H.) 2, 3, 6, 20. VI-VIII.

#### *Alydidae*<sup>2</sup>

- \**Megalotomus quinquespinosus* Say (H.M.H.) 2, 3. VIII.
- \**Alydus pluto* Uhl. (H.M.H.) 3, 8, 12, 15, 20. VI-VIII.
- \* *eurinys* Say (H.M.H.) 2, 3, 21. VIII-IX.
- \* *obesus* Fr. (E.H.N.S.) 3. VIII.
- \* *conspersus* Mont. (G.), (H.M.H.), (E.H.N.S.) 1-3, 6. VII.
- \* *infuscatus* Parsh. (E.H.N.S.) 3, 6, 15, 17. VII.
- scutellatus* V.D. "Alta."
- \**Tollius curtulus* Stal. (H.M.H.) 2. VIII.
- \**Stachyocnemus apicalis* Dall. (H.M.H.) 2. IX.

#### *Corizidae*<sup>2</sup>

- \**Harmostes reflexulus* Say (G.), (H.M.H.), (W.) 2, 3, 6, 18. VI-VII.
- \**Corizus viridicatus* Uhl. (H.M.H.) 2, 3, 6, 18. VI-VIII.
- \* *crassicornis* L. (G.) = *punctiventris* Dall. (H.M.H.) 3, 9, 10, 15, 18. V-IX.
- \* *indentatus* Hanb. (H.M.H.) 2, 3, 6. VIII-IX.

This has twice been reported entering grocery stores in the fall and assembling on cloth sacks which had contained sugar or salt. They were not observed to attempt feeding but they remained on the sacks until they died.

- \**Leptocoris trivittatus* Say (G.), (H.M.H.) 2-5, 8. V-XI.

Adults are frequently a serious nuisance when they congregate in buildings in the fall. Churches and schools, in particular, have been affected.

#### *Aradidae*

- \**Aradus funestus* Berg. (H.P.), (H.M.H.) 2, 6, 10, 18, 19. IV-VI.
- Enters houses very freely and is common on windows in early summer.

- quadrilineatus Say (H.M.H.) 1, 10, 18. V-VI.
- tuberculifer Kby. 10, 19. IV.
- lugubris Fall. (H.M.H.) 3, 10, 18-20. VI-VII.
- nigricornis Reut. (H.M.H.) 10, 18. IV-VI.
- abbas Berg. (E.S.) 10, 19. VII-VIII.
- proboscideus Walk. (H.M.H.) 6, 10, 18-20. IV-VII.
- heidmanni Berg. (H.M.H.) 18, 19. VII-VIII.
- gracilis Parsh. 18. V.
- insolitus V.D. 10. III-IV.
- nigrinus canadensis Parsh. 18. VIII.
- parshleyi V.D. 10.
- persimilis V.D. (H.B.) 10, 18. IV.
- serratus Using. 19. V.
- uniannulatus Parsh. 2, 10, 20. IV-V.
- \*Aneurus septentrionalis Wlk. (W.) 3, 20. VII.
- nr. simplex Uhl. (H.M.H.) 2, 3, 18. VIII.

*Neididae.*

- \*Neides muticus Say (E.S.) 6, 18. IV, VII & IX.

*Lygaeidae.*

Since no consistent attempts have been made to collect in this family of inconspicuous bugs it is probable that the following list is far from complete for this province.

- \*Lygaeus kalmii kalmii Stal. (H.M.H.), (W.) 2, 3, 18. VII-IX.
- Nysius californicus Stal. 3. VII.
- \*  nr. thymi Wolf. (E.S.) 1-3, 5, 20. VII.

Possibly all are *ericae* but there appear to be two species in the series represented.

- \*  ericae Schill. (H.M.H.), (W.) 1-6, 10, 17, 18, 20. V-VII.

Always very abundant on mustard and other weeds in wheat-fields. Transfers to wheat in the spring and again in late summer, producing characteristic feeding marks, but not causing appreciable damage.

- \*  minutus Uhl. (McD.) 3, VII.
- coloradensis grandis Bak. 20. VII.
- paludicola Barb. 21. VIII.

- \*Ischnorrhynchus resedae Panz. (H.M.H.) 6, 9, 10. V-VI.

Taken on birch.

- \*Cymus luridus Stal. (H.M.H.) 8, 10. VI.

  angustatus Stal. (W.) 3. VI.

Blissus occiduus Barb. 3, 17. VII.

Originally identified as *B. leucopterus* Say. Does not appear to be of much economic importance here.

- \*Geocoris bullatus Say. (H.M.H.), (H.B.) 2, 3, 8, 18. VI-VIII.

- \*  discopterus Stal. (H.M.H.) 2. VII.

  atricolor Mont. 20. VII.

- \*Sphaerobius insignis Uhl. (H.M.H.) 2, 3, 8, 12, 20. VI-VIII.

- \*Ligyrocoris sylvestris L. (H.M.H.), (H.B.), (W.) (E.H.N.S.).

  = contractus Say 2, 3, 8, 10, 15, 20, 21. VI-VIII.

  diffusus Uhl. (W.) 3, 9. IX.

- Zeridoneus costalis V.D. (W.) 3, 10. VIII.

- \*Peritrechus fraternus Uhl. 3. VI. (McD.)
- \*       saskatchewanensis Barb. (H.M.H.), (H.B.) 3, 8, 10. IV-VII.
- \*Sphragisticus nebulosus Fall. (H.M.H.), (H.B.) 3, 10, 15. III & XI.
- \*Uhleriola floralis Uhl. (H.M.H.), (H.B.) 2. VIII-IX.
- \*Emblethis vicarius Harv. (H.B.) 2, 10. IV.
- \*Eremocoris ferus Say (H.M.H.) 8, 10, 18, 20. V-VIII.

#### *Tingitidae.*

The limited variety of deciduous trees native to Alberta probably accounts for the small number of species in this family which can be recorded from this province.

- \*Piesma cinerea Say (McD.) 3. V-VI.  
Taken in moderate numbers on alfalfa.
- Acalypta nyctalis Drake 10. VI.
- \*Corythucha immaculata O. & D. (W.) 18. VI.  
Taken on Balsamorhiza.
- \*       distincta O. & D. (D.) 2, 3, 18. VI-VIII.  
This species heavily infests native mountain hollyhocks and has now spread to cultivated varieties in southern Alberta.
- \*       elegans Dr. (D.) 8, 10, 12. VI-VII.  
Infests alders throughout northern Alberta.
- \*       nr. bellula Gib. (E.H.N.S.) 12. VII.  
Taken on imported oaks.
- \*       nr. marmorata Uhl. (E.H.N.S.) 10. VI.  
Taken on Solidago.
- \*       salicata Gibs. (D.) 10. VI.
- \*Galeatus peckhami Ashm. Intermediate with uhleri. (H.M.H.) 10. VI.  
Taken on wild asters.
- \* Physatocheila plexa Say (D.) 3, 10. V-VIII.
- \*       variegata Parsh. (E.S.) 10. V.  
Taken on pine.
- \*Monanthia labeculata Uhl. (E.H.N.S.) 5. VI.

