LEAF MINES

... and GALLS
What are leaf-mines?

The feeding signs left within the tissue of plants by the larval stages of some invertebrates – chiefly Agromyzidae flies and some micro-moths, plus a few beetles and sawflies. Many of these species are tiny and rarely recorded as adults.

The shape of the mines, the pattern of the droppings and the appearance of the larva, cocoon and pupa are used to identify species.

IMPORTANT

Not all leaf-mines can be identified – sometimes you need to rear the larva to adults

Sue Timms, 16/01/2020
UK and VC55 species of leaf mine

There are over **1000** leaf-miner species on the UK list (*source: ukflymines.co.uk*)

- **Beetles** (38)
- **Sawflies** (28)
- **Moths** (481)
  - Flies (Agromyzidae – 405)
  - other Flies (80)

**Leaf miners in VC55:**

- **Sawflies** – c. 14 species
  All in the Tenthredinidae family
- **Beetles** – c. 26 species
  Mainly weevils (Curculionidae)
- **Flies** – c. 100? species
  Mostly Agromyzidae
- **Moths** – c. 280 species
  All micro-moths, mainly in the Nepticulidae and Gracillariidae families

*Sue Timms, 16/01/2020*
Identifying LEAF-MINES

http://www.leafmines.co.uk
https://bladmineerders.nl
http://www.ukflymines.co.uk
https://www.naturespot.org.uk

The leaf and stem mines of British flies and other insects

(Coleoptera, Diptera, Hymenoptera and Lepidoptera)

by Brian Pittin, Willem Ellis, Collin Plant and Rob Edmunds

OAE | About | Checklists | Genus Index | Species Index | Keys | Parasitoids | References | Resources | Search

SYNOPSIS

A total of 1,100 insects are discussed, although not all are flies as all omyzids recorded in Britain and Ireland whether miner or not are included. For latest changes see Recent Changes.

are provided for the identification of mines on 575 of the 882 host plants discussed, although for 107 of these 882 host plant genera the keys to Diptera non-Diptera are separate. No keys for the identification of the mines are provided for the remaining host plant genera, as although they may include miners where they either do not occur in Britain or they are treated elsewhere under a plant name. An additional key is provided for the species of Lepidoptera recorded in aphid mines and/or quarantine interceptions. If in doubt, read it out!

Checklists are provided for all insect species discussed by Family, Genus and also. Access to a list is the latest Checklist of British flies of the British Isles.

Sue Timms, 16/01/2020
What are plant galls?

“A gall is an abnormal growth produced by a plant under the influence of another organism. It involves enlargement and/or proliferation of the host’s cells or vascular tissue, and provides both protection and nourishment for the gall-causer.”

UK plant galls

There are nearly **1300** species listed on the British Plant Gall checklist (2012)

[ britishplantgallsociety.org/publications.html ]

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Five golden rules

**ALWAYS record the gall or miner host plant.**
All the keys and guide books and websites start with the host.

**ALWAYS include the word ‘gall’ or ‘leaf-mine’ in your comments**
only otherwise it might be taken as the adult organism or gall-causer.

**Be careful of sources**
There are a lot of hopeful or mis-identified photos on the internet.

**Retain a specimen of any rarities or County firsts**
so they can be verified by an expert – its not always possible from a photo.

**Take a photo of the fresh specimen**
Photograph mines with back-lighting to show the frass pattern, and
if you can, dissect out the larva/pupa and photograph it.
FLIES - Agromyzidae

- **Agromyza alnivora** (alder)
- **Phytomyza agromyzina** (dogwood)
- **Liriomyza amoena** (elder)

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FLIES - Agromyzidae

*Phytomyza minuscula* (Columbine)

*Amauromyza flavifrons* larva (red campion)

*Phytomyza lappae* (Burdock)
FLIES - pupae

Phytomyza autumnalis (creeping thistle)

Cerodontha iraeos (yellow flag-iris)

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FLIES - Agromyzidae

Phytomyza crassiseta (germander speedwell)

Aulagromyza heringii (ash)

Chromatomyia aprilina (honesuckle)

Phytomyza tetrasticha (water mint)
BEETLES

Orchestes rusci (Birch)

Zeugophora (Aspen)

Sphaeroderma (Creeping Thistle)
BEETLES

 Isochnus (Crack Willow)

 Rhamphus pulicarius
 (Grey Sallow)

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BEETLES

Orchestes quercus
(Oak)

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SAWFLIES

*Heterarthrus wuestneii* (Field Maple)
SAWFLIES

Profenusa pygmaea (oak)
MOTHS – *Eriocrania* on birch

*Eriocrania sangii*

*Eriocrania sparrmannella*

*Eriocrania semipurpurella*

*Eriocrania sangii*
MOTHS - Nepticulidae

*Stigmella nylandriella* (rowan)

*Stigmella anomalallella* (rose)
**MOTHS - Nepticulidae**

*Ectoedemia subbimaculella* – ‘green islands’ in oak leaves

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MOTHS

Mompha raschkiella (rosebay willowherb)

Heliozela resplendella (alder)

Antispila metallella Dogwood)

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MOTHS – *Bucculatrix*

*Bucculatrix thoracella* (lime)

*Bucculatrix albedinella* (elm)

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MOTHS – *Bucculatrix* cocoons

*Bucculatrix cristatella* (yarrow)

*Bucculatrix ulmella* (oak)

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MOTHS - *Phyllonorycter*

*Phyllonorycter oxyacantheae* (hawthorn)

*P corylifoliella* (hawthorn)

*P rajella* (alder)

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MOTHS

*Parornix devoniella* (hazel)

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MOTHS - *Phyllonorycter*

- **larva**
- **pupa**
- **parasitoid** (a Braconid wasp?)
- **cocoon**
MOTHS - *Coleophora*

*Coleophora milvipennis* (birch)

*Coleophora gryphipennella* (dog-rose)
MOTHS - Tischeriidae

*Tischeria ekebladella* (oak)

*Coptotriche marginea* (bramble)
Gall wasps on oak

*Andricus grossulariae*

*Cynips quercusfolii*

*Andricus aries*
Gall midges and flies

*Rabdophaga salicis* - sallow

*Contarinia tiliarum* - Lime

*Dasineura ulmariae* - meadowsweet

*Hartigiola annulipes* - beech

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Gall mites

- **Aculops macrotrichus**
  - Hornbeam

- **Aceria macrochela**
  - Field maple

- **Acalitus stenaspis**
  - Beech

- **Eriophyes leisoma**
  - Lime

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Gall aphids and psyllids

*Pemphigus spyrothecae* - poplar

*Psyllopsis fraxini* agg. – ash

*Eriosoma* - elm

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Gall rusts and fungi

*Taphrina ulmi*
Alder tongue

*Gymnosporangium sabinae* - Pear

*Xenodochus carbonarius*
Great Burnet rust
Gall nematode and sawflies

- **Pontania proxima** (willow)
- **Eupontania pedunculi** (sallow)
- **Subanguina graminophila** (grass)

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