

NORTH EAST ENGLAND BRANCH

Newsletter

Issue 37: SPRING 2018



Butterfly
Conservation

Saving butterflies, moths and our environment



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Spring 2018 Newsletter

Welcome to our newsletter number 37! As I write this it is hovering around freezing outside but the days are getting noticeably longer and there are undeniable signs of Spring starting to appear and we look forward to what we hope will be a good year for our butterflies and moths.

We were saddened to learn that Harry Eales passed away in December after a period of illness. Harry was a prominent entomologist in the North East for many years and made many significant contributions to our knowledge of the region's insects including its butterflies. His friend, Barry Robinson, gives a personal tribute to Harry on page 14 of this issue.

As the older butterfly enthusiasts amongst us pass on or become less active it is vital that we encourage young people to take up the baton and care for these wonderful insects and the habitats they depend on. It is a particular pleasure, therefore, to include a piece by probably our youngest ever contributor, Matthew Wherry. Matthew's poem can be read on page 9 of this issue. I should mention here that the newsletter is printed in black and white but is also posted on our web-site (about 1 month after posting out the printed copies) so if you would like to appreciate Matthew's drawing (and all of the photos in this edition) in full colour, please go to the web-site and download it from there.

You may notice something of a moth flavour to this edition of the newsletter. This was not the result of any editorial decision but, rather, reflects the contributions I received. We welcome contributions on all topics related to the butterflies and moths of the region (and the occasional account of trips and sites outside the region) so if you have something you would like to share with us, please feel free to put pen to paper. Photographs and other illustrations are also welcome but please send these as a separate jpeg file rather than embedding them in your article.

Jonathan Wallace, Editor

Please note that submission deadlines for the newsletter are:

Spring edition: 1st February Autumn edition: 1st September

www.northeast-butterflies.org.uk

Facebook: www.facebook.com/BCNorthEastEngland/

Chairman's Report

Peter Webb

What were your Butterfly or Moth highlights from last year?

It's often the unexpected. In my case a beautifully sunny day in May when I went to Hamsterley Forrest looking for Dingy Skipper and spent half an hour mesmerised watching a Hummingbird Hawkmoth feeding on Bird's-foot-trefoil flowers and only noticed the Dingy Skipper and Small Copper butterflies that were also present after it had flown off.

I'm writing this in January in the middle of what is turning out to be a cold winter and my thoughts turn to the Spring. It was encouraging to read Richard Fox's recent article in which he says that despite their seemingly delicate nature, butterflies and moths are surprisingly resilient to the winter chill.

Different species have evolved different strategies to survive the coldest months and new research has revealed that many UK butterflies actually do better after a cold snap. In years when winter temperatures are unusually warm, many species see a fall in population the following year. The scientists also showed a significant effect of winter temperature for three of the five species studied; Orange-tip, Green-veined White and Green Hairstreak flew earlier in the spring following cold winters. For example, for every 10 days of winter cold (defined as temperatures below 7.2°C) the Orange-tip flight period occurred one day earlier in spring on average.

The majority of branch members are now receiving emailed updates from me about branch activities via the secure Dotmailer account which Butterfly Conservation has set up. If you haven't received these it maybe because you haven't kept Butterfly Conservation updated with your current email address. You can do this by contacting the membership section at head office (membership@butterfly-conservation.org)

Branch membership continues to increase and has now reached 462. We are always pleased to welcome those who are joining after having taken part in the summer's Big Butterfly Count. Since August 28 new members have joined the Northeast England Branch and we would welcome your ideas and support.

The main branch event each year is our Members' Day/AGM and once again this year it will be held at Gibside on 21st or 22nd October. The programme for the day will be advertised once we have confirmed speakers. Please check the website or look for emailed updates for news of other events

As reported in the last newsletter I will be standing down as chairman at the AGM and the branch is looking for someone to take on this role. I intend to stay on the branch committee and will be available to support anyone who is interested in doing it.



Green Hairstreak: will it benefit from the cold weather this winter? Photo: Kyra Wallace

Butterfly Transect and Wider Countryside Butterfly Monitoring report 2017

Brian Denham

Butterfly Transect Report

We started the year with forty seven transects but by the end of the season two of these had not been recorded. For simplicity's sake I have recorded the total number of butterflies recorded on each transect and compared the total number of butterflies recorded on all North East transects with previous years. 2017 was a poor year for number of butterflies seen and this confirmed by the transect results. Total number recorded in 2017 was 20666, for comparison 2012 – 12541 recorded, 2013 – 40395 recorded, 2014 – 36952 recorded, 2015 – 30801 and 2016 – 24702 recorded. These figures do not indicate variation in numbers of various species, which will be covered in the 2017 Summary when it is published later this year.

Whilst the North East England Branch records a good number of transects it would be helpful to add a few new transects to replace those lost. If you would like to record a transect please contact me for details of what is involved. The following sets out the basic requirements:-

Setting up and monitoring a Butterfly transect

- 1) A transect is a repeatable walk of about 1 to 1.5 km through habitat(s) which obviously usually contains butterflies.
- 2) A transect is divided up into a number of sections (max. 14) by types of habitat. Or if the habitat is all the same then by convenient identifiable sections, such as between corners or a length of hedge.
- 3) Ideally a transect should be monitored once per week between the beginning of April and the end of September. The odd missing two or three weeks can be accommodated but the results are more useful and accurate if the full 26 weeks are monitored.
- 4) Transects should only be monitored between 1000hrs and 1700hrs and when suitable weather conditions prevail. This means that you cannot say you will set aside a particular time each week but rather that you must be ready to go when the conditions are suitable.
- 5) Your transect should be relatively close to your home as weather conditions can change rapidly and the cost and time involved in travelling to your transect should also be taken into consideration.

6) A transect should only be set up if you consider that you will be able to continue monitoring your transect for a reasonable number of years. Transect data only becomes of use when a number of years data can be analysed to determine trends in butterfly populations on that particular transect and the UK in general.

Consequently if you work full time and you cannot get to your transect and monitor it during your lunch hour or you are not free to leave your work when conditions are suitable then you should not consider setting up a transect. I always feel that I am putting people off monitoring a transect by specifying the above conditions. It is, however, better to know what you are letting yourself in for before you spend a lot of time setting up a transect only to find that it is not possible to monitor it due to other commitments.

Having decided that you will be able to satisfy the above conditions and you have decided on your transect then you then have to register your transect with Butterfly Conservation and enter details of your transect on the new on line system. Information on using the On Line Transect Walker system can be found by going to www.ukbms.org/mydata/home which will open "welcome to the UKBMS transect walker on line".

