

NORTH EAST ENGLAND BRANCH

# Newsletter

Issue 42:AUTUMN 2020



Butterfly  
Conservation

Saving butterflies, moths and our environment



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Cover picture: Common Blue. Jonathan Wallace

## Autumn 2020 Newsletter

Welcome to the Autumn 2020 issue of the Branch newsletter. When writing the introduction to the Spring edition at the beginning of this year I speculated on what surprises the year would have for us. What I certainly did not imagine was that we would all be locked down in our homes by a pandemic disease rampaging around the World. From the perspective of wildlife observation the lockdown had various consequences. On the one hand, for many people, not being able to go to work or out to the shops gave more time to enjoy nature and we were lucky that the early part of the lock down was accompanied by fine weather. On the other hand, at its most rigid the lockdown prevented us from travelling away from our homes and thereby stopped many of us from being able to visit favourite sites to see Spring flying habitat specialists such as Green Hairstreak. When the records for this year are collated and analysed it is likely that both of these factors will affect the apparent abundance of many species.

A further consequence of the pandemic is the fact that this newsletter will not be issued in printed form as normal but as an electronic version only. This is because the printing and mail-out is usually carried out on our behalf at Butterfly Conservation HQ in Dorset. Because of staffing changings and restrictions on use of volunteer 'envelope stuffers' due to the covid-19 crisis, this has not been possible this time. We intend to revert to a printed edition next Spring.

As usual, I am grateful to the various contributors who have provided the articles in this edition which I hope you will find interesting and enjoyable. I would like to stress that all contributions are welcome and encourage all readers to put pen to paper if you have something you would like to say in relation to butterflies and moths of the region. It is a good idea to contact me first as this helps planning.

Butterfly distributions are not static and in recent years we have had several species move into our region. One such species that is colonising the south of our region is the Brown Argus and we have two articles on this by Martin Partridge and David Phillips respectively. One consequence of this spread is that the species now overlaps in range with the Northern Brown Argus and the implications of this are discussed. One such, practical, implication is that the two species are very difficult to distinguish from one another and so we may now have to accept many records as BA/NBA 'Agg' (i.e. one or the other without specifying which).

Also included in this issue are a couple of pieces on the young stages of butterflies and moths. We tend to focus disproportionately on the adult stage of the life cycle but it is important to recognise that this is only part of the life cycle and it is often the larval stage that is particularly critical in determining the ecological needs of a species. Finally, there are a couple of articles that were submitted quite independently by Roger Norman and David Stebbings respectively, which both look at some strange quirks of the Worldwide distributions of butterflies and moths.

Jonathan Wallace, Editor

Please note that submission deadlines for the newsletter are:

Spring issue: 1st February Autumn issue: 1st September

## **Committee Vacancies**

As we have reported since the Autumn 2018 newsletter we are looking for someone to take on the role of Branch Chair.

The Branch Chair's role is to lead and manage the Branch and its activities (delegating tasks to other Branch committee members and post-holders as needed) in accordance with the Branch Rules and Butterfly Conservation's policies etc. The role includes chairing regular Branch Committee meetings and the Chair leads the committee and Branch post-holders in planning and reviewing the work and activities of the Branch. BC's Head Office can provide full information on BC's policies as well as guidance on running a Branch and Branch activities, and further information is available in the Branch Handbook via the BC website and in regular newsletters and other communications from BC's Head Office and Regional Offices. The Chair also has an important role in maintaining good relationships and communication within the Branch between committee members and post-holders, and between the Branch and BC Regional and Head Office staff, to further the work of the Branch and BC. More detailed information about the role of Branch Chair is available on request from [info@butterfly-conservation.org](mailto:info@butterfly-conservation.org).

We are also looking for someone to take on the role of Butterfly Recorder for Northumberland. The role of this person is to receive butterfly records from within the county, to verify that they are valid (if necessary by requesting supporting evidence from the observer) and generally to ensure that the data-base of records is robust and well managed. We have a single e-mail address for the reception of records from both Northumberland and Durham which channels the records to the relevant county recorder. The two county recorders work in close cooperation and we also have a records sub-committee who support with decisions on 'tricky' records. The county recorders also work together with the Editor to produce the Annual Butterfly Summary report which is our principal means of communicating back to members and individual recorders the results of each year's recording effort.

If you are interested in taking on either of these roles or would like to know more please contact Peter Webb ([apwebb546@gmail.com](mailto:apwebb546@gmail.com)). We would also welcome anyone wishing to join the committee as an ordinary member.

## My Local Patch

Steve Austin

If I have time and am feeling energetic Russell Woods is a ten minute stroll from my home in Newbottle or a very short drive. It takes a little longer to walk back as it is all uphill.

I am lucky the woods are there at all as they were planted as part of the Great North Forest but shortly after that they dug a large part of it up and made several football pitches. Since then they have started to build an extensive housing estate to one side which is still under construction. I am unsure of future plans but there is a roundabout nearby and a road going nowhere, but heading in the direction of a new major road bypass, which would then go through part of the wood!!

So apart from all this and the fact Russell Woods has been burnt at times and trampled on by the local heroes, and the fly tippers have also had a go at spoiling this rather nice environment - oh, and I will not mention the dog walkers - there is a rather nice wood set in an increasingly urban setting. The small wood is only a mile or so from Houghton Le Spring and slightly more from the popular Rainton Meadows. The mixed woodland has several paths running through and there are also the remains of an old railway track that must have served the Dolly Pit at Philadelphia. There is an area of grassland that is nicely overgrown and the main path through has a short tarmac section.

The butterflies that are there are considerable with all the common whites being present as well as Orange tips, Meadow brown, Ringlet, Peacock, Small Tortoiseshell and Speckled Wood. There is also a nice selection of the more uncommon butterflies – Wall and Dingy Skipper in small numbers seem to be hanging on, and it is always nice to see Small Copper, along with both Large and Small Skipper and Small Heath. I saw a Holly Blue there for the first time last year, and a large patch of Michaelmas daisy in autumn on the old railway embankment always attracts several late Comma's and Red Admirals and then if I walk on and through the woods I can often get a really good count of Speckled Wood in October.

Although I may have painted a rather grim picture earlier the place is actually very nice and relatively quiet and clean. I often just have a quick hour away from the gardening hence jumping in the car with my note book, camera and bins. Well that used to be the case, but as I am now using "iRecord" for my sightings, I also need my mobile phone and my reading glasses, driving glasses and a small rucksack to put everything into and keep my house and car keys safe.

I tend to do the same walk the same way each time I visit, so after all the times I have been there, I can almost predict what I will see and where. Looking for that first spring Orange tip is always exciting. Then a few weeks after that, hoping to see if the Dingy Skipper is still there and, if so, in what sort of numbers is another highlight. I remember not so many years back when Speckled Wood was not even present, but now it is here in considerable numbers.

