

# Herbivorous Insects of Fitzgerald Lake Conservation Area

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I walked the trails of Fitzgerald Lake Conservation Area on July 22 and September 26, 2021, in search of galls, leaf mines, and other characteristic evidence of herbivorous insects and mites on their host plants. In July I parked on Marian Street and walked to North Farms Road and back. In September I again parked on Marian Street but stayed on the east side of the lake, exploring Cooke's Pasture and Boggy Meadow Road. I took photographs to document each species I found, and I uploaded these to iNaturalist. The photos from July can be viewed at this link<sup>1</sup>, and those from September are here<sup>2</sup>. Most of the insects and mites I found could be identified to species by examination of their galls or leaf mines in the field (and by the photos I took), but I collected a few that required rearing to adults for specific identification. Follow-up photos I took of insects that I collected and reared are included in this report.

In all, I listed 190 species, including a few that are incompletely identified. In addition to the gall inducers and leafminers that were the focus of these surveys, I listed a few other miscellaneous insects (and signs thereof) that I happened to photograph along the way. The most exciting find was leaf mines of a jewel beetle (*Brachys* sp.) on deerberry (*Vaccinium stamineum*). These have been found previously in New York and North Carolina, but adults have never been reared; the beetle may prove to be an undescribed species. I collected several leaves containing larvae, which I kept over the winter. With any luck, some adults will emerge in a few months. Other highlights included new host records for three species of leaf-mining moths: *Eupatorium* for *Leucospilapteryx venustella*, *Malus* for *Coptotriche crataegifoliae*, and *Symphytotrichum puniceum* for *Bucculatrix angustata*. For more information about all of the leafminers listed here, see my *Leafminers of North America* e-book<sup>3</sup>.

## ARACHNIDA

### TROMBIDIFORMES

#### Eriophyidae (Gall Mites)

All of the listed species form galls on leaves.

Species	Host Plant
<i>Aceria modesta</i>	<i>Acer saccharum</i>
<i>Eriophyes cerasicrumena</i>	<i>Prunus serotina</i>
<i>Vasates aceriscrumena</i>	<i>Acer saccharum</i>
unknown	<i>Acer rubrum</i>
unknown	<i>Betula lenta</i>

<sup>1</sup> [https://www.inaturalist.org/observations?on=2021-07-22&place\\_id=any&user\\_id=ceiseman&verifiable=any](https://www.inaturalist.org/observations?on=2021-07-22&place_id=any&user_id=ceiseman&verifiable=any)

<sup>2</sup> [https://www.inaturalist.org/observations?on=2021-09-26&place\\_id=any&user\\_id=ceiseman&verifiable=any](https://www.inaturalist.org/observations?on=2021-09-26&place_id=any&user_id=ceiseman&verifiable=any)

<sup>3</sup> <http://charleyeiseman.com/leafminers/>

## INSECTA

### HEMIPTERA (True Bugs, Cicadas, Hoppers, Aphids and Allies)

All of the listed species are gall inducers except as noted.

#### Aphididae (Aphids)

Species	Host Plant	Notes
<i>Aphis nerii</i>	<i>Asclepias syriaca</i>	Feed externally on stems
<i>Eriosoma</i> sp.	<i>Ulmus</i>	
<i>Hamamelistes spinosus</i>	<i>Hamamelis virginiana</i>	
<i>Hormaphis hamamelidis</i>	<i>Hamamelis virginiana</i>	

#### Phylloxeridae (Phylloxerans)

Species	Host Plant
<i>Daktulosphaira vitifoliae</i>	<i>Vitis labrusca</i>
<i>Phylloxera</i> spp.	<i>Carya glabra</i>

### COLEOPTERA (Beetles)

All of the listed species are leafminers except as noted.

#### Attelabidae (Leaf-rolling Weevils)

Signs of an undetermined leaf-rolling weevil (Attelabinae) were found on red oak (*Quercus rubra*).

