

# MOTH MUMBLINGS – LEAF MINER SPECIAL OCTOBER 2022

## WELCOME TO ALL

As threatened, this issue of the newsletter of the Herts & Middlesex Moth Group is intended to stimulate you all to get outside and record leaf-mining moths!

## SO – WHAT IS A LEAF MINE?

Caterpillars of moths have many feeding strategies. Most simply sit on the chosen foodplant and eat the leaves (or flowers in some cases). Others feed on stored products such as wool (the famous “clothes moths”). Yet more feed in the detritus that accumulates in birds’ nests and another group feeds on fungi beneath the bark of trees. Quite a few feed internally within the foodplant. Some of these hide away inside flower heads and feed on developing seeds (the tortrix *Endothenia gentianaeana* is a good example, inside Teasel heads). Some tunnel inside plant stems (if you open enough thistle stems you will without doubt eventually find the larva of the thistle ermine *Myelois circumvoluta* (Pyralidae).

Yet others caterpillars feed internally within the leaves of the chosen foodplant. **These are the leaf miners.** Adults may lay eggs on the leaf surface and leave the newly hatched larva to burrow in to the leaf or they may insert the eggs directly into leaf tissue. In both cases, the caterpillar feeds on the internal tissue of the leaf. Often this leaves only the upper or lower (or both) epidermis intact – often literally just a single cell thick – and so the caterpillar will reinforce this with silk. When silk dries it shrinks and so leaves spun with silk may distort. In Britain, moths and butterflies are the only insects that are capable of producing silk (spiders also spin silk, of course), so if silk is present that rather narrows the field!

As the larva feeds inside the leaf, the leaf become thinner and so light can penetrate. In some cases, the cells of the leaf epidermis will die and become discoloured. In both examples, the eaten areas become visible and create the “mine” that we can see.

## WHY IS THIS OF INTEREST

Each individual species of leaf-mining moth feeds in a restricted number of host plants (often only in a single plant species). It will also feed in exactly the same way on a specific plant species, forming an identical mine on every occasion.

## A WORD ABOUT POO

Now, here’s the fun bit! They always poo in the same way. The droppings (politely referred to as “frass”), is excreted from the rear end, and in many species it remains in the mine. Happily, the different moth species

poo in different ways – consistently. In tunnel mines (see below), the frass can occupy the full width of the mine, or be linear with clear margins, dispersed, laid in coiled loops or some other pattern. In blotches (see below), frass may be dispersed as scattered grains, piles at one end, piled up in the middle, arranged in lines, presented in concentric circles and a range of other patterns.

If a species pupates within the mine, the relationship between cocoon and frass can also be important in identification.

Inspecting mines with transmitted light is as important as normal viewing with top light. This is simple – just hold it up to the sky and use a x10 hand lens.

## TYPES OF MINES

Leaf mines take two basic forms – **tunnels** (known as galleries in most books) or **blotches**, some of which adopt a three-dimensional aspect (the resultant distorted or “puckered” leaf is known as a pucker mine, or tent mine in some books).



**Tunnel or Gallery mine: Bramble Leaf-miner *Stigmella aurella***



**Early stage blotch mine of *Phyllonorycter coryli* on Hazel, before the larva has spun silk and thus causes the leaf to distort**



Later stage pucker mine on under-side of Elm, viewed from above, showing leaf distortion.

Some species make tunnels or blotches and later leave the mine to feed in a rolled over leaf edge – known as a **cone**. *Caloptilia* and *Parornix* species do this.



*Caloptilia* [probably *honoratella*] mine and fold in Sycamore leaf. The small initial mine is in the centre of the picture. Larva then moves and feeds from within a fold on the leaf edge (picture left).

Cones are not technically mines, though we still use them to record the species. They are made by folding over a leaf tip and spinning it shut with silk along the join. From inside the cone, the larvae feeds by grazing the enclosed leaf – so it is in fact surface feeding inside the cone and not actually mining internally. Cones can cause confusion, as there are some distorted blotch mines that resemble them. Here are examples of each – both common species and both on hawthorn eaves:



**Fold by *Parornix anglicella* on Hawthorn.** The leaf is folded over and the edge stuck to the leaf surface (with silk) allowing the caterpillar to graze on the enclosed lower leaf surface – so not a real mine.



**Pucker mines of *Phyllonorycter oxyacanthae* on Hawthorn.** The larva feeds internally, within the leaf and spins silk across the delicate lower surface (see also next image) This contracts causing creasing. This is a proper mine.

## MINING VERSUS OPEN-CAST QUARRYING

So to be a mine the feeding must be internal. Many so species graze the upper or lower surface of leaves, often in a characteristic manner, but if you look carefully you can see that this is not strictly internal feeding. However, when recording moths, what we are interested in is the species itself, so I don't intend to labour the point.

