
An Annotated List of Hemiptera Inhabiting Sour Cherry Orchards in the Niagara Peninsula, Ontario¹

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A study of the insect inhabitants of the sour cherry orchards of the Niagara district of Ontario was begun in the spring of 1947, as a part of an investigation of virus diseases of stone fruits carried on cooperatively between the Dominion Entomological Laboratory at Vineland Station and the Dominion Laboratory of Plant Pathology at St. Catharines. The virus disease cherry yellows of sour cherry had by that time become prevalent and appeared to be spreading rapidly. The rate and pattern of spread revealed by a survey of orchards suggested that an insect vector may be involved in the dissemination of the virus. The Hemiptera were chosen as the first group for study because most of the known vectors of plant viruses belong to this order.

Methods

In 1947 collections were made from a large number of sour cherry orchards throughout the fruit-growing area of the Niagara district. This method was abandoned in subsequent years for a more concentrated study of the insects in 9 orchards distributed over the area. For the most part these were rather large

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blocks of sour cherry trees in which records had indicated a rapid spread of cherry yellows.

Collections of insects were made by two methods: by dusting and by sweeping. In the first a 4 per cent nicotine dust composed of 40 per cent nicotine sulphate in hydrated lime was blown into the tree with a small power duster, and the insects knocked down were collected in celluloid funnels hung on the lower branches. Five funnels each covering 2 sq. ft. were used per tree so that a sample of 10 sq. ft. was taken beneath each tree. Collections from each tree were placed in glass vials and taken to the laboratory, where the insects were separated from the dust and stored in salve boxes for future identification. Each orchard was dusted from early June to the middle of September except while the fruit was ripening. From 8 to 16 trees were sampled per orchard on each occasion, depending on the size of the orchard. In the second method the outside of the tree was swept with an insect net and the foliage and twigs were examined. These collections were made from early June to the end of September. The number of trees sampled varied with the size of the orchard and the time available, but generally was 10 per cent or more of the number of trees in the orchard.

Collections were also made by sweeping and examining cover crops in the sour cherry orchards and by sweeping adjacent waste land and crops. These, supplemented by rearing trials in the field and insectary, gave an indication of the sources and hosts of the insects found in the orchards. The hosts given in the following list are those upon which the species were taken in this study unless otherwise indicated. The recorded collection dates are those of collections from sour cherry trees only.

The species of Hemiptera were identified by the author with the assistance of Mr. W. L. Putman of the Vineland Station laboratory and by comparison with determined specimens in the Vineland Station collections. These determinations were checked and corrected where necessary by Dr. B. P. Beirne, Division of Entomology, Ottawa.

List of Species

Heteroptera *Pentatomidae*

1. *Holcostethus limbolarius* Stål
Adults, by sweeping, Fonthill, June 6, Sept. 24, 1948.
Hosts: Said to be *Capsella bursa-pastoris* (L.) Medic. and *Solidago* spp. (Parshley, 1921).
2. *Euschistus* sp(p).
Adults, by sweeping, Aug. 18, 1948.
3. *Cosmopepla bimaculata* (Thomas)
Adults, by dusting, Fonthill, June 22, 1950. Nymphs often numerous on weed cover crops in cherry orchards.
Hosts: A number of herbaceous plants.
Nymphs of this species survived as long as 16 days on young sour cherry trees in the insectary, causing severe injury to the leaves, but did not mature.
4. *Acrosternum bilare* (Say)
Adults, by sweeping, Fonthill, June 1948; Aug. 1949; St. Davids, Aug. 1949.
Hosts: Locally injurious to pears and more rarely to peaches in the Niagara Peninsula. Underhill (1934) lists a number of hosts.
This species can survive in the adult stage for several weeks on sour cherry.

5. *Brochymena quadripustulata* (Fabricius)
Adults, by sweeping, St. Catharines, June 1, 1949. A common tree-inhabiting predacious species (Parshley, 1921).
6. *Banasa sordida* (Uhler)
Adults, by sweeping, Fonthill, Aug. 19, 1948.
7. *Banasa dimidiata* (Say)
One adult, by dusting, Virgil, June 21, 1950.
Hosts: *Prunus virginiana* L., *Corylus* spp., and other shrubs (Blatchley, 1926).
8. *Podisus maculiventris* (Say)
Adults, by dusting, St. Catharines, July 22 and 23, 1948; June 21, 1949; Fonthill, July 28, Aug. 18, Sept. 3, 1948; June 24, July 26, 1949; June 8, 1950; St. Davids, July 20, Aug. 25, 1949.
Nymphs, by dusting, Fonthill, June 24, Aug. 10 and 26, 1949; St. Davids, Aug. 9, 1949; Stamford, June 9, 1950.
A predacious species that is rather common in cherry orchards in the Niagara area.

