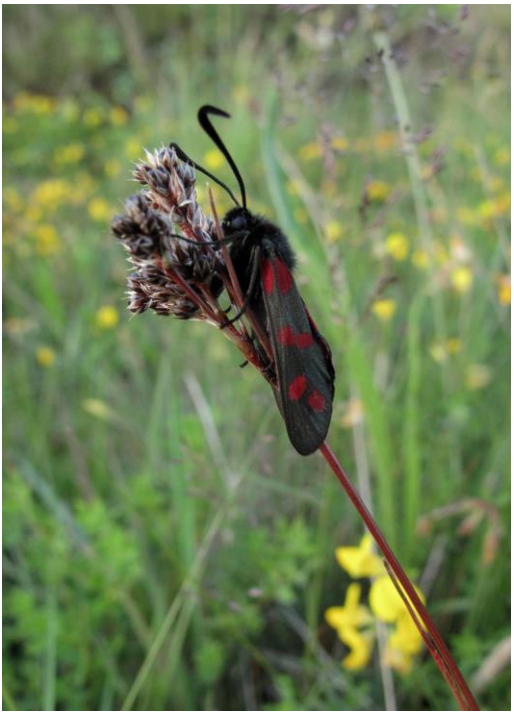
North East England Branch

President Sir David Attenborough CH. FRS

Saving butterflies, moths and our environment

Newsletter No. 36

September 2017



Butterfly Conservation

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Contents

Cover Photo: Six-spot Burnet Moth by Jonathan Wallace

Autumn 2017 Newsletter

Welcome to our newsletter number 36! In contrast to its Spring counterpart which is compiled at the outset of the butterfly season when we are all full of hope for the coming summer, the Autumn newsletter is written towards the end of the season when those early season hopes have either been fulfilled or dashed. This year the widespread feeling is that is has not been a brilliant summer for our butterflies although we shall have to wait until the records are all in to really know how well or badly different species have fared.

Butterfly and moth numbers fluctuate strongly from one year to the next in response to annual differences in the weather, but of greater concern is the long-term downward trend that monitoring has revealed for many of our species. Various factors may contribute to this decline and it is important that these are understood if effective conservation measures are to be taken. The attraction of moths towards artificial light is so well known that it is used as a metaphor for any irresistible attraction but moths evolved and lived for millennia in a world where the only night-time lighting came from the moon and stars and any source of light on the Earth's surface was rare and fleeting. How then does the brightly lit night of the modern world affect their biology and their interactions with their environment? These were questions investigated by Callum Macgregor during his doctoral studies at Newcastle University and he provides a summary of his results on page 9 of this newsletter.

Research such as that carried out by Callum and his colleagues is essential in helping us to identify the actions needed save our wildlife from decline and potential extinction but it is also necessary to then act on the knowledge we have. Actions to benefit butterflies and moths can be taken at all sorts of different scales from major 'landscape-scale' projects to individual home-owners managing their gardens to be insect friendly. In this newsletter we are pleased to include accounts of two conservation projects aimed at butterflies. Ken Dawson provides an update on work being carried out on the Spetchells at Prudhoe whilst Dave Liddle outlines the work being done in County Durham to help the

Small Pearl-bordered Fritillary. In both cases, volunteers have contributed significantly to the work.

The goal of projects such as these is to ensure that butterflies continue to fly across our countryside for long into the future. I suspect that for most of us who join Butterfly Conservation the simple pleasure of seeing these wonderful insects is an important motivation in wishing to contribute to their conservation and many of us spend much of our time in the summer out looking for butterflies. We all have our favourite locations that we visit over and again but Ron Henderson (page 16) reminds us that it can sometimes pay dividends to break old habits and investigate somewhere new – you never know what you might find!

I hope that you enjoy reading the newsletter and would like to take the opportunity again to remind you that contributions are welcome from everyone o if you feel you have something you would like to say in connection with butterflies and moths in the region please do not hesitate - I look forward to hearing from you!

Jonathan Wallace, Editor

Please note that submission deadlines for the newsletter are:

Spring edition: 1st March Autumn edition: 1st September.

Chairman's Report. Peter Webb

For anyone with an interest in butterflies one of the memorable sights of this year will be the Red Admirals. The butterfly in the photograph (right) was nectaring on a Mock Orange bush in June but I saw my first Red Admiral flying on 18th April, the earliest I have seen one flying. As I write this in August freshly emerged butterflies are adorning the Buddleja bushes in the garden and later in the year they will move on to ivy blossom and rotting fruit. In the past we regarded Red Admiral's as a migrant which moved northwards to the UK from North Africa and continental Europe. Now in addition to this, sightings of individuals and immature stages early in the year, especially in the south of England suggest it should be considered a resident .