## WHICH GROUPS OF MOTHS CREATE MINES

There are many – even a few macros (which lends support to the silliness of separating moths into macros and micros). Example – the Forester Moth, whose caterpillar mines *Rumex* leaves. In general, however, it is the micros that mine. There are two main families:

- Nepticulidae (*Ectoedemia*, *Stigmella* etc) typically make tunnel mines.
- Gracillariidae (*Phyllonorycter*, *Parornix*, *Caloptilia* etc) make pucker mines.

However, there are also mines in Eriocraniidae, Tischeriidae, Incrvariidae, Heliozelidae, Tineidae, Bucculatricidae, Choreutidae, Yponomeutidae, Scythropidae, Lyonetiidae, Gelechiidae, Coleophoridae, Elachistidae, Momphidae and some other families.



## ARE ALL MINES MADE BY MOTHS

Sadly, no. A great many flies (Diptera) make mines as do some beetles, sawflies and others. Luckily, it is entirely practical to collect mined leaves, look at them in the comfort of your home and then when done chuck them on the compost heap. There is a risk that this might create some false additions to your garden list the following year, so best to chuck them in a hedge or whatever some distance away so emerging adults are not a problem.

## COLLECTING MINES

Simples! Cut, pull, pinch or otherwise remove the mined leaf from the plant (secateurs advised for brambles, blackthorn and other prickly stuff). Make sure that you have ALL of the mine (e.g., it may run imperceptibly down the leaf petiole). If in doubt, cut a sprig of leaves rather than taking just one leaf.

Using a biro, write the plant name on the leaf **without** obscuring any part of the mine. This will be very helpful if you show it to me! Don't know about you, but apple and sallow leaves look the same to me! Put labelled leaves in a plastic food bag to prevent them drying out. Biro's are ideal – the ink is not water soluble.

As long as leaves are labelled with the plant names, you can put all the leaves from a single outing in one bag. **Do not forget to add a label with the place name, date and your name as well as, if known, a grid reference**

## RECORDING UNITS

As with all moths we will eventually map leaf miners by tetrads (2km x 2km squares). However, we like to gather data by 1Km squares (monads). Please use 1Km squares on your bag labels. If you don't own a map, use the postcode – as that is something I can look up and convert to a grid reference. Please don't use “what three words” as I have no practical means of looking these up (and in any case, what 3 words relates to the nearest metre – I want 100 metre squares!).

## NAMING MINES

If you are confident to name the mines please do so then send me the list. If the leaves are then labelled with the moth names and accompanied by a request, I am happy to check your IDs – probably best to discuss first.

Otherwise, just send or give the bags of leaves to me for naming. Do this the next day or the leaves may start to decompose. I will usually respond with a list in due course.

Some species are easy-peasy to name and others can be done with a little thought. Some are a bit more tricky. A few are awkward blighters that cannot be narrowed down to a particular species without rearing the adult. There is no hard and fast rule. Pointers are given in the list below.

## QUICK TOUR OF WHAT TO LOOK FOR

Here is a summary of mines and identification pointers, listed by foodplant. This is not a complete list – many other plants may also have mines. It is not a comprehensive ID guide – just an outline. If in doubt, bag it and send it to me. Some of these photos used are my own; a couple are filched from the web site. The UK leaf miner web site is a critical resource for naming moth mines. **Use the links given below.**

Here I will concentrate on species that you can find in Hertfordshire or Middlesex (though not all at the same time of year). Both trees and herbaceous plants can support leaf miners.

### ALDER (*Alnus*)

Alder mines are often difficult. There are 2 “standard” tunnel mines, *Stigmella alnetella* & *S. glutinosae*, but these are not separable without rearing adults. There is the much smaller tunnel of *Bucculatrix cidarella*. Link: <http://www.leafmines.co.uk/html/Lepidoptera/B.cidarella.htm>  
Pucker mines of *Phyllonorycter* x 5 and *Caloptilia* x2 can be named with caution, but better to collect samples and let me have them as adults may need to be reared.  
Link: <http://www.leafmines.co.uk/html/Plants/alnus.htm>

### AGRIMONY (*Agrimonia*)

Two or perhaps three tunnel miners - *Stigmella* (1 or 2 species, taxonomy uncertain) and *Ectoedemia agrimoniae*. Difficult – collect samples.  
<http://www.leafmines.co.uk/html/Plants/agrimonia.htm>

### APPLE (*Malus*)

Link: <http://www.leafmines.co.uk/html/Plants/malus.htm>  
Some easy – some tricky. In total around 7 or 8 tunnel mines and two or three puckers. Three species are distinctive:



Apple-leaf Skeletoniser *Callisto denticulella*



Apple leaf miner *Lyonetia clerkella* (here shown on cherry).



*Bucculatrix bechsteinella* – here shown on hawthorn

The rest are a problem - *Stigmella* x 4 & *Ectoedemia* x 2. Collect samples.

#### ASH (*Fraxinus*)

*Caloptilia cuculipennella*, *Gracillaria syringella* & *Prays fraxinella*. Easy with care – use the link at: <http://www.leafmines.co.uk/html/Plants/fraxinus.htm>

#### AUBERGINE (*Solanum melongena*)

A blotch, with obvious frass and usually in an axil between two veins is *Scrobipalpa costella* (see image under Woody Nightshade).