#### *Phymatidae.*

- \*Phymata vicina Handl. (E.S.) 2. VII.
- \*       pennsylvanica Handl. (H.M.H.) = erosa L. 2-4, 6, 18. VII-IX.  
Captures Phalaenid adults in addition to smaller insects on goldenrod flowers.

#### *Emesidae. (Ploiariidae).*

- \*Metapterus uhleri Bnks. (E.S.) 2. III.

#### *Reduviidae.*

- \*Zelus socius Uhl. (G.), (H.M.H.) 2-3. VIII.
- \*       audax Bnks. (G.), (W.) 3. VII.  
Hunts prey on open flowers.
- \*Rhynocoris ventralis Say (H.M.H.) 2, 3, 10, 18. VI-VII.  
Frequently taken on alfalfa.
- \*Fitchia aptera Stal. (E.S.) 2. III.
- \*Sinea diadema Fab. (H.M.H.) 2, 3, 10. VII-VIII.  
A common predator hunting on goldenrod.

*Nabidae*.<sup>3</sup>

- \**Pagasa fusca* Stein. (H.M.H.) 10. VIII.  
Taken most frequently under logs.
- \**Nabis subcoleoptratus* Kby. (McD.) 2, 3, 10, 18. VII-VIII.
- \* *propinquus* Reut. (H.M.H.) 10. VIII.  
Taken in marshes and slough grass.
- \* *limbatus* Dahl. (E.S.) 10, 12. VII-VIII.
- \* *flavomarginatus* Sch. (E.S.) 10, 12. VII-VIII.
- \* *ferus* L. (H.M.H.) 3, 10, 15, 18, 19. VI-VII.  
Frequently hunts on goldenrod flowers.
- \* *pallidipennis* Harr. (H.M.H.) 8, 10. VI-IX.
- \* *roseipennis* Reut. (H.M.H.) 10, 12. V-VII.
- \* *rufusculus* Reut. (H.M.H.) 3, 10. IV.
- inscriptus* Kby. 6, 10, 12. VI.
- \* *alternatus* Parsh. (H.M.H.) 2. XII.

*Cimicidae*.

- \**Cimex lectularius* L. (E.S.) 2-6, 8, 10, 12, 15. I-XII.  
Population steadily declining since advent of general use of DDT but infestations, often in most unexpected places, continue to occur.
- pilosellus* Horv. 3. V.
- \**Oeciacus vicarius* Horv. (H.M.H.) 10. VII.  
Ceiling of a platform shelter at a railroad depot by a lake is heavily infested. Nymphal bugs, in particular, fall occasionally on to people or baggage.

*Anthocoridae*.

- \**Anthocoris antevolens* White (H.M.H.) 1, 3, 8, 10. VI-VII.  
*musculus* Say. 3. VI. Predator on Aphids in Leaf-galls.
- \**Orius insidiosus* Say (K.) 3, 20. VII-VIII.
- \* *tricolor* White (McD.) 3. VII.
- \**Tetraphleps canadensis* Prov. 20. VIII.

*Miridae*.

The following is, undoubtedly, an incomplete record of the species in this family which have been taken in this province. A substantial collection, sent some years ago to a specialist, was reported to have been lost during a move. Since, at the time, we possessed few authoritatively determined species in our collection, only occasional attempts had been made to name any of it ourselves. In 1951, Mr. E. H. N. Smith rendered us great assistance in reviewing doubtful determinations in many genera while Mr. A. R. Brooks undertook to name species in the genus *Lygus* and generously supplied us with the names of several species that had been taken in this province and of which we had no previous record.

Genera here recorded are listed in accordance with the classification employed by H. H. Knight in his "Plant Bugs, or Miridae of Illinois".

**Phyllinae**

- \**Chlamydatus bakeri* Berg. (K.) 3, 20. VI-VII.  
*obliquus* Uhl. 18. VII.
- pulicarius* Fall. 18. VII.
- \* *pullus* Reut. (McD.) 3, 6, 20. VI-VII.

- Plagiognathus alboradialis* Kgt. 20. VII.  
     *guttatipes* Uhl. 2. VII.  
     *laricicola* Kgt. 20. VIII.  
     *moerens* Reut. 20. VII.  
 \*      *obscurus fraternus* Uhl. (McD.), (W.) 3, 10, 20. VII-VIII.  
*Psallus drakei* Kgt. 20. VII.  
 \**Orectoderus obliquus* Uhl. (W.) 1, 5, 7, 9, 10, 20. VI-VII.  
     Taken on sage.  
 \**Coquilettia insignis* Uhl. (McD.) 3. VI-VIII.

#### Dicyphinae

- \**Dicyphus agilis* Uhl. (K.) 10, 18-20. VI-VIII.  
 \*      *nr. vestitus* Uhl. (E.S.) 10. V.

#### Bryocorinae

- Monalocoris americanus*, W. & S. 12.

#### Deraeocorinae

- \**Deraeocoris histrio* Reut. (McD.) 3, 8. V-VIII.  
 \*      *aphidiphagus* Kgt. (E.S.) 3, 10. VI-VII.  
     Taken while feeding on elm aphids.  
 \*      *piceicola* Kgt. (E.H.N.S.) 18. VII-IX.

#### Orthotyliinae

- Strongylocoris atribialis* Kgt. "Alta".  
 \*      *breviatus* Kgt. (E.H.N.S.) 10. VII.  
 \*      *stygius* Say (E.S.) 3, 10. VII-VIII.  
     Taken on goldenrod.  
 \**Labops hesperius* Uhl. (E.S.) = *hirtus* Kgt. 3, 8, 10, 19-21. VI-VIII.  
     *verae* Kgt. 19. VII.  
 \**Ilnacora stalii* Reut. (E.H.N.S.) 2. VIII.  
     *Ilnacorella sulcata* Kgt. 18. VII.  
 \**Hadronema militaris* Uhl. (McD.) 2, 3, 6, 8, 10, 18. VI-VII.  
     *princeps* Uhl. 18. VII.  
 \*      *picta* Uhl. (E.S.) 2, 3. VI-VIII.  
     *simplex* Kgt. 3.  
 \*      *uhleri* V.D. (E.S.) 5. VI.  
 \**Lopidea nr. balli* Kgt. (E.H.N.S.) 2, 3, 10. VII-VIII.  
 \*      *dakota* Kgt. (McD.) 2, 3, 5, 8, 10, 18. VII-VIII.  
     Frequently breeds abundantly on caragana hedges, causes  
     leaves to turn yellow and may cause some leaf-fall. Less frequently on rasp-  
     berries.  
 \*      *lathyri* Kgt. (McD.), (E.H.N.S.) 3. VII.  
 \*      *media* Say (E.S.) 3. VIII.  
     Taken on goldenrod.  
 \*      *minor* Kgt. (McD.) 15, 18. VII-VIII.  
     Taken on prairie clover.  
 \*      *serica* Kgt. (McD.) 3, 18. VII.  
 \**Melanotrichus albocostatus* V.D. (E.H.N.S.) 3. VI.  
 \*      *coagulatus* Uhl. (E.H.N.S.) 3, 10, 18. IX.  
     Taken on lambsquarters.