As stated in our Spring Newsletter our recording of Red Admirals will be submitted to a major study, involving thousands of observers all over Europe. This wealth of data will allow the scientists not only to better understand occurrence patterns of the Red Admiral, but also to study the influence of a varying environment and a changing climate. It also allows them to explore major migration pathways and their potential impact on the ecosystems they cross. Using the Red Admiral as a model species, the researchers also hope to draw more general conclusions that may be applicable to the understanding of other migratory insects, such as economically important crop pests. This is an example of, where with the help of organisations like Butterfly Conservation, citizen science is an important part of a major research project.

Next year is Butterfly Conservation's 50th Anniversary. This will be marked by a number of national events including the publishing of an Atlas of Britain's and Ireland's Larger Moths in October 2018 which will be produced from the hundreds of thousands of records submitted to county moth recorders. Saturday 10th March has been designated as a Conservation Day of Action and in common with other branches we will be planning some conservation activity for that day.

Many of you will have received an online message via Dotmailer regarding the Branch Members Day. Dotmailer is Butterfly Conservations preferred method for sending out e-newsletters and other notifications to branch members. It is a free and secure service. As membership secretary I have access to the secure central membership email database held by the Membership Section at Butterfly Conservation Head Office. This database contains the email address you registered when you originally joined. It may not be up to date. If you received the Dotmailer online message the information held is correct. If you wish to update your email address and receive branch updates in future please contact the membership section at Butterfly Conservation Head office at membership@butterfly-conservation.org

I have been chairman of the Northeast Branch for the last five years and intend to resign at the AGM in 2018 hopefully allowing somebody with fresh ideas to take on the role. Our branch currently has more than 400 members ranging from professional experts to total beginners. Like me many of you will be somewhere between the two, a well meaning amateur with an interest first stimulated in childhood and a level of expertise where I still have a lot to learn. As you can see from the notice in this newsletter we are trying to persuade more of you to get involved in the organisation of the branch.
Please contact me or any member of the committee if you would like to discuss what is involved.

Peter Webb September 2017

Work Continues on the Prudhoe Spetchells
Ken Dawson

Removal of Cotoneaster has continued apace during 2017, not least by contractors with chain saw and brush cutter, who then painted the stumps with herbicide. We then collected the cuttings and sent them down the slope in builders bags to be removed by the Council staff.

An experimental method was tried on the Brachypodium grass, by cutting during the growing season.
Two information boards, designed by Jaime Westwood have been erected, and the 'unveiling' featured in in the Hexham Courant.

On 26 July, the local MP, Guy Opperman visited the site.
On 17 May, we counted 21 dingy skippers after a work session.
The contractors were on site again in August, and a number of volunteer tasks are scheduled for the autumn and winter period..

Dingy Skipper. (Photo: Graham Beckwith)

Work Parties Autumn 2017

Photo: Coralie Niven

Our Northumberland Conservation Officer, David Stebbings, is organising two work parties at Havannah nature reserve this autumn. These will be on Sunday 29th October and Sunday 26th November. The work is clearing scrub, mainly birch and gorse, which is invading important dingy skipper habitat. If you would like to come along please get in touch with David or just turn up on the day. For the work parties bring along a packed lunch, stout footwear and clothes you don't mind getting dirty! Tools and protective gloves will be provided.

For both days meet at the large car park at 10:00am at the airport end of Havannah nature reserve near to the Dinnington Road junction. Grid Reference NZ215718.

Additional work parties may be organised during the Autumn-Winter and these will be advertised via our web-site and Facebook page.

For more information contact David Stebbings – david.stebbings@blueyonder.co.uk or phone 0191 2859097.

Dark sky at night: pollinator's delight
Callum Macgregor

In the North-East, we are privileged to play host to some of the darkest night skies in the UK. Northumberland National Park is England's only Gold Tier International Dark Sky Park, meaning it is "a land possessing an exceptional or distinguished quality of starry nights and a nocturnal environment that is specifically protected". Whilst the International Dark-sky Association – the USA-based organization whose program accredits "Dark Sky Places" like Northumberland – are primarily motivated by the prevention of light pollution for star-gazing purposes, there is an increasing recognition that artificial light at night plays an important role as an ecological pollutant in nocturnal ecosystems.