#### Buprestidae (Jewel Beetles)

Species	Host Plants
<i>Brachys aerosus</i>	<i>Acer saccharum</i> , <i>Castanea dentata</i> , <i>Quercus alba</i> , <i>Q. rubra</i>
<i>Brachys howdeni</i>	<i>Epigaea repens</i>
<i>Brachys</i> sp.	<i>Vaccinium stamineum</i>
<i>Pachyschelus laevigatus</i>	<i>Desmodium ?canadense</i>

#### Cerambycidae (Longhorn Beetles)

Species	Host Plant	Notes
<i>Oberea perspicillata</i>	<i>Rubus idaeus</i>	Adults girdle stems; larvae bore in stems
<i>Tetraopes tetrophthalmus</i>	<i>Asclepias syriaca</i>	Adults found eating leaves; larvae eat roots

#### Chrysomelidae (Leaf Beetles)

Species	Host Plants	Notes
<i>Dibolia borealis</i>	<i>Plantago major</i>	

Species	Host Plants	Notes
<i>Microrhopala vittata</i>	<i>Solidago altissima</i>	
<i>Neochlamisus</i> sp.	<i>Acer rubrum</i>	Case-bearing leaf beetle larva
<i>Pyrrhalta viburni</i>	<i>Viburnum dentatum</i>	Larvae & adults eat holes in leaves
<i>Sumitrosis inaequalis</i>	<i>Symphyotrichum lateriflorum</i> , <i>S. puniceum</i>	
<i>Sumitrosis rosea</i>	<i>Celastrus orbiculatus</i>	



*Sumitrosis inaequalis* on calico aster (*Symphyotrichum lateriflorum*): left, leaf mine collected on July 22; right, adult emerged on August 2. There is a single generation per year, with adults overwintering in leaf litter.

## HYMENOPTERA (Ants, Bees, Wasps, and Sawflies)

### Apidae

I found mating common eastern bumble bees (*Bombus impatiens*) in September.

### Braconidae

Species in this family are parasitoids of other insects.

Genus	Host Plant	Notes
<i>Colastes?</i>	<i>Thalictrum pubescens</i>	Cocoon in agromyzid leaf mine
<i>Meteorus</i>		Cocoon
[subfamily Microgastrinae]		Cocoons

### Colletidae

I found burrows of cellophane bees (*Colletes* sp.) in July.

### Cynipidae (Gall Wasps)

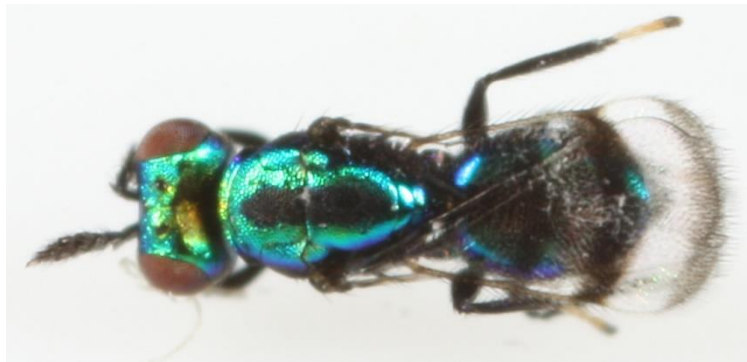
All of the listed species are gall inducers.

Species	Host Plant
<i>Amphibolips confluenta</i>	<i>Quercus ?palustris</i>
<i>Amphibolips quercusjuglans</i>	<i>Quercus ?rubra</i>
<i>Callirhytis clavula</i>	<i>Quercus alba</i>
<i>Diastrophus potentillae</i>	<i>Potentilla simplex</i>
<i>Disholcaspis quercusmamma</i>	<i>Quercus bicolor</i>

Species	Host Plant
<i>Kokkocynips decidua</i>	<i>Quercus rubra</i>
<i>Kokkocynips imbricariae</i>	<i>Quercus ?rubra</i>
<i>Neuroterus tantalus</i>	<i>Quercus alba</i>
<i>Zopheroterus sphaerula</i>	<i>Quercus rubra</i>

### Eulophidae

This family consists of tiny parasitoid wasps. The adult of *Closterocerus trifasciatus* shown at right emerged in mid-August from a mine of *Phyllonorycter crataegella* in a pin cherry (*Prunus pensylvanica*) leaf I collected in July.



### Megachilidae

I found cuts made by a leafcutter bee (*Megachile* sp.) in shadbush (*Amelanchier*) leaves in July.