Urgently Required

For 2018 and onwards we urgently require recorders for two transects which have been recorded for many years but for various reasons have ceased to be recorded. The first is at Wingate Quarry (map ref. NZ373374) and the second is at Littlewood LNR, near Quarrington Hill (map ref. NZ340376). Anyone volunteering to undertake either of these will be shown around the transects and given advice and guidance on recording.

If you can help please contact Brian Denham 01228 495 062 – denham1935@gmail.com

Wider Countryside Butterfly Survey Report

This survey involves surveying a randomly selected 1 km square. Of the possible forty-six random squares selected for recording by the North East England branch only twelve were assigned to individual recorders and by the end of the 2017 recording season only six of these had actually been surveyed. You will appreciate from this that we desperately need recorders for the Wider Countryside Butterfly Survey scheme.

Surveying your allocated 1 km square does not take up a lot of time and is not difficult. Basically it involves making a minimum of two visits to your square between May and August to count butterflies along two 1 km survey lines running roughly north-south through the square. For more detailed information please go to UKBMS web site at www.ukbms.org and then go to the section on WCBS. WCBS records can now be entered “on line” similar to the transect records.

Below is a list of 1 km squares allocated to the North East England Branch. If you would like to be allocated one or more of the squares please contact me – Brian Denham – 01228 495 062 or by email at - denham1935@gmail.com

Recorders who surveyed a 1 km square in 2017 will see that their square is included in the list below. Optimistically I am going to assume that you are planning to survey your square again in 2018 and I will not allocate a previously allocated square to a new recorder before checking with the 2017 recorder. Let's hope 2018's butterfly numbers are better than the previous few years!

Grid ref.	Location (approx.)	Grid ref.	Location (approx.)
NT9145	7.5 north-east of Coldstream	NZ0393	14 km east of Otterburn
NT9935	7 km north of Wooler	NZ0480	15 km north-west of Ponteland, off A696
NU0436	Nr. Holburn	NZ0510	4.5 km south-west of Greta Bridge, off A66
NU0934	1.5 km south of Wolsingham	NZ0630	0.5 km north-west of Hamsterley Forest Grove car park
NU2404	2.5 km west of Amble	NZ0825	Nr. Copley
NY6662	4 km SW of Haltwhistle	NZ0919	4km north-east of Barnard Castle
NY6849	5 km north-west of Alston	NZ0953	Nr. Shottley Bridge
NY6859	5.5 km SSW of Haltwhistle	NZ1030	2 km south-west of Hamsterley
NY6869	6 km NNW of Haltwhistle	NZ1070	3.5 km north-west of Heddon-on-the-Wall
NY7189	Nr. Hawkope, nr. Kielder Water	NZ1198	6 km south-east of Rothbury
NY7352	5.7 km north of Alston	NZ1212	3 km south-west of Ovington
NY7482	5.8 km south-west of Lanehead, nr. Kielder Water	NZ1427	4 km north-west of West Auckland
NY7691	11.5 km west of Otterburn - Kielder Forest	NZ1579	5 km east of Belsay
NY8063	11 km east of Haltwhistle	NZ2024	Nr. Bildershaw on A68, off A1
NY8288	27 km north-west of Corbridge	NZ2075	Nr. Dinnington off A1
NY8525	5 km south-west of High Force	NZ2159	Nr. Sunnyside on A692
NY8583	Nr. Bellingham	NZ2327	1 km north-east of Shildon ctr.
NY8961	5 km south-east of Haydon Bridge	NZ2425	2 km south-east of Shildon ctr,
NY8974	Nr. Chipchase Castle	NZ2712	0.5 km east of Stapleton
NY9085	Nr. Ridsdale on A68	NZ2712	0.5 km East of Stapleton nr. Darlington
NY9582	4.5 km south-east of Ridsdale on A68	NZ3934	Nr. Hurworth Burn
NY9796	4.5 km north-west of Elsdon on B6341	NZ4048	0.5 km North of Murton off A19
NY9971	Nr. Great Whittington, off A68	NZ4234	Nr. Hurworth Burn

Butterflies - a poem by Matthew Wherry

Butterflies are beautiful
Under the clouds
They seek
The flowers of spring.
Early in the afternoon
Red Admirals look
For flowers.
Lovely butterflies
In the meadow
Each one
Silently flutters away.

Matthew Wherry aged 6 .



The Garden Moth Scheme

Mike Cook

The Garden Moth Scheme (GMS) was established to get standardised data from moth records, which can be used for future study. Because we have a standard trapping routine, because we record when we don't catch anything, and because we ask participants to complete a habitat questionnaire, we have created a database that is very robust and therefore valuable to statisticians who use it. As a result, GMS data has been used in at least five academic papers in peer-reviewed journals; something that I think all GMS participants should feel very proud of!



Small Magpie Moth - one of the species surveyed by the GMS. Photo: J Wallace

In 2003, Dave Grundy (now a tutor for some of the moth courses run by the Field Studies Council) started the GMS. Initially the scheme only covered Dave's own area of the West Midlands, but in 2007, it was expanded to the whole of the British Isles (the United Kingdom and Eire).

The area covered by the GMS is divided into twelve regions, with each region having its own species list, comprising the 233 species in the core list, common to all regions, plus extra regional species. The list for the North East region (County Durham, South Northumberland and North Northumberland) contains 333 species, including some of the easier micro-moths. Each region has a Regional Coordinator who is responsible for distributing GMS documents to participants and receiving completed forms.

Roughly 300 to 350 data sets are added to the GMS database each year, with between 20 and 25 of these coming from the North East Region. In March 2017, there were nearly 1.3 million records of nearly 4.6 million individuals in the GMS database.

The GMS is designed for use by beginners as well as by experienced moth-ers, so difficult species are either omitted from the list or are included as "agg." species, for example Uncertain/Rustic agg.

The GMS lasts for 36 weeks, from the beginning of March until the beginning of November, with each participant being asked to trap weekly from dusk to dawn, on the Friday night if at all possible. If a participant can't trap on the Friday, they can trap as early as the preceding Tuesday or as late as the following Monday. If a participant can trap for at least 27 of the 36 weeks, with no gap longer than 3 weeks, they have produced a valid data set for inclusion in the GMS database.

Participants enter their records on an electronic recording form, an Excel spreadsheet, with species down the left hand side and dates across the top. After each of the 9 week quarters of the 36 week GMS, the recording form is emailed to the Regional Coordinator, and within a couple of months, a quarterly newsletter is circulated to all participants, summarising the data from the previous quarter. Each February or March, an Annual report is published, summarising the data from the previous year.

In early March, there is an annual conference, normally in the Midlands, although it has been as far south as Beaconsfield, in Buckinghamshire and as far north as Northwich in Cheshire.