#### BEECH (*Fagus*)

Two tunnels: *Stigmella hemargyrella* usually has coiled frass in the mid-section whilst *S. tityrella* never does and the latter mine is typically zig-zagged between two side veins. There are also 2 pucker mines: that of *Phyllonorycter messaniella* is long and runs between two side veins; *P. maestingella* is more oval, crosses veins and may distort the leaf more. Finally, *Parornix fagivora* makes a blotch then up to three folded leaf edges. Link: <http://www.leafmines.co.uk/html/Plants/fagus.htm>

#### BINDWEED (*Calystegia* and *Convolvulus*)

Both the Brown Plume (*Emmelina monodactyla*) and the White Plume (*Pterophorus pentadactyla*) feed by making actual holes in the leaves – the leaf ends up looking like it has been blasted with a shotgun! Larva needed to separate the two. Also not really a miner, but *Bedellia somnulentella* feeds on the lower leaf surface leaving the upper skin intact (unlike the plume moths) and crucially spins silk underneath the “window” which usually traps falling frass grains. Distinctive. Has become widespread in our area recently.



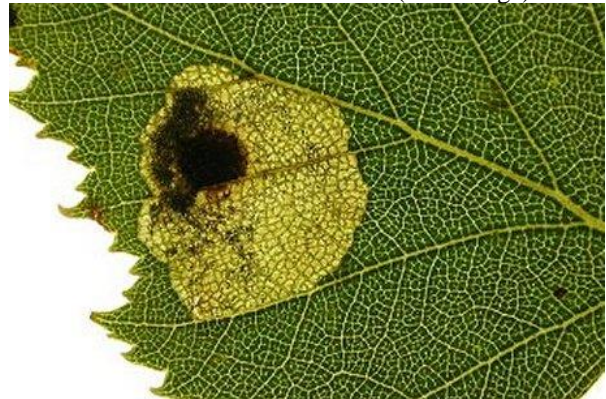
Windows made by *B. somnulentella* (lower) and holes by *E. monodactyla* (at the top).

#### BIRCH (*Betula*)

Link at: <http://www.leafmines.co.uk/html/Plants/betula.htm>

One of the trickiest plants in terms of miner ID. For *Eriocrania* species in spring, use the key via the link given (they are fairly easy, but larvae must be present).

*Ectoedemia occultella* is distinctive (next image).



Blotch mine of *Ectoedemia occultella* with frass spot.

There is also *Lyonetia clerkella* (see under Apple). Everything else needs great care and some require either a view of the larva or a reared adult. Please collect lots of samples and let me have them. *Eriocrania* (7 species), *Stigmella* (6 species), *Ectoedemia* (2 species), *Parornix* (2 species), *Phyllonorycter* (4 species), *Caloptilia* (2 species). Note that *Phyllonorycter* mines on sapling birches may be different to those on older trees.

#### BIRD'S-FOOT TREFOIL (*Lotus*)

Several species make blotch mines on various *Lotus* species – use the link to name them: <http://www.leafmines.co.uk/html/Plants/lotus.htm>



### BLACKTHORN (*Prunus spinosa*)

The “tadpole mine of *Stigmella plagicolella* is distinctive (and probably at every site that supports Blackthorn). Learn to recognise it.



Note that the “tail” can occasionally be hard to spot. Rarely, you may also find the distinctive mine of *Lyonetia clerkella*. In addition there is *Ectoedemia spinosella* (large blotch containing frass trail and which does not distort the leaf), plus *Phyllonorycter spinicolella*, *Parornix finitimella* and *P. torquillella*. These last three are fairly easy if they are three-quarters mature, but “baby” mines are probably impossible. Use the link at: <http://www.leafmines.co.uk/html/Plants/prunus.htm>.

### BRAMBLES (*Rubus fruticosus* agg.)

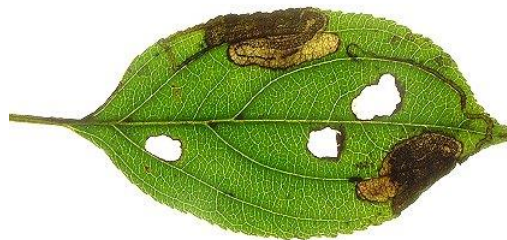
The Bramble Leaf Miner *Stigmella aurella* may or may not be a species complex, but in our area we only seem to have the one. Keep anything atypical. There is also *Coptotriche marginea* (was *Emmetia marginea*) – an upper surface, linear pucker mine that superficially resembles a *Phyllonorycter* mine. Becomes white with maturity. Distinctive. Sometimes with blunt side alleys.



### BUCKTHORN (*Rhamnus & Frangula*)

Both plants support the same two moths. *Stigmella catharticella* makes a typical *Stigmella* tunnel mine, with a frass-filled initial straight-ish section leading to a

contorted section – also frass-filled but usually dispersed in a pattern.