- \* *insignis* V.D. (E.H.N.S.) 18. VIII.
- Orthotylus alni* Kgt. 20. VIII.
- \* *nr. candidatus* V.D. (E.H.N.S.) 10. VIII.
- dorsalis* Prov. 20. VII.
- mistus* Kgt. 20. VII.
- \* *viridis* V.D. (E.S.) 10. VI.
- Taken on willow.
- \* *Tabopidea nr. nigripes* Reut. (E.H.N.S.) 6. VII.
- nigrisetosa* Kgt. 20. VII.
- Ceratocapsus drakei* Kgt. 20. VII.

#### Mirinae

- \* *Megaloceroea debilis* Uhl. (McD.) 3, 20. VI-VIII.
- Collaria meilleurii* Prov. "Alta".
- Trigonotylus ruficornis* Fall. (W.) 3, VI & IX.
- \* *Stenodema trispinosum* Reut. (McD.) 2, 3, 8, 10, 19, 20. V-VII.
- Abundant in grass everywhere.
- \* *vicinum* Prov. (McD.) 3, 10, 19. V-VIII.
- Chiefly in low moist meadows.
- \* *virens* L. (McD.) 3, 6, 18-20. V-VIII.
- \* *Platytyrellus bivittis* Stal. (W.) 3, 20. VII.
- Taken on fireweed.
- borealis* Kgt. (W.) 18. VII.
- eremicola* Kgt. 10, 18. VI-VII.
- nigripilus* Kgt. 12. VIII.
- \* *Capsus simulans* Stal. (A.B.) 3, 8, 10, 20. VI-VIII.
- Ncoborus amoenus* Reut. 3. VII.
- Breeding on, and disfiguring, ash.
- \* *Lygus approximatus* Stal. (A.B.) 1, 20. VII-VIII.
- Breeds on white spruce and larch.
- \* *columbiensis* Kgt. (A.B.) 1, 18, 20. VI-VII.
- Breeds on Umbelliferae.
- \* *desertus* Kgt. (A.B.) 1-3, 10. V-IX.
- Breeds on *Chenopodium*, *Artemisia* spp., &c.
- \* *distinguendus* Reut. (A.B.), 1, 10, 19, 20. V-VIII.
- \* *elisus* V.D. (A.B.) 10. V-IX.
- humeralis* Kgt. (A.B.) 17, 18. VI-VIII.
- \* *lineolarius* P. de B. (A.B.) = *oblineatus* Say 1-3, 10, 18, 20. VI-VIII.
- Very destructive to alfalfa bloom.
- \* *nigropallidus* Kgt. (A.B.) 1-3, 6, 18, 19. V-IX.
- Breeds on lupins, (*Lupinus argentea*.)
- \* *nigrosignatus* Kgt. (A.B.) 3. VII.
- Breeds on cultivated mustard.
- \* *pabulinus* L. (McD.), (A.B.) 1, 16, 17. VII.
- Breeds on *Actaea* sp.
- \* *pulverulentus* Uhl. (A.B.) 2. VII.
- Breeds on *Salix amygdaloides*.
- \* *rubicundus* Fall (A.B.) 3, 6, 10. IV-V.
- \* *rubrosignatus* Kgt. (A.B.) 2, 10, 12, 18. V-IX.

- \* scutellatus Uhl. (A.B.) = *campestris* of auct. 1-3, 6, 17-19. VI-VII.  
Breeds on Umbelliferae.
- \* shulli Kgt. (A.B.) = *hesperus* of auct. 1-3, 6, 17-19. VI-VII.  
A serious pest of alfalfa.
- \* striatus Kgt. (A.B.) 18. VII.
- \* varius Kgt. (A.B.) 1, 2. V-IX.  
Breeds on *Potentilla fruticosa*.
- atritylus Kgt. 20. VIII.  
Taken on *Salix* sp.
- confusus Kgt. 20. VIII.
- \* communis Kgt. (K.), (A.B.) 2, 19, 20. VII-VIII.  
Taken on *Cornus* sp.
- rubroclarus Kgt. 10. VI.
- Lygidea salicis Kgt. (A.B.) 18. VII.
- \*Pleciocoris rugicollis Fall. (A.B.) 1. VII.
- Polymerus balli Kgt. 3. VII.  
basivittis pallidulus Kgt. 18. VII.  
severini Kgt. 3. VIII.  
unifasciatus Fab. "Alta".
- \* lateralis Hahn. (McD.) 10, 20. VII-VIII.  
Taken from bedstraw (*Galium boreale*).
- \* venaticus Uhl. (W.) 10, 15. VII.  
Taken on goldenrod near lake margins.
- Irbisia arcuata V.D. 3. VI.  
brachycera, Uhl. 2. V.
- \* solani Heid. (McD.) 18, 19, 21. VII.
- \* nigripes Kgt. (McD.) 18. VI-VII.
- / fuscipubescens Kgt. 19. VII.
- \*Adelphocoris rapidus Say (McD.) 1, 3, 7, 10, 18. VII.  
Adults often abundant in alfalfa and reduce seed yield.
- \* superbus Uhl. (E.S.) 2, 3, 10. VII-VIII.  
Adults taken in small numbers on alfalfa.
- Phytocoris juncus Kgt. 20. VIII.

#### Gerridae.

- \*Gerris buconi Kirk. (D.), (H.M.H.) 10. V.
- \* comatus D. & H. (D.), (H.M.H.) 10. VIII.
- \* dissortis D. & H. (H.M.H.) 15. VI.
- \* notabilis D. & H. (H.M.H.) 15. VI.
- \* nyctalis D. & H. (D.), (H.M.H.) 6. V.
- \* pinguensis D. & H. (D.), (H.M.H.) 10. V.

#### Saldidae.

The generic disposition of species is that employed by H. B. Hungerford who examined our small collection in 1949. Other authorities had, earlier, employed a variety of generic names for the same species.

*Salda celeripedis* T.B. 20. VII.

- \* bifasciata Thom. (H.B.H.) = *Acanthia bellatrix* T.B. (McD.) 18. VI-VII.
- \* bouchervillei Prov. (H.B.H.) = *L. coriacea* Uhl. (McD.) 3, 8, 18. VI-VII.

- \* lugubris Say (H.B.) = Saldula buconi McD. (H.M.H.) 8, 18. VI.
- \* major Prov. (H.B.H.) = Acanthia and Saldula. 3, 18. VI.
- \* pallipes Fieb. (H.B.H.) = interstitialis Say (H.M.H.) 2, 10, 20. IV-IX.
- obscura Prov. = Saldula. 18. VI.

