

***Phyllocnistis saligna*  
(Zeller, 1839) (Lep.:  
Phyllocnistinae) is a  
complex of species. Which  
of these occur in the UK?:**

A recent paper by Voith et al (2023) has shown that *Phyllocnistis saligna* is in fact a complex of four species; discovered by barcoding specimens from *Salix* mines.

They found the species were:

***Phyllocnistis saligna*:**

**Host:** *Salix purpurea* L

**Mine:** Mines the underside of leaves in a zig zag fashion. It may then enter the stem and mine an adjacent leaf or enter another leaf up to 20 cm away. It then forms a cocoon by folding the underside edge of the leaf.

***Phyllocnistis asiatica* Martynova,  
1955:**

**Hosts:** *Salix alba*, *S. babylonica*, *S. euxina*, *S. fragilis* and *S. purpurea* L.

**Mine:** Mines both upper and lower leaf sides. The larva often mines along the central vein before entering the stem and mining another leaf. Pupation is in a leaf fold at the edge of the leaf.

***Phyllocnistis ramulicola* Langmaid  
& Corley, 2007:**

**Hosts:** *Salix atrocinerea*, *S. cinerea*, *S. euxina*, *S. melanopsis* and *S. pentandra*

**Mine:** Mines up and down the stem, sometimes turning and sometimes crossing the initial track or even abruptly turning to mine the other side of the stem. It finally enters a leaf petiole and forms a cocoon at the leaf base.



*Phyllocnistis ramulicola*

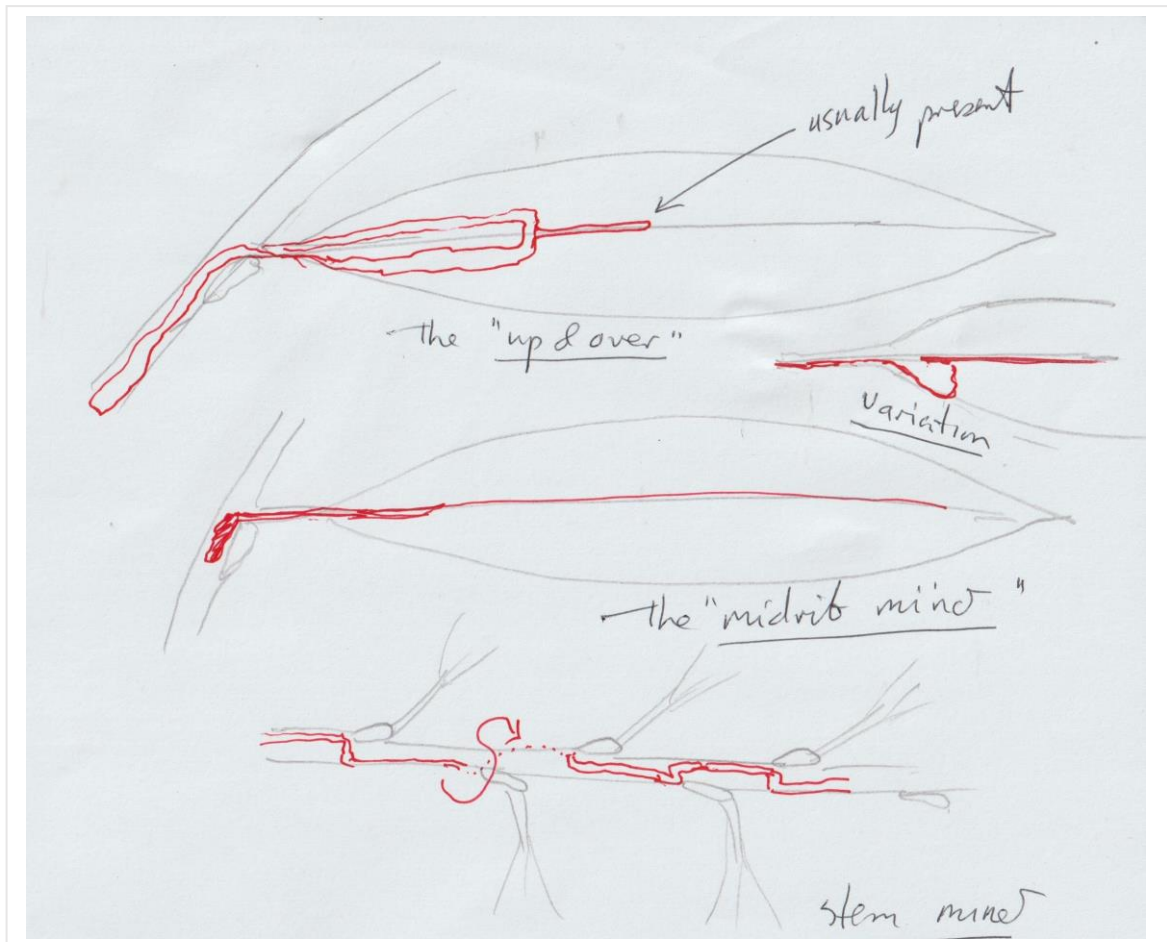
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***Phyllocnistis triandricola* Voith,  
Aarvik & Berggren sp. n.:**