Light pollution has now been shown to affect a wide range of organisms – from newly-hatched turtles that crawl up the beach, towards beachfront houses and bars but away from the sea, to songbirds that sing throughout the night. Perhaps the best-known effect, however, is the strong attraction to light (phototaxis) displayed by nocturnal invertebrates, especially moths. A growing body of research unveils the many ways in which artificial lights can disrupt the life-cycle of a moth. Most simply, lights can fundamentally change the behaviour of the moths they attract – and contact with hot components of lights can be fatal to moths.

However, the problem runs much deeper. Some predators of moths, including pipistrelle and noctule bats, show increased activity around artificial lights as they look to exploit the high density of moths and other prey that have been attracted. Around half of moth species globally are able to hear the echolocation calls of bats, through a range of convergently-evolved ear-like structures. When a bat is heard approaching, moths usually respond by diving to safety on the ground. However, moths appear to fail to react to bat calls in the presence of artificial lights. One theory to explain this is that moths near artificial lights behave as if they are flying during the day, when ultrasound calls are more likely to be made by grasshoppers and crickets – or people – than by bats.

Light pollution can also disrupt moth reproduction in several ways. In many species, male moths locate females by the use of pheromones. Light pollution can both disrupt production of these pheromones by female moths, and distract males from following them to the female. If mating does occur, light pollution can impact upon the growth of caterpillars, causing them to reach a smaller maximum mass at pupation.

Combined, these factors are likely to result in an overall reduction in the ability of moths to survive and reproduce. Butterfly Conservation's 2013 report "The State of Britain's Larger Moths" revealed that two-thirds of the UK's larger moths have declined in abundance over the 40-year period from 1968 to 2007, and it is very possible that the increased use of night-time lighting has contributed to these declines. The reduced abundance of so many species of moths is not merely concerning from a Lepidopteran conservation standpoint; moths play three key roles in the functioning of wider ecosystems.

Their caterpillars are important herbivores, consuming a wide range of plants, including both crop species and agricultural weeds. Higher up the food chain, moths provide an important source of food for animals. Many species of songbird rely on springtime caterpillars to feed their hungry chicks. Finally, moths are thought to be important pollinators. Night-time pollination has been less well-studied than pollination by bees and butterflies, but it is becoming clear that moths can also transport pollen of many flowers. Some plant species, such as lesser

butterfly-orchid (Platanthera bifolia) are almost entirely reliant on moths for their reproduction. However, my own PhD research (conducted at Newcastle University, in collaboration with Butterfly Conservation) has helped to reveal a potentially much broader role for moths in carrying pollen of many common and widespread plants, such as clovers (Trifolium spp., Fabaceae) and asters (Asteraceae). Whilst moths are unlikely to be as important to these plants as bees, they may play an important supporting role, providing redundancy to plants in the face of declines in diurnal pollinators (Fig. 1).

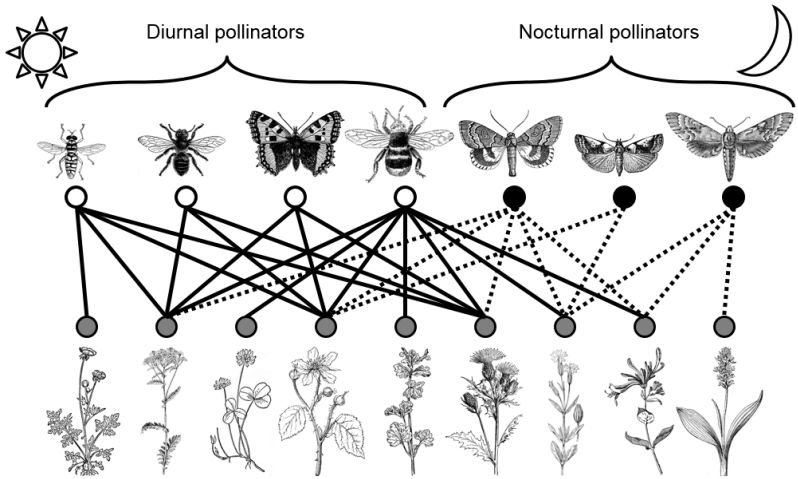


Figure 1: Many plants are pollinated by both diurnal and nocturnal pollinators. Figure used under licence CC BY 4.0, and originally published in Macgregor et al. (2015) Ecol. Entomol., 40, 187-198 – freely available online at http://dx.doi.org/10.1111/een.12174