The place, although familiar, is never the same and sometimes when I have not seen anybody else on my walk – I can imagine I am miles away. I can even get adventurous and walk round clockwise or turn right instead of left, or at the bottom of the woods I can cross the road and walk over to Elba Park, which was a former coke

works where the land was so poisonous they fenced it off for years. It has now been built on, but to be fair they have also cleaned the land and there is now a lake and a large expanse of grassland with walks and sculptures.

Russell wood is a little gem in an ever increasing invasion. It says a lot for nature in so much as no matter how hard we try to spoil and deface the land, given half a chance; it will bounce back and provide a home not only for butterflies but other insects and wild life.

We are told we need more houses, football fields, roads and by- passes but if you were to ask me I would suggest that if we are not careful they will be provided at the cost of these little plots of paradise. In the words of Christina Georgina Rossetti:

*Tread softly! All the earth is holy ground.  
It may be, could we look with seeing eyes,  
this spot we stand on is a Paradise.*



**Steve Austin enjoys a walk through his local patch, Russell Wood.**

# **Lockdown Butterflies - An Old Favourite and a New Discovery**

## **Peter Webb**

For many of us a daily walk became an important part of our lives during the spring. After an exceptionally wet winter persistent high pressure weather provided us with the sunniest spring on record. For those of us who live in or close to the countryside we look back with memories of sunny days and a chance to explore our local area more carefully and get closer to nature. The exceptionally dry sunny weather produced a wonderful display of spring flowers and my daily walks onto the edge of the local moor were accompanied by a sound track of Lapwings, Sky Larks, Curlews and the occasional Cuckoo.

The first butterflies I recorded on my daily walks in the south of county Durham were Peacock and Tortoiseshell flying on 24th March. From that day until the 1st June I recorded a further nine species within one mile of my home in Cotherstone but the butterfly which I looked forward to seeing most was the Orange-tip. This delicate butterfly is well established across most of the British Isles and symbolises the arrival of spring but if you watch more closely you discover what a fascinating life history they have.

I had to wait until 14th April to see my first Orange-tip this year, a male, patrolling the hedgerow looking for a newly emerged mate. The female is similar in appearance to other whites and it is only when perched that you can see the beautiful green mottling on the underside of the hind wing. With so many sunny days in April and May most of my daily walks seemed to include watching Orange-tips flying in hedgerows where their food plant, Garlic Mustard, was flowering and then searching the flower stems for the distinctive bright orange eggs. The eggs are pale green when first laid but as they age turn bright orange. They are laid singly because if more than one egg is laid on a plant the larva to hatch first will cannibalise its sibling. I remember learning this from my early experiences of breeding butterflies when attempting to breed several Orange-tip caterpillars in the same container. At that time I had assumed that the bright orange colour of the eggs was to deter other females from laying on the same plant but have since learnt that the female also deposits a pheromone during egg laying as a deterrent. By searching Garlic Mustard plants during June and early July, with practice you can find the well camouflaged larvae

As lockdown restrictions in England were eased Orange-tips were moving towards their own long period of lockdown. The caterpillars grow quickly and by the end of July most have pupated, forming a wonderful curved chrysalis attached to a neighbouring plant or twig by a pad of silk.

There is normally only one generation of Orange-tip butterflies but occasionally small numbers are recorded in August and September. In County Durham populations of Orange-tip were linked to riverside locations where Cuckoo Flower was the main food plant. In the last 40 years factors such as climate change and a reduction of mowing roadside verges have favoured the growth of Garlic Mustard along hedgerows making Orange-tip more visible close to country roadsides.



**A fully grown Orange-tip caterpillar on Garlic Mustard.  
Photo: Peter Webb.**

Another of my Spring favourites is the Green Hairstreak Butterfly and during May each year I usually drive a short distance to West Plantation near Bowes or Sharnberry Gill near Hamsterley Forest to see them. As it was hard to justify this as an essential journey, I thought I may not get to see any Green Hairstreaks in 2020. One of my favourite daily walks took me across heather moorland just south of the village. This footpath is 4 miles north of West Plantation and 8 miles south of Sharnberry Gill and between these two known locations is almost continuous moorland much of which is managed for Grouse shooting with plenty of patches of Bilberry. So, on a regular basis from the end of April to the end of May, I paid careful attention to patches of Heather which protect the Bilberry plants from grazing sheep. On 14th May at the point where the path crosses Crook Beck I was rewarded by the distinctive flight of a small brown butterfly and the gorgeous flash of green as it settled on a patch of heather showing its distinctive green underside.

Walking along the small beck, in a sheltered gully, I discovered several patches of bilberry and four more Green Hairstreaks. I continued watching these charming little butterflies on many of my walks recording a highest number of eleven butterflies on 21st May.



**Green Hairstreaks discovered by Peter on moorland near his home. Photos: Peter Webb**



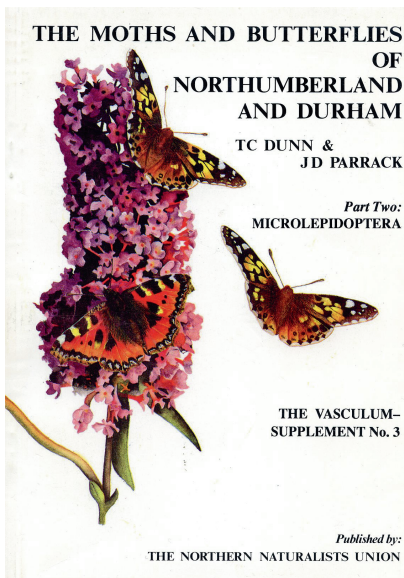
Green Hairstreak is an under-recorded species which is a great pity for such a delightful spring butterfly. In the northeast it is usually found in moorland areas often in reasonably remote but sheltered locations where Bilberry is present. As I had discovered it can be easily overlooked because even on sunny days territorial male butterflies are often resting on favoured perches and need disturbing before they will fly.



**Green Hairstreak.  
Photo: J Wallace**

## **In Memoriam - J D Parrack 1931 - 2020**

We were saddened to learn that J D Parrack passed away on 10 March 2020. Jim Parrack was a chemist by profession but is best known to lepidopterists in North East England as the co-author, with T C Dunn, of the *Moths and Butterflies of Northumberland and Durham* which was published in two volumes (1988 and 1992) by the now defunct Northern Naturalists Union. This work, which was the first major synthesis of the region's moths and butterflies since before World War II and the first to attempt to map the distributions of species, helped to stimulate interest in recording lepidoptera in North East England. As well as his interest in moths and butterflies, Parrack was also an ornithologist with an interest in sea birds amongst other contributions.



