



Birmingham & Black Country  
Biodiversity Action Plan

# GMS moth tips 2



## Identification of macro-moth families and sub-families

### Introduction

This guide is intended for use by Garden Moth Scheme (GMS) recorders and other British and Irish moth enthusiasts who are using moth traps to capture moths overnight. It is for those who already have some understanding of moth taxonomy and morphology but struggle to easily home-in on which moth family or sub-family they are trying to identify. For further information about how to start out see [www.gardenmoths.org.uk](http://www.gardenmoths.org.uk).

The guide should be used with the *Field Guide to the Moths of Great Britain and Ireland* by Waring, Townsend and Lewington, *British Wildlife Publishing* (2003 or 2009 revised edition) (WTL) or the *Concise Guide to Moths of Great Britain and Ireland* by the same publisher and authors. These excellent guides provide comprehensive coverage of nearly every one of the 800 or so species of larger moths, known as macro-moths. However, for those who are not familiar with the various moth families and faced with several unknown moths, looking right through WTL each time is a daunting and time-consuming process. This guide provides photographs and useful pointers to all of the various groups of macro-moths and follows the colour coding of WTL for ease of cross-referencing. For completeness, it also includes families that fly by day and are rarely caught in moth traps.

For each group of moths the guide includes photographs at rest and identification tips, together with an additional information box showing any similar looking groups and the number of species in that family or sub-family. For example, the clearwings:

No. of species: 15

Similar groups: various wasp species

## Swift moths (Hepialidae)

Caddis fly shaped with very short antennae. No proboscis so do not feed at flowers or sugar. Largely crepuscular.



Ghost Moth - female



Orange Swift



Map-winged Swift

No. of species: 5

Similar groups: none

## Leopard moths and the Goat Moth (Cossidae)

Large and caddis fly shaped. No proboscis and are nocturnal.



Leopard Moth

No. of species: 3

Similar groups: none

## Burnets and foresters (Zygaenidae)

Do not occur in moth traps and therefore not in the GMS. Day-flying with semi-clubbed antennae. Foresters are metallic green and burnets are mostly black with red spots. They have a proboscis, and are attracted to flowers in wildflower meadows.



Six-spot Burnet



Narrow-bordered  
Five-spot Burnet



Forester

No. of species: 10

Similar groups: none



## Clearwings (Sesiidae)

Do not occur in moth traps and therefore not in the GMS. Day-flying and wasp-like except for the lack of a waist between the thorax and abdomen and wings have a dark border with cilia and discal spots. They have a tuft of hair at the tip of the abdomen.



Curren Clearwing



Welsh Clearwing



Yellow-legged Clearwing

No. of species: 15

Similar groups: various wasp species

## Eggars (Lasiocampidae) and close relatives

Usually large, hairy and stout-bodied, with small eyes and short legs. Wings are broad and round with two cross lines. No proboscis. Males have strongly feathered antennae and in some species are day flying.



December Moth



Lackey



Drinker

No. of species: 14

Similar groups: none

## Hook-tips (Drepanidae)

Quite small and lightly built, with no proboscis. Most rest with wings spread and all but Chinese Character have hooks on the tip or apex of the wings.



Scalloped Hook-tip



Pebble Hook-tip



Chinese Character

No. of species: 7

Similar groups: Geometridae and Beautiful Hook-tip (Noctuidae)

## Lutestrings (Thyatiridae)

Size and build similar to noctuids. Usually after landing they rest with wings spread and then settle with wings folded. Forewings usually with wavy crosslines and small stigmata. Nocturnal with proboscis.



**Buff Arches**



**Common  
Lutestring**



**Yellow Horned**

**No. of species: 9**

**Similar groups: noctuids**

## Geometrid moths or geometers (Geometridae) – 300+ species

Butterfly-like Lepidoptera, usually with slim bodies and wings held spread. Those that rest with all four wings showing have patterning extending across all four wings. Those that rest with hindwings hidden under forewings, usually have mostly unpatterned hindwings. Larvae popularly known as loopers or inch-worms due to their method of locomotion during which they arch their backs. The geometrids can further be sub-divided into the following sub-families.