Buckthorn Leaf Miner *Stigmella catharticella*

The far smaller mine of *Bucculatrix frangutella* is more or less circular before producing a linear “escape route”. Between mines, the larva of *frangutella* moults its skin in the cover of a white, silk cocoon on the edge of the leaf (underside).

### CANARY GRASS (*Phalaris*)

<http://www.leafmines.co.uk/html/Plants/phalaris.htm>.

The linear mines of 4 species of *Elachista* are similar to that made by the scarce *Cosmopterix orichalcea*. Collect mines and rear adults.



*Elachista maculicerusella* mine in Phalaris

### CHERRY (*Prunus*)

An easy tree! The linear tunnel by *Lyonetia clerkella* is distinctive.



*Lyonetia clerkella* – long, narrow scarcely contorted

It makes a long and narrow mine – fairly straight (i.e., not contorted), with black frass in narrow central line (occasionally broken). No egg visible at start of mine (separates it from all the species of *Stigmella*, which lay the egg externally on the leaf). Also, a single pucker mine on underside - *Phyllonorycter cerasicolella*.

#### CINQUEFOILS (*Potentilla*)

3 or 4 tunnels mines (taxonomy uncertain). Look at <http://www.leafmines.co.uk/html/Plants/potentilla.htm>

#### CLOVER (*Trifolium*)

*Parectopa ononidis* is common in our area, but *Phyllonorycter insignitella* has not found here. Several quite common flies also mine clover leaves. If you find mined clover leaves it is best to go straight to the link at: <http://www.leafmines.co.uk/html/Plants/trifolium.htm>. Remember that different clovers may support different species.

#### CREEPING TISTLE (*Cirsium arvense*)

*Scrobipalpa acuminatella*. Untidy upper surface mine along midrib with side galleries. May become brown with age. Beware of several flies – look at link: <http://www.leafmines.co.uk/html/Plants/cirsium.htm>.

#### DROPWORT (*Filipendula vulgaris*)

One tunnel mine. Frass in a central line – *Stigmella ulmariae*

#### ELM (*Ulmus*)

There are three tunnel mines to find, each with differing frass patterns (*Stigmella viscerella*, *S. ulmivora* and *S. lemniscella*), plus two *Phyllonorycter* “pucker” mines (*P. tristrigella* and *P. schreiberella*) as well as the diminutive mines of *Bucculatrix albedinella* and *B. ulmifoliae* – all present in our area. Look at: <http://www.leafmines.co.uk/html/Plants/ulmus.htm>



*Stigmella lemniscella* – tunnel on Elm.



*Phyllonorycter tristrigella* – underside of Elm.

#### ENCHANTER'S NIGHTSHADE (*Circaea*)

Two species make rather untidy, full-depth mines. *Mompha terminella* usually starts with a spiral gallery (though not always) then forms blotches, whilst a *Mompha langiella* mine is broadly linear (much wider than the larva) with a frass line throughout and never spiral. Once your eye is in they are easy - good images at <http://www.leafmines.co.uk/html/Plants/circaea.htm>

#### FIELD MAPLE (*Acer campestre*)

The tunnel mine of *Stigmella aceris* is instantly recognisable.



Similarly, the pucker mine of *Phyllonorycter acerifoliella* can be named on sight. After that there are three *Caloptilia* species (mines followed by leaf folds), namely *C. hemidactylella*, *C. rufipennella* and *C. semifascia*. <http://www.leafmines.co.uk/html/Plants/acer.htm>. Also, in the samara (wing part of the seed key), a short and hard to spot mine will be *Ectoedemia sphenamni*.

#### GOOD KING HENRY (*Chenopodium*)

Two easily separated species:



*Chrysoesthia drurella*



*Chrysoesthia sexguttella*

#### GOOSEFOOT (*Atriplex*)

The same two species as on Good King Henry.



## GRASSES (Graminea)

*Elachista* species mine various grasses (and sedges) and most mines appear identical, so rearing is necessary for ID. Ask a botanist to name the grass species – it matters. Mine shown below is *Elachista argentella*.



## GUELDER ROSE (*Viburnum*)

A single pucker mine – *Phyllonorycter lantanella*.



*Phyllonorycter lantanella* seen from above



*Phyllonorycter lantanella* seen from below.

## GREAT WILLOWHERB (*E. hirsutum*)

*Mompha ochraceella* mines the midrib but enters the leaf blade in the final stage to create a largish white blister on the lower surface. *Mompha propinquella* eats out the entire leaf (often changing leaves) and leaves frass either scattered or piled up in the centre). Good drawings in volume 4(1) page 237 of *Moths and Butterflies of Great Britain & Ireland*.

## GREY POPLAR



*Phyllocnistis xenia* is an upper surface “snail-trail” mine but with the darker central line as shown..



*Ectoedemia turbidella* shows a distinctive V-shape at extreme base of leaf.