Lower abundance of pollinators can translate into reductions in pollination, but here too, light pollution can act directly. In a research paper published earlier this year, we gathered data from matched pairs of agricultural field margins on farms across Oxfordshire. Within each pair, one field margin was lit by high-pressure sodium streetlights, and the other margin was unlit. We collected moths by conducting nocturnal transects through the field margins, using a head-torch and a butterfly net, before bringing all moths we caught back to the lab to count and

identify the pollen held on their proboscides. In addition, we measured moth activity higher up, at the level of the light, by counting passes through the beam of a torch. Our data revealed that at lit sites, fewer moths flew at the level of the vegetation (where they might feed at flowers or lay eggs) compared to unlit sites, whereas more flew up at the level of the light. We found evidence that moths caught at the lit sites were less likely to be carrying pollen, and overall carried pollen from fewer plant species than those caught at the unlit sites. This corresponded with recent research conducted in Switzerland, which showed that the cabbage thistle (*Cirsium oleraceum*) has reduced seed-set when exposed to artificial light at night, as a result of reduced visitation by moths. Our next research paper, which we hope to publish in the near future, will investigate the possibility that recent developments in street-lighting technology, including the uptake of LED lights and part-night lighting, could provide opportunities to reduce the disruption of nocturnal pollination by lights.

Fortunately, there are also various steps that can be taken around your own home to reduce the impacts of light pollution on moths and other nocturnal wildlife. Many homes have outdoor lighting, but this often is left on for unnecessary periods of time. Alternatives – such as timer switches or motion sensors – are readily available, easy to fit, and can ensure that lighting is still available when you need it most. The recent rise of LED technology has also increased the options to choose 'warm' lighting, which emits less light of the blue and ultra-violet wavelengths that are most strongly attractive to nocturnal invertebrates.

Dotted Clay feeding on Ragwort at night. Photo: J Wallace

Saving the Small Pearl-bordered Fritillary in County Durham. David Liddle

The plight of fritillaries in the North East was well documented in the 1970s and 80s by concerned enthusiasts who included Tom Dunn and Bob Quigley. Fortunately, as the Small Pearl-bordered Fritillary approached the point of no return in County Durham, being found on only three small sites near the A68, several organisations came together to attempt a rescue of this treasure of the region's countryside. Everyone will be aware that since then lots of time and money have been invested into reversing the downward trend. The Heart of Durham project, funded by Durham Wildlife Trust and Northumbrian Water, is currently leading the initiative, supported by a willing band of volunteers who have grown plug plants, fenced off suitable areas, planted trees and cleared scrub. The help of these people cannot be over-emphasized.

The progress of these efforts has been monitored over the past eighteen years and many patterns emerge. One of the most noticeable is the Small Pearl Bordered Fritillary's liking for moving from established sites to find fresh pastures, although they are not prepared to travel a long distance to do this. They will also stay at the previous site in smaller numbers as long as violets and a nectar source remain. This means that new suitable areas need to be created in close vicinity to existing ones in a regular cycle of habitat creation. We realise this cannot go on indefinitely, however, as land that has the required south-facing wet flushes is at a premium. Although a circular network of sites has been created around the Waskerley Way, most of our new sites are on privately owned land and so whilst we are fine at the moment and for the next few years, who knows what the future will bring as land use and farming pressure begin to bite?

The Royal Gardens at Kew have taken interest in the violet plug planting and visit periodically to check on the progress. This adds to local interest and gives the project prominence. Monitoring the sites has shown that not all land that looks suitable will necessarily produce

Dog violet and Marsh violet and this at times leads to disappointing results.

In addition to violet planting and habitat management work, two new reintroductions of Small Pearl-bordered Fritillary have taken place, overseen by Butterfly Conservation's North of England Officer, Dr Dave Wainwright. One of these is in its fourth year and appears to be healthy (Black Plantation) whilst the second (Hamsterley) is in its third year and is only just hanging on.

The impact of all this work on the butterfly population is monitored along transects and the results from 2004 onwards show that while Small Pearl-bordered Fritillary numbers do fluctuate on monitored sites, mainly due to weather conditions, they show a stable population on all areas but one and there has been an overall increase in numbers. The transect sections cover a limited count acreage but we now also find more butterflies outside the registered walking area.