### Emeralds (Geometrinae)

Usually rest with all four wings spread and visible. Fore and hindwings are green, but this colour fades quickly, so that some older individuals can appear almost white. Most have two paler or darker cross-lines across their wings. Nocturnal and attracted to light.



**Common Emerald**



**Large Emerald**

**No. of species: 10**

**Similar groups: Light Emerald  
(Ennominae)**



## Waves (Sterrhinae)

Small and delicate with wings bone-coloured, cream or brown with a pattern of fine, wavy cross-lines. Usually rest with all wings spread. Mainly nocturnal and sometimes seen at flowers.



**Blood-vein**



**Small Blood-vein**



**Riband Wave**

**No. of species: 40**

**Similar groups: some other species in Ennominae**

## Carpets (Larentiinae)

Small to average size, but with a light build. Usually have characteristic triangular resting position with wings spread flat, but with hindwings hidden under forewings. The hindwings are usually less well-patterned than the forewings, which have an intricate banded pattern. Mostly nocturnal, but often disturbed by day.



**Garden Carpet**



**Small Phoenix**



**Red-green Carpet**

**No. of species: 116**

**Similar groups: none**

## Pugs (Larentiinae)

Small and delicate with wings held flat and hindwings usually partly concealed by forewings to form a shape distinctive of this group. Most are nocturnal coming well to light, flowers and sugar. Often grey or brown, obscurely marked and can be difficult to identify.



**Bordered Pug**



**Brindled Pug**



**Double-striped Pug**

**No. of species: 52**

**Similar groups: none**

## Thorns, beauties, etc (Ennominae)

A variable group, often large with thicker bodies than other geometrids. Patterns are usually less detailed than on carpets and the wing edges are often scalloped. Some females of winter species are flightless. Attracted well to light, but rarely to sugar and flowers. Most species rest with all wings spread, but a few rest with wings together vertically above the body.



Purple Thorn



Swallow-tailed Moth



Mottled Beauty

No. of species: 93

Similar groups: none

## Hawkmoths (Sphingidae)

Large and powerfully built moths that sometimes migrate large distances. Forewings usually long, narrow and pointed, with much smaller hind wings. Some species feed from flowers while hovering like hummingbirds and some do not feed at all. Nocturnal species come well to light.



Pine Hawkmoth



Poplar Hawkmoth



Small Elephant Hawkmoth

No. of species: 26

Similar groups: none

## Prominents and kittens (Notodontidae)

Moderately built moths with short furry legs. Their strong markings make them popular with moth trappers. Nocturnal and do not feed, but strongly attracted to light. Most rest with their wings roof like over their body, rather like noctuids, but usually have noticeable tufts along the trailing edge of wings that show along the top of their 'backs' when resting.



Sallow Kitten



Pebble Prominent



Pale Prominent

No. of species: 30

Similar groups: plusias



## Tussocks (Lymantriidae)

Fairly large moths, with forelegs noticeably long and furry, held outstretched when at rest. Wings are often broad and rounded. Males have feathery antennae. Do not feed, but come well to light. Two species (vapourers) have flightless females and day-flying males. Several other species are mainly white, have irritant hairs and should not be touched.



Vapourer

Pale Tussock

Black Arches

No. of species: 11

Similar groups: none

## Tigers and footmen (Arctiidae) – 34 species

### Footmen (Lithosiinae)

Slim moths with wings held folded back over their body in a similar way to a noctuid. Forewings long and narrow, hindwings broader, usually coloured grey, cream or orange. Wings often lacking markings. Many species feed at flowers while all come to light.



Rosy Footman

Common Footman

Four-spotted Footman

No. of species: 16

Similar groups: none

### Tiger moths (Arctiinae)

Mostly of stocky build with strong patterns of bright warning colours; white, black, red and yellow. No proboscis. Some are day flyers. The night flyers come readily to light.