### Pteromalidae

I found galls of *Hemadas nubilipennis* on blueberry (*Vaccinium*) in September.

### Tenthredinidae (Common Sawflies)

All of the listed species are leafminers except as noted.

Species	Host Plants	Notes
<i>Caliroa</i> sp.	<i>Quercus rubra</i>	Larvae feed on undersides of leaves
<i>Metallus lanceolatus</i>	<i>Geum</i> spp.	
<i>Metallus rohweri</i>	<i>Rubus</i> [blackberry]	
<i>Profenusa thomsoni</i>	<i>Betula</i>	
<i>Taxonus pallidicornis</i>	<i>Rubus</i> [blackberry]	External leaf feeder



Larva of *Taxonus pallidicornis* on blackberry (*Rubus* sp.), as it appeared on July 22 (left) and July 25 (right). The adult sawfly emerged some time before October.

## LEPIDOPTERA (Moths and Butterflies)

All of the listed species are leafminers unless otherwise indicated.

### Bucculatricidae (Ribbed Cocoon-maker Moths)

I found leaf mines of *Bucculatrix angustata* on swamp aster (*Symphotrichum puniceum*) in July.

### Coleophoridae (Casebearer Moths)

I found young larvae of an undetermined *Coleophora* species mining in pignut hickory (*Carya glabra*) leaves in September.

### Geometridae (Inchworm Moths)

I found an adult of the boreal pine looper (*Nepytia pellucidaria*) in September. The larvae are inchworms that feed externally on pine needles.

### Gracillariidae (Leaf Blotch Miner Moths)

Species	Host Plants	Notes
<i>Acrocercops astericola</i>	<i>Eurybia divaricata</i>	
<i>Caloptilia</i> sp.	<i>Cornus alternifolia</i> , <i>Cornus</i> sp.	
<i>Caloptilia hypericella</i>	<i>Hypericum punctatum</i>	
<i>Caloptilia ostryaeella</i>	<i>Ostrya virginiana</i>	
<i>Cameraria aceriella</i>	<i>Acer rubrum</i>	
<i>Cameraria bethunella</i>	<i>Quercus rubra</i>	
<i>Cameraria caryaefoliella</i>	<i>Carya glabra</i>	
<i>Cameraria corylisella</i>	<i>Carpinus caroliniana</i> , <i>Corylus cornuta</i>	
<i>Cameraria guttifinitella</i>	<i>Toxicodendron radicans</i> , <i>T. vernix</i>	
<i>Cameraria hamadryadella</i>	<i>Quercus alba</i> , <i>Q. bicolor</i> , <i>Q. prinoides</i>	Some mines possibly made by other species
<i>Cameraria hamameliella</i>	<i>Hamamelis virginiana</i>	
<i>Cremastobombycia solidaginis</i>	<i>Solidago rugosa</i>	
<i>Leucanthiza amphicarpaefoliella</i>	<i>Amphicarpaea bracteata</i>	
<i>Leucospilapteryx venustella</i>	<i>Ageratina altissima</i> , <i>Eupatorium perfoliatum</i>	
<i>Macrosaccus morrisella</i>	<i>Amphicarpaea bracteata</i>	
<i>Marmara fasciella</i>	<i>Pinus strobus</i>	Bark miner
<i>Neurobathra strigifinitella</i>	<i>Quercus alba</i>	
<i>Parornix</i> sp.	<i>Amelanchier</i>	
<i>Parornix</i> sp.	<i>Betula lenta</i>	
<i>Parornix</i> sp.	<i>Prunus serotina</i>	
<i>Phyllocnistis ampelopsiella</i>	<i>Parthenocissus</i>	
<i>Phyllocnistis insignis</i>	<i>Erechtites hieraciifolius</i> , <i>Packera aurea</i>	