**"Dunn and Parrack" was a first attempt to map the distributions of moths and butterflies within the region.**

# The Brown Argus (*Aricia agestis*) and its progress northwards

## Martin Partridge

The first-time people see a Brown Argus, they may be surprised by its small size and perhaps dismiss it for a female Common Blue. I saw my first Brown Argus in the North East in 2017, it took me by complete surprise as it was on the brownfield site behind my place of work. That started a real interest in this species for me.

### Brown Argus (*Aricia agestis*) identification

The best way to tell the Brown Argus and female Common Blue apart is to look at the underwing. The Brown Argus has two of its rear underwing dots in a figure of 8 or colon (: ) arrangement. The Common blue has them in a continuous arc the two dots being in a line ( . . ) There is also a dot missing on the forewing of the Brown Argus when compared to the Common Blue.



**Comparison between Brown Argus (left) and female Common Blue (right).  
Photos: M Partridge.**

Often the female Common Blues are quite blue in colour and larger in size. However this is not always the case; female blues can be very small and very brown with only the slightest dusting of blue around the abdomen like in the photo above on the right. The only way to be sure of identification is to see the underwing dot configuration.

## Brown Argus (*Aricia agestis*)

The Brown Argus was considered to be scarce in Great Britain in the 1980's with populations continuing to decline but more recently we have seen a rapid reversal of fortunes for the butterfly which has led to it populating the North of England in recent years. In this article I am going to summarise some of the research carried out on the Brown Argus and share some of the latest information based on sightings data from the northern region over the last 20 years.

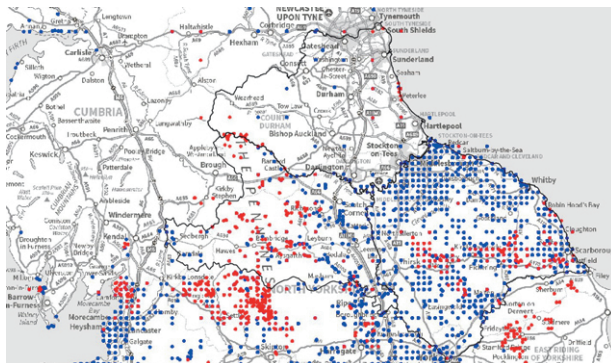
### The Brown Argus and its host plants

The presence of a butterfly's host plant(s) is key to its long-term presence in an area. In Great Britain the Brown Argus can be found on chalk grassland sites where its host plant is a species of Rock-Rose (*Helianthemum nummularium*). In all other habitat types (e.g. sand dunes, heathlands and grasslands on disturbed ground) plants of the Geranium (1) family typically Dove's-foot Cranesbill (*Geranium molle*), are the hosts used by the Brown Argus (2,3). Interestingly in continental Europe the Brown Argus also uses plants of the Geranium family.

Common Rockrose is found mainly on south-facing slopes so even in cooler summers the butterfly can complete its lifecycle. This is not always the case with the Geranium species which are only suitable hosts when we are experiencing warm summers, as we currently have been doing.

This change in diet to more abundant and widespread food sources has enabled the Brown Argus to move rapidly north during our warmer summers, expanding their range after every generation. The abundance of suitable hosts plants has been aided by the setting-aside of land by farmers from the mid 1980's allowing the growth of the Geranium family plants over vast new areas of the countryside.

A map of the dispersal of the food plant types in the North East of England is shown in figure 1. Records are from the National Biodiversity Network (NBN) database and manipulated in QGIS.



**Figure 1. Host plant distribution. Rockrose (*Helianthemum nummularium*) in red and Geraniaceae (3) in blue. The lack of records in VC66 (Durham) is not necessarily lack of the plants but represents the data in the NBN database. The presence of Rock-rose on the coast between Hartlepool and Peterlee highlights the importance of this coastal area for the Northern Brown Argus.**

Research (2,3) has shown that once the Brown Argus has established on Geranium species, the high frequency of these host plants in the landscape has allowed for the ready dispersal and movement north of the Brown Argus with the warmer-on-average summers in the more recent years. The Brown Argus's capacity to do this has been aided by the spread of the butterfly phenotypes which selected for Geranium plants for egg-laying. Based on the thorax weights of female Brown Argus from Geranium sites it has been proposed (extrapolated from findings on the Speckled Wood) that they have a greater capacity for flight which also aids range expansion. Selection of geranium for egg-laying may also provide a degree of protection from enemies associated with Rock-rose sites. These factors have led to the rapid transformation from exclusively favouring highly localized sites of Rock-rose on calcareous land to the widespread use of grassland with Rock-rose or Geranium host plants.

### Brown Argus sightings data

Research (2,3) has provided great insight into the Brown Argus's progression north, which extended about as far north as York. I have included the most recent sightings data available to show a further extension of the Brown Argus's range 50 to 60 miles north into the Teesside and County Durham areas.

Figure 2 shows data from 2000 to 2019 for North Yorkshire (VC62 & VC65). For Durham (VC66) the data is from 2006 which is when the first record of the Brown Argus in the county was made by Dave O'Brien at Elm Tree Local Nature Reserve in Stockton. This is not to say it was not present already in Teesside it just wasn't identified and recorded, possibly due to similarities with female Common blues.

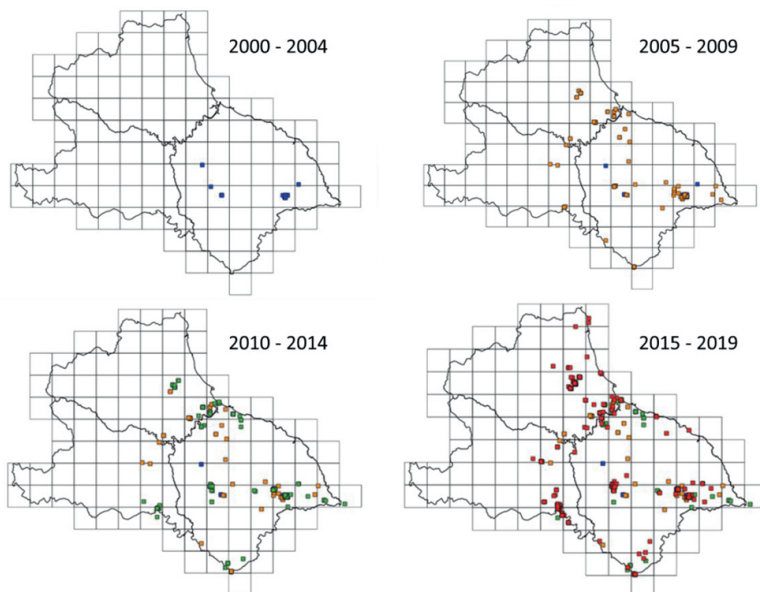


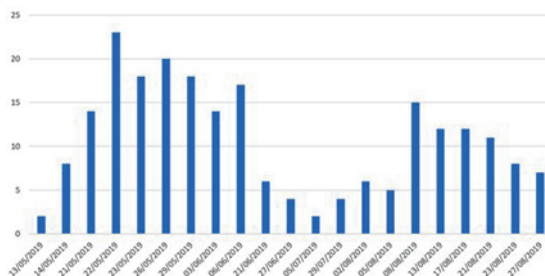
Figure 2. Brown Argus sightings in VC62, VC65 & VC66.