Cydniidae

9. *Corimelaena pulicaria* (Germar)
Adults, by dusting, St. Catharines, July 23 and 22, 1948; St. Davids, July 20, 1949; Virgil, June 1, 1950.
Hosts: Numerous herbaceous plants.
This species is often common on cover crops in the cherry orchards. It is most numerous on sour cherry trees about the time the buds are bursting and during bloom. It appears to feed on the developing buds.

Neididae

10. *Jalysus spinosus* (Say)
Adults, by sweeping, St. Davids, Sept., 1948; Fonthill, Aug. 19, 1948.

Lygaeidae

11. *Nysius ericae* (Schilling)
Adults, by dusting, Pt. Dalhousie, Sept. 14, 1948; St. Davids, Sept. 24, 1948; Stamford, July 21, Aug. 2, 1949; Jordan, June 21, 1950.
Hosts: Reported as causing considerable injury to garden crops (Barber, 1921).
12. *Kleidocerys resedae* (Panzer)
Adults, by dusting and sweeping, widely distributed in the area, in collections from June to September.
This species is sometimes relatively abundant on sour cherry. Adults survive on this host for a month or more. Lygaeid nymphs have been taken in the collections, but they have not been positively identified as of this species.
13. *Geocoris bullatus* Say
Adults, by dusting, Fonthill, Aug. 26, 1949. Predacious.
14. *Ligyrocoris diffusus* Uhler
Adults, by dusting, St. Davids, Sept. 1948.

Tingidae

15. *Corythucha marmorata* Uhler
Adults, by dusting, St. Davids, July 20, Aug. 25, 1948; June 30, Aug. 15, Sept. 20, 1950; Virgil, June 23, Aug. 23, 1948; Stamford, June 20, Aug. 25, 1948; Aug. 8, 11, and 24, 1950; Jordan, June 21, 1950.
Hosts: *Solidago* sp. and *Helianthus* sp.
16. *Gargaphia tillae* (Welsh)
One adult, by dusting, Fonthill, June 22, 1950.

Piesmidae17. *Piesma cinerea* Say

Adults, by dusting and sweeping, common from May to September throughout the area.

Host: *Amaranthus retroflexus* L.

In the adult stage this species feeds readily on sour cherry and can survive on this host for as long as two months.

Reduviidae18. *Acholla multispinosa* (DeGeer)

Adults and nymphs, by dusting, Fonthill, June 18, Aug. 18, Sept. 3, 1948; St. Davids, Sept. 3, 1948, June 2, 1949. Predacious; a common tree-inhabiting species.

19. *Sinea diadema* (Fabricius)

Adults, by dusting, Fonthill, Aug. 18, 1948. A predacious species, inhabiting low vegetation.

Anthocoridae20. *Orius insidiosus* (Say)

Nymphs and adults, by dusting, throughout the area from June to late August.

This predacious species was abundant on sour cherry during the severe infestation of the European red mite, *Metatetranychus ulmi* (Koch), in 1949. It is usually present in only moderate numbers.

Miridae21. *Campylomma verbasci* (Meyer)

Adults, by dusting, St. Davids, June 7, 1950.

Host: *Verbascum thapsus* L.

22. *Chlamydatus associatus* (Uhler)

Adults, by sweeping, St. Catharines, June 12, 1947.

Hosts: *Amaranthus retroflexus* L. and *Ambrosia* sp.

23. *Deraeocoris nebulosus* (Uhler)

Adults, by sweeping, Fonthill, Sept. 8, 1947; July 26, Aug. 10 and 26, 1949; St. Davids, Sept. 24, 1948; July 20, Aug. 25, 1949; Virgil, Aug. 23, 1949; St. Catharines, July 29, 1949; Stamford, June 20, Aug. 17, 1949.

