

# 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.

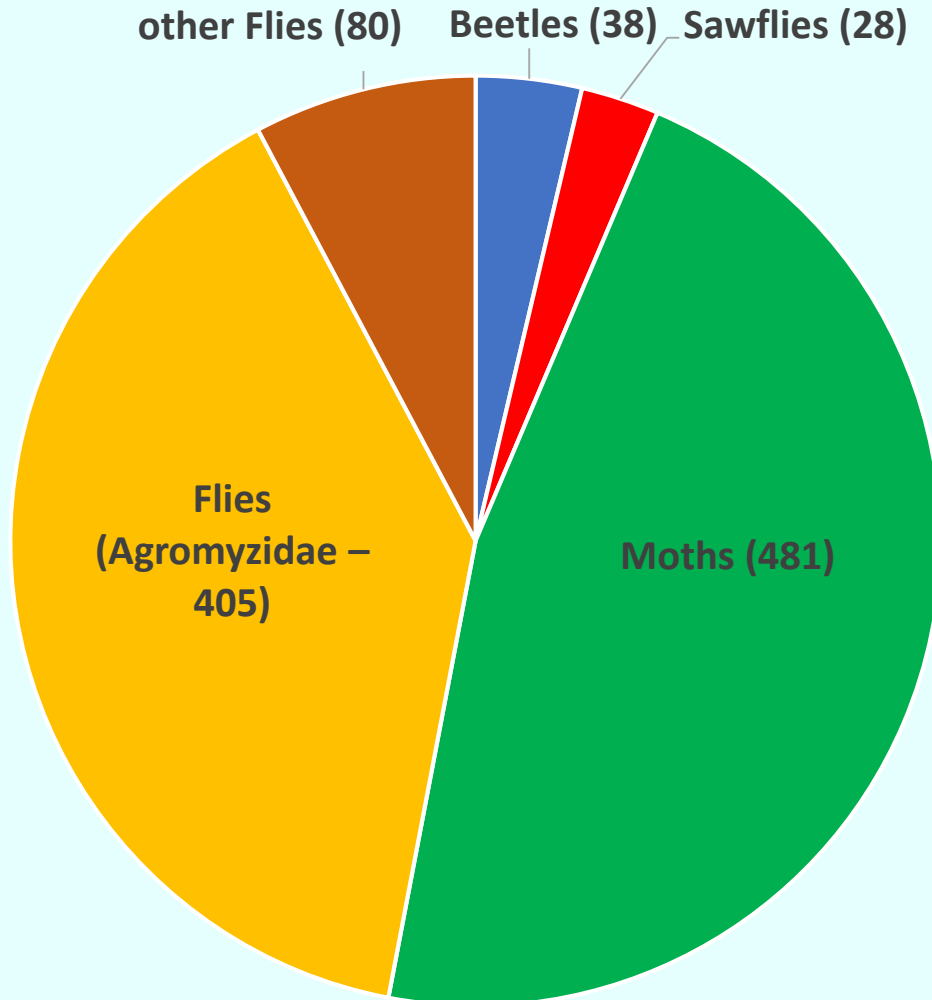
## IMPORTANT

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



# UK and VC55 species of leaf mine

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



## 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



# Identifying LEAF-MINES

<http://www.leafmines.co.uk>

<https://bladmineorders.nl>

<http://www.ukflymines.co.uk>

<https://www.naturespot.org.uk>



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This site is the result of an on-going project, set up to photograph and record all the leaf mining fauna which occur in Britain. Use has been made of SLR and Digital cameras, as well as Scanners, in compiling this site. The leaf mining fauna include Coleoptera (beetles), Diptera (flies), Hymenoptera (sawflies) and Lepidoptera (moths).

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The photo is of *Stigmella aurella* (Lepidoptera: Nepticulidae) - one of our commonest leaf miners in the UK. It mines Bramble. ([more](#))

Species described: 648 Species illustrated: 621

**Contributing**

For details of contributing to the site, including help with identification: [Click here](#)



## The leaf and stem mines of British flies and other insects

(Coleoptera, Diptera, Hymenoptera and Lepidoptera)

by Brian Pitkin, Willem Ellis, Colin Plant and Rob Edmunds

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### SYNOPSIS

Total of 885 British leaf, stem, twig, bark and samara miners are included in this content. A total of 1,100 insects are discussed, although not all are miners as all myzids recorded in Britain and Ireland whether miner or not are included. For latest changes please see [Recent Changes](#).

Keys are provided for the identification of mines on 675 of the 882 host plant genera discussed, although for 107 of these 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 parent name. An additional [key](#) is provided to the species of *Liriomyza* recorded in greenhouses and/or quarantine interceptions. If in doubt, rear it out!



