

# An Introduction to Species Associated with Common Plants



## West Wales Biodiversity Information Centre's Recording Toolkit

This guide was produced with support from the Welsh Government Local Places for Nature grant scheme.



The aim of this Recording Toolkit resource is to highlight some common interactions between plants and other species.

We have compiled a list of plants that commonly have visible signs of other species associated with them. Whilst taking a close look at plants you might spot signs of a variety of galls, fungi, rusts and leaf mines. In this introductory guide we have chosen gall, rust and leaf mine species that are host specific so that you can be confident in your identifications. Once you get accustomed to spotting galls, rusts and leaf mines you will see that they are common and found on a wide range of plant species. They can however be tricky to identify so it is important to refer to expert guides if you plan to submit records.

Resources:

- British Leaf miners <http://leafmines.co.uk/html/plants.htm>
- The leaf and stem mines of British flies and other insects <https://ukflymines.co.uk/>
- Leafminers and plant galls of Europe <https://bladmineerders.nl/>
- Britain's Plant Galls by Michael Chinery
- British Plant Galls by Margaret Redfern and Peter Shirley
- The rust fungi of the British Isles. A guide to identification by their host plant <https://www.aber.ac.uk/waxcap/downloads/Henderson2004-BritishRustFungiHostPlantGuide.pdf>

**Host: Alder/Gwernen, *Alnus glutinosa***

Associated Species: *Taphrina alni*

Take a look at the scales of female Alder cones for the fungus, *Taphrina alni* that causes an Alder Tongue. Growths can be up to 2cm. Spores are released in late summer. Less common in the South East of the UK.



Associated Species: *Agromyza alnivora*

Larvae of this fly, form a linear leaf-mine on the upper leaf surface. The mine starts out quite narrow and then widens towards the end. The mature mine is characteristically brown. Frass is seen in two distinct rows. The larva leaves the mine via a slit in the upper surface.



Associated Species: *Taphrina tosquinetti*

The fungus, *Taphrina tosquinetti*, causes large blister lesions which distort the leaf. As the spore-bearing asci develop the gall surface gets a white bloom. More obvious in the summer.



**Host: Alexanders/Dulys, *Smyrnium olusatrum***

Associated Species: *Puccinia smyrnii*

This rust fungus forms yellow blisters on upper and lower leaf surfaces, stems and petioles.



**Host: Beech/Ffawyddden, *Fagus sylvatica***

Associated Species: *Hartigiola annulipes*

This gall midge forms a cylindrical gall up to 5mm tall, typically on the upper surface of Beech leaves. The galls have a variable amount of hairs and each one contains a white larva.



**Host: Blackthorn/Draenen ddu, *Prunus spinosa***

Associated Species: *Eriophyes similis*

This gall mite typically produces pimples along the leaf margin. The mites leave the galls via small openings in the upper gall surface and overwinter in bark crevices.



**Host: Bluebell/Clychau'r gog species**

Associated Species: *Uromyces muscari*

Native, Spanish and Hybrid Bluebells can all be affected by this rust fungus. The fungus typically shows as concentric rings of spore bodies and can be seen on both upper and lower leaf surfaces.



**Host: Bracken/ *Rhodyen ungoes*, *Pteridium aquilinum***

Associated Species: *Rhopoglyphus filicinus*

This fungus is most noticeable on Bracken stems in the autumn and winter. It forms multiple black patches and lines on the stems.



Associated Species: *Dasineura pteridis*

This gall midge forms small dark swellings on edges of frond pinnulets. Galls start off green but turn brownish-black. Each gall contains one larva. Sometimes called 'Little black pudding galls'.



**Host: Bramble/ Llwyn mwyar duon species, *Rubus fruticosus* agg.**

Associated Species: *Stigmella aurella*

A very common leaf mine on Bramble species. The mines can cross the leaf veins and midrib and are long and winding. The frass within the mine is of varying thickness.



**Host: Cleavers/ Llau'r offeiriad, , *Galium aparine***

Associated Species: *Cecidophyes rouhollahi*

This gall mite causes the leaves to become thickened, rolled inwards. The gall mites are enclosed in hairs.



**Host: Clover species, *Trifolium* sp.**

Associated Species: *Agromyza nana*

The larvae of this fly species create a blotch mine on the upper surface of Clover leaves. The yellow larva is often visible within the mine.



**Host: Common Nettle/ Danhadlen boeth, *Urtica dioica***

Associated Species: *Dasineura urticae*

The galls caused by this gall midge can be found on leaves and stems. Individual swellings can be up to 8mm but the galls commonly fuse together. Larvae develop in the swelling and when mature they leave the plant via a slit on the upper surface. The larva then pupates in the soil.





Associated Species: *Puccinia urticata*

Nettle Rust Fungus, *Puccinia urticata* found on stems and leaves. Common and widespread.



**Host: Cow Parsley/ Gorthyfail, *Anthriscus sylvestris***

Associated Species: *Phytomyza chaerophylli*

The leaf mine of the fly, *Phytomyza chaerophylli* often follow the leaf margin to start and then become a blotch. Frass is seen in two untidy lines of separated grains. A black, shiny pupa can be seen in the photograph below.