The GMS is not intended to be a replacement for the system of County Moth Recorders overseen by Butterfly Conservation, indeed participants are strongly encouraged to send all their records, not just records of GMS species on GMS nights, to their CMR.

In the North East region, we have a few moth traps that we lend each year to applicants who are willing to try and complete the Garden Moth Scheme. While not all applicants will be successful, the names of unsuccessful applicants will be at the top of the list for the following year.

This loan scheme is publicised via the membership lists of the Northumberland and Tyneside Bird Club, Butterfly Conservation (North East England), Natural History Society of Northumbria, ERIC North East (Environmental Records Information Centre) and North Pennines AONB Cold-blooded and Spineless Project.

The Butterfly Conservation report "The State of Britain's Larger Moths 2013" states that: "The total abundance of larger moths caught in the Rothamsted light-trap network

decreased by 28% over the 40-year period (1968 to 2007). This trend towards lower moth abundance over time was statistically significant.” We need robust datasets to monitor future trends. If you have a moth trap and record moths in your garden, why not find out more about the Garden Moth Scheme and consider participating. If you do not have a moth trap but you would like to participate, why not apply to borrow a trap.

If you're not sure about your moth ID skills, you can take a photograph and either email it to your County Moth Recorder or post it on either the Northumberland and Durham Moths Facebook Group: <https://www.facebook.com/groups/756560517795505/>

or the Garden Moth Scheme Facebook Group:
<https://www.facebook.com/groups/438806469608527/>

There is an excellent Northumberland Moths web site with photographs of most species that have been recorded in Northumberland: <http://www.northumberlandmoths.org.uk/>

GMS North East England Coordinator: Mike Cook
Email: michael_j_cook@btinternet.com
GMS web site: <http://www.gardenmoths.org.uk/>



Notices

Field Excursion

Saturday 7th July 2018 to Greenleighton Moss, on the edge of Harwood Forest north of Scots Gap. Target species Large Heath and Small Pearl-bordered Fritillary. We will meet at the National Trust car park next to Greenleighton quarry at 11:00am. Grid reference NZ034915. Nearest post code NE61 4JZ which is for Dyke Head Farm. Greenleighton Moss is about 2 miles from the meeting point over rough ground so walking boots are essential and the moss itself is boggy so it is recommended carrying wellies to put on at the site. As the whole trip will take 3 to 4 hours a packed lunch is also recommended.

Contact David Stebbings 0191 2859097 david.stebbing@blueyonder.co.uk for more information.

Additional events and excursions may be planned and details of these will be posted on the events page of the web-site (www.northeast-butterflies.org.uk/events). The Cumbria Branch of Butterfly Conservation has kindly invited members from NE England Branch to attend its events and the programme for these will be posted at <https://butterfly-conservation.org/310/cumbria-branch.html> once it has been finalised.

Please note all field outings are subject to cancellation or postponement at short notice due to weather conditions and we strongly recommend that you inform the excursion leader of your intention to attend so that you can be notified of any changes to the plans.

Members' Day

The date for this year's Members' Day has not been finalised as we are waiting to confirm the availability of speakers but it will be either the 20 or 21 October. It will be held in the Stable Block at Gibside. Confirmed details will be posted on the web-site events page (see above) and in the Autumn newsletter. We will also notify members via the electronic mailing list. If you are not already on this list but would like to receive notifications by e-mail please let us know by contacting the chariman at apwebb546@gmail.com or via info@northeast-butterflies.org.uk.

Harry Eales - a personal tribute

Barry Robinson

“Near Sweethope I got permission to look at a nearby bog which was surrounded by a wood. Around the wood were a number of small fields. I had to walk across one of the fields to get to a gate in to the wood and to the bog. It was early morning and still quite cool. Just two steps in to the field, clouds of Painted Lady butterflies lifted in to the air. They all flew on, 8-10 feet in front of me, and landed again, closing their wings as they did so, and disappeared. Every step across the field was the same. There must have been 10,000 - It was biblical. I walked across the field to the gate, the wood and the bog. I collected the information I wanted from the site in an hour and returned across the same field. There wasn't a Painted Lady to be seen. The temperature had risen and they had moved on.”

Harry Eales, the entomologist, died in December at the age of 74.

I first met him years ago. My brother, Ian Robinson, was doing phone-in programmes and live broadcasts (the “Big Blue Bus”) for the BBC. Harry phoned in. He had a magnificent, mellow, treacle-rich chocolate, bass barbershop voice. He was a natural on the radio and with his knowledge of Northumberland and Durham and the wildlife of the region, he immediately became the go-to Natural History Correspondent.

Harry was born and brought up in Fenham, Newcastle and it was on a school trip that he was attracted to a bright yellow flower which flew off as he bent down to pick it for his mother. He later identified it as a Clouded Yellow. From that moment he was hooked. His Aunt Trudy fed his interest and bought him books from the Observer Series. He collected conkers and sold them at school to buy more books. And so began a lifetime obsession with natural history in general and insects in particular.

Harry's working life began when, at 16, he volunteered for the RAF to train as an Armourer. He left after 6 months owing to a hearing problem. Years later he took lessons and qualified as a Private Pilot. He was very proud to have got his “wings”.

He was an engineering apprentice and then a Miller / Setter at Parson's Repair Division. Later, he became a furniture salesman; it paid better and he had a wife and two children to support.

Harry had a career as a Police Officer for 17 years in the Newcastle Police Force working mainly in the West End of the city. He had been interested in firearms and had been a member of the Northumberland Pistol and Rifle Association from the age of 15. He represented England in international competition in South Africa where he shot antelope but turned down the opportunity to shoot elephant. Ammunition was very expensive so he used his engineering skills and made his own.

Throughout his working life Harry developed his interest in entomology. In the early 60s he was one of the early volunteers of the then new Biological Records Centre (registered as recorder L [Lepidoptera] 42, O [Odonata] 28).

He had a powerful memory and a meticulous, forensic approach to research; he deep-mined available local sources and had, over time, got every issue of "The Entomologist" in batches of 10, through Rowlands Gill library.

His observation, collecting, breeding and recording of species gave him a formidable knowledge of many insect groups. He worked on bumblebees and submitted 14-15,000 bumblebee records to the Biological Records Centre and these contributed to the publication of "The Life of Bumblebees" by Alford in which Harry gets a special mention. Harry was working on his "Bumblebees of Northumberland and Durham" and in the months before his death it was this that kept him going.

Harry recorded, collected, bred and researched butterflies and moths. He helped run "moth nights" for Butterfly Conservation but was particularly interested in the butterflies, moths and insects of upland bogs and heaths. Here, he continued his interest in the Large Heath butterfly and it was while working as a volunteer in the library of the Natural History Society that he learned about funding to help his research. He spent six years studying the Large Heath, work which he had hoped to submit for a doctorate. It wasn't submitted but he did hope that his research would help others.