Additionally on poplars, there is one tunnel (*Stigmella assimilella*) and one pucker mine on the lower surface (*Phyllonorycter comparella*). Mines on various species of poplars can be seen at the link <http://www.leafmines.co.uk/html/Plants/populus.htm>

## GREAT WILLOW-HERB (*Epilobium montanum*)

*M. locupletella* (not yet recorded in our area). For all willow-herbs look at link: <http://www.leafmines.co.uk/html/Plants/epilobium.htm>

## HAWTHORN (*Crataegus*)

There is the distinctive *Lyonetia clerkella* plus the equally distinctive mine of the gelechiid moth *Recurvaria nanella*.



*Recurvaria nanella* on hawthorn

Beyond these, with the exception of an upper-side pucker mine (*Phyllonorycter corylifoliella*) and an underside pucker mine (*Phyllonorycter oxyacanthae*) and the folded leaf-edges made by *Parornix anglicella* (illustrated in the introduction above), leaf mines on hawthorns are a real nightmare to identify. There are 7 standard tunnel mines plus the very small mines of *Bucculatrix bechsteinella*. Good illustrations are at the link <http://www.leafmines.co.uk/html/Plants/crataegus.htm>

## HAZEL (*Corylus*)

One of the easier host plants to deal with. In the spring there will be *Eriocrania chrysolepidella*. Later in the year, the pucker mine of *Phyllonorycter coryli* is obvious on the upper surface from some distance. The pucker mine on the underneath is *Phyllonorycter nicellii*. A smaller, more or less rectangular blotch



associated with a leaf fold will be *Parornix devoniella*. For the separation of the two tunnel mines of *Stigmella microtheriella* and *S. floslactella* you need to note the position of the egg at the start of the mine (in an axil, on the leaf margin, or whatever). Look at <http://www.leafmines.co.uk/html/Plants/corylus.htm>

#### **HIMALAYAN HONEYSUCKLE (*Leycesteria*)**

Same two species as found on ordinary Honeysuckle. <http://www.leafmines.co.uk/html/Plants/lonicera.htm>

#### **HONEYSUCKLE (*Lonicera*)**

Two pucker mines to find. *Phyllonorycter emberizaepennella* forms a large mine on the under surface, occupying most of the leaf and with many creases in the lower surface. *P. trifasciella* make a much smaller mine, also underneath, and often causing leaf to twist into a cone.

<http://www.leafmines.co.uk/html/Plants/lonicera.htm>

#### **HOP (*Humulus*)**



A distinctive, linear mines with side galleries on the upper surface is *Cosmopterix zieglarella*.

Not yet recorded in our area is *Caloptilia fidella*, which makes small blotches in the axils of leaf veins before folding a leaf edge.



Mine of *Caloptilia fidella* on Hop

#### **HORNBEAM (*Carpinus*)**

In the spring/summer a blotch mine is likely to be *Eriocrania chrysolepidella*. In the autumn, there is an upper-surface pucker (*Phyllonorycter esperella*) a lower surface pucker (*P. tenerella*) and a smaller under-surface blotch, by *Parornix fagivora* (later in a leaf fold).

#### **LILAC (*Syringa*)**

Untidy blotch mines in leaf tips will usually be *Caloptilia syringella*. Check that frass is present.

#### **LIME (*Tilia*)**

Look for just one standard tunnel mine – *Stigmella tiliae*. The much smaller tunnel of *Bucculatrix thoracella*, starts in a leaf axil with a brownish blotch before “escaping” along a vein leaving a frass trail apart from in the final section, which it leaves to pupate.



#### **LOOSESTRIFE (*Lysimachia*)**

*Calybites phasianipennella* – makes a short initial gallery leading to a blotch mine. Images at <http://www.leafmines.co.uk/html/Lepidoptera/C.phasianipennella.htm>.

#### **MEADOWSWEET (*Filipendula ulmaria*)**

Look for two tunnel mines. Frass in a central line – *Stigmella ulmariae*; frass usually dispersed, at least in mid section – *Stigmella filipendulae*. Beware of *Stigmella splendidissima* – rarely on this foodplant <http://www.leafmines.co.uk/html/Plants/filipendula.htm>.

#### **MUGWORT (*Artemisia vulgaris*)**

Lower leaves inflated and turn purple



*Leucospilapteryx omisella*

#### **NORWAY MAPLE (*Acer platanoides*)**

The tunnel mine of *Stigmella aceris* and the pucker mine of *Phyllonorycter joannisi* are distinctive. There are also three species of *Caloptilia* (*hemidactylella*, *rufipennella* and *semifascia*) that will require adults rearing. A hard to spot mine in the samara (seed key) is *Ectoedemia sericopeza*.

