

## 5. The essential art of breeding micros

Many micro species are never seen as adults! Also, many species are more or less impossible to identify as adults, but *knowing the foodplant helps*. Larval feeding signs are often very easy to find, even at unpromising times of year. Bred micros are often beautiful and deserve to be seen at their best.

All in all, *you ought to try and breed micros* and many are much easier to breed than are caterpillars of macro-moths.

To help, you need to know about where and when micro moth larvae can be found and there is help from some experienced micro-men, who specialised in breeding them.

Maitland Emmet was a leader in the study of micro life cycles and published an essential field guide. However, his guide is now well out of date and so it has now been extensively updated:

**Langmaid, J. R., Palmer, S. M. and Young, M. R. 2018 *A Field Guide to the Smaller Moths of Great Britain and Ireland*. BENHS ISBN 978 1 899935 08 6**

Each species is listed in order, including the time of occurrence of eggs, larvae, pupae and adults, with brief details of the life history.

An essential feature is that *foodplants are cross-referenced*, so that if you find a larva on (for example) catmint, feeding under a web in the flowers in autumn, you look up each of the species that are known to feed on catmint and find, on the basis of where and when your larvae feed, that it can only be the beautiful 'pyrale' *Pyrausta aurata*.

If you have heard about a particular species and want to find it, the guide will help you focus your search on when, where and how to find it. Its foodplant will be identified for you, as well as its feeding signs.

Many micro larvae are free-living, others have cases, mines or spinings that are easily found, and so they can be collected just like macro larvae. Thereafter it is much more simple, because *they are small and feed up very quickly*.

*Use a small 'sandwich box' or similar, lay kitchen towel into the base, add the foodplant and larvae on top, plus a label that you can read from outside the pot, and keep out of the sun, but at ambient temperature.*

*Often the larvae feed so quickly that the first batch of foodplant is sufficient*, but otherwise try to remove old foodplant, (but beware of throwing away larvae or pupae that are hidden in the old leaves or flowers) and then lay fresh foodplant on top. Pupae tend to form amongst the paper or leaves, usually in a silk cocoon.

*The main problem is mould and decay*, so immediately the larvae are fully fed and are pupating, open the lid and allow the leaves to dry off a bit. Netting over the top will keep the moths in, but still don't put the pot into the sun.

A few species, such as the case-using Coleophoridae, always need an airy environment, so they are better reared in open-mesh containers, or sleeves, of netting on their foodplant.

If kept at the normal temperature, moths will emerge at the expected time of year. (Or parasites appear! This sounds horribly disappointing but keep them for Dr Mark Shaw's attention.) Try to let the moths go where you found them at the right time of year.

Many micro larvae have specialised feeding habits and their feeding signs are characteristic. For example:

Eriocraniidae – large blotch mines on the upper surface of leaves of trees

Nepticulidae – small blotches or serpentine mines on leaves of many plants

Incurvariidae – larvae in cases cut out of leaves, leaving obvious holes

Psychidae – larvae in cases, often with twigs or lichen attached

Tineidae – larvae in cases, often on corpses, fungi or bird's nests

Gracillariidae – some in cone-shaped spinnings on leaves, but *Phyllonorycter* make oval 'blister' mines on leaves