Harry was the Recorder for Dragonflies and Damselflies in Northumberland and Durham for fourteen years and in 2016 his "Dragonflies and Damselflies of Northumberland and Durham" was published by the NHSN.

Shieldbugs were another group that interested Harry. Visiting a friend and fellow

entomologist, Peter Summers, in Edinburgh he went out to look for the Juniper Shieldbug which had never been recorded in Scotland.

“Must be a female Juniper bush to produce the berries which the shieldbug feeds on. The plant needs to be at least two years old - it takes that long for the berries to develop. Best to search branches at the edges of Juniper stands and those that get most sun.”

They went to a stand of Juniper just outside Edinburgh and; *“I tapped a branch and out fell the 1st and 2nd ever records of Juniper Shieldbug for Scotland.”*

He produced a comprehensive account of shieldbug species in Northumberland and Durham in *The Vasculum*.

His experience and expertise led to site surveying and monitoring contracts with the Forestry Commission, Northumbria Water (12 years) and the Ministry of Defence - he was the Entomological Consultant for the MoD at Otterburn.

Harry was passionate about insects and for him it was a whole-year activity.

“I’ve always regarded recording as work as well as pleasure. In the winter, between recording seasons I would research larval and adult food plants, their locations from local floras, geological and soil maps. From them, I worked out where I might best be able to find species that I wanted to record.”

He found new sites for many species including Emperor Dragonfly, Grayling, Small Pearl-bordered Fritillary, many Shieldbugs and, of course, Large Heath.

He encouraged people to go out and look at new places and he tried to stimulate interest and to attract records.

“There are still places in Northumberland that have rarely been visited by entomologists.”

In later life Harry became a self-confessed, “Grumpy, old bugger”. He had an incredibly dirty laugh and a store of salacious jokes which he was happy to share with others but he was a grumpy old bugger who was obsessed with the natural world and was very generous with his time especially in encouraging, supporting and inspiring others in the

study of various groups.

"We need more hemipterists!"

The last time I saw Harry in the Care Home, he had a copy of "Bumblebees" by Ted Benton by his bed. It was a week or so before he died and he talked about moving his shed, with his engineering gear, down to the home so that he could continue his work in building a model of the Sharps-Borchardt 1878 rifle. He gave details of the gunmaker and the disposal of the original jigs - buried but priceless; other rifles used in the American Civil War, the Luger and the development of the double trigger; bullets and bullet-making; Industrial Melanism; the history of Watson and Doncaster and of the mounting pin and pin-making and the metals used; the New Naturalist books; the Rothschild's animal collection at Tring; EB Ford and his attitude to women and preparing roadkill pheasant for the pot.

Harry didn't always take himself seriously and wasn't always forensic in his species research.

"I had read about Crayfish. I didn't know whether they had been recorded in Northumberland. I was doing some work, looking for Small Pearl-bordered Fritillary on the south bank of the river Irthing, and wondered whether there were any in the river there. I cut the necks off three plastic pop - bottles and put in, as bait, some bits of kipper, left over from my tea the night before which I rescued from the bin. I weighted the bottles down and left them in the river until I returned 2 hours later having done my 'entomologising'. There were 19 Crayfish in the bottles. I put them in to a bucket and took them home. The crayfish made a very tasty meal that night. The following morning I discovered that I had eaten not the alien American Signal Crayfish, as I had thought, but the rarer native British species."

In August Harry knew he was very ill and talked of his goals - to see the first bluebells, the first primroses and the first swallows.

Harry is survived by his two sons Simon and Allard of whose achievements he was intensely proud and his former wife Patricia, all living in Australia. His sister, the tireless and immensely capable Jacky, has been his staunch help and supporter especially throughout his illness.

Harry's ashes will be scattered in the spring at Aid Moss, one of his favourite Forestry Commission sites in Northumberland where he spent hours enjoying his study of the Large Heath.

I have never known anyone like Harry.

I will miss him.



Harry Eales at Hopes Reservoir in the Lammermuir Hills on 17th April 2007 after logging the first two records ever of Juniper Shieldbug in Scotland. Photo: Peter Summers



The Large Heath - a species that is particularly associated with Harry, who greatly extended our knowledge of its distribution in Northumberland. Photo: Graham Beckwith.

Easy Butterfly Recording - on your smart phone!

Sarah Wherry (article adapted from the BC web-site)

Butterfly Conservation has developed a smartphone App 'iRecord Butterflies'. It is completely free and is available for iOS (Apple iTunes) and Android devices. (Google Store). Just search for 'butterfly' and look for the BC logo. iRecord Butterflies is a FREE app that will guide you through the identification of any butterfly that you see in the UK and allow you to add your sighting to millions of other valuable records that inform the work of Butterfly Conservation.

1) Identify your sighting. You can compare your own photo with those from the App's extensive image library, filter species by colour, pattern and size. See distribution maps and identification tips for each butterfly.

2) Tell us what you've seen. Add your butterfly sightings to Butterfly Conservation's long-running national recording scheme. Such records provide the essential foundation for much-needed conservation work to help the UK's declining butterflies.

The iRecord Butterflies app makes submitting your sightings really easy. Once you've identified the butterfly, enter a few simple pieces of information, such as the number that you saw and a place name (important so that the sightings can be checked on maps) and submit. The app will automatically calculate where you are (using the GPS in the Smartphone) and provide a grid reference for your sighting.

Records show how butterflies are faring so conservation effort can be targeted at those most at risk of extinction. They can help reveal the impact of climate change and other environmental issues on our butterfly populations. The data you send via iRecord Butterflies will be used to underpin the management of important butterfly sites, help protect habitats through the planning system and enable Butterfly Conservation to produce regular 'State of the UK's Butterflies' reports, local and national atlases and Red Lists of priority species.

Simply by sending in some basic information about the butterflies that you enjoy watching, even if just from your garden, you can make a real contribution to their conservation. Every sighting counts in the struggle to save our butterflies.

These tips are in not in order of merit...but if you can make use of even just a few tips our butterflies and moths would be delighted! I should also point out that there is also excellent advise on butterfly gardening available from BC both as a leaflet and on their brilliant web site.

Garden borders

[1] Remember gardens should not just be about nectar sources for adult butterflies.....gardens can be great for caterpillar food plants and as habitat providing shelter, roosting and hibernation.

[2] Buddleia really is the best nectar source....BUT plant a mix of varieties [mainly purples and white davidi] in different locations/aspects and prune at different times/levels of vigour! If you plan it right you can have flowers on at least some from June to September!....especially if you prune to encourage a second flowering.