*Notonectidae.*

- \*Notonecta undulata Say (H.M.H.) 3, 6, 10. VI-VIII.
- \* insulata Kby. (McD.) 3. V.
- \* kirbyi Hung. (H.M.H.), (W.) 3, 4, 6, 7, 10, 19. VIII-IX.

*Belostomatidae.*

- \*Lethocerus americanus Leid. (McD.) 3, 6, 8, 10, 16. V-IX.

*Corixidae.*<sup>5</sup>

Few attempts have been made to collect aquatic insects in Alberta and most of the records given below are from the collection of Mr. O. Bryant, determined by Dr. Hungerford.

- Arctocorisa sutilis Uhl. 12, 15. VI-VIII.
- convexa Fieb. 18. VII.
- Callicorixa alaskensis Hung. Lost Lake VI.
- audeni Hung. 3, 6, 10, 12, 19. IV-IX.
- \*Cenocorixa bifida Hung. (H.B.H.) 1-3, 6. VI-IX.
- dakotensis Hung. 1-3, 12. VII-IX.
- \* utahensis Hung. (H.B.H.) 1, 3, 6, 18, 19. VII-IX.
- Cymatia americana Huss. 1. VI-VII.
- \*Hesperocorixa laevigata Uhl. (W.) 3, 6. V & IX.
- vulgaris Hung. 6. IX.
- Sigara alternata Say 2, 3, 6, 10. V-IX.
- conocephala Hung. 10, 12. XII.
- decoratella Hung. 3, 10. VII-VIII.
- trilineata Prov. 12. IX.
- washingtonensis Hung. 18. VI.

**Suborder HOMOPTERA***Cicadidae.*

- Okanagana canadensis Prov. 10. VI.
- rimosa Say. (W.) 3, 10. VI-VII.
- occidentalis Wlk. (McD.) 3. VII.
- synodica Say 3. V.
- bella Dav. 18, 21. VII.
- luteobasalis Dav. 1-3. VI-VII.

*Cercopidae.*

- Aphrophora parallela Say 19.
- Taken on spruce.
- \* permutata Uhl. (G.), (E.B.), (W.) 1, 10, 12, 18. VII-VIII.
- Taken on spruce.
- \* annulata Ball (G.) 10, 12. VI-VIII.
- \*Lepyronia quadrangularis Say (G.), (E.B.), (W.) 10. VI-IX.
- \* gibbosa Ball (E.S.) 9. VI.

- \**Philaronia abjecta* Uhl. (E.S.) 10. VII.
- \*       *bilineata* Say (McD.) 1-3, 10. VI-VIII.
- \*       *orbiculata* Ball (G.), (E.B.) 2, 10. VII-VIII.
- \*       *reticula* Ball (G.), (E.B.) 2, 18. VII.
- \**Clastoptera obtusa* Say (E.S.) 10. VIII.
- \*       *borealis* Ball (E.B.) 10. IX.

*Membracidae.*

- \**Ceresa diceros* Stal. (E.B.) 2. VIII.
- \*       *bubalus* Fab. (E.B.) 3, 6. VII-VIII.
- \*       *basalis* Wlk. (E.B.) 3, 6, 10, 12, 15, 18. VII-IX.
- \*       *turbida* Godt. (E.B.) 10. VIII.
- \*       *brevis* Wlk. (G.) 3, 6, 19. VIII-IX.
- \*       *femorata* Fair. (W.) 18. VIII.
- \**Stictocephala inermis* Fab. (G.), (E.B.) 2, 3, 6, 17. VII-VIII.
- pacifica* V.D. (McD.) 3, 17. VII.
- \**Heliria scalaris* Fair. (G.), (E.B.) 2, 10. VII.
- \**Telamona decorata* Ball (G.) 2, 10. VIII.
- reclivata* Fh. 10. VII.
- \**Palonica pyramidata* Uhl. (E.B.) 10. VII.
- ampliata* Ball 10. VIII.
- \*       *tremulata* Ball (E.B.) 10, 19. VII-VIII.
- \*       *viridia* Ball (G.) 3. VII-VIII.
- \**Publilia modesta* Uhl. (E.S.) 2, 3. VII-VIII.
- Breeds on wild liquorice, *G. lepidota*.
- \**Campylenchia latipes* Say (E.B.), (W.) 2, 3. VII-VIII.

*Cicadellidae.*

A moderately large collection in this family had been assembled by about 1940, when Dr. H. Hurtig, then a graduate student at this University, studied our available material. With the aid of the literature we possessed, together with authoritatively named specimens from elsewhere, he was able to name much of our material with a fair degree of certainty. The bulk of this collection was, however, subsequently submitted to an authority for further examination. In transit, much of this material was damaged beyond recognition. Species of which the determination is credited to Hurtig must, therefore, be accepted with a degree of caution though we have included only those regarding which we have no cause to question the accuracy. Undamaged material was reexamined by Mr. B. Beirne in 1951.

In the following list, genera and species are recorded in accordance with the classification given by Oman<sup>2</sup>.

**Dorycephalinae**

- \**Dorycephalus platyrhynchus* Osb. (E.S.) 2. VI.

**Helacinae**

- \**Parabolocratrus viridis* Uhl. (DeL.), (B.B.) 2, 3, 8, 15, 18, 20. V-VI.
- \*       *montanus* Ball (B.B.) 8, 10. VI.

**Agalliinae**

- \**Agalliopsis novella* Say (DeL.), (W.), (B.B.) 3, 4, 10. V-VI.
- Taken on willow.
- Agallia quadripunctata* Prov. (H.) 3. VI-VII.

- Certagallia bigeloviae* Bak. (H.) 3.  
 \**Acertagallia arida* Oman (B.B.) 2. VIII.  
     *fuscascripta* Oman (H.) 2-4. VII.  
 \*    *sanguinolenta* Prov. (DeL.), (B.B.) 2-4, 10, 18, 21. VII-VIII.  
     Taken on sage.

#### Macropsinae

- \**Oncopsis fitchi* V.D. (B.B.) = *pruni* Prov. (W.) 10, 16-18. VI-VII.  
     Taken on birch.  
 \*    *sobrinus* Wall. (B.B.) 10. VI.  
     Taken on wolf-willow.  
 \*    *variabilis* Fit. (DeL.) 10, 21. VI-VII.  
     Taken on alders, wolf-willow and birch.  
*Macropsis basalis* V.D. (W.) 3, 20. VI-VII.  
     Taken on poplar.  
     *canadensis* V.D. (W.) 18. VII.  
     Taken on willow.  
     *erythrocephala* G. & B. (W.) 20.  
     Taken on willow.  
 \*    nr. *fumipennis* G. & B. (B.B.) = *suturalis* O. & B. (DeL.) 10. VI.  
     Taken on willow.  
     *nigricans* V.D. (W.) 20. VIII.  
     *robusta* Break. (H.) 10, 19. VII.  
     *sordida* V.D. 21.  
     Taken on willow.  
 \*    *tristis* V.D. (W.) 3, 20. VII.  
 \*    *viridis* Fit. (H.) 3, 10. VII.