#### **OAK (deciduous)**

<http://www.leafmines.co.uk/html/Plants/quercus.htm>

A nightmare species – most stuff will need rearing to adult stage. In spring, large blotches made by *Dyseriocrania subpurpurella* are distinctive. Later, the pale blotches of *Tischeria ekebladella* with their



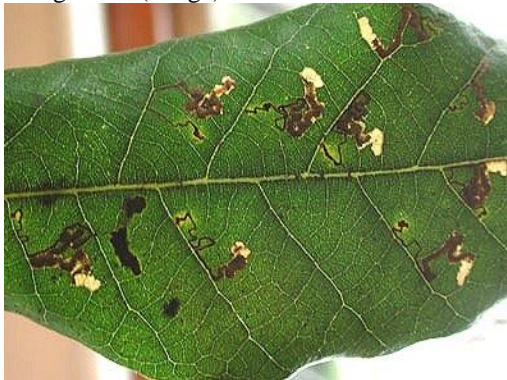
yellowish, central round enclosure are also distinctive (next image).



However, the many *Stigmella* tunnels are a problem (apart from *S. basiguttella* – the only one with the entire mine completely filled with green frass). Lower surface *Ectoedemia* can usually be named with a little effort and a x10 hand lens. Most other things, including 12 *Phyllonorycter* pucker, three *Caloptilia* and several others will usually require rearing the adults. Collect samples and don't assume that any given two mines are the same species.

#### OAK (evergreen)

*Stigmella suberivora* makes a broad gallery with a broad frass line that follows a leaf edge for at least some of its length. Smaller and usually contorted mines of *Ectoedemia heringella* tend to be present in number on a single leaf (image).



There is also a single pucker mine on the underside, but usually visible from above (*Phyllonorycter maestingella*). A perfect, oval-shaped cut out, usually towards the leaf base that has a small gallery mine leading to it will betray *Heliozela sericiella*.



*Heliozela sericiella* cut out and earlier larval gallery (above)

#### OX-EYE DAISY (*Leucanthemum*)

*Bucculatrix nigricomella* is fairly easy (image), but beware of several fly species on this plant.



#### PEAR (*Pyrus*)

There are 4 gallery mines and 4 pucker mines to find plus the far smaller tunnels of *Bucculatrix bechsteinella* and the blotch, containing frass in a spiral, made by *Leucoptera malifoliella*. Probably best to collect leaves and sit down with them. View images at link: <http://www.leafmines.co.uk/html/Plants/pyrus.htm>

#### PINE NEEDLES (*Pinus*)

No less than 6 micro mines the needles of pine trees. Some feed from base to tip and others from tip to base. Some on Scots Pine, some on other pines. Mostly identifiable, but you may need to rear adults of some. See images at <http://www.leafmines.co.uk/html/Plants/pinus.htm>

#### PLUM

Pretty much the same as Blackthorn (above). Refer to <http://www.leafmines.co.uk/html/Plants/prunus.htm>.

#### POPLAR (*Populus species*)

*Phyllocnistis unipunctella* makes a distinctive “snail trail” on leaves or Lombardy poplars. Also, look for 4 tunnels mines (*Stigmella* x 2 and *Ectoedemia* x 2), plus 2 pucker mines by *Phyllonorycter* and one fold by *Caloptilia*. The species of poplar matters as there are different moths on different trees. Collect samples (and label as you do so, since they can be very confusing just as leaves).

#### POTATO (*Solanum tuberosa*)

A full depth blotch, leaving transparent upper and lower surfaces is likely to be *Acrolepia autumnitella*, but beware of similar fly mines. A smaller blotch, with obvious frass and usually in an axil between two veins is usually *Scrobipalpa costella* (see image under Woody Nightshade).

#### PRUNUS PADUS

A single pucker mine underneath – *Phyllonorycter sorbi*.

#### PRIVET (*Ligustrum*)

*Caloptilia* x 2 species. See “Ash” above.

#### QUINCE (*Cydonia*)

Two pucker mines; one above (*Phyllonorycter corylifoliella*) and one on underside (but the status if this latter is uncertain, so collect mines for rearing adults).

### RASPBERRY (*Rubus idaeus*)

A long gallery mine with a very thin central frass line is likely to be *Stigmella splendidissimella*, but it is unclear if this is a valid species or just a variant of the Bramble Leaf-miner (*S. aurella*). Collect mines to show me, please.

### REED (*Phragmites*)

The mines of a few *Elachista* species plus those of *Cosmopterix lienigiella* and the very rare *C. scribaiella* are tricky to separate. Collect mines and rear adults.

### REST HARROW (*Ononis*)

<http://www.leafmines.co.uk/html/Plants/ononis.htm>. A blotch extending along the midrib on the upper surface will probably indicate *Parectopa ononidis*, but some flies make similar mines so look very carefully. A much smaller full-depth blotch towards the wing base might indicate *Aproaerema anthyllidella*. Both are common. The pucker mine of *Phyllonorycter nigrescentella* is not yet known in our area.

### RIBWORT PLANTAIN (*Plantago lanceolata*)

A pucker mine, usually on the underside, will be *Aspilapteryx tringipennella*.

### ROCK ROSE (*Helianthemum*)

*Mompha miscella* makes full-depth blotches on the leaves.