[3] Make the most of south facing locations....you could always move pots into the sun....they really do love sun! Pots are also great for small or urban gardens and for plants that need to over-winter eg Lantana.

[4] Look in parks, gardens, nurseries to see which flowers butterflies prefer.....but be a little cautious with large garden centres that buy for colour and vigour but not for nectar. Usually the 'old fashioned' cottage garden plants are best.

[5] Look as above..... but in spring, summer and autumn to give year round nectar.....eg Aubrietia, Sweet Rocket and perennial wallflower 'Bowles Mauve' are great in spring; Valerian, Oregano, Nepeta [cat mint] and Thyme are good in early summer; Lavendar [angustifolia], Hemp Agrimony [eupatorium cannabinum], and Cone flower [Echinacea] in mid-summer and Sedum Spectacles [go for light shades of pink and white] Astor [Patricia Ballard and Marie Ballard] and most Veronica's are great in late summer.

[6] Grow the above in clumps,[not singly] dead head to prolong flowering and water regularly as this boosts the nectar levels.

[7] Have a tall plants at the back and shortest at the front but do not forget to plant some shrubs at the back too....and even some climbers like honey suckle and Ivy.. Also if you have stone walls or even better brick walls leave some exposed in the sun for the butterflies to sunbath after they have eaten! Some of the best shrubs include Cotoneasters, Hebes [Great Orme, Mid Summer Beauty and Albicans] and of course Ivy....great as a late source of nectar for Red Admirals but also for Holly Blue and for roosting/hibernating.

[8] Do not forget Moths! Most of the nectar rich plants are good for moths, bees and hover- flies but go for Honeysuckle, Sweet Rocket, night scented Stocks and tobacco plant [nicotiana alata] . Moth caterpillars also love Oak, Willow, Ash, Hazel, Birch and other native broad-leaved trees and shrubs.

[9] If you can plant or encourage a mixed native hedge....include Hawthorn, Blackthorn, Holly, Willow. Privet, and some Bramble....with a few non-native Buddleia! Prune but not evenly and not every year or at the same time each year..... Even better if you can allow taller trees such as Ash, Willow and Hazel to grow through in places.

Wild gardens

[1] Look for areas in the sun that have poor soil or where you can strip off the top layer of soil to encourage wild grasses and flowers. Thin or even stony soil gives wild flowers and grasses a chance to not be out competed by more vigorous plants that prefer better soil.

[2] Encourage wild flowers that grow well in your area....you could collect seed locally....if possible include Thistles, red and white Clover, Ox-eye daisy , common Knapweed [centaurea nigra] and field Scabious. If you do not collect seed you could buy one of the special 'butterfly seed mixes' available from specialist suppliers....but you will still need to strip the surface! Dandelion, Daisy and Clover are not weeds...but valuable nectar sources.

[3] Fine grasses are food plants for members of the 'Brown' family...including Meadow Brown and Ringlet. AVOID Rye grass and other garden centre grasses for lawns. Instead go for Common Bent, Crested Dog's Tail, Red Fescue and Smooth Meadow Grass.....again available from specialist suppliers. Cut/mow the grass at different heights and times [infrequently] to create diversity.....taller grass and shorter grass provide the

ideal range of micro-climates. You could use a strimmer or a mower on different height settings.

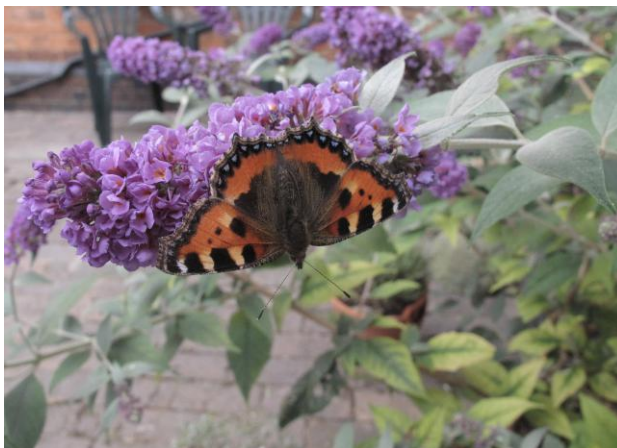
[4] After cutting LIGHTLY rake off the thatch....do not leave to 'choke' the grass....but can do cutting and raking on a rotational basis. The thatch could be piled up to create a compost suitable for mini-beasts and hibernators.....even grass snakes.

[5] Grow Nettles, Birds foot Trefoil, Garlic Mustard and Nasturtium [and Cabbage?] as food plants for Red Admiral, Comma, Peacock, Small Tortoiseshell, Common Blue, Orange Tip, Large White, Small White and Green-veined White.

Finally....

Get children involved from planning /designing the borders and wild areas to sowing seed, planting out, watering, dead heading ,finding eggs , rearing caterpillars and recording/photographing adults.....they love it. It could even inspire creative writing and art.....and they will become the next generation of naturalists.

Useful contacts: butterfly-conservation.org, mothscout.org, munchincaterpillars.org, habitataid.co.uk, wildseed.co.uk, bluebellcottage.co.uk, beehappyplants.co.uk, floralocale.org, crocus.co.uk.



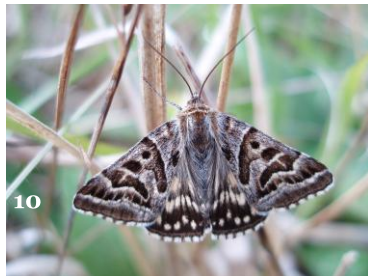
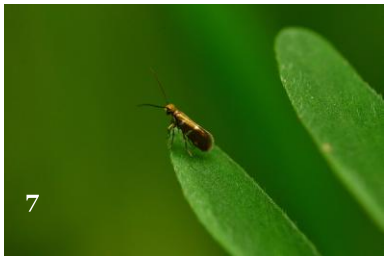
Buddleia - an excellent nectar source for attracting Small Tortoiseshell and other butterfly species. Photo J Wallace