#### Idiocerinae

- \**Idiocerus alternatus* Fit. (DeL.) 2, 10, 20. III-IV.  
     Appears on poplar trunks on first warm spring days.  
 \*    *fitchi* V.D. (B.B.) 2. VII.  
 \*    *lachrymalis* Fit. (DeL.), (W.) 1, 3, 10, 12, 18, 20. VI-VIII.  
     Common on willows and aspens.  
 \*    *pallidus* Fit. (DeL.) 2, 3, 10. VI & IX.  
     *productus* G. & B. (W.) 20. VII-VIII.  
     *snowi* G. & B. (H.) 3. VII.  
 \*    *suturalis* Fit. (B.B.) 3, 4, 8, 10. VI-VIII.

#### Iassinae

- \**Gyponana flavilineata* Fat. (B.B.) = *striata* Burm. (McD.) 3. VIII.  
     *octolineata* Say (W.) 2, 3, 10. VII-VIII.  
 \**Gypona melanota* Spang. (B.B.) 2. VIII.

#### Tettigelinae

- \**Cuerna costalis* Fab. = *Oncometopia lateralis* Fab. (McD.), (DeL.) 2, 3, 6, 8, 10, 19. V-VIII.  
     Causes slight damage by feeding on wheat stems in late summer. Damage has been mistaken for rust.  
     *septentrionalis* Wlk. (H.) 2. VI.

- \**Draculacephala angulifera* Wlk. (DeL.) 10. VIII.  
 \* *crassicornis* V.D. (McD.), (DeL.), (B.B.) 10, 19, 20. VII-VIII  
 \* *nr. mollipes* Say (B.B.) 8, 10. VII-VIII.  
 \* *novaboracensis* Fit. (McD.), (B.B.) 1-3, 10. VIII.  
 \* *prasina* Wlk. (B.B.) 1-3, 5, 8, 10. VII-VIII.  
 \**Helochara communis* Fit. (DeL.), (B.B.) 2, 3, 5, 8, 10. V-IX.  
 Is abundant in slough grass.  
 \**Neokolla gothica* Sign. (DeL.), (W.), (B.B.) 2, 3, 7, 8, 10. IV-VIII.  
 Taken on alder, dogwood and aspen.  
 \* *hieroglyphica* Say (B.B.) 2. VII.  
 \**Keonolla confluens* Uhl. (McD.) 3. V.  
 \**Evacanthus acuminatus* Fab. (DeL.), (B.B.) 10. VI-VIII.

#### Cicadellinae

- Dikraneura carneola* Stal. (B.B.) 2. VII.  
*mali* Prov. (DeL.) 10. VI.  
*Empoasca smaragdula* Fall (H.) 6. VIII.  
*filamenta* DeL. 3. VI.  
 Injurious to Chinese elm.  
 \* *vincula* DeL. (B.B.) 10. IV.  
 \**Erythroneura ziczac* Walsh. (E.S.) = *comes* Say. 2, 3. VI-VIII.  
 A serious pest of Virginia creeper.

#### Deltocephalinae

- \**Scaphytopius acutus* Say (DeL.), (B.B.) 2, 3, 10, 12. VII-VIII.  
 Taken on lambsquarters.  
 \* *cinereus* O. & B. (DeL.) 2. VII.  
*latus* Bak. (H.) 5, 10.  
 \**Acinopterus viridis* Ball (B.B.) 2. VII.  
*Neosteles neglectus* DeL. (B.B.) 2. VII.  
 \**Balclutha abdominalis* V.D. (DeL.) 10, 15. VI-VII.  
 Taken on nettles and equisetum.  
*impicta osborni* V.D. (W.) 19. VIII.  
*manitou* G. & B. (H.) 2, 3. VI-VII.  
 \* *punctata* Thun. (B.B.) 2, 6-8, 10, 18, 19. V-VI.  
 \**Macrosteles arcuatus* G. & B. (B.B.) 10. VII.  
 \* *quadripunctatus* Fall. (B.B.) = *dahlbomi* Zett. 12, 20. VII.  
*binotatus* Sahl. (DeL.) 3. VIII.  
 Taken on beets and potatoes.  
 \* *divisus* Uhl. (DeL.) = *fascifrons* complex (B.B.) 2-6, 10, 17, 20. V-VIII.  
 Frequently recorded from Alberta under the name *Cicadula sexnotata* Fall. as a serious garden pest disseminating "yellows".  
 \* *potorius* Ball (DeL.), (B.B.) 10. VI.  
 \* *variatus* Fall. (DeL.), (B.B.) 7, 10. VII.  
 Taken on carrots and nettles.  
*Chlorotettix galbanatus* V.D. (H.) 8. VII.  
 \* *lusorius* O. & B. (DeL.) 10. IX.  
 \* *unicolor* Fit. (W.), (B.B.) 2, 3, 10. VII-IX.

- Colladonus clitellarius marcidus* Ball (H.) 3.  
 \* *montanus* V.D. (H.) 2, 3, 10. VII-IX.  
 \* *Idiodonus kennicottii* Uhl. (DeL.), (B.B.) 15. VII-VIII.  
 \* *Ballana venditaria* Ball (DeL.) 18. VII.  
 \* *Norvellina chenopodii* Osb. (B.B.) 2, 8, 10, 12. VIII.  
 \* *Paraphlepsius apertus* V.D. (DeL.) 10. VIII.  
 \* *irroratus* Say (McD.) 10, 17. VIII.  
 \* *lascivus* Ball (DeL.), (B.B.) 2, 3. VII.  
 \* *solidaginis* Wlk. (B.B.) = *nebulosus* V.D. 2, 3, 6. VII.  
 \* *Cicadula ciliata* Osb. (B.B.) 2, 3. IX.  
 \* *decipiens* Prov. (DeL.), (B.B.) 10, 19. VIII-IX.  
 \* *longiseta* V.D. (B.B.) 6. VIII.  
 \* *straminea* S. & DeL. (B.B.) = *melanogaster* Prov. (DeL.) 10, 19. VIII-IX.  
 \* *stylata* DeL. (B.B.) 2, 19. VII-IX.  
 \* *Thamnotettix prasina* Fall. (B.B.) = *simplex* H.-S. & *chlamydatus* Prov. (DeL.) 10, 12, 19. VIII-IX.  
 \* *Extrusanus extrusus* V.D. (B.B.) 3, 8, 9, 10. VI-VIII.  
*Frigartus frigidus* Ball (B.B.) 2.  
*Limotettix parallelus* V.D. (DeL.) 10. VI-VII.  
 \* *striolus* Fall. (B.B.) 2, 10. VIII.  
 \* *uneolus* Ball (B.B.) = *divaricatus* S. & DeL. (DeL.) 2, 3, 6, 10. VII-VIII.  
 \* *Scleroracus angustatus* Osb. (B.B.) 5, 20. VII-VIII.  
*elongatus* Osb. (W.) 20. VII.  
 \* *Exitanus exitosus* Uhl. (B.B.) 3.  
*Athysanella bifida* B. & B. (B.B.) 2.  
*attenuata* Bak. (B.B.) 2.  
*obesa* B. & B. (B.B.) 2.  
*occidentalis* Bak. (B.B.) 2.  
*curvata* B. & B. (B.B.) 2.  
 \* *Palus bilineatus* G. & B. (DeL.) 10. VI.  
*Orocistus perpusillus* B. & DeL. (B.B.) 2.  
 \* *Auridius auratus* G. & B. (DeL.), (B.B.) 10. VI.  
 Taken on prairie grass.  
*Mocuellus flavidus* Beir. 2. VII.  
*ordinatus* Ball. 6.  
*canadensis* DeL. (W.) 20. VII.  
*collinus* Boh. (H.) 2, 3. VI-VII.  
 \* *Psammotettix striatus* L. (DeL.) 2-6, 8, 10. VI-IX.  
 Taken on a great variety of plants, including grass, alfalfa and willows.  
 \* *Sorhoanus debilis* Uhl. (DeL.) 3, 8, 10. VI-VII.  
 Taken on prairie grass.  
 \* *orientalis* DeL. & D. (B.B.) = *Verdanus abdominalis* Fab. (DeL.), 1, 5, 8, 10. VI-VII.  
 \* *uhleri* Oman (B.B.) 2, 3, 8, 10. VI-VII.  
*Cazenus cicatrix* DeL. & S. 12.