Blue= 2000-2004; Yellow = 2005-2009; Green = 2010-2014; Red = 2015-2019

In the time period 2000 to 2004 there are very few records and all of those are in VC62, around the west and south of the North York Moors on a small number of sites. The big changes in sightings data occur in the period 2005 to 2009 when the first records come in from both VC65 and VC66. In VC65 they are all on the east side of the Vice county where good populations of Geranium host plants have been recorded. The western side of VC65 has a much greater propensity for Rock-rose and is one of the strongholds of the Northern Brown Argus in the North-East region. In this time period there are also records from Bishop Middleham Quarry which has traditionally been a Northern Brown Argus site where Rock-rose is abundant.

During the period 2010 to 2014 the sighting locations are not too dissimilar to those in the 2005-2009 time period. What appears to be happening is the Brown Argus is dispersing from the established sites and populating suitable sites nearby. This is most notable around Teesside and also Nosterfield near Masham and continues to the present day. It is hard to say if the Brown Argus range expansion has been well tracked over the years; we have seen a recent increase in the number of recordings and probably more people are aware to look out for this beautiful butterfly.

From my own experiences; we were not looking for the Brown Argus on the biodiversity site in Billingham, which I survey. We were making weekly trips to the site throughout the summer of 2017 so we caught its emergence for the first time. The foodplant Dove's Foot Cranesbill, was largely absent from the site but is now to be found over large parts of the biodiversity site. In 2019, with very regular visits, we were able to clearly observe the bivoltine emergence of the species in good numbers, see figure 3. Interestingly, in the Midlands the Brown Argus uses both Rockrose and species of the Geranium family and these populations are largely single-brooded (univoltine) with most being seen late July/August time (4).



**Figure 3. Brown Argus numbers during 2019 flight season (13 May to 27 Aug) at a private biodiversity site in Billingham, Teesside.**

## History of the Brown Argus & Northern Brown Argus

An excellent summary of the research data on the history of the Brown and Northern Brown Argus has previously been provided by Dave Wainwright (5). I have picked out a few pertinent points to add to this article. There are two *Aricia* species in the North of England *Aricia agestis* (Brown Argus) and *Aricia artaxerxes* (the Northern Brown Argus). Their separation at species level being proposed after a series of breeding experiments suggested that the two species were incapable of

interbreeding despite an almost complete overlap of morphological characteristics (6,7). Voltinism has been proposed as a means of separating the two species (8) with univoltine populations such as those seen in County Durham, determined to be Northern Brown Argus and bivoltine populations to be Brown Argus. This has been proven to not always be a robust indicator and with climate change it is likely to be less reliable.

The Northern Brown Argus was believed to be represented by two subspecies : *A. artaxerxes artaxerxes* and *A. artaxerxes salmacis*, the former being characterised by a white discoidal spot on each upper forewing (a small proportion of *salmacis* also display this trait). When researchers investigated (9,10) the relationships between the *Aricia* species and subspecies using DNA analysis, they found that previous species and subspecies assignments were only partially correct. They found that the Brown Argus and Northern Brown Argus were distinct species but that the subspecies division within populations of the Northern Brown Argus was not supported by the analysis. In the North of England the analysis of three of the populations from the Peak District and North Yorkshire showed genetic characteristics that indicated past inter-breeding, estimated to have occurred some 9500 years ago.

What does the rapid progression north of the Brown Argus mean for the future of the two species as they are now being found at the same sites? History suggests inter-breeding has previously occurred, albeit a long-time ago. In the future, will we see the formation of a hybrid species, the elimination of one of the two, possibly the Northern Brown Argus, or will the two species actually co-exist as they do in Jutland, the islands of eastern Denmark and southern Sweden (9), only time and some detailed research will tell.

Martin Partridge is the species writer for the Brown Argus and Northern Brown Argus for the Yorkshire branch of Butterfly Conservation.

Thank you to Dave O'Brien, Paul Millard and Roger Norman for providing data on the sightings of Brown Argus.

### References and notes

- (1) The host plants typically used by the Brown Argus in the Geraniaceae family are Dove's-foot Crane's-bill (*Geranium molle*), Common Stork's-bill (*Erodium cicutarium*) and Cut-leaf Crane's-bill (*Geranium dissectum*).
- (2) Bridle JR, Buckley J, Bodsworth EJ, Thomas CD. Evolution on the move: specialization on widespread resources associated with rapid range expansion in response to climate change. Proc Biol Sci. 2013;281(1776):20131800. Published 2013 Dec 11. doi:10.1098/rspb.2013.1800
- (3) Pateman, Rachel M., Jane K Hill, David B. Roy, Richard Fox, Chris D. Thomas (2012) Temperature-Dependent Alterations in Host use Drive Rapid Range Expansion in a Butterfly . Science Vol 336 p1028.
- (4) Personal communications with Mike Williams (West-Midlands branch), Mike Slater (Warwickshire branch), Butterflies of the West Midlands. Pisces Publications 2016. I. Duncan, P. Seal, J. Tilt, R. Wasley, M. Williams.
- (5) Wainwright, Dave (2014) Northern Brown Argus. In: Butterflies of North East England, Northumbrian Naturalist vol 77 p 89

- (6) Jarvis, F V L (1976) Further research into the relationship of *Aricia aegestis* and *A. artaxerxes* in Britain. *Proceedings of the British Natural History Society* 9: 85-94.
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- (8) Heath, J., E. Pollard and J. Thomas.(1984) *Atlas of Butterflies of Britain and Ireland*.
- (9) Aagaard, Kaare., Kjetil Hindar, Andrew S. Pullin, Christina H. James, Olle Hammarstedt, Torveig Balstad and Oddvar Hanssen. (2002) Phylogenetic relationships in Brown Argus butterflies (Lepidoptera : Lycaenidae: *Aricia*) from north-western Europe. *Biological Journal of the Linnean Society*, 75, p27-37.
- (10) Mallet, James Ian R. Wayne and Chris D. Thomas. (2010) Hybridisation and climate change : Brown Argus butterflies in Britain (*Polyommatus* subgenus *Aricia*). *Insect Conservation and Diversity*. page 1.