It has also been noticed that on certain sites where grazing can be controlled for the benefit of the Small Pearl-bordered Fritillary, the numbers of Dark Green Fritillary, Small Heath and Green hairstreak all take advantage and increase accordingly.

And what of the 2017 season? It started well with butterflies emerging early on the lower sites, in the warm weather that came in late May-early June and counts at Black Plantation and Emma's Wood (a private site) were encouraging. Unfortunately the weather conditions took a turn for the worse thereafter and all other sites suffered and counts were down to 2012 levels. More worrying was the non-appearance of Small Pearls at the sites on which they had turned up for the first time last year. However, on a project such as this occasional set-backs are to be expected and we hope that 2018 will be a better year - it is optimism that keeps all concerned going!

Photo: Graham Beckwith

Butterfly Pin Badges

Readers are probably familiar with the enamel bird pin badges of birds sold by the RSPB. These help to raise substantial amounts of money for conservation purposes and we are pleased to inform you that there is a range of attractive butterfly and moth badges available from Butterfly Conservation. These are available online (post free) via this link: https://tinyurl.com/y8wcjtcv.

The badges cost £3 each and the species currently available are Small Copper, Emperor Moth, Marbled White and Adonis Blue. They will distinguish any lapel or hat-band and make ideal small gifts! All profits go to Butterfly Conservation.

Creatures of Habit Ronald Henderson

Butterflies are creatures of habit. Certain species such as the Painted Lady and Red Admiral habitually migrate to Britain whilst others habitually grace the same sites year after year such as the notable Wingate Quarry Marbled White colony and the Browney Valley Small Pearl Bordered Fritillary sites. Human beings, including the small percentage of us who are butterfly lovers, can be equally habitual. Some of us habitually visit the same sites year after year knowing that, aside from some environmental catastrophe, a particular species will be found there year after year, to be observed and admired. Lamesley Pastures and Raisby Way are good sites for Small Coppers whilst Picktree Interchange will almost certainly produce the elusive White Letter Hairstreak year on year.

I have lived in the Lambton district of Washington for the last forty years and during this time I have made regular trips on foot to the nearby Galleries Shopping Centre via Washington's pedestrian routes and the hard-core pathways that criss-cross Princess Anne Park. This park, which stretches from the Galleries southwards to Fatfield contains some large grassy areas, some mowed frequently and others allowed to remain natural. A wide assortment of mainly deciduous trees and shrubs are scattered throughout the site, which is crossed by two streams. However, in the forty years of regular walking through the park I have never explored it for butterflies.

On the last day of July this year, on yet another walk to the Galleries, I decided, for the first time ever to deviate slightly from the pathway and walk through a grassy meadow bordered on one side by a wide range of deciduous trees including sallows, elms and oaks. All along the base of the tree line there was a layer of blackberry bushes and an assortment of flowers such as thistles, knapweed, ragwort and umbellifers. Having walked a few hundred yards along the tree line I noticed two small butterflies, followed by another, flitting around at ground level and these proved to be Small Coppers including one of the blue spot form ab *caeruleo-punctata*. As the walk progressed, things got better. There were lots of Green-veined Whites together with

some Large and Small Whites. Meadow Browns were fluttering in the grass and Speckled Woods were flying in and out of the trees and basking in the sunlight. Small Skippers were abundant, feeding on thistles or maintaining vigilance on the top of grass stalks. Their antennae were closely examined to exclude the possibility of them being Essex Skippers. Members of the Nymphalid family, Red Admiral, Small Tortoiseshell and Comma were also seen.

As the walk progressed I noticed a small brown butterfly sitting on the top of a milk parsley flower; a pristine White-letter Hairstreak! This species has been an annual visitor in my garden but the source has never been ascertained. Princess Anne Park is a bit too far away for them to have originated from there but certainly a new site has now been identified for the butterfly. In total I saw eleven different butterfly species during the 15 minute walk along the tree line.

This seemed worthy of some further investigation and so I made a return visit the next morning, this time armed with a camera. However, low cloud and no sunshine meant that only a few Green-veined Whites and Small Skippers were on the wing. Conditions for my third visit were much more suitable with clear sunny conditions. Small Coppers were in evidence again at the start of the walk and another was found at the far end. All of the previously mentioned species were seen with the addition of the first summer Peacocks. I found four White-letter Hairstreaks this time; one was feeding on the same milk parsley as the first one, two were feeding on thistles and one was seen crawling around in the grass. There are several elm trees in the vicinity and the hairstreaks were spread about along the tree line so it appears that there are a few colonies of them in the park.