- \**Verdanus evansi* Ash. (B.B.) 1, 3, 8, 10, 15. VI-IX.  
Taken on sage.
- \**Diplocolenus configuratus* Uhl. (DeL.), (B.B.) 2, 8, 10. VI-VII.  
Taken on prairie grass.
- Flexamia flexulosa* Ball (B.B.) 2.
- \**Errastrunus ocellaris* Fall. (DeL.), (B.B.) 10, 18, 20. VI-VII.
- \* *sobrinus* DeL. & S. (B.B.) 10, 12, 19. VII-VIII.
- \**Quontus misellus* Ball (H.) 6, 8, 10. VII-VIII.
- Hebecephalus borealis* DeL. & D. "Alta".
- \* *nr. occidentalis* B. & T. (B.B.) 8, 10. V.  
*rostratus* B. & T. (B.B.) 2.  
*signatifrons* V.D. (W.) 2-4, 20. VI-VIII.
- \* *truncatus* B. & T. (B.B.) 2, 3, 10. V-VIII.
- Commellus sexvittatus* V.D. (B.B.) 2.
- \**Cabrulus labeculus* DeL. (H.) 2, 19. VII-VIII.
- Deltocephalus balli* V.D. (B.B.) 2.  
*castoreus* Ball (H.) 10.
- \**Endria inimica* Say (B.B.) 2, 3, 6, 8, 10. VII.

#### *Fulgoridae*<sup>s</sup>

In 1937<sup>10</sup>, the writer recorded the twelve species of Fulgorids which were then known to be native to Alberta. Subsequent examinations of likely habitats for representatives of this family have already produced 32 species.

- \**Scolops angustatus* Uhl. (Z.M.), (V.D.) 1, 2, 5. VIII.  
*hesperius* Uhl. 3.
- \* *grossus* Uhl. (Z.M.) 2. VIII.  
Taken on sweet clover.
- \**Epiptera pallida* Say (V.D.) 1, 8. VI.
- \* *septentrionalis* Prov. (V.D.) 8. VI.  
Both of the above were taken on rushes.
- \**Oliarus franciscanus* Stal. (Z.M.) 10. VI-VII.  
Taken on sage.
- \* *humilis* Say (E.S.) 2, VIII.
- \**Cixius misellus* V.D. (E.S.) 2, 3. V & IX.
- \* *nervosus* L. = *basalis* V.D. (Z.M.) 10, 16. VI-VIII.  
Taken on sage and spruce, usually on former.  
*cultus* Ball (McD.) 3. V-VII.
- \**Apache degeeri* Kby. (Z.M.) 10. VIII.
- \**Stenocranus aurundineus* Met. (E.S.) 2. VI.
- \* *dorsalis* Fit. (Z.M.) 10. V-VII.  
Taken on prairie grass.
- \* *felti* V.D. (R.B.) 8, 10. V-VI.
- \**Pissonotus marginatus* V.D. (V.D.) 2. VII.
- \* *basalis* V.D. (Z.M.) 3. VIII.  
Taken on gumweed (*G. squarrosa*).
- \* *brunneus* V.D. (W.) 3.
- \* *aphidioides* V.D. (Z.M.) 10. VII.  
Taken only on Indian paintbrush (*C. coccinea*).
- \**Phyllodinus nervatus* V.D. (Z.M.), (R.B.) 10. VI-VII.  
Taken from grass under trees.



- \*Laccocera vittipennis V.D. (Z.M.), (V.D.) 2, 10, 15. VI.
- \*     zonata V.D. (R.B.) 2. VI.
- flava Cwfd. 2, 3.
- \*Delphacodes kilmani V.D. (Z.M.) 10, 15. V-VII.
- Breeds abundantly on mares' tail. (*Equisetum* spp.)
- \*     neocclusa M. & G. (R.B.) 3, 8. IV-V.
- \*     arcanastyla Beam. (R.B.) 10. V.
- \*     pellucida Fab. (Z.M.), (V.D.) 1-3, 5, 8, 10. V-VII.
- Widespread wherever cinquefoil (*Potentilla* spp.) is  
growing.
- \*     stricklandi Met. 10. VI.
- \*     campestris V.D. (Z.M.), (V.D.) 2, 8. VI-VIII.
- Taken commonly from prairie grass.
- \*     nalis Cwfd. (R.B.) 10. V.
- \*Archortile albosignata Dahl. (E.B.) 15.
- \*Criomorpus inconspicuus Uhl. (R.B.) 10. VII.
- \*Pentagramma vittatifrons Uhl. (R.B.) 2. VIII.

