

AGROMYZIDAE NEWSLETTER

LATEST NEWS FROM THE NATIONAL AGROMYZIDAE RECORDING SCHEME

A BRIEF UPDATE

RECORDS

In June, the Scheme received 107 records. *Phytomyza ilicis* continues to be the most recorded species, forming 27% of the total records received this month. Thanks to all participants!

A record of the larval mines of *Agromyza vicifoliae* (pics below) was sent in by Graham Watkeys, a species which, although seemingly widespread, is not recorded in large numbers. Graham says "This mine was found at the Wildlife trust of south and west Wales Pwll waun cynon reserve in Mountain Ash. This valleys reserve sits at the edge of the former Phurnacite smokeless fuel plant once considered the most polluted site in Wales and is being managed with the aim of creating species rich grassland.

Part of this reserve management involves the removal of Himalayan balsam which generally involves you being "head down" pulling the stuff up, this facilitates the spotting of various leaf mines. This particular one was fairly easy spot as the Vetch was located on the edge of one of the main access routes growing through brambles".



WHAT'S ABOUT.....

AUGUST

During August, the mines of *Liriomyza sonchi* will be visible on Sow-thistles (*Sonchus* spp.).

These mines can form anywhere on the leaf, ranging from the centre of the leaf blade to ones at the leaf edge.

The mine starts as a short corridor but this is quickly overrun by a brown, upper surface blotch. There can be several larvae within the mine and secondary feeding lines are very conspicuous, as seen in the image below;



Pupation is external but occasionally, the puparium can be formed within the mine.

Another miner to look out for during this month is that of *Chromatomyia ramosa*.

This species forms mines on Wild Teasel (*Dipsacus*), Field Scabious (*Knautia*) and Devil's-bit Scabious (*Succisa*).

The larva of *C. ramosa* feeds along the midrib but it makes short lateral mines out in to the blade of the leaf. In Wild Teasel, the lateral mines are quite short, whereas in Scabious, these are much longer.

Normally, there is very little, if any, visible frass as most is deposited within the midrib. Pupation also takes place within the midrib, just below the epidermis.

In most years, there are two generations. In the second generation, the winter is passed as a young larva in the basal rosette of leaves and feeding commences in the early Spring.

A typical mine of *C. ramosa* on Wild Teasel is shown below;



There is usually no visible sign of the larva or the puparium, only by carefully opening the midrib can you see if the mine is tenanted or has a puparium present.

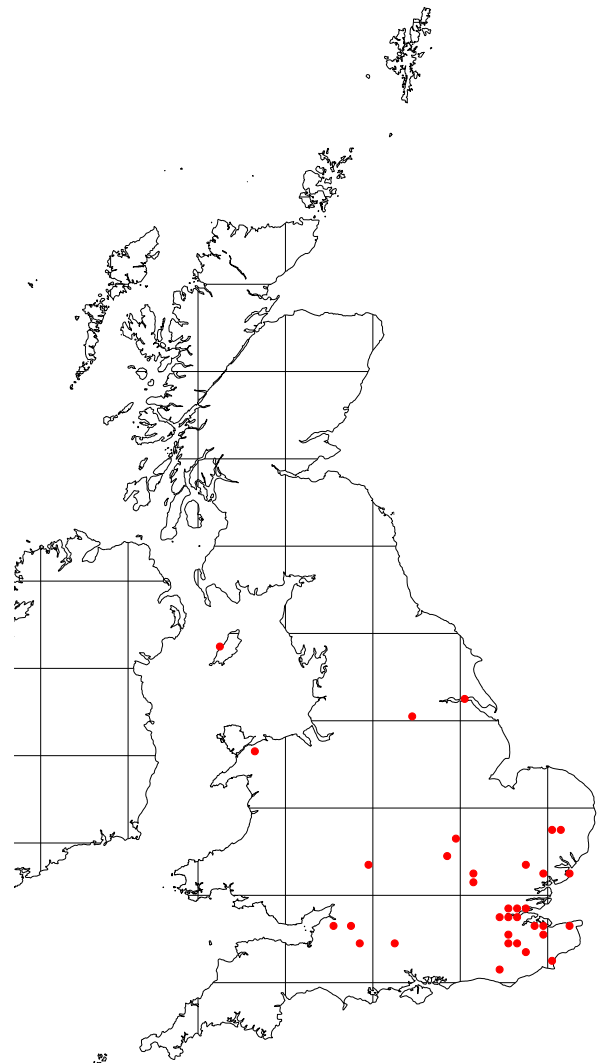
The below image shows the puparium, having opened up the midrib;



Despite the abundance of the host plants, *C. ramosa* is a rather local species with the most northerly records coming from East Yorkshire and the Isle of Man, as shown on the distribution map opposite (*based on records held by the scheme*).

During a recent survey in East Yorkshire (VC61), 831 Wild Teasels, covering five sites, were examined. Only seven mines were found!

Any records from the North of England and Scotland would be very welcomed as it will greatly increase our knowledge of this species in terms of its distribution within the UK.