[Liriomyza huidobrensis \(Diptera\)](#)  
[Bayer Crop Science video on YouTube](#)

Checklists are provided for all insect species discussed by [Family](#), [Genus](#) and [Species](#). [Agromyzidae names in the latest Checklist of Diptera of the British Isles](#) if

## Plant Parasites of Europe

*leafminers, galls and fungi*

ENGLISH NEDERLANDS

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# Leafminers and plant galls of Europe

**Dr. Willem N. Ellis**

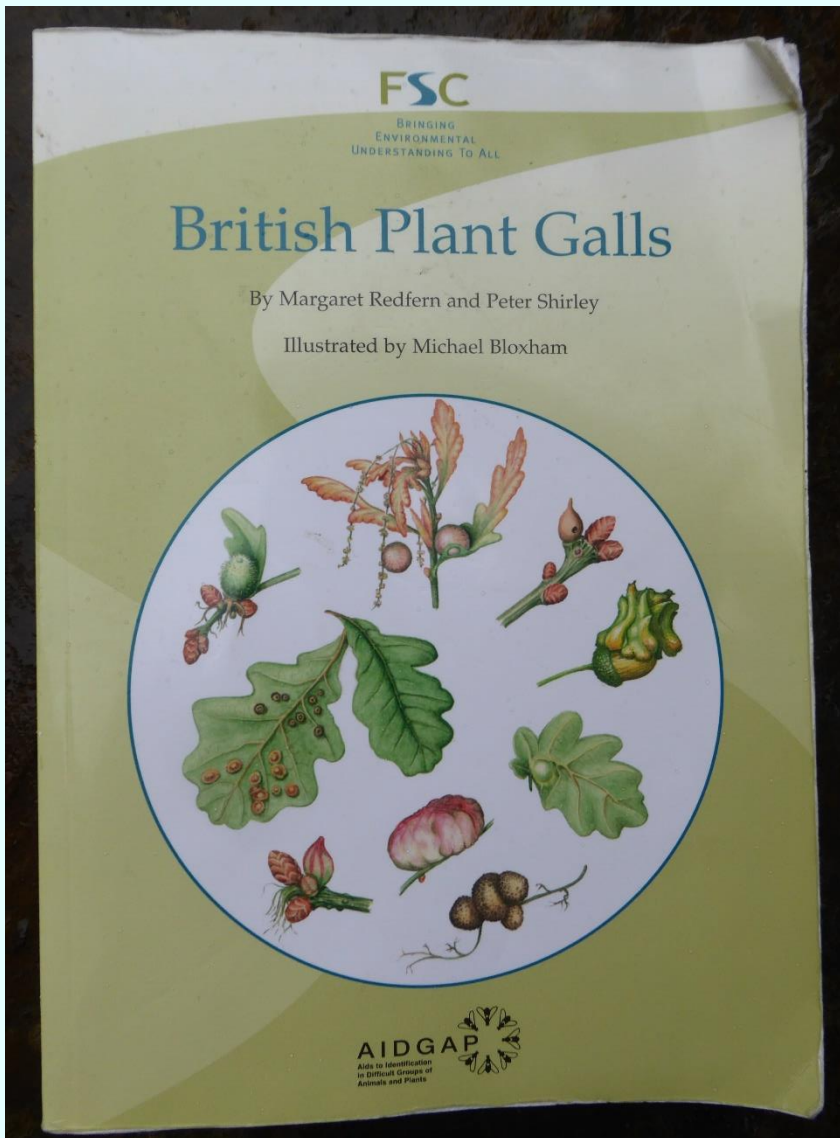
Leafminers, causers of plant galls, and parasitic microfungi have in common that, with few exceptions, they are specialised on a single plant species or genus. This means at the same time that a plant has only a limited number of specialised



# 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.”

Redfern, M. & Shirley, P. (2011) *British Plant Galls*. FSC



# UK plant galls

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

[britishplantgallsociety.org/publications.html](http://britishplantgallsociety.org/publications.html)



Fly/midge	404
Fungus	338
Mite	183
Cynipid wasp	76
Aphid	70
Beetle	57
Sawfly	35
Moth	28
Nematode	21
Scale	21
Psyllid	17
Bacteria	9
Chalcid wasp	8
Vascular plant	5
Protozoan	3
Copepod	1
Rotifer	1

# 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**

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



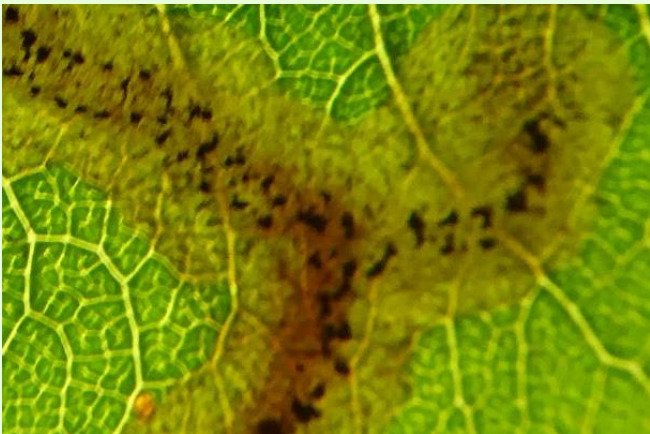
# FLIES - Agromyzidae



◀ *Agromyza alnivora*  
(alder)