Garden Tiger

Buff Ermine

Muslin Moth

No. of species: 18

Similar groups: none

## Nolids (Nolidae)

Small, pale-coloured moths that can easily be mistaken for micro-moths. They have small raised tufts on the forewings and come readily to light.



Short-cloaked Moth

Least Black Arches

No. of species: 5

Similar groups: some micro-moths

## Noctuids (Noctuidae) – 400+ species

A large and very varied group of moths that is still being studied by taxonomists and is difficult to split into recognisable groups. Most species are stocky, medium to large size and nocturnal. They usually come to flowers and sugar, with some species more strongly attracted to sugar than light. Forewings cover hindwings and are either held roof-shaped over body, or flat over body with forewings partly overlapping each other. Wing markings usually include obvious reniform and orbicular stigmata (only pyralid micro-moths and lutestrings share these marks).

### Darts and clays (Noctuinae)

Forewings usually long, narrow and square-ended with obvious stigmata. Wings folded flat over body, with one forewing partly covering the other, in 'pen-knife' fashion.



Heart and Dart

Large Yellow  
Underwing

Autumnal Rustic

No. of species: 66

Similar groups: other noctuids



## Brocades, rustics, etc. (Hadeninae and others)

Wings held folded over the body in a shallow 'roof-like' fashion, sometimes with a slight overlap and not quite meeting. Usually prominent stigmata on the forewings. A large and diverse group that is difficult to split into smaller simpler groups.



Pine Beauty



Barred Sallow



Dark Arches

No. of species: about 65

Similar groups: lutestrings, other noctuids

## Wainscots (Hadeninae, Amphipyrinae)

These moths have similar wing patterns and colours but are from two different sub-families. All have pale brown or whitish wings streaked lighter or darker. Stigmata usually absent. Well camouflaged in their natural grassland and reed-bed habitats.



Smoky Wainscot



Common Wainscot



Large Wainscot

No. of species: 37

Similar groups: other noctuids

## Daggers (Acronictinae and Bryophilinae)

Usually grey with black and white markings. Often with black dagger markings on wings. Well camouflaged against lichens, walls and rocks, and can be found in these habitats by day.



Sycamore



Grey Dagger agg.



Marbled Beauty

No. of species: 17

Similar groups: other noctuids

## Plusias (Plusiinae)

Wings are held in steeply sloping 'roof-like' fashion at rest, with crests along the 'back' showing between them. Stigmata are usually not well marked, but wings have prominent metallic silver, gold or white markings.



**Burnished Brass**



**Silver Y**



**Dark Spectacle**

**No. of species: 25**

**Similar groups: prominents, other noctuids**

## Snouts and fan-foots (Hypeninae and Herminiinae)

Slender bodies with flat triangular shape due to forewings resting flat rather like carpet moths. On the front of the head are prominent palps, sometimes curved to form a 'snout'.



**Snout**



**Fan-foot**



**Pinion-streaked Snout**

**No. of species: 22**

**Similar groups: none**

## Misfits (Stiriinae, Catocalinae) and others

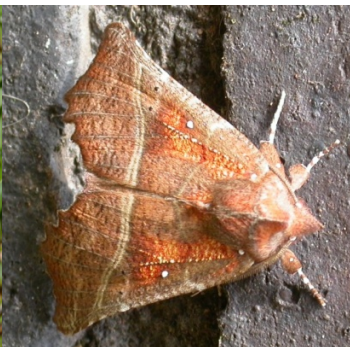
A really variable group of sub-families that do not look much like noctuids. Variable in shape and size, and some look more like geometrids or micro-moths (particularly pyralids). If in doubt over an identification, look in this group.



**Green Silver-lines**



**Red Underwing**



**Herald**

**No. of species: 65**

**Similar groups: geometrids and micro-moths**