It is quite galling how this site and its butterfly populations have been there, on my doorstep for decades but have been by-passed at regular intervals without a second thought. Only a ten minute walk away from home, the site will now be on the agenda for weekly visits throughout the summer months. Habitually visiting known butterfly sites year after year and recording the sightings is a very pleasurable and rewarding pastime but the Princess Anne Park episode demonstrates that sometimes the more elusive species are not that far away.

New Moth Records in Northumberland
Tom Tams.

The Following species have been recorded for the first time in Northumberland during 2017.

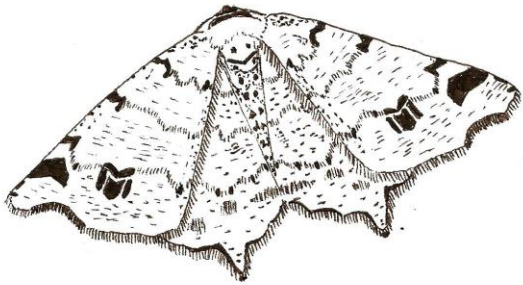
New species in 2017, South Northumberland (VC 67)

ABH No*	Species Name	Vernacular name	Number of records
16.007	*Yponomeuta plumbella*		1
16.023	*Ocnerostoma piniariella*		1
19.012	*Acrolepiopsis betulella*		1
32.013	*Agonopterix carduella*		1
35.160	*Stenolechia gemmella*		1
43.004	*Scythris picaepennis*		1
49.167	*Celypha rivulana*		1
49.191	*Endothenia nigricostana*		1
49.196	*Bactra lacteana*		3
49.280	*Gypsonoma oppressana*		1
63.112	*Platytes alpinella*		1
63.091	*Agriphila latistria*		1
63.112	*Platytes alpinella*		1
70.145	*Pasiphila debiliata*	Bilberry Pug	1
70.211	*Macaria notata*	Peacock Moth	1
72.049	*Eilema sororcula*	Orange Footman	2
New species in 2017, North Northumberland (VC 68)			
15.084	*Phyllonorycter acerifoliella*		1
16.003	*Yponomeuta malinellus*	Apple Ermine	1
19.011	*Acrolepiopsis assectella*	Leek Moth	1
43.004	*Scythris picaepennis*		1
49.357	*Grapholita funebrana*	Plum Fruit Moth	1
70.198	*Lobophora halterata*	Seraphim	1

New species in 2017, Northumberland (VC 67 & VC 68)

16.007	*Yponomeuta plumbella*		1
19.011	*Acrolepiopsis assectella*	Leek Moth	1
19.012	*Acrolepiopsis betulella*		1
32.013	*Agonopterix carduella*		1
35.160	*Stenolechia gemmella*		1
43.004	*Scythris picaepennis*		1
49.167	*Celypha rivulana*		1
49.191	*Endothenia nigricostana*		1
49.196	*Bactra lacteana*		3
49.280	*Gypsonoma oppressana*		1
63.112	*Platytes alpinella*		1
70.145	*Pasiphila debiliata*	Bilberry Pug	1
70.211	*Macaria notata*	Peacock Moth	1
72.049	*Eilema sororcula*	Orange Footman	2

*ABH number is the number assigned to each species in Agassiz, DJL, SD Beavan & RJ Heckford (2013) Checklist of the Lepidoptera of the British Isles.



Peacock Moth *Macaria notata.* Drawing by Daria Wallace

What Do You Do In the Winter?
Peter Webb

Different species of butterflies and moths have different strategies to survive our cold winters. Some will hibernate in a sheltered place such as a crevice in a tree or even in a shed or garage. The chosen place needs to be cold enough that they don't mistakenly wake up thinking it is spring, but warm enough that their bodies will not actually freeze. These species include butterfly species such as, Red Admiral, Small Tortoiseshell and Comma (usually the larger species of butterflies). Of the moth species that hibernate the Herald Moth is perhaps the most remarkable, emerging in August before hibernating, occasionally in quite large numbers in November or early December and then reappearing in the spring to continue flying until the summer. Others fly and reproduce during the winter months such as the aptly named December Moth and Winter Moth.

Some species are migratory and fly over the channel from Europe in the spring and breed in the UK over the summer. Their offspring will then usually make the return journey as it gets colder in the autumn. Most notable of these is the Painted Lady.