Species	Host Plants	Notes
<i>Phyllocnistis populiella</i>	<i>Populus tremuloides</i>	
<i>Phyllocnistis vitifoliella</i>	<i>Vitis labrusca</i>	
<i>Phyllonorycter apparella</i>	<i>Populus tremuloides</i>	
<i>Phyllonorycter argentinetella</i>	<i>Ulmus rubra</i>	
<i>Phyllonorycter basistrigella</i>	<i>Quercus alba</i> , <i>Q. rubra</i>	
<i>Phyllonorycter crataegella</i>	<i>Prunus pensylvanica</i>	
<i>Phyllonorycter diversella</i>	<i>Gaylussacia baccata</i>	
<i>Phyllonorycter kearfottella</i>	<i>Castanea dentata</i>	
<i>Phyllonorycter ?propinquinella</i>	<i>Prunus serotina</i>	
<i>Phyllonorycter</i> sp. ( <i>blancardella</i> group)	<i>Malus toringo</i>	
<i>Phyllonorycter</i> sp.	<i>Acer rubrum</i>	
<i>Phyllonorycter</i> sp.	<i>Alnus incana</i>	
<i>Phyllonorycter</i> spp.	<i>Quercus alba</i> , <i>Q. bicolor</i> , <i>Q. rubra</i>	
unknown	<i>Vaccinium pallidum</i>	



*Cameraria bethunella* on red oak (*Quercus rubra*): left, leaf mine collected on July 22; right, adult emerged two days later.



*Phyllonorycter crataegella* on pin cherry (*Prunus pensylvanica*): left, “underside tentiform” leaf mine collected on July 22, viewed from above and below; right, adult emerged two days later.

### Heliozelidae (Shield Bearer Moths)

Species	Host Plant
<i>Antispila cornifoliella</i>	<i>Cornus</i>
<i>Heliozela aesella</i>	<i>Vitis labrusca</i>

### Incurvariidae (Leafcutter Moths)

I found feeding evidence of the “maple leafcutter moth” (*Paraclemensia acerifoliella*) on red oak (*Quercus rubra*) in September. This species is a leafminer when very young, later feeding on the upper surface of leaves under progressively larger cut-out leaf pieces that it ties down with silk.

### Limacodidae (Slug Caterpillar Moths)

I found a caterpillar of the “abbreviated button slug moth” (*Tortricidia flexuosa*) in September. This species feeds externally on leaves of maple, birch, cherry, and oak.

### Momphidae

In September I found leaf mines on buttonbush (*Cephalanthus occidentalis*) that could have been made either by *Mompha solomoni* or *M. cephalanthiella*.

### Nepticulidae (Pygmy Leafmining Moths)



This leaf-mining larva of *Stigmella prunifoliella* was discovered on July 25 in one of the pin cherry leaves I had collected three days earlier in order to rear the maker of some much more conspicuous mines, which turned out to be *Phyllonorycter crataegella*.

Species	Host Plants	Notes
<i>Ectoedemia populella</i>	<i>Populus tremuloides</i>	Petiole gall
<i>Ectoedemia rubifoliella</i>	<i>Rubus hispidus</i>	
<i>Ectoedemia trinotata</i>	<i>Carya glabra</i>	
<i>Stigmella amelanchierella</i>	<i>Amelanchier</i>	
<i>Stigmella apicalbella</i>	<i>Ulmus</i>	
<i>Stigmella caryaefoliella</i>	<i>Carya glabra</i>	

Species	Host Plants	Notes
<i>Stigmella castaneaefoliella</i>	<i>Castanea dentata</i>	
<i>Stigmella corylifoliella</i>	<i>Carpinus caroliniana</i> , <i>Vaccinium pallidum</i> , <i>V. stamineum</i>	
<i>Stigmella nigriverticella</i>	<i>Quercus rubra</i>	
<i>Stigmella prunifoliella</i>	<i>Prunus pensylvanica</i> , <i>P. serotina</i>	
<i>Stigmella quercipulchella</i>	<i>Quercus rubra</i>	
<i>Stigmella rosaefoliella</i>	<i>Rosa</i>	
<i>Stigmella</i> n. sp. ( <i>betulicola</i> group)	<i>Carya glabra</i>	
<i>Stigmella</i> n. sp. ( <i>lemniscella</i> group)	<i>Betula lenta</i>	

### Noctuidae (Owlet Moths)

I found a caterpillar of an undetermined species of dagger moth (*Acronicta* sp.) feeding under a web on a white oak (*Quercus alba*) leaf in September.