*Chermidae (Psyllidae).*

In 1938<sup>11</sup> and 1939<sup>12</sup> the writer recorded 39 species of Chermidae which he had taken in Alberta. In these lists their host relationships were discussed. The following list contains one additional entry, only. /

- \*Aphalara artemisiae Forst. (C.) 10. VI-VII.
- \*     confusa Cald. (C.) 10, 12. VII-VIII.
- \*     curta Cald. (C.) 15.
- \*     dentata Cald. (C.) 3. VI.
- \*     fumida Cald. (C.) 9, 10, 16. VI.
- \*     nr. gutierreziae Kly. (C.) 2. VIII.
- \*     hebecephala Cald. (C.) 9, 10. VI-VII.
- \*     loca Cald. (C.) 10. V-VII.
- \*     manitobaensis Cald. (C.) 10. V.
- \*     nebulosa kincaidi Ash. (C.) 10, 15. VI.
- \*     rumicis Mall. (C.) 7, 10. VII.
- \*     simila Cald. (C.) 10. V-VI.
- \*     vancouverensis Kly. (C.) 10, 15. VI.
- \*     veaziei Patch (C.) 10. VI-VII.
- \*Calophya trioanomima Sch. (C.) 3. VIII.
- \*Paratrioza cockerelli Sule. (C.) 2, 3, 5, 6, 8, 10. I-XII.
- \*Trioza quadripunctata Cwfd. (C.) 10, 12. V-VII.
- \*     frontalis Cwfd. (C.) 10. V-VI.
- \*     sulcata Cwfd. (C.) 10. IX-X.
- \*     nr. similis Cwfd. (C.) 10. VIII.
- \*     nr. maura Forst. (C.) 10. VI.
- \*     varians Cwfd. (C.) 10, 15, 19. IV-VII.
- \*Phyllopecta multidubiata Cald. (C.) 10. V.
- \*     breviradia Cald. (C.) 10. V-VI.
- \*Arytaina ribesiae Cwfd. (C.) 3. VII.
- \*Psyllia nr. fibulata Cwfd. (C.) 10. VI.
- \*     sinuata Cwfd. (C.) 10, 20. VI-VII.
- \*     alba Cwfd. (C.) 10, 15. VI-VII.

- \* hartigii Flor. (C.) 10. VI.
- \* americana Cwfd. (C.) 10, 19. IV.
- \*       flava Cwfd. (C.) 10, 19. IV-V.
- hamata Tuth. 19. IV.
- \* magnicauda Cwfd. (C.) 3, 7, 10. VI-VII.
- \* striata Patch (C.) 10. VI.
- \* stricklandi Cald. (C.) 10, 16, 21. VI-VII.
- \* virida Cald. (C.) 3. VIII.
- \* negundinis Mall. (C.) 7, 10. VI-VII.
- \* floccosa Patch (C.) 10, 21. VI-VII.
- \* cerasi Patch (C.) 10. IX.
- \*       astigmata Cwfd. (C.) 10. VII.
- \*alni americanella Str. (C.) 12, 20, 21. VII.

#### *Aphididae*.<sup>4</sup>

The only systematic attempt to collect data on the species of this important family in Alberta has been that of Mr. T. R. Davidson, a graduate student at this University, who in 1944 made a fairly comprehensive collection of the species then in evidence in the neighbourhood of Edmonton. With the aid of available literature he was able to name, with reasonable certainty, the bulk of our collection. Additional material was loaned by the Dominion Entomological Laboratory at Lethbridge and in the following year Mrs. McGillivray of the Dominion Entomological Laboratory at Fredericton, N.B. generously re-examined all of our material in order to verify or to correct determinations.

In the following list, genera are arranged in conformity with Hottes and Frison's publication on the Plant lice of Illinois.<sup>4</sup>

- \**Cinara* laricis Hart. (E.S.) 10. V.  
  Taken on imported larch.
- \*   palmerae Gill. (E.S.) 10. V-VI.  
  Extremely heavy infestation of several large spruces in gardens in Edmonton in 1951.
- \**Clavigerus* bicolor Oest. (P.M.) 19. VII.  
  Migrants taken on Columbia Ice Field at 10,000 ft.
- \*   smithiae Mon. (P.M.) 3, 4, 6, 8, 10, 19. VI-VIII.  
  This is a serious pest of Russian poplars. It kills young growth if the trees are suffering simultaneously from some other handicap such as drought or hail. Migrants were taken with *bicolor* at 10,000 ft.
- \**Periphyllus* negundinis Thom. (E.S.) 3, 6, 8, 10. V-IX.  
  This is a disagreeable and widespread pest of Manitoba maples. The trees do not appear to be seriously affected but copious honey-dew falls continually.
- \*   populicola Thom. (McG.) 6, 10. VII.  
  Infests N.W., and less frequently, Russian poplars.
- \**Aphis* abbreviata Pat. (McG.) = rhamni Fons. 10. VI.  
  Infesting tomatoes.
- forbesi Weed. 2, 3, 10, 19. VI.  
  Strawberry root aphid.
- \*   nr. heracella (McG.) 3. IX.  
  Taken from celery.

- \* *maculatae* Oest. (McG.) 10. V.  
Taken on dogwood, but recorded from poplar.
- \* *maidis* Fit. (McG.) 3, 10. VIII.  
Infests corn in S. Alberta and colonies were found during the winter on greenhouse-grown barley at Edmonton.
- \* *ocnotherae* Oest. (P.M.), (McG.) 10. VII.
- \* *ribiensis* G. & P. (McG.) 3. IX.  
Taken on red currants.
- \* *sensoriata* G. & B. (McG.) 10. IX.  
Taken on beans.
- \* *viburnicola* Gill. 3. IX & V.  
Apparently overwintering on *Viburnum* Sp. (Snowball).
- \* *Brachycolus tritici* Gil. 6. VI.  
Since 1944, when it was first observed, a localized infestation of wheat has occurred near Cowley but it does not appear to be spreading.
- \* *Brevicoryne brassicae* L. (McG.) 3. VII-IX.  
Occasionally infests cabbages and cauliflowers heavily and turnips more lightly.
- \* *symphoricarpi* Thom. (McG.) 10. VII.  
Taken from pincherry.
- \* *Cavariella aegopodii* Scop. (McG.) 10. II. /  
Taken on carrots in a greenhouse.
- \* *caprae* Fab. (McG.) 3, 6. IX.  
Taken on carrots and celery in greenhouse.
- \* *Hyalopterus atriplicis* L. (McG.) 10. VII.  
Breeding on Lambsquarters (*C. album*).
- \* *hyperici* Mon. (D.) 3. VI.  
Taken on plum.
- \* *Rhopalosiphum enigmae* H. & F. (McG.) 10. VII.
- \* *prunifoliae* Fit. (McG.) 10. IX.  
Taken on Pincherry, Alders and Clover.
- \* *pseudobrassicae* Dav. (McG.) 3, 7. VI-IX.  
In addition to occasional severe infestations of cabbages and turnips, this has been found breeding on stinkweed.
- \* *scirpifolii* G. & B. (McG.) 3. IX.  
Taken on greenhouse grown celery.
- \* *Myzocallis ulmifolii* Mon. 3. VII-VIII.  
Breeding on elm and producing copious honeydew.
- \* *Amphorophora cosmopolitana* Mason (McG.) 3. IX.  
On black currants and greenhouse grown celery.
- \* *rubicola* Oest. (McG.) 8. VI.  
Taken on raspberry.
- \* *Capitophorus flaveolus* Wlk. (McG.) 3, 10. VIII-IX.  
Taken on Canada thistle, potato, beans and bullberry.
- \* *fragaefolii* Ckll. = *Myzus rosarum* Kalt. (McG.) 10. VI.  
Taken on tea-rose but not on other cultivated varieties which were growing in its immediate vicinity.
- \* *ribis* L. (D.) 2, 3, 5, 10. VIII.  
Common on currants and *Polygonium* spp.