**Host: Creeping Thistle/ Ysgallen y maes, *Cirsium arvense***

Associated Species: *Urophora cardui*

This picture-wing fly species causes large swellings, up to 10cm, to form on stems. Each gall contains larval chambers where the larvae mature until the Autumn. The galls become woody so adult flies are unable to emerge until the gall starts to disintegrate.



**Host: Fern sp.**

Associated Species: *Chirosia betuleti*

This fly species forms a knot-like gall at the ends of fronds of Lady Fern, Buckler Ferns and Male Fern. Eggs are deposited in the frond tip and larvae tunnel to the stem causing the pinnae to become distorted.



**Host: Germander Speedwell/ Llygad doli, *Veronica chamaedrys***

Associated Species: *Jaapiella veronicae*

This gall midge causes galls to form on the shoot tips. It causes the terminal leaf pair to form a hairy pouch. The pouch contains numerous orange larvae.



**Host: Ground-ivy/ Eidal, *Glechoma hederacea***

Associated Species: *Liposthenes glechomae*

This gall wasp causes hairy, ball-shaped galls to form typically in the leaves but the stem can also be affected. Each swelling contains a larva which will undergo pupation within the gall and emerge as an adult in late Spring. Fresh galls smell of mint.



Associated Species: *Randaniola bursaria*

This gall midge produces 'Light-house galls'. They are up to 4mm high with a single larva per gall. In late summer, the galls fall leaving round holes in the leaf. Galls remain on the ground in winter with larvae pupating inside. Adults emerge in spring.



Associated Species: *Phytomyza glechomae*

This fly larva produces an initial linear mine that then becomes a blotch before becoming linear again. The frass can be seen as fine grains in the linear parts of the mine and as larger grains in the blotch. The pupa is brown and the puparium can often be seen sticking out of the leaf as in the photographs below.





Associated Species: *Puccinia glechomatis*

This rust fungus shows as raised brown dots on the underside of leaves, petiole and stems.



**Host: Hart's-tongue/ Tafod yr hydd, *Asplenium scolopendrium***

Associated Species: *Chromatomyia scolopendri*

The larvae of this fly produce long, narrow mines on the upper frond surface. It can also form mines on Wall-rue and Polypody. The larva usually pupates in the mine.



**Host: Hogweed/ Efwr, *Heracleum sphondylium***

Associated Species: *Erysiphe heraclei*

This is the only mildew affecting Hogweed.



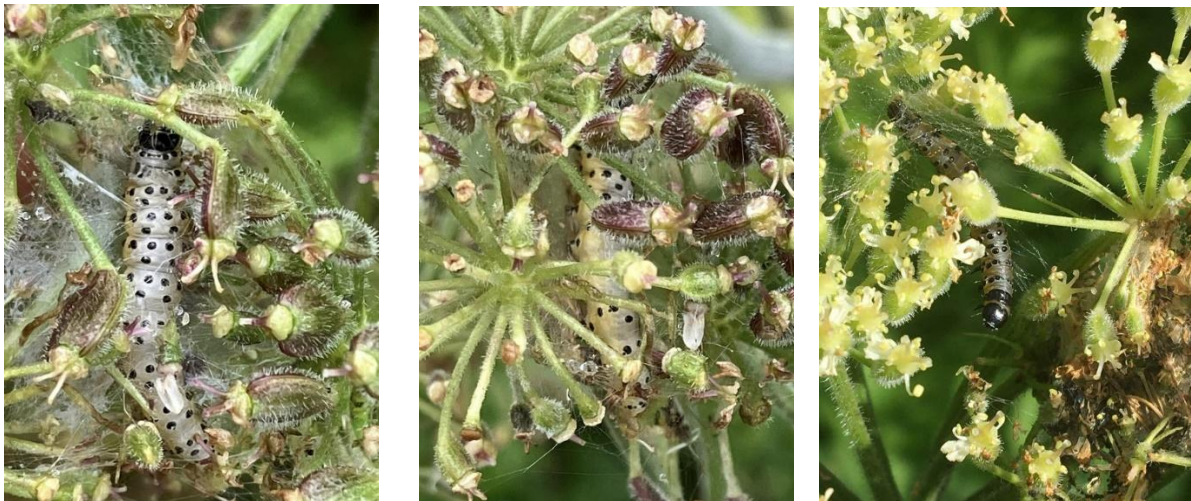
Associated Species: 22-spot Ladybird

If you see Hogweed affected by the mildew, *Erysiphe heraclei*, take a closer look for 22-spot Ladybird larvae and adults. The 22-spot Ladybird feeds on mildew on the upper surface of Hogweed and other umbellifers early in the season, switching to Creeping Thistle and young Oak later in the year. The adult measures up to 4mm long and its wing cases have 20-22 black spots and pronotum has an additional 5.