This predacious species was abundant in sour cherry orchards having severe infestations of the European red mite in 1949.

24. *Melanotrichus flavosparsus* (Sahlberg)

Adults, by dusting and sweeping, throughout the area, from June to September.

Host: *Chenopodium album* L.

This is a very common mirid in cherry orchards when its host is present in the ground cover. It does not appear to feed on cherry at any stage.

25. *Lygus oblineatus* (Say)

Adults, by dusting and sweeping, common throughout the area from July to September.

Hosts: A large number of herbaceous and woody plants.

This species shows some resistance to the dust used in collecting. Sweeping records indicate that it is numerous on sour cherry trees late in the season. Adults feed readily on cherry but it was not found breeding on this host.

26. *Adelphocoris lineolatus* (Goeze)

Adults, by dusting, Fonthill, June 24, 1949; Stamford, June 30, 1950.

Hosts: *Medicago sativa* L. and *Trifolium* sp.

27. *Phytocoris* sp.

Nymphs and adults, by dusting, St. Catharines, July 20, 1949; Fonthill, June 8, 1950; St. Davids, June 30, 1950.

Homoptera**Fulgoridae**28. *Oliarus humilis* (Say)

Adults, by dusting, Fonthill, Sept. 24, 1948; July 31, 1950; St. Davids, July 4, 1948; July 7, 1949; Stamford, Aug. 24, 1950.

Hosts: Unknown; sometimes numerous on weed cover crops.

29. *Oliarus aridus* Ball

Adults, by dusting, Fonthill, July 26, 1949; Aug. 23, 1950; St. Davids, July 20, Aug. 9 and 25, 1949; Aug. 9 and 24, 1950; Virgil, Aug. 8 and 24, 1950.

30. *Cixius basalis* Van Duzee

Adults, by dusting, Fonthill, Sept. 24, 1948.

31. *Omenis pruinosa* (Say)

Nymphs and adults, by dusting, throughout the area, nymphs from May to late July, adults from late July to September.

Hosts: A large number of shrubs and trees, including *Ligustrum* spp., *Acer* spp., *Ulmus* spp., *Juglans* spp., and *Prunus* spp.

This species breeds on sour cherry but is only occasionally abundant on this host. The nymphs are often heavily parasitized.

32. *Cedusa incisa* Metcalf

Adults, by sweeping, Fonthill, Aug. 18, 1948; St. Davids, Aug. 4, 1948.

33. *Liburniella ornata* (Stål)

Adults, by sweeping, Fonthill, Sept. 24, 1948; by dusting, Fonthill, Aug. 26, 1949.

Membracidae34. *Campylenchia latipes* (Say)

Adults, by dusting, Fonthill, Aug. 18, Sept. 24, 1948.

Hosts: *Trifolium* spp.

35. *Stictocephala inermis* (Fabricius)

Adults, by sweeping, Fonthill, June 6, 1948; St. Davids, Aug. 9, 1949.

Hosts: Said to be *Pyrus malus* L. and *Trifolium* spp. (Funkhauser, 1921).

36. *Stictocephala dicerus* (Say)

Adults, by sweeping, St. Davids, July 20, 1949.

Hosts: A number of trees and shrubs, most commonly *Sambucus canadensis* L. (Funkhauser, 1921).

37. *Stictocephala* spp. (*bubalis* (Fabricius) and related species)

Nymphs and adults, by dusting, common throughout the area, nymphs occurring in June, adults from late July to late September.

Buffalo treehoppers are sometimes numerous in sour cherry orchards. Adults caged on sour cherry trees survived as long as two weeks.

Cercopidae38. *Philaenus leucophthalmus* (Linnaeus)

Adults, by dusting and sweeping, common throughout the area from late June to early September.

Host: Many herbaceous plants.

The adults of this species feed extensively in sour cherry orchards. Nymphs have not been taken from sour cherry, and efforts to rear them on this host have been unsuccessful.

39. *Philaenus lineatus* (Linnaeus)
Adults, by dusting, St. Davids, Aug. 4, Sept. 2, 1948.
Hosts: Grasses.