Those that cannot survive as an adult, either by hibernating or migrating, must time their lifecycle so that a different developmental stage has the job of getting through the winter. Most often this will be the pupa (or chrysalis) as this offers the most protection, either stuck to a sheltered part of a structure (fencepost, shed, windowsill), in dense vegetation or buried underground or in the leaf litter. Some, like many of the Hairstreaks, lay eggs on branches in the summer months that will hatch out in the following spring when the leaves are available for their caterpillars to eat.

Moths also survive the winter in a variety of ways. In some species eggs laid in one year do not hatch until the following spring, when there is plenty of food. Many more species spend the winter as caterpillars, which remain dormant until spring, although some such as the Fox Moth are able to feed on evergreen plants during mild spells. Others, such as hawk-moths, and the majority of the noctuid moths over-winter

as pupae, sheltered from the cold under the soil. Some moth species build cocoons or even more elaborate shelters for their over wintering pupae. The best examples being the Puss and Kitten Moths who pupate within a tough cocoon constructed on the trunk of the food plant from chewed wood.

The life-cycles of moths and butterflies are carefully synchronised with those of their food-plants, so that the caterpillars hatch when food is plentiful. Some predators, such as bird which rely on caterpillars as food for their young, also time their breeding to coincide with the moths' life-cycles. There is now concern that climate change could disrupt these delicate relationships. When the timing of the seasons change, plants, moths and their predators are unlikely to all react in the same way (or at the same speed) and so breeding cycles may no longer match food supplies. This could have disastrous consequences for some species.

Rescuing Hibernating Vanessid Butterflies

As noted in Peter's article above, hibernating butterflies seek out a sheltered crevice or similar spot where they are protected from the worst of the weather and often they find the structures we make very suitable – look inside a garden shed in winter and there is a reasonable chance that you will find a dormant Small Tortoiseshell clinging to the walls. Unfortunately they sometimes choose our homes for hibernation and when the central heating gets cranked up in the winter this can cause them to rouse from their slumber and start to fly around. This is potentially harmful for the butterfly as it is using up its stored energy reserves and may as a result fail to make it through until the Spring. So what should you do?

Don't simply open the window and shoo it outside. In the middle of winter there will be no sources of nectar available for it to top up its energy reserves and it will simply die. Equally, it is likely to die if you just leave it to flutter against the window pane until it exhausts itself. Instead try to catch the butterfly and gently transfer it into a cardboard box and close the lid to retain it. Take the box to somewhere cold but sheltered such as a shed or garage and leave it to settle again. The butterfly can then be left where it is but be sure to leave an escape route for it to get outdoors when it wakes up in the Spring.

Review: Micro-moth Field Tips. A Guide to Finding the Early Stages in Lancashire and Cheshire by Ben Smart

It is fair to say that the micro-moths lie at the more neglected end of the amateur study of lepidoptera. The perceived difficulties of accurately identifying these often tiny species have put many naturalists off but in recent years the emergence of a number of readily available, good quality identification resources in both on-line and traditionally published formats has persuaded an increasing number to try to get to grips with them. Since the micro moths account for around two thirds of the two and a half thousand or so species of lepidoptera in the UK, this can only be a good thing.

Ben Smart's new guide, published by the Lancashire and Cheshire Fauna Society with support from the Lancashire branch of Butterfly Conservation, is the latest addition to the resources available to help identify micro-moths but unlike many of the others his focus is not the adult moths but rather their immature stages. He lists a number of reasons why the early stages are worth studying including the fact that many species are much more readily recorded in the immature stages and the fact that feeding signs and other evidence of habitation are available over a much larger proportion of the year than the generally short flight periods of the adults. In fact it is possible to search successfully for feeding signs throughout the year and the book provides a month by month guide to the species to look out for from January through to December.

The book highlights the characters necessary to identify the species featured, which include not only the appearance of the larva itself but (of course) the plant species it is found on and the distinctive marks they leave on the leaves (and other parts of the plant) as they feed. These include various leaf folds and spinnings, larval cases (typical of the genus *Coleophora*), and a variety of 'mines' (the space occupied by a larva between the upper and lower epidermis of a leaf) in the form of blotches, blisters and galleries. The characteristics of the faecal

deposits ('frass') of the larvae within their mines are also described as these are often helpful in identifying a species.