Associated Species: *Depressaria radiella*

Larval food plant for the Parsnip moth, *Depressaria radiella*. The larvae can be seen in June and July in dense spinnings in the flower heads.



**Host: Holly/ Celynnen, *Ilex aquifolium***

Associated Species: *Phytomyza ilicis*

*Phytomyza ilicis* is a small species of fly (~3mm) that lays its eggs in Holly leaves. As Holly leaves are very tough, the female fly lays eggs in leaves in April-May when they are new and soft. The larva initially tunnels along the midrib and later feeds on the leaf blade where it produces a distinctive blotch that is easy to see with the naked eye. Even though the larvae are only 1.5mm they are still susceptible to parasitic wasps and predation by birds, particularly Blue Tits.



**Host: Horse Chestnut/ Castanwydden y meirch, *Aesculus hippocastanum***

Associated Species: *Cameraria ohridella*

The Horse-chestnut Leaf Miner was first noted in Britain in 2002. The micro moth produces a blotch type leaf mine on upper side of leaves of Horse-chestnut and sometimes Sycamore.





**Host: Nipplewort/ Cartheig, *Lapsana communis***

Associated Species: *Puccinia lapsanae*

This rust fungus produces red blisters and distortion of leaf blades and petioles. Both upper and lower leaf surfaces can be affected by blisters. Most commonly seen on young plants in Spring.



**Host: Oak/ Derwen sp. *Quercus* sp.**

Associated Species: *Andricus foecundatrix*

The asexual generation of this gall wasp cause artichoke or hop galls to form. They represent an enlarged bud and can measure up to 30mm long. A single larva is contained within an inner egg-shaped gall.



Associated Species: Common Spangle Gall, *Neuroterus quercusbaccarum*

Common Spangle Galls are produced in response to the asexual generation of this gall wasp. Galls measure up to 5mm in diameter and have a central pimple and tufts of red hair. Each gall contains one larva. Galls fall off the leaves and over winter in leaf litter. Adults emerge in early Spring and then lay their eggs in Oak buds.



Associated Species: Silk Button Spangle Gall *Neuroterus numismalis*

Silk Button Spangle galls are found on the underside of leaves and are caused by the asexual generation of this gall wasp. It is possible for single leaves to have hundreds of galls. Each gall measures approximately 5mm in diameter and houses one larva.



**Host: Rose/Rhosyn sp, *Rosa* sp.**

Associated Species: *Diplolepis rosae*

This gall wasp lays eggs in a rose bud in the spring and a bedeguar or Robin's Pincushion gall develops in response. Females lay fertile eggs without having mated (males are rare). The gall has a woody core surrounded by branched red or green hairs. There are multiple larval chambers in the core.



Associated Species: *Blennocampa phyllocolpa*

This sawfly causes rose leaflets to form a tight roll. The larvae feed inside the rolls for approximately 2 months, late spring-early summer. The leaflets roll wherever the female prods them but not each roll will contain an egg or larva.



**Host: Rosebay Willowherb/ Helyglys yr ardd gerrig, *Chamaenerion angustifolium***

Associated Species: *Mompha raschkiella*

This micro moth larva initially forms a linear mine with obvious frass followed by a yellowish blotch area. The initial mine often stays close to the leaf midrib. The larva has a dark brown head and legs and a yellowish body. Empty mines turn whitish.



**Host: Sycamore/ Masarnen, *Acer pseudoplatanus***

Associated Species: *Rhytisma acerinum*

This fungus only matures when leaves have fallen. Ascospores are usually discharged in March and April when new leaves unfold. Used to be thought that it wasn't seen often in urban areas due to higher sulphur dioxide levels but distribution may be due to urban tendency to clear fallen leaves which interrupts the fungal lifecycle.



**Host: Wild Carrot/ Moronen y maes, *Daucus carota***

Associated Species: *Kiefferia pericarpicola*

Galls made by the *Kiefferia pericarpicola* gall midge start off green and turn red. They are approximately 5mm diameter and typically occur on the developing fruits. Each gall contains one larva. This gall midge may also use other umbellifers such as Hogweed and Burnet Saxifrage but this is much less common.



**Host: Willow sp, *Salix* sp**

Associated Species: *Rhytisma salicinum*

Generally found on Goat, Grey and Eared Willows. Causes raised shiny black spots. Fungus survives on fallen leaves over winter and infects young leaves in the spring.



**Host: Yarrow/ Milddail, *Achillea millefolium***

Associated Species: *Coleophora argentula*

The larval cases of the micro moth *Coleophora argentula* can be found on the seed heads of Yarrow. Cases are 5-6mm, brown, cylindrical with a grainy appearance from its coating of tiny plant fragments.



**Host: Yellow Rattle/ Cribell felen, *Rhinanthus minor***

**Host: Red Bartsia/ Gorudd, *Odontites vernus***

**Host: Eyebright/ Effros agg, *Euphrasia* agg.**

Associated Species: *Coleosporium tussilaginis*

Keep a look out for the orange patches of this rust fungus on leaves of Yellow Rattle, Red Bartsia, and Eyebright (pictured left to right).