Cicadellidae

40. *Idiocerus alternatus* Fitch
Adults, by sweeping, St. Davids, Sept. 24, 1948.
Hosts: *Salix* spp. (DeLong, 1948).
41. *Aceratagallia sanguinolenta* (Provancher)
Adults, by sweeping and dusting, throughout the area from June to September.
Hosts: *Trifolium* spp.
Nymphs and adults of this species are commonly taken by sweeping orchard cover crops and headlands. The adults when caged on sour cherry survive as long as two weeks.
42. *Graphocephala coccinea* (Förster)
Adults, by sweeping, St. Catharines, July 29, 1948.
Hosts: *Prunus* spp. (plum) and *Rubus idaeus* L.
43. *Neokolla hieroglyphica* Say
Adults, by dusting, St. Davids, Sept. 2, 1948; Fonthill, Sept. 24, 1948.
Hosts: *Rubus idaeus* L. and other shrubs.
44. *Gyponana* sp(p).
Nymphs, by dusting, Fonthill, June 8, 1950; St. Davids, June 7, 1950; Virgil, June 21, 1950; Stamford, June 30, 1950. Adults, by dusting, Fonthill, Sept. 24, 1948; St. Davids, Aug. 9, 1949; Virgil, Aug. 8, 1950.
Hosts: *Pyrus malus* L. and *Rubus idaeus* L.
The species collected from cherry have not yet been positively identified and may not be the same as those found on apple and raspberry.
45. *Parabolocratrus major* Osborn
Adults, by dusting, Fonthill, June 18, 1948.
Hosts: Grasses.
46. *Aphrodes albifons* (Linnaeus)
Adults, by dusting, St. Davids, Aug. 4, 1948; July 20, 1949.
Hosts: Said to feed on the roots of grasses (DeLong, 1948).
47. *Aphrodes costata* (Panzer)
Adults, by dusting, Fonthill, June 18, July 28, 1948; June 22, 1950; St. Davids, Aug. 4, 1948, July 20, 1949; Aug. 15, 1950; St. Catharines, July 23, 1948; Virgil, Aug. 8, 1950; Stamford, Aug. 8, 1950.
Hosts: A number of herbaceous plants.
Third-instar nymphs collected on cover crops in the cherry orchards have successfully completed their development on sour cherry.
48. *Xestocephalus pulicarius* Van Duzee
Adults, by dusting, St. Catharines, July 22, 1948; July 20, 1949; Virgil, Aug. 8, 1950.
49. *Scaphoideus ochraceus* Osborn
Adults, by sweeping and dusting, Fonthill, Sept. 3, 1948; July 31, 1950; St. Davids, July 20, 1949; Stamford, Aug. 8, 1949.
50. *Prescottia lobata* (Van Duzee)
Adults, by dusting, St. Catharines, July 20, 1949.
Hosts: *Solidago caesia* L.
51. *Cloanthanus acutus* (Say)
Adults, by dusting and sweeping, throughout the area from June to September.

Hosts: *Amaranthus retroflexus* L. and probably other weeds.

Adults of this species may become numerous on sour cherry trees during July and August. When confined to this host they survive only a few days.

52. *Cloanthanus frontalis* (Van Duzee)

One adult, by dusting, Stamford, June 20, 1949.

53. *Latalus sayi* (Fitch)

Adults, by dusting, Fonthill, June 18, 1948; Virgil, June 21, 1948.

Hosts: Grasses.

54. *Endria inimica* (Say)

Adults, by dusting, throughout the area from June to September.

Hosts: Grasses and numerous weeds.

This species is not numerous on cherry trees but becomes abundant on cover crops in the orchards during July and August. When confined to cherry it survives for only a few days.

55. *Arthaldeus pascuellus* (Fallén)

Adults, by dusting, St. Davids, June, 1948; Virgil, June 23, 1949; Stamford, June 1, 1950; Jordan, June 21, 1950.

56. *Driotura gammaroides* (Van Duzee)

Adults, by dusting, St. Catharines, July 20, 1949.

Hosts: Said to be grasses (DeLong, 1948).

57. *Ophiola striatula* (Fallén)

Adults, by sweeping, Fonthill, June 18, 1948.

Host: *Vaccinium* sp. (DeLong, 1948).

58. *Opsius stactogalus* Fieber

Adults, by sweeping, St. Catharines, July 29, 1948.

Hosts: *Tamarix* spp. (DeLong, 1948).

59. *Norvellina chenopodii* (Osborn)

Adults, by dusting and sweeping, throughout the area from June to September.