## **Bishop Middleham Quarry Nature Reserve and Northern Brown Argus                      David Phillips**

Bishop Middleham Quarry is situated 1km north of Bishop Middleham Village on the A177. Abandoned in the 1930s, this former magnesian limestone quarry is a Site of Special Scientific Interest, nationally recognised for the plant life it supports. It is managed by Durham Wildlife Trust.

The thin limestone soils support a range of plant species ranging from scarce orchids such as the Dark-red Helleborine to more common species like Common Rock-rose. The site attracts a large numbers of butterflies such as Dingy Skipper, Common Blue, Small Heath, Ringlet, Wall Brown and one of the county's largest colonies of the rare Northern Brown Argus, known locally as the Durham Argus which is best seen in June and July.

The Northern Brown Argus (NBA) is very closely related to the Brown Argus (BA) and those found in Scotland are distinguished by having a white spot on the upper side of each forewing and fainter black spots on their undersides. The colony at Bishop Middleham belongs to a separate race, *Salmacis*, which although like their Scottish relatives have variable orange markings on their upper wings, may or may not possess a white upper forewing spot. Likewise, BA may occasionally have a white halo on their upper wing to add to the identification complexities.

In the past, range was a suitable way of separating NBA and BA. This is no longer the case in county Durham. BA has been increasingly and widely recorded in the south of our region. Whilst county Durham may well be right on the limit of its range here, it does seem to be firmly established. Possibly the hot summers have encouraged this butterfly to expand northwards from Yorkshire.

It was a good opportunity this spring to see if both Argus species could be found at the quarry with the Government beginning to ease travel restrictions, my desire to stay local for obvious reasons and the long hot weather, even in the north east! I was armed with the knowledge that both species could be found in the county and early and late NBA had been recorded from a couple of inland limestone sites. Whilst any early Argus sightings were likely to be the BA expanding its range, I had to consider

that many species were now flying earlier than in the past. This was likely to be the case this year given the excellent spring weather. The earliest record of NBA was at Bishop Middleham Quarry on the 18 May 2017 which was a fact I had forgotten when I made my first visit.

A summary of my observations follows.

My first visit was on the 15th May 2020. There were plenty of Dingy Skippers and Wall Browns despite the cloudy conditions, but the appearance of an Argus was rather unexpected. The under wing appeared silvery in flight. It settled once on dead vegetation during a brief sunny spell with wings fully stretched (picture 1). My initial thoughts were BA, but it appeared to be a female NBA. It had plenty of orange markings and possessed a faint white spot on each upper wing. Common Rock-rose was present but was only just beginning to flower. A dorsal view of a BA from a nearby quarry at Wingate is shown as a comparison, (pictures 2). This appears browner and has no white spot although I accept light can change the hue of the wing.

A further three Argus species were observed in flight in the quarry and briefly nectaring on Common Milkwort. No underwing observations could be secured. I was intrigued as to whether these were all remarkably early NBA or whether BA was now firmly established in the quarry. Could they be NBA x BA hybrid given the remarkably early date and their ability to hybridise? Curiosity and the lack of underwing photos spurred me on.

On the 16 May 2020, an Argus with a dark spot and a lack of orange on each upper wing was found nectaring on Common Milkwort. A silvery underwing was again noted in flight. This appeared to be a male BA or a possible BA x NBA hybrid, but identification could not be confirmed from the brief views available.

Over the next few days, no Argus species were seen, presumably because of cloudy weather and a fresh westerly breeze. This changed on the 25 May 2020 following an improvement in the weather. Three male Argus species were observed. They appear to be all NBA. All had very recently emerged as they had the white margins to the upper wings. Another Argus species enabled me to secure an underwing photograph (picture 3) showing large black spots within the white under wing spots. This appeared to confirm the presence of BA in the quarry.

Unfortunately, it took off, and could not be relocated so no upper wing shots were secured except for a very blurred take off image which was consigned to the bin. A picture of an NBA under wing is shown (picture 4) to give a comparison. Note the reduced black spots in picture 4. A further five Argus species were consigned to agg. status as I could not confidently identify them from the brief views available. Interestingly the local transect recorder had observed his first NBA earlier that morning.

Three more visits to the quarry up to mid-June revealed a total of 15 NBA together with 16 Argus agg. What appeared to be another single BA was observed but not photographed on 1 June. I should perhaps have undertaken further visits, but I was getting itchy feet and a desire to see a few more local species. I did make another visit at the end of June and in early July predominately to see the orchids. Ringlets



and Meadow Browns were recorded, but no Argus species were seen, although 1-2 NBA continued to be recorded by others until late July. I did observe several NBA at a nearby site in late June.

Where has the Spring sightings at Bishop Middleham Quarry left me? Well to be honest, rather confused! Both Argus species appear to be present at the quarry. Careful observation allows the Argus to be separated from the similar female Common Blue but separating NBA and BA in spring is extremely difficult and often impossible where their range overlaps. A prominent white spot on each upper wing and the presence of small black spots within the white spots on the underwing points towards Northern Brown Argus but there is still the possibility of hybridisation. It may be only a matter of time until the taxonomists take a fresh look at the classification of these two species, given their ability to hybridise. But until they do, I suspect confusion will only increase.

The purpose of this article is not to discuss hybridisation but to make people aware that both Argus species are now present in Co. Durham. You can no longer take for granted that any Argus species will be NBA. You need to carefully check any early spring Argus sighting at sites with Common Rock-rose.

Whilst the West Coast does not currently have this problem (yet), may be the NE Region now needs a new category called Argus agg. to capture all those Argus records flying in early Spring that cannot be positively identified at sites where Rock rose is present. Perhaps, I have inadvertently made the acceptance of early spring records that little bit more difficult, but I will give it another go next Spring.



**Picture 1: Northern Brown Argus**



**Picture 2: Brown Argus**



**Picture 3: Brown Argus underside**



**Picture 4: Northern Brown Argus underside. All photos: D Phillips**

# Butterflies of the Northwest Territories

## Roger Norman

This is a review of a small booklet<sup>1</sup> that you will very likely not need to acquire! I have a sister in Canada and she generously sent me a (free) booklet produced by the government of the Northwest Territories in Canada. I thought that the booklet would have little relevance to the butterflies in Northumberland and Durham. I was wrong!

If you have an atlas published before 1999, the Northwest Territories will stretch across the majority of the Canadian North, between the Yukon and Greenland. However, the creation of Nunavut in 1999 to the east has left the Northwest Territories lying between the Yukon and Nunavut, with Alberta to the south and the Arctic Ocean and the North Pole to the north. The map shows the outline of the Province and the sites where butterflies have been collected.