*Mompha miscella* mine on Rock Rose

### ROSE (*Rosa*)

Wild roses are productive but cultivated garden varieties are rarely mined. The tunnel mines of *Stigmella anomalella* & *S. centifoliella* are not always separable; that of *Ectoedemia angulifasciella* is distinctive. Completely hollowed out leaves are often the work of *Coptotriche angusticollella*. Look at the photos at <http://www.leafmines.co.uk/html/Plants/rosa.htm>

### ROSE BAY WILLOWHERB (*Chamerion*)

A sub-rectangular blotch (sometimes more circular) with a gallery leading to it is the work of the very common *Mompha raschkiella*. [look out also for swollen stems in the flower head region these will be galls of *Mompha sturnipennella*].



*Mompha raschkiella* on Rose-bay Willow-herb

### ROWAN (*Sorbus aucuparia*)

Several tricky species, so refer to "Sorbus" mines at <http://www.leafmines.co.uk/html/Plants/sorbus.htm>.

### SALLOWS (*Salix* with rough, round leaves)

Several species, mostly a problem to name from just the mine so collect and rear adults: Look at images on <http://www.leafmines.co.uk/html/Plants/salix.htm>.

### SALAD BURNET (*Poterium*)

This is just the one tunnel mine – *Stigmella poteri* – not recorded in Herts or Middx

### SELFHEAL (*Prunella*)

One gallery mine, not recorded in our area. Collect samples and show me if you find it.

### SILVERWEED (*Potentilla anserina*)

A longish gallery with linear central frass line is *Stigmella splendidissimella*. A gallery leading to a blotch that contains much frass will be *Stigmella aeneofasciella*.

### SNOWBERRY (*Symphoricarpos*)

<http://www.leafmines.co.uk/html/Plants/symphoricarpos.htm>  
*Phyllonorycter emberizaepennella* forms a large pucker on the under surface, occupying most of the leaf and with many creases in the lower surface. *P. trifasciella* make a much smaller mine, also underneath, and often causing leaf to twist into a cone.

### SORBUS SPECIES

Several tricky species. Record the tree species as different *Sorbus* support different moths and refer to <http://www.leafmines.co.uk/html/Plants/sorbus.htm>.

### SORREL (*Rumex*)

Untidy blotch mines are probably the work of *Calybites phasianipennella*. Short, frass-free galleries might indicate *Teleiopsis diffinis*. Short galleries with a frass line could be the Forester Moth (*Adscita stictices*). Finally, there is a distinctive spiral mine, usually turning purple, made by *Enteucha acetosae* – a rare moth not yet recorded in our area.

### STRAWBERRY (*Fragaria*)

Gallery mines of *Stigmella* species related to the Bramble Leaf-miner may be found. Their taxonomic status is unclear – collect samples to rear adults.



### ST JOHNS'S-WORT (*Hypericum*)

In our area we have *Fomoria sepiembrella* (a tunnel that may form a blotch) and *Eucalybites auroguttella* (a pucker mine). Elsewhere there are other species – keep leaves if anything is not a 100% fit. Good images at <http://www.leafmines.co.uk/html/Plants/hypericum.htm>

### SWEET CHESTNUT (*Castanea*)

Most tunnels are likely to be made by *Stigmella samiatella*, but this plant also supports a few tunnels usually found on oaks, so best to collect leaves and examine closely at home. Some images at <http://www.leafmines.co.uk/html/Plants/castanea.htm> but other species might occur.



### SYCAMORE (*Acer pseudoplatanus*)

Tunnel mines are *Stigmella speciosa*; pucker mines are *Phyllonorycter geniculella*. However, there are also 4 species of *Caloptilia* making small blotches before folding the leaf edge (*C. hemidactylella*, *C. honoratella*, *C. rufipennella* and *C. semifascia*). Also look at the blade of the keys (the samara) – a small, hard to spot mine near the seed will be *Ectoedemia decentella*.

### TOMATO (*Lycopersicon esculentum*)

*Tuta absoluta* – an untidy elongate blotch along the leaf axis and with blunt side branches.

### WHITEBEAM (*Sorbus aria*)

Refer to “*Sorbus*” (above).

### TORMENTIL

See “*Cinquefoils*” (above).

### WAYFARING TREE (*Viburnum*)

A single pucker mine on the underneath - *Phyllonorycter lantanella*.

### WILD SERVICE (*Sorbus torminalis*)

A pucker mine will likely be *Stigmella torminalis*, but some of the hawthorn mines may also be here. Refer to <http://www.leafmines.co.uk/html/Plants/sorbus.htm>.

### WILLOWS (*Salix* with smooth elongate leaves)

Another “difficult” tree. An easy mine is *Phyllocnistis saligna*, which makes a surface mine on the upper surface along or next to the midrib.



Then it gets tricky. There are 6 pucker mine species (one is now shown) ...



and several tunnels; each willow species may have different moth species! Visit the link at <http://www.leafmines.co.uk/html/Plants/salix.htm>.