GENITALIA PREPARATIONS

METHODS

In the previous newsletter, the topic of genitalia determinations was discussed. Since then, a number of queries were received asking how to preserve and store the genitalia.

Again, each Dipterist has their own preferred ways. Methods can also be dictated by what the collector plans to do with the 'gen prep'. Some may wish to preserve the genitalia for serious study research whilst others make preparations which are designed to purely support their determination.

There are various methods used but here we will discuss one of easiest and most convenient ways to mount genitalia.

To make genitalia mounts which are great for supporting determinations whilst been quick and straightforward, you will need;

Waterproof card and;

Euparal (a mountant – available [here](#). Other mountants are available but for the purpose of this feature, Euparal is chosen)

The card needs to be cut into small pieces, measuring approximately 20mm x 15mm. It is prudent to write the name of the species and the standard data (date, location, collector....) on one side of the card in case it becomes separated from the actual Agromyzid specimen.

In the last newsletter, the final stage of the genitalia determination had the genitalia in a staining block/petri dish containing alcohol.

To mount the genitalia, place a small blob of Euparal (using a balsam rod works well for this) in the centre of the piece of card (not the side with the data on!).

Then, using fine forceps or a micro pin, carefully lift the genitalia from the alcohol and place in the Euparal.

Whilst in the Euparal, the genitalia should be carefully manipulated so that it resembles the illustration(s) in the reference literature. At times, this can be tricky and it may not be possible to align the genitalia to be an *exact* replica of the illustration.

The card should then be left to dry (usually a couple of days) and then mounted with the specimen and put into storage.

Euparal has excellent optical properties and preparations will remain in good condition for a very long time.

In the next newsletter, the matter of photographing the genitalia will be covered.

As always, if you have any questions or would like to know more, please do get in touch!

RARE AGROMYZID FOUND IN YORKSHIRE

NAPOMYZA TRIPOLII (SPENCER, 1966B) DISCOVERED IN EAST YORKSHIRE

On 12th July 2017, a large male *Napomyza* spp was collected from salt marsh in Hessle, East Yorkshire (VC61). Upon examination of external and genitalia features, *Napomyza tripolii* Spencer 1966b was determined and later confirmed by Dr. Michael von Tschirnhaus.

This is the first record for Yorkshire and possibly only the 5th British record. It also represents the UK's most northerly record to date (*details based on records held by the Scheme and NBN Atlas*).

Napomyza tripolii is an exceptionally large Agromyzid, with a wing length of up to 3.5mm in males and 3.8mm in females.

It does resemble another, more common species, *Napomyza lateralis*, but can be distinguished by its large size and certain bristles on the adults head (of course, the males genitalia should be examined to confirm the determination);



It is reasonably certain that the host plant is Sea Aster, *Aster Tripolium*, with the larva feeding internally in the stem. Now is the best time to sweep for *N.tripolii* around its host plant and it would be fantastic if anyone were to find it elsewhere in the UK! As ever, the Scheme is more than happy to help with determinations if you are lucky enough to find it – good luck!

References;

Spencer, K A 1990, Host Specialization in the World Agromyzidae (Diptera)

Spencer, K A 1966, A clarification of the genus *Napomyza* Westwood (Diptera: Agromyzidae) 1966b

ATYPICAL MINES

NOT ALL LARVA FOLLOW THE TEXT BOOK AND FORM TYPICAL MINES!

Recently, several mines were noticed developing on Borage (*Boraginaceae*) which did not resemble any of the known miners of this host plant.

Mines were collected and within a week, an adult male emerged allowing a determination. The miner turned out to be *Chromatomyia horticola*, a very common, highly polyphagous Agromyzid. This highlights the difficulty one can experience when basing identifications on mine alone.

Ch.horticola, along with *Ch.syngenesiae*, forms linear mines which are relatively broad and has frass in isolated grains. A typical example of the mine *Ch.horticola* forms is shown below;



Comparing this to the mine below on Borage, there is a vast difference. The mine is quite slender with the frass so tightly packed, it is forming 'pearl chains', which is extremely noticeable along the right edge of the leaf.



This image was sent to Dr. Willem Ellis in the Netherlands who has studied leaf mines for many years. Dr. Ellis had never seen a mine produced like this and although *Ch.horticola* was considered, it was hoped the miner would turn out to be something rather more interesting!

The larvae pupated at the end of the mine in a pupal chamber, which is typical of *Chromatomyia* spp, with the anterior spiracles penetrating the epidermis.

The puparium of *Ch.horticola* is usually a yellowish-white, however, in these specimens they were more orange, as shown opposite.



Taking this into account, along with the leaf mine features, *Ch.horticola* was still not seriously considered. It was only after examining the male's genitalia that a determination was made!

The below photograph shows the genitalia preparation, confirming *Ch.horticola*;



This emphasizes the importance of rearing through collected material, as it really does allow us to gain more knowledge and understanding about Agromyzidae.

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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