The Territories have an area of 1,346,106 sq.km (519,735 sq.m), including some of the arctic islands to the north of the mainland, with a population of around 44,000. They are very sparsely populated so it seems very likely that the butterflies are under-recorded. There are around 70 frost-free days each summer. The capital, Yellowknife in the south of the province is where the TV series of the Ice Road Truckers was based. Average temperature there is -27 C in January and 16 C in July.

The booklet describes 92 species, but with the comment that more are expected to be found. The subdivisions of their butterflies start with the Skippers. Looking through their species gave me the first surprise. Their Arctic Skipper, *Carterocephalus palaemon* is our Chequered Skipper. Their Common Branded Skipper, *Hesperia comma* is our Silver-spotted Skipper.

The second family to be listed is the Swallowtails with four species, including their Old World Swallowtail, *Papilio machaon*, although our own Swallowtail is a subspecies of this, *P machaon britannicus*.

Next comes the Whites and Sulphurs, with eight Whites and ten Sulphurs. Their Cabbage White, *Pieris rapae*, is of course our Small White. All their Sulphurs are different species, although one or two look rather similar to our Clouded Yellow.

Their next family is called the Gossamer Wings and includes Hairstreaks, Blues and Coppers. Four hairstreaks are listed, called Elfins. Of their three Coppers, the American Copper, *Lycaena phlaeas*, is our Small Copper. All of their seven Blues are different species.

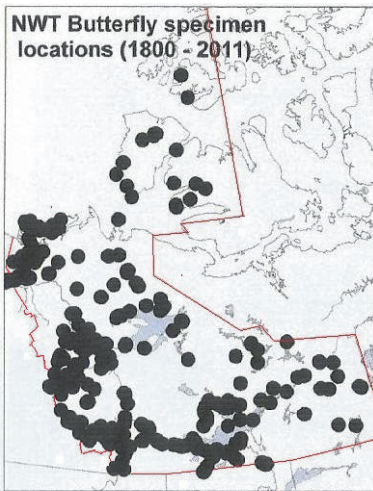
All the rest of the listings are given under the name Brushfoots, with 50 species! It is easiest to split them into subgroups to discover the surprises. Of the first 11 species, their Mourning Cloak, *Nymphalis antiopa*, is our Camberwell Beauty. Their Red Admiral and Painted Lady are the same as ours. They have four species that look like Commas so I guess a butterfly net would be essential equipment.

There are 17 fritillaries described, to my great surprise their Silver-bordered Fritillary, *Boloria selene*, is our Small Pearl-bordered Fritillary. Of the 13 Browns, one stood

out. Their Common Ringlet, *Coenonympha tullia* is our inhabitant of upland bogs in Northumberland, the Large Heath. I had thought that these last two of our species were real stay-at-homes! The final family of nine species, all called Arctics has no parallel here at home.

To summarise here are the species that we both have in common, here in the UK and in the Northwest Territories of Canada.

Canadian name	Scientific name	British name
Arctic Skipper	<i>Carterocephalus palaemon</i>	Chequered Skippper
Common Branded Skipper	<i>Hesperia comma</i>	Silver-spotted Skipper
Old World Swallowtail	<i>Papilio machaon</i>	Swallowrtail
Cabbage White	<i>Pieris rapae</i>	Small White
American Copper	<i>Lycaena phlaeas</i>	Small Copper
Mourning Cloak	<i>Nymphalis antiopa</i>	Camberwell Beauty
Red Admiral	<i>Vanessa atalanta</i>	Red Admiral
Painted Lady	<i>Vanessa cardui</i>	Painted Lady
Silver-bordered Fritillary	<i>Boloria selene</i>	Small Pearl-bordered Fritillary
Common Ringlet	<i>Coenonympha tullia</i>	Large Heath



All known collection locations for butterflies in the NWT. Many specimens are housed at the Canadian National Collection of Insects, Arachnids and Nematodes in Ottawa. Other specimens are in museums across North America, or in private collections. Compilation by R. Layberry based on data on file at GNWT and Agriculture and Agri-Food Canada in Ottawa. Updated to 2011.

When I opened the booklet, I never dreamed that we would have ten species in common. Indeed, here in the northeast, we have eight species, (we have a Swallowtail record from the 1980s). That is, we share almost a quarter of our species with the far northwest of Canada, across 2000 miles of ocean and 2000 miles or so of boreal forest and tundra. I find this amazing.

How did this happen?

<sup>1</sup> *Butterflies of the Northwest Territories*, Government of Northwest Territories. Version November 2016. Free copies from NWTBUGS@gov.nt.ca

Ed: Roger's article is an excellent illustration of the value of scientific names. Although Canadians may refer to a 'Silver-bordered Fritillary' when describing the butterfly we know as the 'Small Pearl-bordered Fritillary' the use of the name *Boloria selene* allows us to be confident as to exactly which species we both mean.

## Oleander Hawk-moth in Hawaii? David Stebbings

This is probably the first article in this newsletter about a moth spotted in Hawaii!

My sister lives in New Mexico and, knowing my interest in butterflies and moths, occasionally sends me photos of them taken around this south western US state. I have limited success in identifying them. However, last February she was on holiday in Hawaii and sent me a photo of a moth which I immediately recognised as an Oleander Hawk-moth. This moth is found in countries around the Mediterranean and wide areas of Africa and Asia. It is a rare immigrant to the UK, with just over 110 records here<sup>1</sup>. It very rarely gets to the North East with two records for Northumberland in 1906 and 1971<sup>2</sup>, and two for County Durham, 1885 and a specimen caught probably in 1927<sup>3</sup>. I had no idea the Oleander Hawk-moth was found as far away as Hawaii and thought it worth checking out. So I logged onto the internet and found an interesting story about it.

It starts with the introduction of the oleander shrub, a plant native to the Mediterranean region and Asia, to Hawaii as an ornamental garden plant. I cannot find the exact date of its introduction but it was being introduced into the USA by 1841<sup>4</sup> and probably to Hawaii in the early 20th century. It was appealing as a garden plant as it flowers all year round and is suited to the dry Hawaiian climate. However, as with many introduced species the world over it escaped from gardens and became established in the wild, becoming an invasive pest on some of the islands. There were no controlling agents such as insects to attack it; only aphids sometimes infested it. Looking for ways of controlling the spread of the plant, the Oleander Hawk-moth was introduced in the 1970s, which, as the name suggests, lays its eggs on the oleander plant and the caterpillars feed on the leaves. The introduction had a dual purpose; to control the spread of oleander plants and to pollinate the endangered *Brighamia insignis* and *Brighamia rockii*, known commonly as the vulcan palm and cabbage-on-a-stick, both endangered species of Hawaiian plants of the bellflower family, which previously had to be hand pollinated<sup>5</sup>.