The guide is well illustrated, mostly with the author's own photographs and the text is clear and succinct. Although it does not purport to be comprehensive it should allow the successful identification of a range of species and the text draws attention to potential confusion species. In some instances breeding through to acquire the adult may be recommended for definitive identification and Smart also provides some guidance on the techniques for doing this.

The month by month layout encourages the user to undertake 'projects' – seeking out particular food plants in order to then examine them for the presence of the target moth species and such an approach can potentially result in the discovery of species not previously recorded in the county and, indeed, some of the species added to the Northumberland list in recent years have been found in just this way. In this context it should be stated that although Smart's guide has been produced for the counties of Lancashire and Cheshire, many of the species recorded there also occur in our region and users should find the guide a valuable resource in our region too.

The micro moths will remain a challenging group to identify but Ben Smart's guide provides an excellent introduction to an important aspect of their study and will hopefully encourage more people to 'dip their toe in the water' and have a go. It can be obtained from various on-line suppliers including NHBS, Atropos Books and Amazon, priced at £16.

(Reviewed by J. Wallace)

New Members

Welcome to all the new members who have joined the Branch during the past six months. We look forward to meeting you at some of our events. Every member of Butterfly Conservation makes an important contribution to protecting the nation's butterflies and moths and the habitats on which they depend, especially at a time when funding from other sources is hard to obtain. The increasing number of members also adds weight to Butterfly Conservation's voice when it urges government to implement appropriate polices to maintain a rich and healthy fauna and flora across the nation.

You can participate in the activities of the branch in a variety of ways including through the submission of records of butterflies and moths (see end pages for details of where to send them) and by joining 'winter work parties and summer butterfly walks (these are advertised on our web-site and facebook pages). We also welcome contributions to our newsletter, web-site and facebook pages. If you are interested in getting involved in running the branch we are also keen to recruit new members onto our committee (see page 25).

Our web-site is at http://www.northeast-butterflies.org.uk/index.html and our fcebook page can be found at https://www.facebook.com/BCNorthEastEngland/.

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.

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!
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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.

In all cases the following information should be recorded:

Species name:	Please indicate scientific and (where there is one) common names.
Location:	Where the moth was recorded.
Grid reference:	Ideally a six-figure grid reference for the location.
Vice County:	66 for Durham, 67 for South Northumberland and 68 for North Northumberland.
Date :	For light trapping records the convention is that the date should be that of the evening when the trap is set rather than the morning when it is emptied.
Recorder:	Name of the person who caught/observed the moth(s).
Determiner:	The name of the person who identified the moth(s) (if different to the recorder).
Life cycle stage:	i.e. adult, pupa, caterpillar or egg.
Quantity:	The number of each species recorded.
Method:	Type of trap, field record, or how the moth was caught.

Durham (Vice County 66)

Records should be submitted to either of the joint moth recorders for Durham:

Keith Dover
4 Lindisfarne Avenue
Chester-le-Street, Co. Durham
e-mail: k.dover879@btinternet .com

Tim Barker
26 Farrier Close
Pity Me, Durham, DH1 5XY
e-mail: tim@tapandspile.co.uk

A spreadsheet for the submission of moth records for County Durham can be downloaded from www.northeast-butterflies.org.uk/recording

Northumberland (Vice County 67 and Vice County 68)
Records should be submitted to **Tom Tams,** the moth recorder for Northumberland**,**
191 Links Road, Tynemouth, Northumberland. Tel: 0191 272 8499
e-mail: tom-tams@blueyonder.co.uk or recorder@northumberlansmoths.org.uk
Full details for submitting records in Northumberland, including a downloadable spreadsheet are given at www.northumberlandmoths.org.uk.

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 without being harmed).

Submitting Butterfly Records 2017

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-2010	Large White	7	
2	Name/s of recorder/s	NZ196858	Morpeth (riverside)	24-Sep-2010	Peacock	2	Very worn
3	Name/s of recorder/s	NZ2514	Baydale Beck Darlington	1-Jul-2010	Comma	1	*Hutchinsoni* 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 2018 Annual Report is 30 November 2017. Depending on where you live, please send records to:

DURHAM
Ian Waller : aeshna@hotmail.com

NORTHUMBERLAND
Michael Perkins
71 Broadway West
Gosforth,
Newcastle upon Tyne
NE3 2NH
: mjp514@yahoo.co.uk

North East England Branch Committee Members for 2016-2017

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Mike Harris. Tel. 0191 5220160
michaelsharris@talktalk.net

Branch website: www.northeast-butterflies.org.uk

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