### WILLOW-HERBS (*Epilobium* sp.)

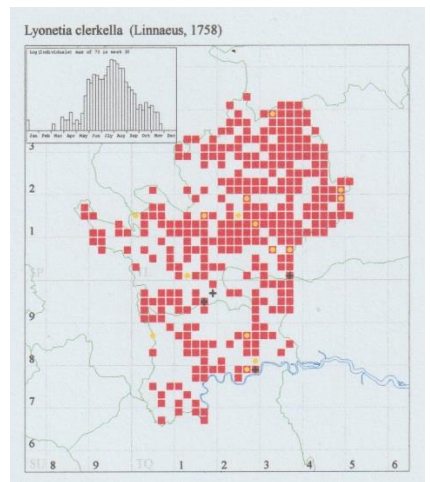
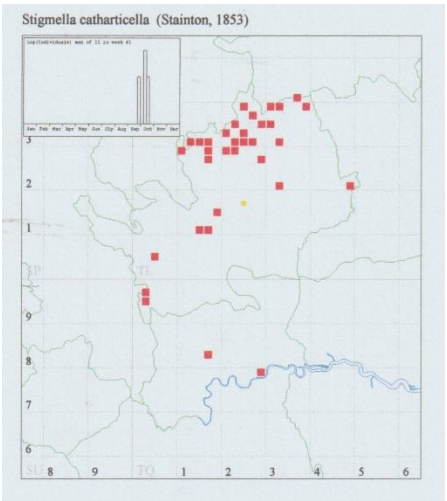
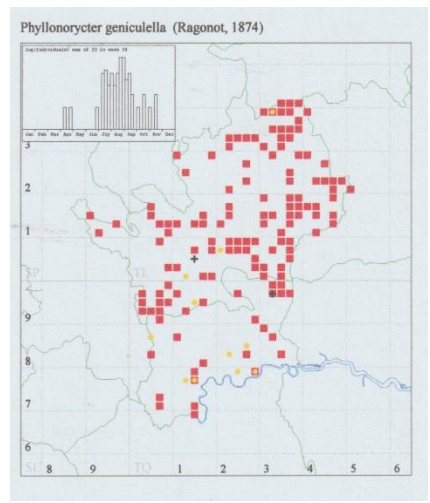
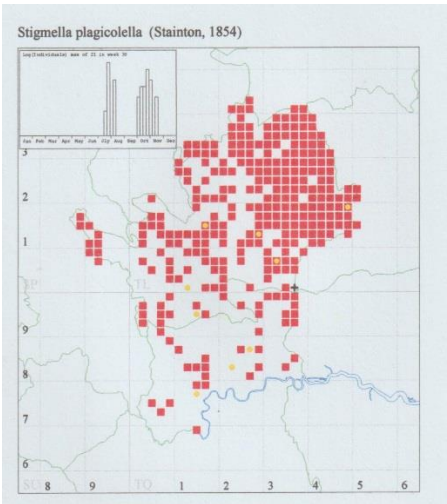
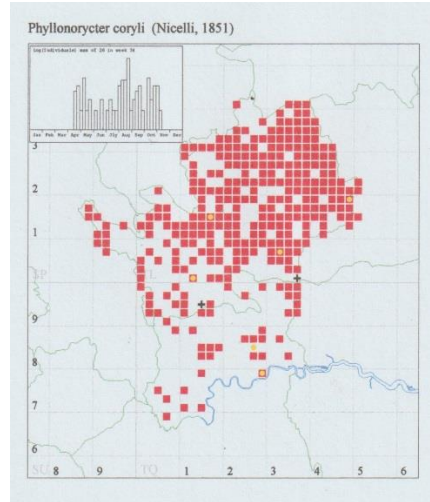
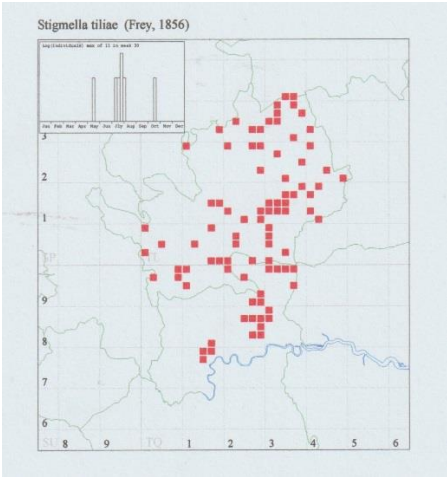
Several species, but in general one moth species per willow-herb species. For all willow-herbs take a look at this link: <http://www.leafmines.co.uk/html/Plants/epilobium.htm>

### WOODY NIGHTSHADE (*Solanum dulcamara*)

A full depth blotch, leaving transparent upper and lower surfaces and usually without frass is probably *Acrolepia autumnitella* (also on Deadly Nightshade – a very rare plant in our area). A smaller blotch, with obvious frass and usually in an axil between two veins is likely to be *Scrobipalpa costella*.



**SOME DISTRIBUTION MAPS**



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**THIS NEWSLETTER**

**We welcome the sharing of this newsletter.** Other moth groups are free to distribute it to their own members.

I welcome informal contributions to the next newsletter.

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