**Oleander Hawk-moth, *Daphnis nerii*, photographed in Hawaii by Eileen White.**

I could not find any information on how successful or otherwise the introduction has been in controlling oleander, but if my sister came across the moth it has probably become fairly common. As far as I could gather the introduction had no further unexpected consequences, but it is yet another example of trouble arising when introducing non-native species to countries and then having to sort out problems created.

References:-

- 1) Atlas of Britain and Ireland's Larger Moths 2019
- 2) Northumberland Moths web site
- 3) Tim Barker, Moth Recorder VC66 pers. comm.
- 4) International Oleander Society web site
- 5) Wikipedia and Hawaii Travel Guide web sites

## **A Rearing Success: The Trials and Tribulations Graham Beckwith**

It was the 15th September 2019. How long ago that seems during the intervening months until now. Who would have thought then what was yet to come? Of course, ignorance is bliss, so I'll take you back to that happier time of 15th September 2019, not least because on that date I had quite a surprise when I received an electronic photograph (ah! technology) from my great nephew Ben Howe. He had found a rather special caterpillar, quite a large caterpillar, in his garden at his home in Stanley, Co Durham. I stared at the photo; a black caterpillar with a reddish head and 'tail', size uncertain but large and with a row of white 'spots' along its length on each side. I knew immediately that it was the caterpillar of a Hawkmoth. A search of reference sources soon confirmed it as a Bedstraw Hawkmoth, a scarce migrant moth to the UK and within an hour it was in my possession.

I knew the pupal stage is unable to survive a British winter, least of all a north-eastern winter so I set out to try and rear it to adulthood although I didn't have any experience whatsoever in moth rearing. Well, there's always a first time. One of my Lepidoptera colleagues, Stephen Lowther kindly loaned me a plastic bug box he had recently bought and, after a little research, I half-filled the box with garden compost, placed a few pebbles here and there along with a couple of small, snapped branches. In went the caterpillar with a fresh food source of Rosebay Willowherb, one of the larval food plants of the Bedstraw Hawkmoth. My garage (and latterly my shed) was its home for the next few months until spring. After 3 days and a further fresh sprig of Rosebay Willowherb, it was apparent that pupation was imminent as the caterpillar scurried around the box before burrowing backwards into the compost and, as luck would have it, it burrowed right up against the side of the transparent box before spinning a few silk strands, forming a very loose cocoon. This was extremely convenient as it allowed me to monitor its progress and provided me with superb photograph opportunities. Pupation was completed by 25th September. It was now a waiting game with my only intervention being to mist-spray periodically to prevent desiccation. Invaluable advice from our regional moth expert, Keith Dover.

A month had passed. October 20th was a wet and windy autumn day. Paddy still needed a walk; dogs always need walks. This walk was different because after it, the Bedstraw Hawkmoth pupa had some company; a Pale Tussock caterpillar, looking bedraggled and rather worse for wear. Within 2 days, this caterpillar had spun a substantial cocoon just under the lid of the bug box. Little did I know what the future held for this little feller.

Christmas saw a welcome break with family in Dubai. What stunning butterflies and moths the United Arab Emirates have, even in December but that's another story. I was thankful that another Lepidoptera colleague, Steve Austin was baby sitter for those few weeks.

Winter passed and spring slowly progressed with some fantastic weather and a lot of lockdown garden chores during which I unearthed a reddish-brown pupa in late April. In the box it went. I was intrigued to see what would emerge. After only 2 weeks, this pupa had successfully emerged and a pristine Scalloped Hazel was sitting on one of the small branches.

A few more gardening days later; another pupa, different, more red and in the box that went. What would this be? It was another month before there was any activity in the box. On 13th June, the red pupa had emerged. It was a male Large Yellow Underwing; of all the moth species it could have been, it was rather deflating but on the bright side, it successfully emerged.

The best were yet to come and I didn't have long to wait. On 18th June I noticed a hole in the Pale Tussock pupal cocoon. A substantial sized moth, but I couldn't see it so I carefully loosened the lid and opened it. There was no Pale Tussock moth but emergence was successful..... for an Ichneumon wasp, one of a number of wasps that parasitise larvae of butterflies and moths. After 8 months, it wasn't to be for the Pale Tussock larva. I didn't anticipate that.

Over the next 5 days, the Bedstraw Hawkmoth pupa became very active, bending at various angles. At least it was still alive and had survived the 9 months from September. What would emerge? Like the Pale Tussock, had the Bedstraw Hawkmoth caterpillar been hijacked by an Ichneumon wasp? Surely I hadn't carefully nurtured another developing ichneumon wasp for 9 months? All was revealed on 23rd June. I checked the pupa but there was little difference; it was bent inward away from the inside of the box but there was no movement. I peered through the air vents in the lid and there, peeking from the underside of one of the branches was a pair of unmistakable moth antennae. The first ever Bedstraw Hawkmoth I had seen had successfully emerged and, with a small, socially distant audience, was released that evening.

Sadly Ben wasn't able to see the progression right through from caterpillar to moth but I hope he feels proud to have been part of the story. I am grateful to Ben for providing the opportunity and I am proud to have experienced the trials and tribulations along with the success and satisfaction of moth rearing.



**This page: Bedstraw Hawk-moth caterpillar. Opposite top: caterpillar starting to pupate. Opposite middle: Bedstraw Hawk-moth pupa. Opposite bottom: Freshly emerged adult Bedstraw Hawk-moth. Photos: Graham Beckwith**



## An assortment of caterpillars

Jonathan Wallace

Butterflies and moths famously have a life cycle which includes four stages, each radically different to the next. Our attention is often disproportionately focussed on the adults, though. Whilst this is not surprising as the adult stage tends to be more conspicuous than the other life stages, it is a pity if other parts of the life cycle are ignored. Often it is the rather fussy requirements of the caterpillar stage that dictate where a butterfly or moth species occurs so successful conservation depends on a good understanding of larval biology.

Whereas the main purpose of the adult life stage is to find a mate and produce fertilised eggs, the purpose of the caterpillar is essentially to feed and grow. Unfortunately for the caterpillar the world is full of predators including birds, rodents, spiders and other insects so instead of just munching its way happily through its days it also has to avoid becoming someone else's meal! One way in which caterpillars avoid predators is to drop to the ground at any sign of danger, something that can be frustrating to any would be wildlife watcher or photographer who has approached a little too clumsily! The following selection of photos illustrate just a few of the other ways in which caterpillars seek to protect themselves.