Host: *Chenopodium album* L.

This species causes a characteristic curling and red spotting of the leaves of its host. There are two broods a year, adults of the second sometimes occurring in considerable numbers on sour cherry trees. Nymphs have been successfully reared on *Capsella bursa-pastoris* (L.) Medic and on *Beta vulgaris* L. but not on sour cherry, although adults survive on this host as long as five weeks.

60. *Norvellina seminuda* (Say)

Adults, by dusting and sweeping, throughout the area from late June to September.

Hosts: *Stellaria media* (L.) Cyrillo, *Amaranthus retroflexus* L., and *Chenopodium album* L.

This species does not occur on sour cherry trees in so large numbers as the preceding one. There are two broods a year, adults of the second most commonly occurring on cherry. Adults confined on sour cherry survive little more than one week.

61. *Paraphlepsius irroratus* (Say)

Adults, by dusting and sweeping, throughout the area from late July to September.

Hosts: Apparently a great variety of herbaceous plants.

This species was abundant in sour cherry orchards in 1948 and 1949, but was relatively scarce in 1950. Nymphs have been collected in moderate numbers from the grassy headlands of the orchards. When confined to sour cherry trees, adults survive longer than two weeks.

62. *Fieberiella florii* (Stål)

Nymphs and adults, by dusting and sweeping; nymphs: St. Davids, July 20, 1949; June 7 and 30, 1950; Stamford, June 30, 1950; adults: St. Catharines, Sept. 8, 1948; St. Davids, Aug. 4 and 20, Sept. 2, 1948; Aug. 9 and 25, 1949; Aug. 15 and 24, Sept. 20, 1950; Stamford, Aug. 15, 1949; Aug. 11 and 15, 1950.

Hosts: A number of shrubs and trees, including *Ligustrum* spp., *Spiraea* spp., *Ribes* spp., and *Prunus cerasus* L.

Nymphs of this species hatch on sour cherry about the time of shuck fall and reach the adult stage by early August. Overwintering eggs are laid during late August and September in the bark of the young branches. On sour cherry the species appears to be limited to a few young orchards, but it has been taken from other hosts over a much larger area.

63. *Colladonus clitellarius* (Say)

Adults, by dusting, Fonthill, Aug. 12, 1948; June 24, 1949; St. Catharines, June 23, Aug. 10, 1948; St. Davids, June 25, Aug. 20, 1948.

64. *Colladonus eburatus* (Van Duzee)

Adults, by dusting, St. Catharines, Aug. 10, 1948; Fonthill, Aug. 12, 1948; Aug. 10, 1949.

65. *Graminella nigrifrons* (Forbes)

Adults, by dusting, St. Davids, July 20, Aug. 25, 1949.

Hosts: Grasses.

66. *Chlorotettix unicolor* (Fitch)

Adults, by sweeping, St. Catharines, July 29, 1948; St. Davids, July 4, Aug. 4, 1948.

Hosts: Sometimes numerous on weed cover crops in the cherry orchards.

67. *Macrosteles divinus* (Uhler)

Adults, by dusting, Fonthill, June 18, 1947; St. Catharines, July 22, 1948; St. Davids, Aug. 4 and 20, 1948; July 20, 1949; Virgil, Aug. 23, 1949; Aug. 8, 1950.

Hosts: Overwinters in egg stage on rye and perhaps other cereals; summer forms on a number of herbaceous plants.

When confined on sour cherry trees, nymphs of this species lived only a few days but adults lived as long as two weeks.

68. *Balclutha impicta* (Van Duzee)

Adults, by dusting, Fonthill, Sept. 3, 1948; St. Catharines, July 20, 1949; St. Davids, Aug. 24, 1950; Stamford, Aug. 24, 1950.

69. *Balclutha punctata* (Thunberg)

Adults, by sweeping and dusting, St. Catharines, July 22, 1948; St. Davids, June 25, 1948; Pt. Dalhousie, Sept. 14, 1948; Fonthill, Aug. 26, 1949.

70. *Alebra albostriella* (Fallén)

Var. *fulveola* (Herrich-Schaeffer)

Adults, by dusting, Fonthill, July 28, Aug. 19, 1948; July 28, 1949; Virgil, June 23, 1949.