My top ten moths on Raisby Way

Bob Mawson

My Ten Favourite Moths on the Raisby Way: **No 1** the Cocksfoot Moth (*Glyphipterix simplicella*). The adults fly in May onwards. Wingspan of the Moth is 6-9mm. The caterpillars feed on Cocks-foot and Tall Fescue grasses within the seeds, **No 2** Clouded Silver (*Lomographa temerata*). Look for the adult in May around nettle beds. Wingspan of the Moth is 22-26mm. The caterpillars feed on Blackthorn, Hawthorn, Plum and Apple. **No 3** Common Carpet (*Epirrhoe alternata*). Look for the adult in May around nettle beds and tall grasses. Wingspan of the Moth is 20-25mm. The caterpillars feed on Hedge bedstraw, Goosegrass (Cleavers) and Lady's bedstraw. **No 4** Silver-ground Carpet (*Xanthorhoe montanata*). The adults fly in May onwards. Wingspan of the Moth is 24-28mm, the caterpillars feed on Bedstraws, Chickweed and Groundsel. **No 5** Yellow Shell (*Campptogramma bilineata*). Look for the adult in May in scrub and tall grasses. Wingspan of the Moth is 22-25mm. The caterpillar feeds on various grasses, Chickweed and Dock. **No 6** (*Micropterix calthella*). Look for the adult in May, They like to nectar in Buttercup flowers. Wingspan of the Moth is 7-10mm. The caterpillar feeds on young shoots of herbaceous plants. **No 7** (*Micropterix aruncella*). Look for the adult in May. They like dry grassland and feed on pollen of herbaceous plants. Wingspan of the Moth is 6-8mm. The caterpillar feeds on young shoots of herbaceous plants. **No 8** Chimney Sweeper (*Odezia atrata*). Look for the adult in May on limestone grassland. Wingspan of the Moth is 23-27mm. The caterpillar feeds on the flowers of Pignut. **No 9** (*Crambus lathoniellus*). The adults fly in May onwards on grasslands. Wingspan of the Moth is 20mm. The caterpillar feeds on various grasses at the stem bases. **No 10** is Mother Shipton (*Euclidia mi*). Look for the adult in May on Limestone grassland and meadows. Wingspan of the Moth is 25-30mm The Caterpillar feeds on Black Medick, Birds-foot Trefoil and Clover. If you know an area near to you that has any of the Caterpillars food plant above, there is a good chance of seeing these moths,

I have included pictures of each species (next page). Six of them are macro moths and the other four are micro moths. I have recently started to use a small butterfly net to catch micro moths and it works well but I still like finding moths just by carefully looking as I walk the areas that may contain moths. A small stick is also a useful tool to use; a gentle tap may disturb the Moth from its resting place. Please always leave the habitat as you found it. I am looking forward to May 2018 and starting recording on my local patch.



All photos by R J Mawson - see previous page for species names

Moths with Flightless Females - a Conundrum?

David Stebbings

In the years I have been interested in moths I have been puzzled by the species in which the females have no, or merely vestigial, wings, rendering them flightless. The fact that the females of some species have vestigial wings leads one to believe they must have been fully winged and able to fly at some point in the past but over time evolved to lose their wings. There must have been an evolutionary advantage to being flightless, but what could that be? Some species of ground feeding birds on remote islands such as the dodo on Mauritius and kiwi and kakapo in New Zealand, became flightless as there were no ground based predators on these islands and the need for flight became redundant. This is not the case for moths in Britain as predators in the form of birds and small mammals abound. Most species of insects have wings in their adult stage. This enables them to fly to feed, find mates and for the females to disperse to lay eggs, so easily spreading to new habitats. A few of the species of moths with flightless females such as the March Moth, Dotted Border and Mottled Umber are common, well distributed and abundant throughout England and southern Scotland. So the puzzling questions are: why did they lose their wings and, being flightless, how did they manage to spread to achieve their present distribution?

Surprisingly, there are about thirty species of moths in Britain in which the females are flightless. In the macro moth grouping, there are about twelve species in the family Geometridae with flightless females and two species in the family Lymantriidae¹.

The first question is how did they achieve their current distribution being flightless? In general the twelve Geometridae species inhabit woodland and use common species of tree such as oak, birch, hazel and willows as caterpillar food plants. In the past, before humans arrived, Britain was covered with forests rich in such trees. This would undoubtedly have helped the species to spread to their present distribution. Movement from tree to tree even by caterpillars would enable the moths to spread by a few metres per year, unhindered by the vast treeless areas we have today. In fact spreading may even have been faster because although the females cannot fly, the caterpillars are capable of movement over longer distances. The caterpillars can spin silk like threads, anchor this in the tree tops and use the wind to carry them considerable distances. At a conservative estimate, spreading by this method could easily achieve 200 metres per year, or a kilometre in 5 years. So moving the approximately 600 km from southern

England to central Scotland through the forests of that time could be done in about 3000 years. Plenty of time from the establishment of the forests about 8000 years ago to the time man started clearing the forests for agriculture about 1000 years ago.

The second question is why did they lose their wings? For most insects our winters are too cold for them to be active so they have to pass the winter months in a hibernating stage. However, some species of moths do fly in the cold winter months, including the males of Geometridae species with wingless females. This is revealed in some of their common names such as Winter Moth, March Moth, Spring Usher and Early Moth. These moths can only be active by being able to operate at low temperatures. Flying uses a lot of energy and by not flying the females of these species can remain active at low winter temperatures and have more energy for egg production, possibly producing more eggs than would be the case if they could fly. A researcher in America² calculated that, by being flightless, the Winter Moth can produce about 20% more eggs than it could if it were able to fly. The females look like plump maggots and not moth-like at all. They can often be found on tree trunks at night or in the early morning, having crawled up to attract males by releasing pheromones.

Two species which do not fit into the generalisations above are the two members of the family Lymantriidae. Namely the Vapourer, common throughout Britain, and the Scarce Vapourer, very rare. These two species are real anomalies. The males are day flying and the flight season is through the summer months. The wingless females remain in a cocoon and attract males by pheromones. So they have not lost their wings to conserve energy for egg production during the winter months. The caterpillar foodplant is a wide range of broadleaved trees and shrubs; the female lays her eggs in batches near her cocoon, the eggs overwinter and hatch out the following spring. I am unable to offer an explanation as to the evolutionary advantage to the Vapourer of the females losing their wings!

Turning to the micro moths there are fifteen species with flightless females. Fourteen species are in the family Psychidae, and are known by the rather unattractive name of bagworms - this refers to the larvae which live within portable silken bag like cases. One, the Water Veneer, is in the Cramidae family. Research on some species of bagworms has revealed an unusual method the females use to disperse their eggs. The adult female which emerges from the larval case looks and behaves like a fly maggot. This is designed to attract a bird predator which eats the moth. The eggs she is carrying can pass through

the bird's digestive system unaffected and are passed out in the faeces, thus dispersing the eggs without the need to fly³.

Much of what I've said above is speculation on my part. There seems to be very little published work on this particular topic, apart from the research done into the curious life cycle of the bagworms. Maybe some readers can suggest other theories as to why the females of some of our species have become flightless.

References:

- 1) Waring, Townsend and Lewington - Field Guide to the Moths of Great Britain and Ireland
- 2) J H Marden - Journal of Experimental Biology 198 2087-2094 (1995)
- 3) Sterling, Parsons and Lewington - Field Guide to the Micro Moths of Great Britain and Ireland - Page 66



Jonathan Wallace

Strikingly different: - male (left) and female (below) Mottled Umber moths.