\**Macrosiphum caraganae* Chol. 3, 10. VI-X.

This species is recorded in the literature as the most frequent cause of caragana defoliation in Saskatchewan and Alberta. All of the specimens we have taken from caraganas which were being rapidly defoliated at Edmonton have been *M. pisi* Kltb.

\**Macrosiphum dirhodum* Wlk. (McG.) 10. VII.

Taken on rose and potato.

*eoessigi* Knowl. 3, 18. VII.

Infests wild and cultivated hollihocks.

\* *granarium* Kby. (McG.) 2-5, 10, 12, 15. VII-IX.

Heavily infests all kinds of grain in certain years. It is improbable that this species can overwinter anywhere in Alberta.

\* *psi* Kltb. (McG.) 3, 10. VI-VII.

Appears to overwinter on alfalfa and to migrate during the summer to peas and caragana. May defoliate the latter.

\* *rudbeckiae* Fit. (McG.) 10. VII.

\* *solanifolii* Ash. (McG.) = *gei* Kock. 3, 6, 8, 10. VI-VII.

Cultivated roses are usually infested every spring in the larger cities and towns of Alberta. This species is, however, very uncommon on wild roses. A serious disease-transmitting pest of potatoes and tomatoes.

\* *solidaginis* F. & W. (McG.) 10. VIII.

The wine-coloured apterae of this species are rather evenly distributed along the stems of cultivated asters.

\**Myzus convolvuli* Kltb. (McG.) 2, 10. VIII-IX.

Taken on tomatoes and beans.

\* *cynosbati* Oest. (McG.) 10. VII.

Taken on currants.

\* *essigi* G. & P. (McG.) 10. VI.

Taken on wild and cultivated columbine.

\* *persicae* Sulz. (McG.) 2, 10. VIII-IX.

Taken on tomatoes and potatoes.

\**Eriosoma americana* Ry. (McG.) 2-4, 8, 10. VI-IX.

Elms to saskatoon roots.

\* *lanigera* Haus. (McG.) 3, 10. VI-IX.

This is more abundant on elms at Edmonton than is *E. americana*. The ground surrounding the trunks of these trees is frequently covered to a depth of up to about two inches and to a distance of about 9-10 inches from the trunk itself with winged migrants at about the middle of September.

*Forda occidentalis* Hart. 2, 3. VII.

This was first observed infesting wheat roots in 1934, but it has not proved to be very injurious in Alberta.

\**Mordwilkoja vagabunda* Walsh. (E.S.) 3, VII.

The sponge galls of this species are very conspicuous in certain years in the drier parts of the province.

\**Pemphigus betae* Doane 3. V-IX.

A pest of increasing importance to beet production in Southern Alberta, first recorded in 1934. Overwinters on *Populus nigra* *foliae* and *P. balsamifera*, forming a mid-rib gall.

- \* *brevicornis* Hart. (McG.) 3, 10. VIII-IX.  
This species has been taken on potatoes, beets and celery in Alberta. Hottes and Frison<sup>1</sup> state that this may be the sexupara of *P. populicaulis* Fit.
- \* *ephemeratus* H. & F. (McG.) 10. VIII-IX.  
In certain years the subterranean apterae are extremely abundant on the roots of petunias and larkspurs where they produce a flocculent white wax which covers much of the surrounding soil.
- \* *populicaulis* Fit. (McG.) 2, 3. VII.  
Hottes and Frison think that this may be synonymous with *P. lactucae* Fit. It forms an irregular stem gall at the immediate base of poplar leaves. On *Populus balsamifera* the gall is seen to be formed by the flattening and twisting of the stem. The migrants leave this as the stem is unwrapped in late summer.
- \* *populitransversus* Ry. (E.S.) 2, 3. VII.  
A marble gall is formed on the stem of poplar leaves usually at a little distance from the base of the leaf. Migrants leave by a transverse slit in the wall of the gall.
- \* *populivenae* Fit. (McG.) 10. VII.  
Recorded as having produced "pseudogalls" on poplar leaves at Edmonton.
- \* *Thecabaeus populimonilis* Ry. (McG.) 3, 10. VII.  
In 1948, poplars of the balm of Gilead type in the Elk Island National Park were very heavily infested with marble galls along the midribs of the leaves. They usually occurred in series of from four to five to a leaf and some trees were so heavily infested that they appeared to be carrying bunches of grapes. Mrs. McGillivray confirmed our determination that these were produced by *T. populimonilis* Ry. It did not, however, form a "cockscorn" gall as is claimed for it in the literature.
- \* *populiconduplifolius* Cow. (McG.) 10. VII.  
Taken on Swiss chard.  
*Mindarus abietinus* Koch. "Alta".

*Phylloxeridae.*

- \* *Adelges abietis* L. 10, 12, 15-17, 19. VII-VIII.  
Widespread on all types of spruce.
- \* *cooleyi* Gill. 3, 8, 19-21. VII-VIII.  
Common on spruces, transferring to Douglas fir.  
nr. *pinicorticis* Fit. 8. VII.  
On transplanted pine.  
*Pineus pinifoliae* Fit. North-west Alberta.  
*similis* Gill. 6. VII.  
On white spruce.

*Aleyrodidae.*

- We have no records of any species in this family that are native to Alberta.
- \* *Trialeurodes vaporariorum* L. (E.S.) 2, 3, 5, 8, 10, 15. I-XII.  
Now present in nearly all greenhouses and often introduced into dwellings.

*Coccidae.*

No systematic attempts have been made to collect the native species of this family in Alberta. In recent years, one or two scale insects have attracted attention as pests of economic importance in the "field", but interest has centred chiefly on those species which have been accidentally introduced into greenhouses.

- \**Pseudococcus citri* Riss. 2, 3, 5, 6, 8, 10, 15. I-XII.  
Now widely prevalent in greenhouses.  
*longispinosus* Targ. 10. VII.  
Has been reported to us from one greenhouse only.
- \**Lecanium coryli* L. (E.S.) 3. VI.  
Infesting caraganas and elms.  
*corni* Bouch. 6, 7, 10. VIII.  
Infesting dogwood and, to a less extent, Manitoba maple.
- Pulvinaria vitis* L. 3. VI.  
Infesting Manitoba maple.
- \**Saissetia hemisphaericae* Targ. (E.S.) 10. VII-IX.  
On a variety of greenhouse and house plants.
- \**Phenacapsis pinifoliae* Fit. 4-9. VI-VII.  
Becoming increasingly abundant on transplanted spruce and pine.
- \**Hemichionaspis aspidestriae* Sign. (E.S.) 3, 6, 10. I-XII.  
More prevalent on Boston ferns in houses than in greenhouses.
- Lepidosaphes ulmi* L. 3. III-VII.  
/ Heavily infests cotoneasters.

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