**Hosts:** *Salix babylonica* var. *matsudana*,  
*S. triandra* L.

**Mine:** Initially it mines under the leaf along the main vein and enters the stem, mining downwards for 5-10 cms before turning upwards and mining the stem for 10-20cms. It then enters a leaf and mines along the midrib. It then mines to the leaf margin to pupate under a leaf fold. This is predominantly a stem mining species.

Besides the morphology of the mines it was found that the genitalia of the adult female *Phyllocnistis* moths had characteristics which enable distinction between the species.



These findings mostly relate to European *Phyllocnistis* species and the question is raised as to which are found in the UK.

*P. ramulicola* and *P. asiatica* are both confirmed as UK species but what of *P. saligna* and *P. triandricola*?

Obviously more research is needed looking at both the mines, the host plants and the adult moths before we can determine which of these are present in the UK.

Colin Plant has been looking at these *Salix* *Phyllocnistis* species (in spite of it being very late in the season for observing them) and has initially found three basic types (as his field sketches above illustrate) but he stresses, as yet no adults! His field sketches refer to the autumn generation and it is possible that a spring generation may differ.

His material is also from the south-east and there will surely be a bias.

Colin is happy to collate data/receive material so that we can determine the presence and ranges of these *Salix* miners in the UK.

#### Reference:

Voith, R.J.D.I., Aarvik, L., Berggren, K., Bengtsson, B.Å., Hellberg, H., Mutanen, M., Slagsvold, P.K. & Wieser, C. 2023. Taxonomy of the complex around *Phyllocnistis saligna* (Zeller, 1839) (Lepidoptera, Gracillariidae) in North and Central Europe, with the description of a new species. Norwegian Journal of Entomology 70, 10–28.

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## Finding *Phyllonorycter scopariella* (Zeller, 1846) (Lep.:Lithocolletinae) - a rare and cryptic stem miner of Broom (*Cytisus scoparius*):

The insignificant stem mines of *Phyllonorycter scopariella* are difficult to find and may be confused with superficially similar mines of both *Trifurcula immundella* (Zeller, 1839) and *Leucoptera spartifoliella* (Hübner, [1813]).

In each case the stems are mined and as they mature the mines turn grey (or black in the case of *T. immundella*).

The difficulty is in deciding which species you have found when locating a mature stem mine.

### Length of the mine:

Guy Meredith looked for the mines of *P. scopariella* saying 'On 23rd October 2023 I was searching on broom in the Forest of Dean for mines of *Phyllonorycter scopariella*, which at that point I had never seen. I found some long mines (e.g. 60mm+) but they were not *Phyllonorycter* mines.'



