



DEVON MOTH GROUP

Please reply to: The Secretary/Treasurer
Roy McCormick
36 Paradise Road
TEIGNMOUTH
Devon TQ14 8NR
Telephone: 01626 779543
181525131225.devvm@talktalk.net

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After a run of warm months, July and, particularly, August have been disappointing. The Jet Stream has delivered wave after wave of Atlantic fronts across the South West bringing cool, windy and often wet conditions and putting the dampeners on what was starting to look like a good summer for moths, as well as forcing the cancellation of one of our field meetings.

Nevertheless, there have, as always, been some exciting records. Phil Barden caught a single *Tuta absoluta* (image right) on 9th June at Bere Alston, which is new to Devon. This South American species has been spreading rapidly in Europe over the past decade and, only a month after Phil's record, Bob Heckford found larvae of the same species on tomato plants at a Devon garden centre (see article on p.2 for more details).



Tuta absoluta (Phil Barden)

Also new to Devon, and indeed to the UK, was an adult *Ophiusa tirhaca* (image right) found indoors on a badminton court at a Plymouth sports centre on 3rd July by Matt Gough. This southern European species is not expected to occur in central or northern Europe, so its occurrence in Devon, especially indoors, suggests that it arrived here with (presumably inadvertent) human assistance.



Ophiusa tirhaca (Matt Gough)

Among native Devon moths, Ieuan Blackmore caught *Photedes fluxa* Mere Wainscot at Baggy Point, Croyde on 17th July. This is a very rare moth in Devon with only five previous records in the Devon Moth Group database and Ieuan's sighting is only the second ever in VC4, after one in 1960!

Another good sighting was a *Heterogenea asella* Triangle trapped in Shaugh Prior on 5th July by Andy Trout. There are only 15 previous records in the DMG database of this woodland species and the majority of these are of larvae. Indeed Bob Heckford recorded Triangle larvae in this area in 2004 and 2006. Andy's record is only the second adult sighting of this species in Devon this century.

Richard Fox

Members of Council: Richard Fox (Chairman) Nicola Bacciu (Membership & Distribution) Roy McCormick (Secretary/Treasurer)
Barry Henwood (Recorder), Rob Wolton (Conservation), Phil Dean (Ordinary member), Rob Price (co-opted, Publicity)

www.devonmoths.org.uk

Tuta absoluta (Meyrick, 1917) (Gelechiidae) arrives in Devon

As mentioned earlier in this Newsletter, Phil Barden had one individual of *Tuta absoluta* at light at Bere Alston on 9 June, the first Devon record. On 13 July I found several larvae mining leaves and shoots of tomatoes *Lycopersicon esculentum* (Solanaceae) at a local Garden Centre, possibly the second Devon record.

Tuta absoluta is a native of South America that was first found in Europe in Spain in 2006. It has since been found in a number of European countries. The larva can be a serious pest. It also feeds on leaves of other species of Solanaceae, including potato *Solanum tuberosum* and Black Nightshade *Solanum nigrum*, but as far as I am aware it has not (yet) been recorded feeding on anything other than tomato in the British Isles.

The first British record was in 2009 (Homan, R., 2010. *Tuta absoluta* (Meyrick, 1917: Lep.: Gelechiidae): an adventive species new to Britain. *The Entomologist's Record and Journal of Variation* **122**: 31–32) when a larva was found on 20 December 2009 mining a tomato, just below the surface of the skin. The tomato was in a pack that had been bought in a supermarket in Cheltenham, Gloucestershire a few days earlier. The moth emerged on 5 January 2010. The species has since been found, often at light, with some presumed to be immigrants because of their arrival at coastal sites during periods of immigrant activity, in at least 15 vice-counties in Great Britain, 13 in England and two in Wales. One specimen has been recorded from Ireland and this has been regarded as an immigrant because it was found at a coastal locality.