František ŠARŽÍK (CC-BY Creative Commons Attribution License 3.0)

In recent editions of the newsletter we have included a couple of articles encouraging readers to try out moth trapping. There is no doubt that the use of light traps is far and away the most effective method for investigating which moth species may be present in a locality and there is also, undeniably, great excitement to be had when opening the trap in the morning to see what wonders may be waiting inside. Having said that, not everyone can afford, or wishes to purchase a light trap and others may lack a suitable site in which to operate one. In this article, therefore, I discuss some of the alternative methods that can be used to locate and identify moths. Confirmed light-trappers will also often use one or more of these methods in addition to light trapping as not all moth species are strongly attracted to light (or even nocturnal).

Day-flying moths

The simplest and easiest way for butterfly recorders to extend their repertoire into moth recording is to try to identify and record the day-flying moths they encounter when already out and about hunting for butterflies. The grassland habitats that we explore for skippers and blues, browns and heaths also host a variety of day flying moths. Some of these are very conspicuous, such as the burnet moths and Cinnabar whilst others such as the Treble-bar (and the very similar Lesser Treble-Bar), the Shaded Broad-bar and the Mother Shipton are a little more cryptic. There are also many day-flying micro moths that may be encountered such as the various *Grapholita* species and the beige 'grass moths' of the family Crambidae which are often disturbed in large numbers when walking through grasslands. Accurate identification of these generally requires them to be captured for close examination.

Trunk searching

The moths that are flying about during the night do not, of course, cease to exist when dawn comes so it is possible to record nocturnal species during the day-time by searching out their roosting places. As most species are cryptically patterned and actively seek places to hide away from predators during the day time it is very easy to overlook them but careful searching of tree trunks, fence-posts, walls and such like can sometimes reveal their presence. The recent discovery of the Grey Shoulder-Knot in county Durham

was made by searching tree trunks at potential locations early in the morning. Searching for resting/roosting moths can also be extended to searching for hibernating moths. The Herald, for example, over-winters as an adult and can be found in outbuildings, cellars, caves and similar (e.g. old air-raid shelters). Indeed Butterfly Conservation Scotland is running a 'Hibernating Heralds' survey of this widespread but under-recorded (at least in Scotland) species by asking people to check-out such locations and report any they find.

Blossoming

Just like butterflies, many moth species need to feed on nectar in order to provide the energy needed to fly, find mates and lay eggs (although there are also some species which do not feed at all as adults). Certain species of flowering plant are extremely attractive to moths and it is well worth searching their flowers by torch-light after dusk. The compound eyes of the moths reflect the light back like miniature headlamps making the moths easy to spot. Plant species that can be particularly fruitful include willows, which can attract large numbers of the 'quakers' (*Orthosia* spp.) in spring, buddleia, ragwort, bramble and ivy blossom. Of course you can also encourage the moths to come to you by planting these and other plants in your garden; night-scented species are good for attracting moths for obvious reasons and include summer flowering Jasmine, Honeysuckle, Evening Primrose, Sweet Rocket, Nicotiana and Night-scented Stock.

Sugaring

The attraction of nectar-bearing flowers to moths can be simulated by the technique known as sugaring. This involves painting a sticky, sugary mixture onto posts, tree trunks or similar surfaces. Various recipes have been described but a typical one involves the dissolving of a tin (450 g) of black treacle and 1kg of brown sugar into some brown ale (coca cola also works) and then adding a dash of rum to the mix just prior to use. Over-ripe bananas can also be added to the mix to increase the appeal. Clearly, such a mixture is very messy and it should never be applied in locations where you do not have permission from the land-owner or where the public might be expected to subsequently lean against or sit on a treated surface! Wine ropes are an alternative technique that can help avoid such issues as the rope can be removed at the end of the night. In this case about 1 kg of sugar is dissolved into a bottle of red wine (no need to use an expensive vintage!) and short lengths of rope are soaked with this mixture and then hung up in the habitat being investigated. Sugaring and wine-ropeing are techniques that can be rather hit

or miss. It seems that success can be improved by sugaring in the same location over a period of days so that the moths have more chance to locate the bounty, whilst still, muggy weather also seems to be helpful. Despite potential frustration the technique can be worth persisting with as it can attract some species, such as the autumn-flying Old Lady moth that are rarely caught in light traps.

Pheromones

The main purpose of an adult moth's life is to find a mate (or mates) and produce offspring. Song-birds rely on song to attract mates and butterflies rely mainly on visual signals but for most moths it is through scent that they find mates. Unmated female moths release volatile chemicals – 'pheromones' - into the air which the males can detect with their antennae. The males then follow the scent gradient upwind until they find the female and mate. This can be exploited in two ways. By placing a virgin female moth (in order to ensure she is unmated it is necessary to obtain her by rearing from the young stages) in a cage that keeps her captive but allows air to pass through the mesh and placing the cage in suitable habitat, males of the species can be attracted from downwind. This technique was known as 'assembling' to the old collectors and it can be remarkably effective with some species such as the day-flying Emperor Moth. The second method involves the use of synthetic pheromones which are now available commercially for a number of species including the Emperor Moth and various of the Clearwing species (Sesiidae). An impregnated lure is used to replace the caged female but in other respects the technique is the same as 'traditional' assembling. Commercial pheromone lures are also used to monitor populations of various pest species including Silver-Y moth in agricultural crops, Codling moth in orchards and clothes moths (*Tinea* spp) in buildings.

Young stages

Searching for the young stages – eggs, larvae and pupae of moths substantially increases the period of time over which it is possible to record species which often have an adult flight period of a few weeks or even less. It also is of value as it provides unequivocal evidence that a species is breeding in a location. Some caterpillars are conspicuous and/or distinctive – again the Burnet moths and the Cinnabar spring to mind, as well as species such as the Puss moth, the Vapourer and the Drinker – but many require a bit more effort both to find and identify. Caterpillars can be found by careful searching of the vegetation but also using less subtle methods such as beating bushes and trees

(remember to place a tray of some kind beneath to catch what comes falling down) or sweeping ground vegetation with a net. Some of the species thus obtained will be distinctive and identifiable but be prepared to catch a lot that are not much more than a greenish or brownish tube on legs, with few distinguishing features! The identity of these can be determined if you are prepared to breed them out to obtain the adult (which can be released back where it came from once it has been identified).

The caterpillars located by beating or sweeping will be those that feed on the surface of the food plant but there are many species of micro-moth that have tiny larvae that feed between the upper and lower surfaces of the leaf. These species leave characteristic marks on the leaf which can be used to identify the species concerned and searching for these can also be a fruitful way of recording species. This topic was discussed further in the review of Ben Smart's book 'Micro-moth field tips' in the autumn 2017 edition of our newsletter (newsletter 36).

