Moths: those fly by night creatures that come in all shapes and sizes.

Moths and Butterflies are in the scientific Order *Lepidoptera*, meaning 'scaly-wings'. The separation between moths and butterflies is artificial, but in general moths fly mostly at night and unlike butterflies, they do not have a club-shaped thickening at the end of their antennae.

Moths are further divided into two groups (also artificially): 'macro' and 'micro'. There is no biological reason for these divisions, and is mainly for convenience of naming and identification. 'Macros' are usually over 20mm span, but confusingly, a few of the largest 'micros' are little bigger than the smallest 'macros'. The moths in this leaflet are all 'macros'.

The Life Cycle of a Moth

Moths lay their eggs on the leaves of their food plant. When the eggs hatch, the caterpillar (or larva) just eats and eats, until it gains the necessary weight to produce the adult moth. As it grows, the caterpillar will shed its skin up to four times before reaching the pupa stage.

Pupation is a 'resting', in which a spectacular transformation takes place, and at the end of which an adult moth emerges. Shortly after emergence, the wings expand and dry, and the moth is ready to fly off, find a mate and start the cycle once again.

On Shotover, 226 species of 'macro' moth and 72 'micros' have been recorded over the past 20-30 years (making a total of almost 300 species). Current moth recording by *Shotover Wildlife*, in collaboration with regional specialists, is updating our knowledge of the moth diversity on Shotover.

So where are they all? In addition to their nocturnal habits, some have perfect camouflage, which maybe why we notice so few. Starting with some of the biggest, the Hawkmoths, here are a selection that might be seen during the day.

The Poplar Hawkmoth

Laothoe populi (Sphingidae)

The grey and light brown pattern is rather dull, but when at rest the shape is unmistakable with the under-wings staying forward. It comes frequently to light, males usually after midnight and females earlier. Perhaps the most common Hawkmoth.

Food plants for the larvae are Poplars, including Aspen, White and Black Poplar.

Span: 60 - 90mm. Flight: May - early August

Eyed Hawkmoth (see the front cover)

Smerinthus ocellata (Sphingidae)

The eye spots are on the pink hind wing. These 'eyes' are exposed when the moth is disturbed, and it rocks to and fro in an attempt to frighten a potential predator. The colour of the forewing can vary a little from light to dark brown.

Food plants for the larvae are wild and cultivated willows, also ornamental and wild crab apple.

Span: 75 - 90mm. Flight: early May - mid July

Scarlet Tiger

Callimorpha dominula (Arctiidae)

This spectacular moth is a recent additional find by *Shotover Wildlife,* to the list of Shotover moths. It flies by day and night and is often seen resting on leaves in the marshes and damp places.

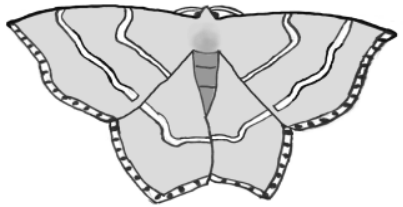
The forewing is a beautiful iridescent black/green with white and yellow spots. The hind wing is red.

Larval food plants are wide ranging, but there is a preference for common Comfrey and Nettle.

Span: 45 - 60mm. Flight: June- July.

Common Emerald

Hemithea aestivaria (Geometridae)



Of the 'Emerald' moths, only the Common Emerald has a brown body, also the combination of chequered wing margins and all wings coming to a single point at the extremity.

Larval food plants: woody shrubs e.g. Hawthorn

Span: 30 - 35mm. Flight: Late June – late July

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Mottled Beauty

Alcis repandata (Geometridae)

Rather variable and little difficult to identify, but one consistent feature is the dark wavy line across the forewing which is distinctively curved in the front half of the wing.

Larval food plants: woody shrubs

Forewing 40 - 55mm. Flight: June - mid August

Heart and Dart

Agrotis exclamationis (Noctuidae)

Larval food plants include a wide range of wild and cultivated herbaceous plants.

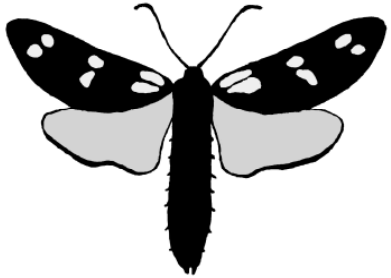
Span 30 - 40mm. Flight: mid May - late August.

About Names

For all things in nature, Latin has been the language of science because it was internationally understood. So if *Macroglossum stellatarum* was recorded on the Continent or in your garden, both would be the Hummingbird Hawkmoth, but the descriptive English name would only mean something to speakers of English: hence the Latin.

Like the 'Heart and Dart' and the 'Silver Y', many of the English names come from the patterns and shapes on the moth's wings and bodies.

Six Spot Burnet
Zygaenidae filipendulae (Zygaenidae)



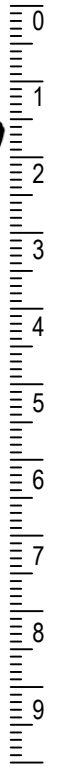
This is another moth that can be seen during the day, and is the only British Burnet with six red spots on each forewing. The underwings are red.

This distinctive moth can be seen in the summer visiting thistles and knapweeds in Slade Camp Field and the meadows near Brasenose Wood.
Larvae feed on Birds-foot Trefoils.
Span: 30 - 40mm. Flight: late June – August.

A spectacular visitor to garden flowers is the **Hummingbird Hawkmoth**
Macroglossum stellatarum (Sphingidae)
This moth resembles a small hummingbird as it flits rapidly from flower to flower, hovering to get nectar with its very long tongue. The orange underwing, which can be seen even when it is hovering, helps to separate it from the two scarce but similar 'bee hawkmoths'.

The larvae feed on Bedstraws and Wild Madder, and eggs are laid on Red Valerian
Span: 40-50mm. Flight: Day or night in most weather conditions. Most are immigrants from Europe/Africa arriving April - November. Those that have over wintered here can be seen flying from January on warmer days.

The moth is reputed to be one of the fastest of flying insects (50kph), and in Europe, is thought to be a messenger of good news. A small swarm was reported flying north across the English Channel on D-Day!



Recording and Identifying Moths

Most moths can be identified without killing them. Light trapping is the most effective technique for recording night flying moths. The best lamps are those which emit part of their output as ultra-violet light. Mercury vapour lamps and fluorescent tubes are often used in light traps. In order to compile a full site inventory, day-flying moths would also have to be recorded. Useful equipment is a 'butterfly' net and a digital camera.

With a good magnifying glass, a good picture book and a little patience, it is possible to identify most macro moths.

The 'micros', being so small, are very difficult to identify and generally require specialist knowledge and equipment.

Shotover Wildlife is a voluntary organisation founded to research and communicate the importance of Shotover Hill for wildlife

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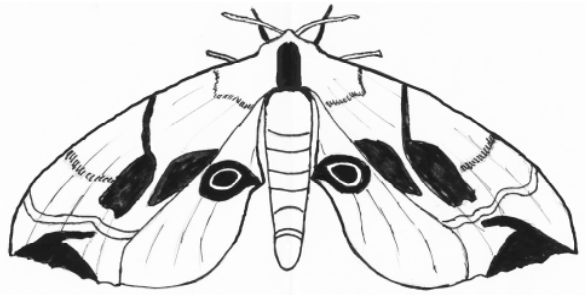
MOTHS

on SHOTOVER



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