AGROMYZIDAE NEWSLETTER

LATEST NEWS FROM THE NATIONAL AGROMYZIDAE RECORDING SCHEME

A BRIEF UPDATE

RECORDS

A total of 152 records were received by the scheme during January. *Phytomyza ilicis* continues to be the most recorded species, forming 59% of this month's total.

As mines are still very thin on the ground during February, there is no 'What's about….' feature this month but don't worry, this popular part of the newsletter will be back in the next edition!

Nigel Gilligan recorded an unusual mine on Holly and wasn't sure if it was caused by the usual suspect, *Phytomyza ilicis* as it is purely linear, with no blotch section, as shown below;

Unusual linear mine on Holly © Nigel Gilligan

However, although very unlike the typical *Ph.ilicis* mine, it is indeed this well-known miner! Dr Willem Ellis explains why;

"When the larva of *Ph.ilicis* leaves the corridor in the midrib that it has made before and during the winter, it must immediately make a blotch: eat tissue away all round. If the larva only eats tissue right in front of it for too long, it will lose the space to move.

This is the combined effect of the toughness of the Holly leaves, and the speed with which scar tissue (callus) is formed.

Almost all linear mines that you open end with a larva that has been squeezed to death. Hering called it "der Flucht für dem Callus" - the flight for the callus".

Source : www.bioimages.org.uk

UNUSUAL METHOD OF RECORDING AGRO'S

MOTH TRAP BY-CATCH MERITS A CLOSER LOOK

James McCulloch contacted the NRS to let us know about what he found in his moth trap;

"I have a Skinner moth trap, with an MV bulb. During the spring and summer months I put it out quite regularly and catch many other insect orders along with plenty of moths.

Usually it's the beetles, large wasps or leafhoppers that grab my attention yet during 2017 I decided to have a look at the small flies and parasitic wasps that were also attracted to the light.

I found the greatest concentrations of these small flies in the socket of the Mercury Vapour bulb.

Whenever I would pack away the moth trap, many small insects fell out of the socket although I had never been brave enough to have a look at them until last year.

Often in the best conditions (warm, cloudy nights) there would be upwards of 30 individual small diptera or hymenoptera within the socket.

To collect them, I would tip the piece of wood holding the socket upside down, allowing the insects to fall onto a white sheet, where I would sort them into the ones I thought might be identifiable.

To my surprise, while examining them under a microscope, I discovered that at least one of the flies was an Agromyzid. It was a female *Phytomyza ranunculi* – a species that I hadn't recorded before and haven't yet recorded since.

I wouldn't have been able to record this species without catching the adult in the moth trap, which demonstrates the potential that light has for recording adult *Agromyzidae*.

From personal communication it seems that traps with actinic lights also attract many small insects, although more spread out within the trap as opposed to concentrated in the bulb sockets of MV lights.

During 2018 I will continue to look at the small flies attracted to my moth trap, and hopefully many *Agromyzidae* will be among them!".

Thank you James for informing the NRS about your unusual discovery!

LATE WINTER MINES OF PHYTOMYZA RANUNCULI SCHRANK 1803

LARVA STILL ACTIVELY FEEDING DESPITE FREEZING CONDITIONS

Rob Edmunds, of, writes;

On the 31st December, 2017 I spotted some fresh looking mines of *Phytomyza ranunculi*, on Buttercup, in my garden.

This is a common Agromyzid leafminer, found throughout the year, with distinctive long twisting mines and frass in strings.

I thought that it would make a good addition to the leafminers seen in 2017 and so I photographed the mines and brought a leaf indoors, to further examine the frass pattern.

I was very surprised to find that this mine was occupied, even though we recently had snow and the temperatures had been down to -2C, at night, during the previous week.

I kept the leaf and the larva emerged and pupated on the 2nd January 2018

It was the latest I had found an occupied mine of this species but, Spencer (1976) says 'There are several generations and larvae can be found even in winter, in plants covered by snow'."

A very hardy species (and one to look for during the winter months)!

Reference: Spencer, K.A (1976) The Agromyzidae (Diptera) of Fennoscandia and Denmark, Fauna Entomologica Scandinaviaca

Phytomyza ranunculi mines on Buttercup © Rob Edmunds

Close up of mine with feeding larva visible on left-hand side © Rob Edmunds

Phytomyza ranunculi puparium © Rob Edmunds

There are several other species which may be found feeding during the winter months, *Phytomyza chaerophylli* and *Ph.hellebori* being two, so it is well worth looking in your garden to see if you can also find any of these hardy larvae feeding away!

If anyone else comes across tenanted mines during the next few weeks, please get in touch and let us know!

Many thanks to Rob for taking the time to get in touch with the NRS and putting this article together.

Rob's website, www.leafmines.co.uk, now incorporates the NRS Grading System for recording *Agromyzidae*, which was published in last month's newsletter.

SPECIES NEW TO YORKSHIRE

CHROMATOMYIA SCOLOPENDRI DISCOVERED NEAR RIPON

Charlie Fletcher, Yorkshire Macro-moth recorder, made the discovery and writes;

"My interest in leaf-mines goes back quite a few years but non-lepidopterous mines were of little interest and in fact looked far too complicated. In those days either keys were poor or I didn't possess the necessary literature. I noted one or two obvious ones down but that was about all.

Hackfall Woods (or more properly just "Hackfall") are located on the south bank of the River Ure in North Yorkshire where the river runs through a steep gorge before heading south-east to Ripon.

The semi-natural mixed woodland was turned into a wild garden by William Aislabie in the 18th Century and has been recently restored by the Woodland Trust with rebuilding of the follies and recreation of some of the original vistas.