### Tischeriidae (Trumpet Leafminer Moths)

Species	Host Plants
<i>Coptotriche aenea</i>	<i>Rubus</i> spp.
<i>Coptotriche castaneaeeella</i>	<i>Castanea dentata</i> , <i>Quercus rubra</i> , <i>Q. velutina</i>
<i>Coptotriche citrinipennella</i>	<i>Castanea dentata</i>
<i>Coptotriche crataegifoliae</i>	<i>Amelanchier</i> , <i>Aronia melanocarpa</i> , <i>Malus toringo</i>
<i>Coptotriche</i> spp.	<i>Castanea dentata</i> , <i>Quercus rubra</i>

### DIPTERA (Flies)

All of the listed species are leafminers unless otherwise indicated.

### Agromyzidae (Leafminer Flies)

Species	Host Plants	Notes
<i>Agromyza aristata</i>	<i>Ulmus rubra</i>	
<i>Agromyza idaeiana</i>	<i>Potentilla simplex</i>	
<i>Agromyza vockerothi</i>	<i>Rubus</i> [blackberry]	
<i>Calycomyza avira</i>	<i>Bidens</i>	
<i>Calycomyza flavinotum</i>	<i>Eutrochium maculatum</i>	
<i>Calycomyza ?menthae</i>	<i>Pycnanthemum</i>	
<i>Calycomyza promissa</i>	<i>Symphotrichum lateriflorum</i>	
<i>Calycomyza solidaginis</i>	<i>Solidago ?canadensis</i>	
<i>Cerodontha angulata</i>	<i>Dichanthelium clandestinum</i>	
<i>Cerodontha incisa</i>	<i>Phalaris arundinacea</i>	
<i>Cerodontha</i> sp.	<i>Carex</i>	
<i>Liriomyza</i>	<i>Ambrosia artemisiifolia</i>	
<i>Liriomyza carphephori</i>	<i>Bidens</i>	
<i>Liriomyza ?cracentis</i>	<i>Ageratina altissima</i> , <i>Eupatorium perfoliatum</i> , <i>Eutrochium maculatum</i>	



Species	Host Plants	Notes
<i>Liriomyza eupatorii</i>	<i>Symphyotrichum lateriflorum</i>	
<i>Liriomyza limopsis</i>	<i>Eurybia divaricata</i>	
<i>Liriomyza orilliensis</i>	<i>Nabalus</i>	
<i>Nemorimyza posticata</i>	<i>Eurybia divaricata, Solidago caesia, S. rugosa</i>	
<i>Ophiomyia carolinensis</i>	<i>Symphyotrichum cordifolium, S. lateriflorum</i>	
<i>Ophiomyia congregata</i>	<i>Nabalus</i>	
<i>Ophiomyia euthamiae</i>	<i>Euthamia graminifolia</i>	
<i>Ophiomyia maura</i>	<i>Eurybia divaricata, Solidago caesia, S. rugosa</i>	
<i>Ophiomyia mimuli</i>	<i>Mimulus ringens</i>	Stem miner
<i>Ophiomyia parda</i>	<i>Symphyotrichum lateriflorum, S. puniceum</i>	
<i>Phytoliriomyza melampyga</i>	<i>Impatiens capensis</i>	
<i>Phytomyza actaeivora</i>	<i>Actaea rubra</i>	
<i>Phytomyza aralivora</i>	<i>Aralia nudicaulis</i>	
<i>Phytomyza crassiseta</i>	<i>Veronica officinalis</i>	
<i>Phytomyza loewii</i>	<i>Clematis virginiana, Ranunculus recurvatus</i>	
<i>Phytomyza penstemonis</i>	<i>Penstemon digitalis</i>	
<i>Phytomyza plumiseta</i>	<i>Thalictrum pubescens</i>	
<i>Phytomyza ranunculi</i>	<i>Ranunculus repens, R. recurvatus</i>	
<i>Phytomyza tarnwoodensis</i>	<i>Diervilla lonicera</i>	
<i>Phytomyza</i> sp. ( <i>albiceps</i> group)	<i>Doellingeria umbellata</i>	
<i>Phytomyza</i> sp. ( <i>albiceps</i> group)	<i>Solidago rugosa</i>	
<i>Phytomyza</i> sp. ( <i>ilicis</i> group)	<i>Ilex verticillata</i>	

### Anthomyiidae (Root-maggot Flies)

Species	Host Plants
<i>Chirosia filicis</i>	<i>Osmunda claytoniana, Osmundastrum cinnamomeum</i>
<i>Chirosia gleniensis</i>	<i>Onoclea sensibilis</i>
<i>Chirosia pusillans</i>	<i>Athyrium angustum</i>

### Cecidomyiidae (Gall Midges)

All of the listed species are gall inducers.