Var. *fumida* Gillette

Adults, by dusting, St. Davids, Aug. 9, 1950.

Hosts: Both varieties apparently breed on wild and cultivated species of *Vitis*.

71. *Dikraneura angustata* Ball and DeLong

Adults, by dusting, Fonthill, June 22, 1950.

Hosts: Grasses (DeLong, 1948).

72. *Dikraneura mali* (Provancher)

Adults, by sweeping, Fonthill, June 6, 1948.

Hosts: Grasses (DeLong, 1948).

73. *Forcipata loca* DeLong and Caldwell
 Adults, by dusting, St. Catharines, Sept. 5, 1947; Fonthill, June 2 and 18; 1948; June 22, 1950.
 Hosts: Not determined, but apparently certain grasses.
74. *Empoasca fabae* Harris
 Nymphs and adults, by dusting and sweeping throughout the area from June to October.
 Hosts: Many herbaceous and woody plants.
 Adults of this species appear in cherry orchards early in June and the first nymphs hatch about two weeks later. It is rarely numerous enough on sour cherry to cause serious damage. Rearing trials indicate that, compared with certain herbaceous plants such as bean and potato, sour cherry is an unsatisfactory host.
75. *Cicadella melissae* (Curtis)
 Adults, by dusting, Fonthill, June 18, 1948; Aug. 26, 1949.
 Host: *Nepeta cataria* L.
76. *Cicadella stellulata* (Burmeister)
 Nymphs and adults, by dusting and sweeping, throughout the area from June to September.
 Hosts: *Acer platanoides* L., *Exochorda* sp., *Prunus cerasus* L.
 Nymphs of this species begin to hatch in the sour cherry orchards about the time when most of the shucks have fallen, and continue to emerge for approximately two weeks. The first adults appear about 20 days later. There is only one brood a year. Overwintering eggs are laid mainly in the bark of the current year's growth. Most of the adults disappear from the orchards shortly after they mature, but they have been taken in small numbers as late as Sept. 22. The species shows a preference for young, rapidly growing trees.
77. *Typhlocyba froggatti* Baker
 Adults and nymphs, by dusting and sweeping, throughout the area from late May to October.
 Hosts: *Prunus cerasus* L., *Prunus virginiana* L., *Prunus domestica* L., *Pyrus malus* L.
 Nymphs of this species begin to appear on sour cherry trees shortly after petal fall. The length of the hatching period has not been determined but it appears to be short, probably little more than one week. The first adults appear in late June and lay eggs in the petioles and large veins of the leaves. Second-brood adults begin to mature in late July and continue until early September. Overwintering eggs are laid in the bark of twigs and small branches. The first brood on sour cherry is usually very small, but in favourable years the species may become very numerous on this host in late August and early September.
78. *Typhlocyba gillettei* Van Duzee
 Adults, by dusting, Virgil, June 23, 1949.
 Hosts: *Prunus virginiana* L., *Acer saccharinum* L., *Fagus sylvatica* L.
79. *Typhlocyba modesta* Gibson
 Adults and nymphs, by sweeping and dusting, Fonthill, June 18, 1947; St. Davids, June 25, 1948.
 Hosts: *Prunus virginiana* L., *Prunus cerasus* L.
80. *Typhlocyba pomaria* McAtee
 Adults and nymphs, by dusting and sweeping, throughout the area from May to October.
 Hosts: *Pyrus malus* L., *Prunus domestica* L., *P. virginiana* L., *P. cerasus* L., *P. avium* L.

The life-history and habits of this species are very similar to those of *T. froggatti*. A very few overwintering eggs are laid on sour cherry trees, but the second brood may be numerous on this host. During 1948 and 1949 this was the most numerous leafhopper in the orchards during August and September, but in 1950 it was relatively scarce. Sweet cherry and prune plums appear to be more satisfactory hosts than sour cherry.

81. *Typhlocyba rosae* (Linnaeus)

Adults and nymphs, by dusting and sweeping, throughout the area from June to October.

Hosts: *Rosa* spp., *Pyrus malus* L., *Prunus avium* L., *P. cerasus* L. and probably other species of Rosaceae.

This species lays its overwintering eggs on rose almost exclusively. Only once have first-brood nymphs been taken from sour cherry trees in this survey. There are two complete broods and a partial third brood a year. Nymphs are often present in the orchards up to the time of leaf fall. Although this leafhopper may become numerous on sour cherry trees during July and August, it shows a decided preference for other hosts such as apple and sweet cherry.