Hart's-tongue Fern *Asplenium scolopendrium* is particularly common in the wetter parts with some impressively large stands. I often visit the woodland, especially in spring to monitor the nest boxes which I erected over twenty years ago.

Whilst there I usually check the Hart's-tongue fern to see if I can find any evidence of larvae of the Psychid moth *Psychoides verhuella* or even its relative *Psychoides filicivora* which has recently moved into the county. Despite much searching, I have never had any luck.

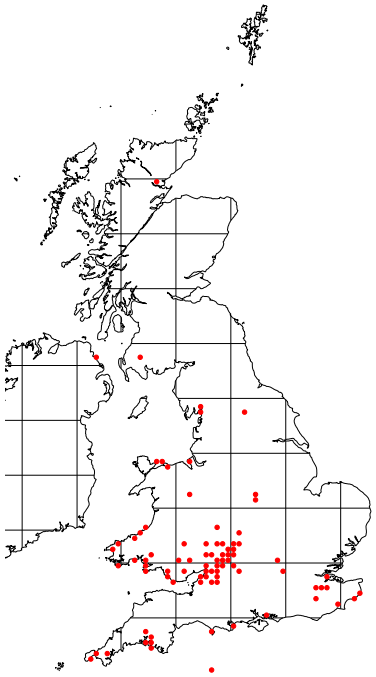
This has always puzzled me as I have found *P. verhuella* in several locations within a few miles. The only mines I have ever seen have been dipterous. A check of the literature suggested only one candidate, *Chromatomyia scolopendri,* so this went into my records.

The creation of the National Agromyzidae Recording Scheme reminded me that I had various odd records tucked away on MapMate and this year I thought I should submit these.

The Scheme pointed out that *Chromatomyia scolopendri* had not been recorded previously in Yorkshire and quite rightly asked for photographic evidence.

Luckily this is one of the few species whose evidence is obvious in the depths of winter so a quick trip to Hackfall proved that it is extremely common at this site, in fact the first leaf I looked at contained two mines.

Chromatomyia scolopendri has a westerly distribution in the UK with most records in south-west England, Wales, Cumbria and the west of Scotland, as depicted below;



The larva forms a long thin greenish mine, as shown below, with the linear frass forming a distinctive line along one side. The mine often follows the midrib for a while before wandering over the leaf. It is unlikely to be mistaken for any other species".

Chromatomyia scolopendri © Barry Warrington

There are no previous Yorkshire records however it has probably been present at Hackfall for some time – my first record dates to 2012 but I remember seeing it some years before this".

Thanks to Charlie for writing about this great find!

THE HOGWEED MINER – CAN YOU HELP?

RECORDERS REQUIRED TO HELP ASCERTAIN DISTRIBUTION OF THIS 'COMMON' MINER

The very first NRS Newsletter highlighted that *Phytomyza spondylii*, which forms linear mines on Hogweed, can't be recorded on the leaf-mine alone.

There is another species, *Phytomyza pastinacae*, which forms **identical** mines on the same plant. The only way you can record these two species is to dissect adult males reared from collected larval mines.

When the NRS was launched, there were hundreds of records for *Ph.spondylii* within iRecord, nearly every single one based on larval material!

The NRS has been busy contacting recorders to ascertain if any of their larval records of *Ph.spondylii* resulted in adults been reared, confirming the determination. So far, no larval records are supported by reared males, therefore, all larval records have had to be 'quarantined' in the NRS database.

It soon became apparent that folk were simply not aware of the other possible causer.

Although both species are described and illustrated in the relevant literature, unfortunately the most frequently used websites did not highlight the issue with recording these mines on Hogweed.

As of 31st January 2018, there are still 199 records of *Ph.spondylii* in the NRS database, with only 9 that positively relate to adult material. The NRS continues to seek clarity on the remaining larval records.

With regards to the other possible causer, *Ph.pastinacae*, there are 15 records in the NRS database, 14 of which are the result of material caught/reared by the NRS Organiser in Yorkshire.

The NRS is therefore seeking recorders to help build a bigger and better picture of the true distribution of these two species.

So, how can you help? To get involved, the NRS is looking for people, ideally covering the length and breadth of the UK, who would be willing to;

- Collect tenanted mines & rear through adults

or

- Collect tenanted mines to send into the NRS

If you choose the former option, the NRS will of course be happy to dissect any males that you manage to successfully rear.

If you would prefer to just collect leaf-mines and send these to the NRS Organiser, please ensure that the mines are placed in air-tight food bags and packed to prevent damage in transit.

Alternatively, you could collect the mines, wait for the larvae to pupariate (which is done externally) and send just the puparia, which would reduce the cost of postage (unfortunately, the NRS won't be able to reimburse any postage costs).

For any mines that you collect, a spreadsheet will be provided to disclose the following details;

- Your name
- Date mines were collected
- Number of mines collected
- Site name and grid reference/postcode
- A brief description of the habitat and abundance of the mines (DAFOR scale)
- Date larva vacated the mine to pupate (not essential)
- Date any adults emerged*
- Sex of adults*
- Your determination based on gen det*

* only applicable if recorder is rearing through

As tenanted mines can be found between March and as late as December, it is hoped a good number of adults can be obtained.

Of course, there is only so much we can achieve in one season but hopefully this little 'citizen science' project will provide enough data to allow a much greater understanding in terms of the true distribution of the two species in question, along with other valuable information such as phenology and life-style habits.

If you are interested in taking part or have any questions relating to the project, please do get in touch. Thank you!

CONTACT

IF YOU HAVE ANY QUESTIONS OR WOULD LIKE TO KNOW MORE ABOUT THE SCHEME, PLEASE DO GET IN TOUCH WITH US;

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