© Guy Meredith

They were shallow, with no pupation site and two of them had obvious arc-shaped larval exit slits like those made by *Stigmella* species mining in leaves as shown below:



© Guy Meredith

Lacking a narrow dark brown initial mine, I don't think they could have been *Trifurcula immundella*, so they were probably *Leucoptera spartifoliella*.'

Long stem mines with exit slits are obviously not caused by *P. scopariella* as both *T. immundella* and *L. spartifoliella* leave their mines, via an exit slit, to pupate.

The mines of *P. scopariella* are much shorter, with most being up to 20mm long.

### Internal structure of the mine:

GM found mines on 15<sup>th</sup> November 2023, in Bristol, which were '*Phyllonorycter*: quite deep, with frass heaped at each end and evidence of pupation between these (final larval head capsule & skin), and one mine had two earlier head capsules (one with skin attached) in the frass heap at one end.'



*Frass heaped at either end of the mine*

© Guy Meredith



*P. scopariella* pupates within the stem, in a thinly silk-edged chamber.



© Guy Meredith

George Tordoff has found *P. scopariella* too in Monmouthshire and identified his mine due to the presence of exuviae. Again, the mine was short.

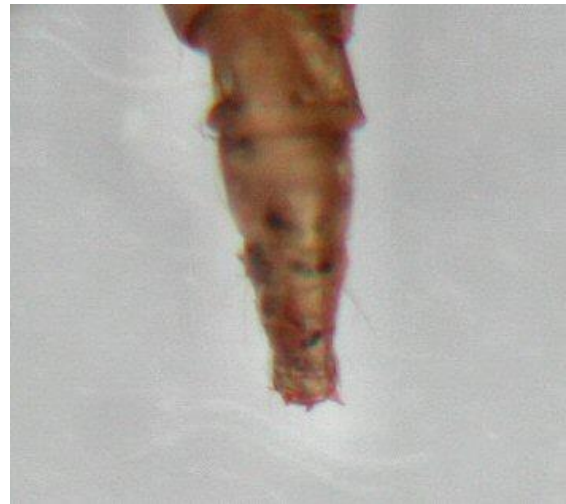


The mine is short © George Tordoff



Exuviae (with hooked spines) © George Tordoff

The exuviae of *P. scopariella* are very distinctive having four curved spines in the cremaster:



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Wil Langdon found the colour of the mines variable, depending on their age, with fresher mines looking rather blackish/greyish and older ones being brown and papery

### Where to look for these mines:

RE has found this species on small, isolated plants, even growing in concrete in the sides of storm drains.

Four mines found by GM were all at a low height 'at the edge of quite large patches of broom. They were quite low on tall plants, but not very low, probably between 50cm and 150cm above ground level.'

WL has found mines although 'the broom bushes I've found it on have been quite variable, though I think the mines have often been at the base of side-shoots'.

Conclusions – is a mature mine in broom caused by *P. scopariella*?:



*Mine in a flowering broom stem*

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In deciding whether a stem mine in broom is caused by *P. scopariella* the following criteria may be useful:

- (i) The mines are short – between 15 and 25mm long.
- (ii) Frass is piled at either end of the mine.
- (iii) There is a thinly silk-edged chamber.
- (iv) If exuviae are present curved spines are seen in the cremaster.

We would be very interested to learn of any further criteria or comments on these, based on your findings.

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## *A semi-evergreen host for Tischeria ekebladella (Bjerkander, 1795) (Lep.:Tischeriidae):*

*Tischeria ekebladella* is usually associated with deciduous Oaks such as *Quercus robur* but Andy Law has found it recently mining a semi-evergreen Oak species in Shropshire (VC40).

The Oak species is possibly *Quercus x crenata*.

A return visit to the parkland site will be undertaken to formally identify the Oak species.



*Surface view of the mine*



Photos © Andy Law

Larvae were present in the mine, which enabled identification.

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It would be interesting to see if any other evergreen Oak species are similarly mined.