82. *Erythroneura plena* Beamer

Adults and nymphs, by dusting, throughout the area from June to September.

Hosts: *Prunus persica* (L.) Batsch, *P. avium* L., *P. cerasus* L.

This is the only species of *Erythroneura* found breeding on sour cherry trees. It is distributed throughout the area, but has never occurred in the collections in large numbers. Its preferred host appears to be peach.

83. *Erythroneura lawsoniana* Baker

Adults, by dusting, Virgil, June 5, 1950.

Host: *Pyrus malus* L.

84. *Erythroneura* spp. (*comes* group)

Adults, by dusting and sweeping, throughout the area, in May and June, and late August and September.

Hosts: *Vitis* spp.

Adults of the grape leafhoppers are often numerous on sour cherry trees early in the summer and feed extensively on the new leaves. They appear again in small numbers late in August, but whether they feed on cherry at that time has not been determined.

Psyllidae

85. *Psylla pyricola* Förster

Adults, by dusting and sweeping, Fonthill, Aug. 18, Sept. 3, Oct. 22, 1948; July 26, 1949; Aug. 23, Sept. 22, 1950; St. Davids, Sept. 24, 1948; Aug. 25, 1949; Aug. 24, Sept. 20, 1950; Pt. Dalhousie, Sept. 14, 1948; Stamford, Sept. 20, 1950.

Host: *Pyrus communis* L.

Adults of this species may become numerous in the orchards in late summer and early fall, but it has not been determined whether they feed on sour cherry.

Aleyrodidae

86. *Trialeurodes packardi* Morrill

Adults, by dusting, throughout the area from June to September.

Hosts: *Prunus persica* (L.) Batsch, *Prunus avium* L., *Prunus cerasus* L., *Fragaria* spp.

This species has been taken in the collections only in small numbers. Examination of the foliage of sour cherry trees indicated that the nymphs were relatively scarce, although they were present in all the orchards examined.

Aphididae

87. *Chaitophorus* sp(p).

Alatae, by dusting, Fonthill, June 18, 1948; Stamford, June 1, 1950.

88. *Aphis fabae* Scopoli
Alatae, by dusting, Fonthill, Aug. 10 and 26, 1949; Virgil, Aug. 24, 1950.
Hosts: Many herbaceous plants.
89. *Aphis gossypii* Glover
Alatae, by dusting, Fonthill, June 2, 1948.
Hosts: A number of herbaceous plants, including *Cucurbita* spp. and *Lilium* spp.
90. *Hyalopterus pruni* (Geoffroy)
Alatae, by dusting, St. Catharines, June 16, July 23, 1948; St. Davids, July 20, Aug. 9 and 25, 1949; Aug. 24, 1950; Stamford, June 21, Aug. 8, Sept. 6, 1950; Virgil, Aug. 8 and 24, 1950.
Hosts: *Prunus* spp. (plums) and *Typha* spp.
91. *Rhopalosiphum nymphaeae* (Linnaeus)
Alatae and apterae, by dusting, throughout the area from June to August.
Hosts: *Prunus* spp. (plums) and a number of aquatic plants.
Although a few apterous forms of this species have often been taken in the dusting collections, it has not been found colonizing on sour cherry trees in the orchards. Seedling trees and young budded trees of sour cherry, however, have occasionally been found rather heavily infested. Fall migrants are often numerous on orchard trees in October and deposit young on this host, but no eggs have been found. Efforts to colonize the species on sour cherry have so far failed.
92. *Drepanaphis acerifoliae* (Thomas)
Alatae, by dusting, Fonthill, June 24, 1949; Virgil, June 21, 1950; Stamford, June 1, 1950; St. Davids, June 7, 1950.
Hosts: *Acer* spp.
93. *Myzocallis ononidis* (Kaltenbach)
Alatae, by dusting, Fonthill, June 18, Aug. 12, 1948; June 22, 1950; Virgil, June 2, Aug. 23, 1949; Jordan, June 21, Sept. 6, 1950; Stamford, June 1, 1949; June 21, Aug. 8 and 24, 1950.
Hosts: *Trifolium* spp.
94. *Amphorophora cosmopolitana* Mason
Alatae, by dusting, Virgil, June 5, Aug. 24, 1950.
Hosts: *Ribes* spp., *Lactuca* spp., and *Sonchus* spp.
95. *Capitophorus* sp(p).
Alatae, by dusting, Fonthill, Aug. 23, 1950.
96. *Macrosiphum pisi* (Kaltenbach)
Alatae, by dusting, Fonthill, June 2, Sept. 3, 1948; Aug. 23, 1950; St. Catharines, June 16, 1948; St. Davids, June 2, 1948; June 7, 1950.
Hosts: *Pisum* spp., *Lathyrus* spp., *Trifolium* spp.
97. *Macrosiphum gei* (Koch) [= *M. solanifolii* (Ashmead)]
Alatae, by dusting, Fonthill, June 2, Sept. 3, 1948; Aug. 23, 1950; St. Catharines, June 16, 1948; St. Davids, June 2, 1948; June 7, 1950; Virgil, June 5, 1950.
Hosts: Numerous herbaceous plants, including many garden crops.
98. *Macrosiphum rosae* (Linnaeus)
Alatae, by dusting, Pt. Dalhousie, July 27, 1948; Fonthill, June 2, Sept. 3, 1948; St. Davids, June 7, 1950; Stamford, June 2, 1949; June 26, 1950; Virgil, June 5, 1950.
Hosts: *Rosa* spp.
This species has occasionally been found depositing young on sour cherry trees in June, but failed to establish colonies.
99. *Myzus cerasi* (Fabricius)