Despite this the number of records, there has been no description of the adult published in the British entomological journals (although a photograph of an adult has appeared: Clement. P. 2012. One to watch out for: *Tuta absoluta* (Meyrick) (Lep.: Gelechiidae) apparently free-flying in Worcestershire. *The Entomologist's Record and Journal of Variation* **124**: 13), nor any reference to the full description and illustration of three adults and the genitalia of both sexes in Huemer & Karsholt (2010. *Microlepidoptera of Europe. Gelechiidae II*). Nor has there been any illustration of the larva or its feeding signs, or the pupa, in the British entomological journals. These omissions are surprising especially bearing in mind that *Tuta absoluta* is a pest species.

In general the adult resembles a small (wingspan 10–12 mm) *Scrobipalpa* species, with a dark greyish brown forewing with scattered orange-brown and sometimes white markings. Homan (*loc. cit.*) describes the larva, based on the one larva in the tomato, as 'pink/green, depending on the angle of view. It had a narrow black band across the prothoracic plate, thickening slightly towards the centre where it was divided by a narrow pale band.' There has been no subsequent larval description in the British literature.

Homan's description agrees with that of several larvae that I observed except that the larvae only becomes 'pink', in my limited experience more reddish than pink and then only dorsally, shortly before pupation. Larvae of a number of species of Microlepidoptera, especially in the Gelechiidae and Tortricidae families, become suffused with various shades of pink/reddish/carmine shortly before pupation.

The change in larval colour is shown by the two accompanying photographs. Both are of the same larva. That of the green larva was taken at 15.09 on 17 July, and the other at 12.48 the following day. The larva then spun a cocoon amongst a tomato leaf later that day.



Tuta absoluta larva at 15.09 on 17 July 2017 (left) and 12.48 on 18 July 2017 (right) (Bob Heckford)

The pupa is pale yellowish brown with the head, tips of the wing-cases and last two abdominal segments darker brown and ventrally and dorsally pale greenish yellow anteriorly, becoming dark greenish brown a few days before emergence of the adult.

The larval mines that I found began as short, frass-filled almost linear mines but opened out into larger pale yellowish white blotch mines, often initially with similar diverticula, that are free of frass (see image below). As the larvae extend the blotch mines frass is deposited either in the initial gallery or other small galleries apparently created for this purpose. The larvae vacate the mine to pupate and vacated mines are pale yellowish brown.

As far as I was able to observe, feeding on the leaves did not of itself cause either them to die or adversely affect the plant, but no doubt if all the leaves on a plant had many mines this would affect both the health of the plant and its ability to produce a satisfactory crop of tomatoes.

When the larvae mine flower-shoots, they cause these to droop, and thus effectively destroy the possibility of fruit being formed.

This is a species that will certainly be found in other parts of Devon in the near future. As the title to Patrick Clement's 2012 note correctly states, this is one to watch out for.

Finally, I thank Stella Beavan for enhancing my digital images of the larva.
Bob Heckford



Pupa of *Tuta absoluta* (Bob Heckford)



Vacated larval mine of *Tuta absoluta* (Bob Heckford)

Sponsor a species in the first ever moth atlas of Britain and Ireland

Devon Moth Group members have been working hard over recent years to ensure that Devon is well recorded for the forthcoming Britain and Ireland moth atlas. It promises to be a landmark publication and, in order to raise the funds needed to produce the atlas, Butterfly Conservation are offering the chance to sponsor a moth in the new book. Each species will have only one sponsor and there are two ways to try to get your name against a favourite species, while contributing to a worthy cause:

1. Auction – moth sponsorships are being auctioned online in six batches, each lasting a month. Three auctions have already taken place and the fourth is live now at <http://butrfli.es/mothauction4> where you can bid for the right to sponsor species such as Black-banded, Gem, Orange Moth, Paignton Snout, Scarce Silver-lines, Silver-ground

Carpet and even the humble Small Fan-foot. Each moth has a reserve price of £25, £50 or £100 depending on the species. At the end of the month, the highest bidder for each species will win the right to sponsor it in their own name or to dedicate it to someone else.

2. Reservation – if you don't want to take a chance in the auction and have your heart set on sponsoring a particular species, you can reserve it in advance of its auction batch by paying double the reserve price.

