

### 3. Moth Recording Equipment

The following equipment is recommended for a beginner to get started:

- Moth trap - however, even this is not necessary to start - you can use alternative methods to conventional light traps (e.g. sugar, blossom, outdoor lights; these methods are described in sections 3.5 - 3.10) before you decide to spend money on a trap.
- Moth identification guide (recommendations listed below)
- Sample pots (the pot should always be substantially larger than the moth)
- Net
- Torch

Many nocturnal moths are attracted to artificial light, although there is still no convincing scientific explanation as to why this is so. The easiest way to attract moths to artificial light without using moth trapping equipment is to leave outside lights on and drape a white sheet over lit walls or fences. You can also leave your curtains open so that moths settle on the outside of the window. One recorder identified 100 species on the outside of a window over course of several years! Bathrooms also make good moth traps, leave the light on and the window open and record what comes in. Low energy light bulbs used both indoors and outdoors are just as good at attracting moths as the conventional light bulbs. However, it is more effective and efficient to use moth traps.

#### 3.1 Moth Traps

There are three basic kinds of moth traps (also called light traps), although there is a growing range available. Which you use is a balance between using a trap which attracts and retains high numbers of moths but is costly and bulky, against one which attracts fewer moths, which is not a bad thing for a beginner, but is cheaper and more portable. For garden trapping, there is the issue of nuisance to consider. Some moth-trap bulbs generate a lot of light, others e.g. actinic bulbs (a fluorescent tube producing actinic light) give off little visible light and therefore, are much less likely to annoy your neighbours. The principles of use are the same for the three: they are put out in suitable habitat at night; the light attracts moths, of which a certain percentage will fly inside the trap. Traps are typically filled with cardboard egg trays, which provide a rough surface giving secure footholds, and many dark crannies where moths can hide. Most moths quickly settle down, perhaps assuming it is dawn. The egg trays can be inspected either during the night or the following morning, and the moths can then be released unharmed.

Below is a summary of the advantages and disadvantages of each trap type.

#### Robinson trap

The Robinson trap uses either a mercury vapour (MV) bulb or sometimes a 40 watt actinic tube, set on a round, plastic container. Large numbers of moths are caught in this type of trap and the moths tend not to escape. The disadvantages of Robinson traps are that the trap does not collapse and therefore takes up a lot of room when transporting and storing. Additionally the trap requires a 240V



power supply (mains electricity or a generator). However, perhaps the biggest constraint is that the Robinson trap is expensive, costing around £300.00.

### Skinner trap

Two types of Skinner trap are available, an MV and an actinic version. The MV type has the same electrics as a Robinson trap set on a square box, typically made of plywood. The actinic version uses a horizontal fluorescent tube. It can normally be collapsed to enable easy storage and transportation, and it is cheaper (around £145) than a Robinson trap. The MV type should attract as many moths as a Robinson trap but is not as efficient at retaining them. The actinic version will not attract as many moths. The MV version requires a 240V power supply (mains electricity or a generator) while the actinic version can also be run off a 12V car battery.



### Heath trap

A fluorescent tube producing actinic light is set vertically upon a small rectangular box, typically made of metal. This trap is easy to transport and store because it flat-packs. The trap runs off a 12V battery or mains electricity. Although the trap attracts significantly fewer moths than the other models, it still traps a good variety of species and is the cheapest option of the three, costing around £120.

Something else to bear in mind is the cost of running your moth trap. It would cost more in electricity to run a 125W or 250W MV bulb compared to a 12W actinic bulb, not to mention the potential annoyance to your neighbours!



Another option is to make your own moth trap; Anglian Lepidopterist Supplies has produced a handy guide with instructions on how to make one. **We strongly recommend that you buy the electrics ready wired.**

### 3.2 Moth Trapping Tips:

- Actinic light sources work particularly well in places where there are few competing light sources - in built-up areas MV bulbs are better, but actinic's can still be useful especially if your neighbours are light sensitive!
- Think about where you should set your trap - use habitat boundaries to get a broader mix of species, preferably in an open, but sheltered place. The site should be shaded from the early morning sun.
- Place the trap on an old white sheet, spread out on the ground. This is a good way to find moths that land short of the trap and prevents them being trampled on.
- The highest catches are on mild, cloudy, still nights with no moon. Fewer moths fly when there is a full moon. Steady drizzle will often improve catches, but heavy rain and strong wind is best avoided.
- Always ask permission of land owners before moth recording. It is also good to warn your neighbours / local people about what you are doing to ensure good relations.
- Beware of leaving moth-trapping equipment unattended at night, as it may attract unwanted attention and could be damaged or even stolen. Generators are at a particularly high risk.