Camouflage; many caterpillars are coloured green or brown and are very difficult to spot when clinging to their food plant. Counter-shading, posture and limited movement all help to increase the effectiveness of the camouflage. Orange-tip caterpillar. Photo: Jonathan Wallace



Camouflage; some species also have body shapes, textures and adornment that help them to hide more effectively. Many of the geometrid moths such as this Pale Brindled Beauty have caterpillars that bear a strong resemblance to twigs, an illusion that is increased by the posture adopted by the resting caterpillar on its foodplant. Photo: Jonathan Wallace



Spines: some caterpillars have thorny spines which presumably make them more difficult for birds and other predators to swallow. This is particularly a feature of the caterpillars of many the Nymphalidae such as the Comma, pictured here. The photo shows two Comma caterpillars at different stages of development. Photo: Graham Beckwith





**Hairs:** many caterpillars have long and/or profuse hairs. Like spines these may make the caterpillar less easy to swallow for many predators. In some species, including the Pale Tussock, illustrated here, the hairs have irritant properties and can cause an unpleasant reaction when they pierce the skin. Photo: Jonathan Wallace



**Mining:** Many micro-moths such as this *Stigmella floslactella* have caterpillars that live and feed between the upper and lower surface of a leaf. The traces of these may be seen as blotches or wiggly trails through the leaf depending on the species. This lifestyle provides the tiny caterpillar with protection from weather and many predators. Photo: Jonathan Wallace



**Aposematism.** The Cinnabar Moth (pictured) is an example of a species that is noxious to predators and advertises the fact with bright warning colours. This is known as aposematism. The caterpillar accumulates toxins from its food plant, ragwort, within its tissues and birds learn that the yellow stripey caterpillars are not good to eat. Photo: Jonathan Wallace



**False advertising:** The Alder Moth (pictured) is an example of a species that carries bold warning colours without actually having any defensive weapon; it is a bluff. In its early stages the Alder Moth caterpillar mimics an unpalatable bird-dropping but in its final instar - perhaps because the bird dropping ruse is less convincing above a certain size - it adopts this stripey form. Photo: David Stebbings



**Defensive posturing:** when threatened the caterpillars of some species such as this Coxcomb Prominent, rear up in threatening looking postures. In some species this may be accompanied by the ability to spray defensive secretions at the threat. For example the Puss Moth (not illustrated) has two tails that it flicks when threatened, squirting droplets of acid as it does so. Photo: Jonathan Wallace

## Footnote



“Grandad I have got a Holly Blue”.

It seems if you want to attract Holly Blue then paint your toe nails blue! Big Butterfly Watch with my grand-daughters in Darlington. It flew onto her toes, then walked onto her sandals, flew to her hand then back onto her shoe. It only flew off after 5 minutes when her younger sister tried to coax it onto her hand.

**Text and photo: David Phillips**

Do you have photographs of butterflies or moths engaged in interesting or unusual behaviour? We are always keen to include such images in the newsletter and encourage members to send in any pictures they think may be of interest. If you do submit pictures for inclusion in the newsletter please send them as a separate file attachment not embedded in the e-mail message or embedded in accompanying text as this way they are most easily handled during the compiling of the newsletter. Also please send full size files if possible - we can reduce a large file to fit into a small space but a heavily compressed file will often end up looking blurry and pixellated when printed. We can also use prints sent in by post.

# Submitting butterfly & moth records 2020

Records are the bedrock of conservation and observers are encouraged to send in their records of moths and butterflies seen or trapped within the region to the relevant recorders. Different arrangements are in place for butterflies and moths.

## Moths

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](http://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](http://www.northumberlandmoths.org.uk/submit_records.php). This also gives guidelines on the information to be recorded.

### Durham (Vice County 66)

Records should be sent to the Moth Recorders for Durham.

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

e-mail: [timvc66@uwclub.net](mailto:timvc66@uwclub.net)

### Northumberland (Vice Counties 67 and 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](mailto:tom-tams@blueyonder.co.uk) or [recorder@northumberlandmoths.org.uk](mailto:recorder@northumberlandmoths.org.uk)

## Butterflies

Irrespective of which county they relate to, all butterfly records should be e-mailed to: **[records@northeast-butterflies.org.uk](mailto:records@northeast-butterflies.org.uk)**

Electronic records are preferred but any paper records should be sent to:

Roger Norman  
1, Prestwick Gardens,  
Kenton,  
Newcastle upon Tyne  
NE3 3DN.

Records will be reviewed by the Recorders prior to being added to the data-base.

A spreadsheet is available for the submission of records and this can be downloaded from [www.northeast-butterflies.org.uk/downloads.html](http://www.northeast-butterflies.org.uk/downloads.html).

Records should be submitted by 30 November in order that they may be considered in the Annual Butterfly Report for the year in question. Valid records received after this will still be added to the data-base but may not be included or credited in the Annual Report.

## Validation

It is important that records are accurate and based on correct identifications. It is the responsibility of the Recorders to scrutinise submitted records to ensure that this is the case. Where records concern rare species, species that are outside their known range or flight periods or species that are easily confused they may ask for supporting evidence to be supplied. This may include good quality photographs or, in the case of moths, sight of the actual specimen (moths can be kept alive without harm for a day or two in a pot stored in a cool place).

## Branch Committee 2020

### Membership Secretary

Peter Webb  
Tel. 01833 650772  
apwebb546@gmail.com

### Conservation Officer Northumberland

David Stebbings  
tel.0191 2859097  
david.stebbing@blueyonder.co.uk

### Transect Coordinator

Valerie Standen  
valerie.standen@hotmail.com

### Committee Member

Roger Norman  
tel. 0191 2858314  
roger@norman784.plus.com

### Committee Member

Helen McDonald  
helen.mcdonald02@gmail.com

### Committee Member

Stephen Lowther  
stelow4@live.co.uk

### Treasurer

Steve Kirtley  
Tel. 01325 460198  
stephenkirtley2@gmail.com

### Newsletter & Web-site editor

Jonathan Wallace  
tel. 0191 2744303  
jonathan@cherryburn.com

### Butterfly Recorder Durham

Steve Austin  
records@northeast-butterflies.org.uk

### Committee Member

Coralie Niven  
coralie.niven@durham.gov.uk

### Committee Member

Julie Lowther  
stelow4@live.co.uk

### Committee Member

Dave Liddle  
d.liddle01@btinternet.com

### Butterfly Conservation Regional Office (Northern England)

Dave Wainwright, Butterfly Conservation, Low Barns, Witton le Wear, Bishop Auckland, Durham, DH14 0AG  
Tel. 01388 488428 e-mail: dwainwright@butterfly-conservation.org

### Butterfly Conservation

Company Limited by guarantee, registered in England (2206468)  
Registered Office: Manor Yard, East Lulworth, Wareham, Dorset, BH20 5QP.  
Charity registered in England and Wales (254937) and in Scotland (SCO39268).