Species	Host Plants	Notes
<i>Acericecis ocellaris</i>	<i>Acer saccharum</i>	
<i>Asphondylia pseudorosa</i>	<i>Euthamia graminifolia</i>	
<i>Asteromyia carbonifera</i>	<i>Solidago rugosa</i>	
<i>Asteromyia euthamiae</i>	<i>Euthamia graminifolia</i>	
<i>Asteromyia</i> sp.	<i>Symphyotrichum puniceum</i>	
<i>Blaesodiplosis</i> spp.	<i>Amelanchier</i>	At least two different species
<i>Caryomyia caryae</i>	<i>Carya glabra</i>	

Species	Host Plants	Notes
<i>Caryomyia flaticrustum</i>	<i>Carya glabra</i>	
<i>Caryomyia recurvata</i>	<i>Carya glabra</i>	
<i>Caryomyia striolacrustum</i>	<i>Carya glabra</i>	
<i>Caryomyia supina</i>	<i>Carya glabra</i>	
<i>Caryomyia tubicola</i>	<i>Carya glabra</i>	
<i>Caryomyia urnula</i>	<i>Carya glabra</i>	
<i>Caryomyia</i> sp.	<i>Carya glabra</i>	
<i>Contarinia</i> n. sp.	<i>Hamamelis virginiana</i>	
<i>Contarinia</i> n. sp.	<i>Quercus rubra</i>	
<i>Contarinia</i> n. sp.	<i>Sassafras albidum</i>	
<i>Dasineura carbonaria</i>	<i>Euthamia graminifolia</i>	
<i>Dasineura pellex</i>	<i>Fraxinus americana</i>	
<i>Dasineura pudibunda</i>	<i>Carpinus caroliniana</i>	
<i>Dasineura?</i>	<i>Alnus incana</i>	Bud gall; larva emerged in February
<i>Gliaspilota glutinosa</i>	<i>Carya glabra</i>	
<i>Macrodiplosis erubescens</i>	<i>Quercus rubra</i>	
<i>Meunieriella</i> n. sp.	<i>Smilax herbacea</i>	
<i>Neolasioptera farinosa</i>	<i>Rubus</i> [blackberry]	
<i>Parallelodiplosis subtruncata</i>	<i>Cornus racemosa</i>	
<i>Polystepha globosa</i>	<i>Quercus rubra</i>	
<i>Polystepha pilulae</i>	<i>Quercus rubra</i>	
<i>Polystepha</i> spp.	<i>Quercus rubra</i>	Leaf spots/blisters
<i>Rhopalomyia pedicellata</i>	<i>Euthamia graminifolia</i>	
<i>Rhopalomyia solidaginis</i>	<i>Solidago altissima</i>	
<i>Sackenomyia commota</i>	<i>Viburnum acerifolium</i>	
<i>Sackenomyia viburnifolia</i>	<i>Viburnum dentatum</i>	
<i>Schizomyia impatientis</i>	<i>Impatiens capensis</i>	
<i>Vaccinidiplosis vaccinii</i>	<i>Vaccinium stamineum</i>	
unknown	<i>Quercus rubra</i>	Leaf edge fold
unknown	<i>Solidago canadensis</i> , <i>S. gigantea</i>	Rosette galls
unknown	<i>Vitis labrusca</i>	Tendrils swellings

### Scathophagidae (Dung Flies)

I found leaf mines of *Neochirosia nuda* on Canada mayflower (*Maianthemum canadense*) in July.

### Tephritidae (Fruit Flies)

I found spherical stem galls of *Eurosta solidaginis* on tall goldenrod (*Solidago altissima*) in July.