- Check the trap as early as possible in the morning before the sun shines directly on the trap heating and unsettling the moths inside. This also means you can collect moths that have landed near to, but not in the trap before they fly off or are preyed upon by birds.
- If you don't have time to unload the catch first thing, site the trap in or move it to a cool, shaded position, and block the entrance with crumpled tissues or rags (a tea towel is ideal). Covering the trap with a sheet can also help.
- If you run a trap in the same place on consecutive nights, release the moths away from the line of sight of the trap so that the majority aren't re-caught immediately. Although moth trapping doesn't directly harm moths, they are unable to get on with the important tasks of feeding and reproduction while confined.
- Avoid touching the moths when you inspect them, as you may harm them. To put them in a container give the egg tray a sharp tap to dislodge them or gently lift the moth from underneath using a pencil, or rough cardboard tray, as they will grip onto rough surfaces.
- Release moths at dusk, or keep them (still on egg trays) in a part open container in a sheltered place out of the reach of birds etc. from which they can fly out by themselves at night. If you need to release the moths during daylight, place them among vegetation where they can hide away from birds or other predators. If you do this regularly it is a good idea to vary the release location so that birds do not learn the location of "fast food"!
- Species which need to be stored for expert identification can be kept for a day or two in pots in a fridge, and then released unharmed. Moths are cold blooded so keeping them cool helps them to conserve energy and prevents them from damaging themselves flapping around inside pots.
- Ensure that you know which rare or migrant species your County Moth Recorder may wish to see before accepting your record. It is a good idea to keep very interesting moths in pots which can be checked with your County Recorder (for further details see section on verification below.)
- When recording moths the protocol is that the date used for any record is the night the trap was set, not the morning after.

### 3.3 Getting Out and About

Although almost all moth recorders trap regularly in their own and friends/relatives gardens, moth recording of the wider countryside is very important. You can encounter different species in different habitats and you may find rarer species.



Many traps can be run from a mains electricity supply but when trapping away from the mains, there are two options:

### 3.4 Power sources

**12V-car battery.** These can be used to power actinic tubes (e.g. Heath trap). An actinic light source will reduce the numbers of moths caught, but some species appear to be more attracted to actinic than MV traps. For reasons not fully understood, this is particularly true of moths from the geometer family.

**A generator.** This is the more expensive and usually less portable option compared to batteries, but a generator is a very effective option for recording moths in the wider countryside as they can be used to power MV moth traps, and can run two or more traps together. If you want to transport generators a long distance from your car, a fishermen's trolley with wide wheels can be very useful.

It is important that in bad weather all connections are waterproof. (Waterproof connections can be obtained from many suppliers) and that you use a circuit breaker with mains electricity and generators. Large fishing umbrellas can be used to protect generators from the rain, although care is needed as the exhaust will get hot. Actinic tubes run relatively cool, and hence can normally be used unprotected on wet nights (provided the electrics are waterproof), but MV bulbs run hot, and should be covered with either a bulb guard or a pyrex mixing bowl to avoid the unlikely event of bulb fracture.

### **Some recommended sources for moth traps and other equipment**

#### **Anglian Lepidopterist Supplies**

A and J Clifton, Station Road, Hindolveston, Norfolk, NR20 5DE, UK

Tel/Fax: 01263 862068

email: [Jon.Clifton@btinternet.com](mailto:Jon.Clifton@btinternet.com)

[www.angleps.com](http://www.angleps.com)

#### **B&S Entomological Services**

37 Derrycarne Road, Portadown, Co. Armagh, BT62 1PT, Northern Ireland

Tel: 077 6738 6751 or 028 3833 6922, Fax: 028 3833 6922

email: [enquiries@entomology.org.uk](mailto:enquiries@entomology.org.uk)

[www.entomology.org.uk](http://www.entomology.org.uk)

#### **Watkins & Doncaster (Moths Count Business Friend)**

PO Box 5, Cranbrook, Kent TN18 5EZ

Tel: 0845 833 3133, Fax 01580 754054

email: [sales@watdon.co.uk](mailto:sales@watdon.co.uk)

[www.watdon.com](http://www.watdon.com)

#### **Acknowledgements**

The ongoing Moths Count project is supported financially by The Redwing Trust, Natural England, Natural Resources Wales, Northern Ireland Environment Agency, Royal Entomological Society, Scottish Natural Heritage Forest Services, Forestry Commission and many other individuals and partners. Business partners include Nectar Creative and Watkins & Doncaster.