Alatae and apterae, by sweeping and dusting, throughout the area from May to November.

Hosts: *Prunus avium* L., *Prunus cerasus* L., *Capsella bursa-pastoris* (L.) Medic, *Lepidium apetalum* L., *Sisymbrium officinale* (L.) Scop.

This species was sufficiently numerous in a few sour cherry orchards in 1948 and 1950 to damage the crops severely. Most of the aphids leave the cherry in early July, but a few are taken in the collections throughout the summer.

100. *Myzus persicae* (Sulzer)

Alatae and apterae, by dusting, St. Catharines, June 3, 1948; Pt. Weller, June 3, 1948; Vineland Station, June 19, 1948; Pt. Dalhousie, June 19, 1948; Virgil, Aug. 24, 1950; Stamford, June 21, 1950; St. Davids, June 7, 1950; Stamford, June 21, 1950; St. Davids, June 7, Aug. 24, 1950.

Hosts: Overwinters on *Prunus persica* (L.) Batsch; a large number of herbaceous plants are summer hosts.

Apterous forms of this aphid have been collected from sour cherry only in association with *Myzus cerasi*. It readily colonizes young, rapidly growing cherry trees.

101. *Myzus lactucae* (Schrank)

Alatae, by dusting, Stamford, June 1, 1949.

Hosts: *Ribes* spp., *Lactuca* spp. (Hottes and Frison, 1931).

102. *Eriosoma lanigerum* (Hausmann)

Alatae, by dusting, St. Catharines, June 21, 1949; Virgil, June 23, Aug. 24, 1950; Stamford, June 9, 21, and 30, Aug. 24, 1950; Jordan, June 22, 1950; Fonthill, June 8, Aug. 23, 1950.

Hosts: *Ulmus* spp., *Pyrus malus* L.

103. *Forda occidentalis* Hart

Alatae, Fonthill, June 2, 1948.

Hosts: Said to feed on roots of grasses (Hottes and Frison, 1931).

104. *Tuberculatus ulmifolii* (Morrell)

Alatae, by dusting, Virgil, Aug. 24, 1950.

Hosts: *Ulmus* spp.

Summary

A total of 104 or more species of Hemiptera were collected in sour cherry orchards in the Niagara Peninsula, Ontario, from 1947 to 1950. These included 8 species of Pentatomidae, 1 of Cydnidae, 1 of Neididae, 4 of Lygaeidae, 2 of Tingidae, 1 of Piesmididae, 2 of Reduviidae, 1 of Anthocoridae, 7 of Miridae, 6 of Fulgoridae, 4 of Membracidae, 2 of Cercopidae, 45 of Cicadellidae, 1 of Psyllidae, 1 of Aleyrodidae, and 18 of Aphididae.

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