As well as caterpillars, it is also possible to search for pupae, though this is perhaps a more difficult and specialized approach. Digging into the soil around the base of trees can reveal the pupae of species that have descended from the canopy to pupate underground. Even in your own garden, when digging the flower-bed it is not uncommon to reveal the shiny brown pupae of noctuid moths such as the Dark Arches. It is then possible to re-bury the pupa in a container or cage and retain it (try to replicate the conditions of temperature and moisture in which you found it) until the adult emerges and can be identified.

Recording

Whichever methods you use, the records you obtain are of value both for extending our knowledge of the distribution of species in the region and, potentially, for conservation purposes. It is therefore important that the information should be communicated to the recorders. Details of how to contact the recorders are given on page 34 of this newsletter. For records to be of value they need to include precise details of the location and date as well as the species name and the name of the recorder and (if different) the person who identified the moth.

It is clearly also important that records are based on accurate identification of the species. Digital photographs can be helpful to establish and confirm the identity of species but in

some cases it may be necessary to show the actual moth to the recorder for verification. Moths are able to spend several days in a glass or plastic pot in the bottom of a fridge without ill effect and this is usually sufficient to be able to get expert assistance with identifying a species you are unsure of. If it is not possible to identify a moth with certainty then the record should not be submitted as incorrect data are worse than no data. However, with increasing experience and the advice of experts when required, the frequency with which you have to throw records away should significantly reduce over time!



Recording day-flying moths such as these Narrow-bordered Five-spot Burnet Moths (left) is a great way for butterfly enthusiasts to start to extend their interest into the world of moths. Photo: J Wallace



Although not all caterpillars are as distinctive as this Coxcomb Prominent, many can be readily identified. Photo: J Wallace

We need you!

Would you like to join our committee?

The Branch is run by a small committee of volunteers (see back page for the current committee members) who meet four times per year, including the AGM. There is naturally a turnover of committee membership and we are keen to invite new people to join. We currently have vacancies in the roles of Conservation officer for Durham and Health and Safety Officer and if you have skills or experience in these areas we would particularly like to hear from you but we would also like to enrol additional general members. Our current chairman, Peter Webb, has expressed his intention to step down from the chair at the next AGM (see page 4) and we are also keen to recruit someone to take over this role.

Other roles to which you might be able to contribute include:

Publicity and promotion: e.g. liaising with other organisations, the press and media;

Organising events, field outings, workshops etc.

Education: liaising with schools, colleges etc. and involving young people.

Our meetings are generally on a Saturday or a Sunday morning and are held at the offices of the Durham Wildlife Trust at Rainton Meadows.

If you are interested in joining the committee please contact the chairman, Peter Webb (e-mail address: apwebb546@gmail.com). We look forward to hearing from you!



How to submit moth records

Over 1200 species of moth have been recorded in our region, some common and widespread, others represented by very few, or in some cases, only a single record. Submitting records of moths helps to improve our understanding of the distribution and abundance of these fascinating insects and to enable potential problems they may be experiencing to be detected. Separate databases are maintained for Durham and Northumberland and records should be submitted to the appropriate recorder depending on where they are made. Recorders are encouraged to use Mapmate recording software (www.mapmate.co.uk) to file and submit their records but an excel spreadsheet, suitable for use in both counties, can be downloaded from www.northumberlandmoths.org.uk/submit_records.php. This also gives guidelines on the information to be recorded.

Validation

It is important that records are accurate and based on correct identifications and one of the responsibilities of the County Recorders is to scrutinise submitted records and check that this is the case. For any records of rare species, easily confused species or records of species that are outside their usual geographic range or flight period they may ask for supporting evidence to be supplied before the record is accepted. Suitable evidence may include good quality photographs, or sight of the actual specimen (moths can be kept captive for a day or two in a pot in a cool place).

Durham (Vice County 66)

Records should be sent to either of the Joint Moth Recorders for Durham.

Keith Dover
4 Lindisfarne Avenue,
Chester le Street, Co. Durham

Tim Barker
26 Farrier Close,
Pity Me, Durham, DH1 5XY

e-mail: k.dover879@btinternet.com

e-mail: tim@tapandspile.co.uk

Northumberland (Vice Counties 67 & 68)

Records should be sent to the Moth Recorder for Northumberland

Tom Tams
191, Links Road,
Tynemouth NE30 3TQ

e-mail: tom-tams@blueyonder.co.uk or: recorder@northumberlandmoths.org.uk



Submitting butterfly records 2018

Records are the bedrock of conservation and the North East Branch welcomes records of all species, for all dates and places, and of course for all forms.

Records can either be submitted on paper using the casual records recording sheet or electronically. The latter is preferred if you have a computer as it greatly facilitates the addition of records to the database. Each record should occupy one line and the format of the spreadsheet should look something like the following example. An 'Excel' spreadsheet can be downloaded from the web-site (www.northeast-butterflies.org.uk/recording.html):

	A	B	C	D	E	F	G
1	Name/s of recorder/s	NZ274423	Palace Green, Durham City	22-Aug-2004	Large White	7	
2	Name/s of recorder/s	NZ196858	Morpeth (riverside)	24-Sep-2004	Peacock	2	Very worn
3	Name/s of recorder/s	NZ2514	Baydale Beck Darlington	1-Jul-2004	Comma	1	<i>Hutchinsoni</i> form

Column A – Recorder/s names.

Column B - Grid reference, which should be two letters, (NT, NU, NY or NZ), followed by four or six numbers. The first two (or three) numbers are the Easting, read from the top or bottom of OS maps, the last two, (or three) numbers represent the Northing, read from either side of the map.

Column C - Site name. For obscure place names please include a nearby town or village.

Column D – Date (please try to follow the format shown)

Column E - The name of the species seen.

Column F - The number seen. The actual number is preferred rather than the letter system. For larva (L), ova (O), pupa (P) or mating (M) records, please use the code letter provided, optionally adding numbers seen.

Column G - For any comments you may wish to add.

Optionally, you can add a habitat code to column H if you wish.

A blank spreadsheet, with the date formatted, is available by contacting the recorders. Electronic records are most easily sent as an email attachment. However, you can also send them in by post on CD or memory stick. The deadline for records to be included, and credited, in the 2019 Annual Report is 30 November 2018. Depending on where you live, please send records to:

Durham

Ian Waller
e-mail: aeshna@hotmail.com

Northumberland

Michael Perkins
34 Dene Hall Drive,
Bishop Auckland, DL14 6UG

e-mail: mjp514@yahoo.co.uk

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