You can find a list showing which species are still available, which are reserved and which have already been sponsored at <http://butrfli.es/mothauction>
Richard Fox

Field Meeting Reports

Andrew's Wood 14.7.2017

An impressive total of 21 people attended this event. The evening was not particularly warm, so two traps were set up in the woodland and one in the open near the woodland edge. Jackie Gage led a walk around part of the reserve at dusk, while waiting for darkness to fall. The rare Heath Lobelia was in flower and duly admired. By the end of the evening a total of 86 species had been recorded, the most interesting being:

<i>Alcis jubata</i>	Dotted Carpet
<i>Brachylomia viminalis</i>	Minor Shoulder-knot
<i>Catarhoe cuculata</i>	Royal Mantle
<i>Celypha aurofasciana</i>	
<i>Deileptenia ribeata</i>	Satin Beauty
<i>Epione repandaria</i>	Bordered Beauty
<i>Eudonia delunella</i>	
<i>Eulithis testata</i>	Chevron
<i>Euphyia unangulata</i>	Sharp-angled Carpet
<i>Hydrelia sylvata</i>	Waved Carpet
<i>Hydria undulata</i>	Scallop Shell
<i>Lampropteryx otregiata</i>	Devon Carpet



Bordered Beauty (Iain Leach)

There were also some "crowd pleasers" for those new to moth trapping such as:

<i>Deilephila elpenor</i>	Elephant Hawk-moth
<i>Geometra papilionaria</i>	Large Emerald
<i>Ourapteryx sambucaria</i>	Swallow-tailed Moth
<i>Thyatira batis</i>	Peach Blossom

Overall it was a most enjoyable evening with plenty of moths to see. Participants gradually left as the night moved on and we finally finished packing up at about 01:00. Thank you to Jackie Gage (Devon Wildlife Trust, reserves officer) for allowing us to hold the event and driving the equipment onto site.

Barry Henwood

Poole Farm, Plymouth 21.7.2017

The weather leading up to our meeting at Poole Farm was dreadful, with heavy rain and strong winds. Indeed, there was doubt about the meeting actually taking place. A site inspection carried out in the afternoon confirmed there were no health and safety issues, and the decision was taken to go ahead.

The meeting started with a talk about Poole Farm/Derriford Country Park from Chris Avent of Plymouth City Council. Devon Moth Group members have been volunteering help in surveying moth species at the site. Conditions were clear and cold, and although we ran three lights, moths were few and far between. The evening began with small numbers of *Idaea biselata* Small Fan-footed Wave. Among the eleven people who attended, some were comparatively new to moths, including two children, and they were delighted to see *Habrosyne pyritoides* Buff Arches and *Lomaspilis marginata* Clouded Border. Two in number of *Selenia dentaria* Early Thorn and *Perizoma affinitata* Rivulet were recorded, as well as singles of *Lymantria monacha* Black Arches and *Ecliptopera silaceata* Small Phoenix.

By 23.30 things were very quiet and so we called it a day with a total of only 17 species. So the weather proved the winner, as on the same date at the site in 2016 we recorded a total of 86 species! However there was positive feedback from those present, with new moths for some, and the opportunity to find out more about the Poole Farm Project and its aspirations. My thanks to Graham Davey and Chris Avent for their support.
John Boon



Small Phoenix (Iain Leach)

Clennon Valley, Paignton 28.7.2017

Unfortunately, this event had to be cancelled due to poor weather.

Forthcoming events (see www.devonmoths.org.uk for more details)

Friday 8th September 2017 Wembury Point nr Plymouth. Meet at 19.30 at the Wembury Point National Trust Car Park at SX503487. Please phone Dave Gibbon (01752 666231 and 07904129309) in advance, if the weather appears unfavourable.

MOTH NIGHT 2017

Saturday 14th October 2017 Hakeford Farm, Chelfham, nr Barnstaple. Meet at 19.00 at Hakeford Farm at SS614355. Please phone Paul Butter (07807 680455) in advance, if the weather appears unfavourable.