

## NATIONAL MOTH RECORDING SCHEME

### Micro-moth Verification Guidelines

#### Introduction

The following 'Verification Guidelines' have been devised and compiled to help recorders and Vice-county Recorders (VCRs) decide which micro-moths need careful consideration before records should be submitted to the National Moth Recording Scheme. Some may find it useful to use these guidelines in conjunction with the vice-county distribution maps currently available online on the Butterfly Conservation website (<https://butterfly-conservation.org/moths/moth-resources-and-downloads/micro-moth-distribution-maps>). In some cases the Regional, or even the National panels, that have been put in place to support the VCRs may need referring to.

There will be plenty of the larger micro-moths, such as *Pleuroptya ruralis* (Mother of Pearl), *Anania hortulata* (Small Magpie), *Hypsopygia costalis* (Gold Triangle) and *Pterophorus pentadactyla* (White Plume Moth), where the moths can be easily identified and where no similar looking species occur. Typically, these records will be accepted as submitted and only those which occur outside their usual flight period, habitat or geographical range are likely to be questioned. However, it will assist the VCR if these checks are made to rule out any potential misidentifications before submitting the record. This sort of information is readily available in books and on-line facilities. Once experience has been gained with the different families there will be many species that can be accepted without further evidence being required. If a recorder has had the species checked before it is unlikely that subsequent records of the same species will need querying again (unless dissection is required or, perhaps, the species is very scarce).

#### **Why additional evidence may be needed:**

Many micro-moths are not straightforward to determine. In these cases it is best to assume that species that have not been encountered before will be best retained as a photograph (or in some cases a specimen, see the guidelines) for examination by the VCR or an experienced micro-moth recorder.

Sometimes a photograph will not suffice and a specimen will be required, for example identification can often hinge on hindwing shape and markings, or other parts of the moth's structure that are not readily shown on a photograph. If in doubt, submit a photograph whilst retaining the live moth (most can be kept alive for a few days in an airtight dry pot in a fridge). It should be borne in mind that the relevant VCR/expert may not be able to respond immediately. The on-line maps (mentioned above) should help identify potential new vice-county records; alternatively the relevant VCR may be able to provide information on a species' status in the county. **All new vice-county records should be supported by one or more good quality images or, in some cases, a specimen.** Please bear in mind many species cannot be determined without a specimen (see guidelines). If a scarce or very scarce species is suspected and a specimen is likely to be required for accurate determination, please ensure that only one, or at most a very few, specimens are retained.

When taking photographs of micro-moths, ensure that the moth is not too worn (this can make identification by this means difficult or impossible). It is important that the moth is clearly visible, that the picture is not blurred and that, preferably, two images from different angles are submitted. An idea of scale should be included in the image if possible. Additional information, such as capture date and location will help aid determination. If subsequently submitting a record when the

moth has been determined by a third party, ensure that the determiner's name is given along with that of the recorder.

### ***The use of the Verification Guidelines***

The criteria listed below aim to provide a framework for the verification of micro-moths for the National Moth Recording Scheme. These criteria cover the adult moths and also species more regularly recorded as leaf-mines or as larval cases. The criteria are applicable at the UK level, but it may be that local or regional knowledge could be used to adapt individual species gradings.

The grading assumes that moths identified were in a good or adequate condition when originally determined. When assessing submitted records or datasets, consideration is likely to be given to the level of experience and expertise of individual recorders as part of the verification process, for example even very common and relatively distinctive species could be misidentified by novice recorders (it is also worth noting even more experienced recorders can make mistakes). The relevant VCR should be involved in the verification process (and, where relevant, in identification) and given the opportunity to view a specimen or photographs if required (an exception to this is where an alternative local arrangement, in liaison with the VCR, has been made).

Additional evidence, such as flight period, available habitat or larval foodplant, should be used when verifying records, particularly for scarcer or more unusual records. These details are not given in the tables below. In the event that a species has been bred from a known foodplant, this may downgrade the verification evidence required for some Category 2 - 4 species and advice should be sought from the VCR/relevant expert. In the tables that follow a few very brief notes are given in a comments field, for example highlighting species that are considered Extinct, and, where relevant, with an indication if the presence of a larva, pupa or cocoon is required to confirm leaf-mining species.

### **The Verification Criteria**

**Important note: All new Vice-county records should be supported by one or more good quality images showing all of the critical identification features or by a specimen (see guidelines).**

#### **a. Adult moths:**

**Category 1:** Generally distinctive species unlikely to be confused with other species. *Usually accept record **within documented range and usual occurrence period** for the region; otherwise one or more good quality photographs, or possibly a specimen, would be required. Applies to species which will quickly become familiar to those gaining experience in micro-moths.*

**Category 2:** Can be confused with other species. *Good quality photographs or possibly a specimen will be required if the recorder is not familiar with the species. If records have previously been submitted and accepted, Category 1 criteria may apply subject to confirmation from your VCR. **Worn examples are likely to be unidentifiable** unless a specimen is retained for microscopic examination.*

**Category 3:** Very scarce species (includes very scarce adventives/immigrants). **A voucher specimen may be required** by your VCR (seek advice before releasing the moth). *A good set of photographs showing all critical identification features clearly may suffice in some cases.*

**Category 4:** Dissection required.

**N.B.** Because nearly all of the Nepticulidae look very similar no attempt has been made to add an adult code.

**b. Larval cases:**

For many larval case records (and particularly for the Coleophoridae), great care should be taken to ensure the foodplant is correctly named. A wrongly named foodplant will almost certainly lead to an incorrect moth determination. Pabulum is used below to indicate that some larvae (such as in the Psychidae) feed on non-plant material.

**C1:** Same as Adult Category 1.

**C2:** A good quality photo or specimen of the case and plant/pabulum is required.

**C3:** A good quality photo or specimen of the case and plant/pabulum and the bred moth is required.

**C4:** As in C3 and the moth requires dissection.

The case must be well developed and, with the Coleophoridae, feeding should be observed (larvae can fix their cases away from the host plant). Information on the style of feeding (e.g. peppering leaves, consuming large parts of a leaf etc.), the time of year when the fully-fed case occurred and habitat, amongst others, can all assist with identification.

**c. Leaf-miners:**

**Category A:** Accept record without the need to see the actual leaf or a good photo.

**Category L:** Either the leaf or a good photograph required.

**Category R:** Moth needs to be reared and, in some cases, possibly dissected.

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