Lyonetiidae – larvae in serpentine mines in leaves

Coleophoridae – larvae in intricate cases on leaves, flowers or seeds

Elachistidae – larvae in blotchy, longitudinal mines on grass blades

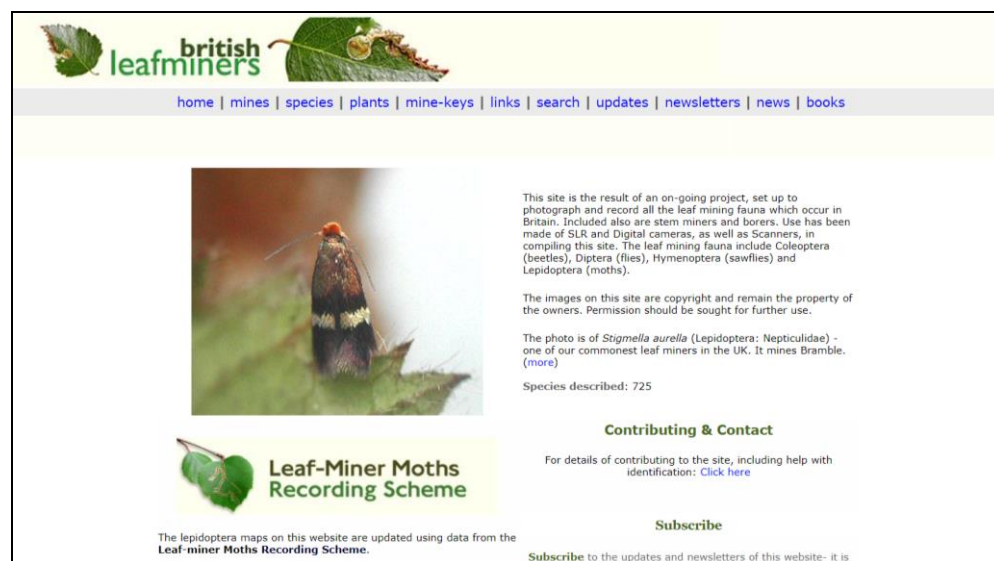
Oecophoridae – larvae often in loose spinnings

Tortricidae – larvae often in characteristically spun leaves

Leafmining in autumn in a nice deciduous wood can produce 40 or 50 species records and some micro enthusiasts specialise in leaf mines. Interestingly identification of the Nepticulidae often depends on the pattern of droppings (called frass) in the mines, as well as things like where the egg is laid on the leaf. You have to become an expert on caterpillar poo!

Other people specialise in cases of Coleophoridae or tineid cases in bird nests.

There is a great website on leaf mining: [www.leafmines.co.uk](http://www.leafmines.co.uk)



british leafminers

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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. Included also are stem miners and borers. 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).

The images on this site are copyright and remain the property of the owners. Permission should be sought for further use.

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

Species described: 725

**Contributing & Contact**

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

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Subscribe to the updates and newsletters of this website- it is

The lepidoptera maps on this website are updated using data from the Leaf-miner Moths Recording Scheme.

If you find full-grown *Phyllonorycter* blisters in late summer or autumn (which usually have longitudinal creases), you can keep them in an old stocking (or the mesh bags now used in supermarkets to hold vegetables) hung out over the winter, so that air can circulate freely around the leaves, and hopefully the moths will emerge in the next year. Bring them into a plastic pot in spring, so that there is a *little* humidity in the pot, which helps to allow the moths emerge from the pupae.

If you find Nepticulidae larvae (Neps) in their serpentine mines, it will take you a lifetime learning how to rear them successfully, but try the following! Nep larvae feed up very quickly, a week or two at most, and then emerge to drop to the leaf-litter to pupate in little cocoons. If the larvae are still in the mines you find, put the leaves in a large yoghurt pot, with gravel, then compost or vegetable debris in the bottom of the pot and some *Sphagnum* moss just below the leaves. Use a plastic lid until the larvae leave the leaves and then remove the leaves, change to a netting lid and store outside semi-sheltered from the worst weather. Bring in next year, changing to a plastic lid. Good luck – you will need it!

If you find Nep mines from which the larvae have emerged to pupate, keep them and press them until they dry out. I have an old botanical press, but you can press the leaves between old newspaper and

with heavy books on top. Once dry, keep them in brown paper envelopes, with the data on the outside, and identify them using the keys on the leaf-mining website. An herbarium is a lovely thing.

Ben Smart's two books on micro moth field tips are great books to encourage you to find micro larvae and he also explains how to breed them.

**Smart, B 2017 *Micro-moth Field Tips*. Vol. 1 Lancs and Cheshire Fauna Society. (ISBN 978 1 9997312 0 5)**

**Smart, B 2021 *Micro-moth Field Tips*. Vol. 2 Lancs and Cheshire Fauna Society. (ISBN 978 1 9169034 2 5)**

Good luck with larval breeding – it is rather addictive! Many moth-ers find that it is an essential part of micro recording, it is also great fun and the sense of achievement when a moth emerges gives a great thrill. Go for it!

The text in these materials has been adapted from that originally created by Mark Young.

The *Supporting Science* project aims to improve data flow and better support our recorders and volunteers.

We will improve access to natural heritage and grow digital skills by developing tools and collaboration. This project received DCMS and National Lottery funding, distributed by The Heritage Fund as part of their Digital Skills for Heritage initiative. We are also grateful to Henry C. Hoare Charitable Trust, Sophia Webster Ltd. Sabina Sutherland Charitable Trust, and The Lochlands Trust for their support.



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