*Phytomyza agromyzina* ▶  
(dogwood)



*Liriomyza amoena* ▶  
(elder)





# FLIES - Agromyzidae



*Phytomyza minuscula* (Columbine)



*Phytomyza lappae* (Burdock)



*Amauromyza flavifrons*  
larva (red  
campion)





# FLIES - pupae



▲  
*Phytomyza  
autumnalis*  
(creeping thistle)

▶  
*Cerodontha iraeos*  
(yellow flag-iris)





# FLIES - Agromyzidae



*Phytomyza crassiseta*  
(germander speedwell)



*Aulagromyza heringii*  
(ash)



*Chromatomyia aprilina*  
(honeysuckle)



*Phytomyza tetrasticha*  
(water mint)



# BEETLES



*Orchestes rusci* (Birch)



*Sphaeroderma* (Creeping Thistle) ▲



*Zeugophora* (Aspen) ►



# BEETLES



*Isochnus* (Crack Willow)



*Rhamphus  
pulicarius*  
(Grey Sallow)





# BETLES



*Orchestes  
quercus*  
(Oak)

# SAWFLIES



*Heterarthrus wuestneii* (Field Maple)



# SAWFLIES

*Profenusa pygmaea* (oak)





# SAWFLIES on Alder



◀ *Heterarthrus vagans*



*Fenusa dohrnii* ▶





# MOTHS – *Eriocrania* on birch



*Eriocrania  
sparrmannella*



*Eriocrania  
semipurpurella*



*Eriocrania  
sangii*





# MOTHS - Nepticulidae

*Stigmella nylandriella* (rowan)



*Stigmella anomalella* (rose)



# MOTHS - Nepticulidae



*Ectoedemia subbimaculella* –  
'green islands' in oak leaves





# MOTHS



*Heliozela resplendella* (alder)

*Mompha  
raschkiella*  
(rosebay  
willowherb)



*Antispila metallella* Dogwood)



# MOTHS – *Bucculatrix*

*Bucculatrix thoracella* (lime)



*Bucculatrix albedinella* (elm)

# MOTHS – *Bucculatrix* cocoons



*Bucculatrix cristatella* (yarrow)

*Bucculatrix ulmella* (oak)





# MOTHS - *Phyllonorycter*



*Phyllonorycter oxyacanthae*  
(hawthorn)



*P corylifoliella*  
(hawthorn)



*P rajella*  
(alder)

# MOTHS

*Parornix devoniella*  
(hazel)





# MOTHS - *Phyllonorycter*



◀ larva



▲ pupa



◀ cocoon

parasitoid  
(a Braconid  
wasp?)



# 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

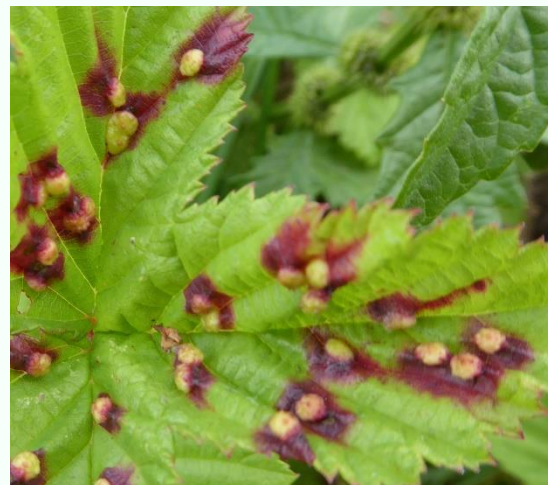
*Rabdophaga salicis* - willow



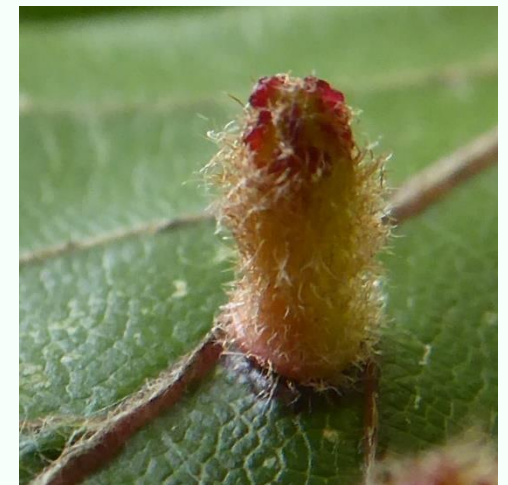
*Contarinia tiliarum* - Lime



*Dasineura ulmariae*  
meadowsweet



*Hartigiola annulipes*  
beech





# Gall mites



*Eriophyes leisoma*  
Lime





# Gall aphids and psyllids

*Pemphigus spyrothecae* - poplar



▲ *Psyllopsis fraxini* agg. – ash

*Eriosoma* - elm ▼



# 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)