Cheshire and Wirral ARGUS

The Newsletter of the Cheshire and Wirral Branch of Butterfly Conservation

Spring 2021 Issue 104

https://butterfly-conservation.org/in-your-area/cheshire-and-wirral-branch

Butterfly Conservation
Saving butterflies, moths and our environment

ANNOUNCEMENTS

Welcome to new members!

Butterfly Conservation Cheshire & Wirral gives a warm welcome to our new members who have joined our branch since the last newsletter! We used to print the names of our new members to make the welcome more personal, but Butterfly Conservation received a complaint about that - breach of privacy - so we have been asked to refrain from giving you that personal greeting, but please be assured we welcome you to the branch and encourage you to join in any of our activities when they begin again. You will get a warm and friendly reception.

Photographic Competition 2020

Congratulations to Barry Mills for his winning entry, shown on the front cover of this edition. Those judged as second and third are at the end of the newsletter, along with other entries that scored highly with the judges. Thanks to all those who entered. We have begun to receive images taken on phone cameras; so far none of these have gained scores that put them in contention, but as phone cameras improve, who knows? Please bear in mind that the best entries are reproduced in the newsletter, so the resolution must be adequate for printing and so far, none of the phone camera images have been technically adequate.

Photographic Competition 2021

Open to all Members of Cheshire & Peak Branch of BC

Entries must be taken in 2021 in the UK; they must be of butterflies or moths in colour or B & W, submitted by e-mail to the newsletter editor as a JPG file at 300 dpi resolution, A5 size by **October 31st 2021**. Include your membership number with your entry. Entries are limited to three per member, but only one photo from each entrant may be included in the top 3 places. Entries will be judged anonymously by the Branch Committee, whose members may not enter. The winning entry will appear on the front cover of the Spring 2022 newsletter; second and third entries will be on the back cover and inside back cover. First prize - £25 book token. *Obviously, you are requested not to infringe government instructions on travel, but hopefully you will have an opportunity to take your camera further afield as Covid-induced restrictions are lifted and those of you with moth traps will be unaffected by the problems.*

COVER IMAGE Orange Tips *(Anthocharis cardamines)*

by Barry Mills - the winner of our 2020 Photo Competition. Runners up and specially commended entries are towards the end of the newsletter.

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Copy deadline for the Autumn issue - September 30th 2021

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Editorial

This issue is very much concerned with monitoring butterfly populations. Our county recorder, Rupert Adams has a difficult job. All recorders have a difficult job. Not all records are accurate, but some unlikely records will be accurate. Discriminating between the two is not straightforward. We now have the added difficulty of introductions, so we request that anyone releasing or introducing butterflies or moths in our area please inform the appropriate recorder. I am certain there would be no argument, but Rupert or Dave Maddy (moths) really do need to know.

The Guardian article by Patrick Barkham (https://bit.ly/3auuMeB), that Rupert refers to in his piece, was largely concerned with Martin White, who died at the end of last year. Martin was a lifelong lepidopterist, vastly experienced and very knowledgable. He dedicated much of his adult life to the breeding and release of a range of butterfly species, mostly in his native Nottinghamshire and adjacent counties. He worked alone. Butterflies were bred in his garden and he released them without reference to anyone else except for close friends. He did not trust bodies that he referred to as 'official' or the 'establishment'. I am not aware that the relevant county Wildlife Trusts or Butterfly Conservation disparaged his activities, but his *modus operandus* certainly did not fit with theirs.

Since Martin's sad departure, there have been several internet posts and published articles paying tribute to his activities. Some of these have pointed a finger of blame at "the experts in nature conservation" for the decline in most UK butterfly species and suggested that more Martin Whites would make a better job of reversing our loss of species (see https://bit.ly/3trrfXl for example). It is a shame that the death of a decent man has been used as an excuse to peddle nonsense. It is also a shame that some folk with an interest in wildlife conservation choose a partisan self-isolation from the mainstream, following the current trend for extremist tribalism. *If you're not with us, you're against us.* Trumpism in wildlife conservation?

It is certainly true that the maverick approach to introductions does not follow the recommendations published by Butterfly Conservation…note, recommendations, not rules. These recommendations are based on three premises, which to me are simple logic. First, it is a good idea to thoroughly asses the suitability of the habitat in the area selected for (re)introduction well in advance. I'm sure that Martin White did this. Second, it is a good idea to carefully evaluate, using unbiased and objective methods, the success of the introduction; and this needs to be followed for several generations before success can be claimed. Third, it is logical to document all aspects of the process and to publish the account in a format that can be peer-evaluated and is accessible to all. Can anyone reasonably disagree with these three recommendations? So, if these recommendations are acceptable, is it not also true that a team will do a better job than an isolated individual? Two heads are better

than one, and three or four heads…you get the picture. Projects such as these are expensive both financially and in time spent. Furthermore, failure causes damage to confidence and incentive, making the next effort more difficult to set up. Thus, introduction projects should enrol all possible relevant expertise. The mavericks would, of course, argue that too many cooks spoil…again, you get the picture. I spent my entire working life in biomedical research and I never witnessed a solo project that would not have benefited from collaboration. Indeed, I wonder whether the insistently solo maverick is more interested in his/her personal achievement than in the success of the butterflies. That is not a suggestion pointed at Martin White. I corresponded with him. He was not ego-driven, far from it, but he certainly wasn't a team-player and many of his efforts were not documented, so the learning from his successes and failures was not shared at all or limited to close associates. Indeed, no one is certain what he introduced and where he did it. I suspect that suited him. He did not do what he did to gain credit or appreciation - he did it for the butterflies. So he was happy with the increased numbers of Marbled White colonies in Nottinghamshire and he preferred it to be seen as a natural phenomenon, rather that something he could take credit for. In the end, I see him as beneficial rather than a nuisance (a personal view, possibly not the corporate view of BC), but my positive stance derives from his phenomenal knowledge, insight and thoroughness. These qualities brought many successes. For 'introducers' whose enthusiasm is greater than their understanding of the projects and their problems, then cooperation and teamwork is a better approach than flying solo.

So, I plead with all would-be 'introducers' to consult before you act. If you feel that others will slow you down, does that matter? The project might be deferred for a year, but it might stand a better chance of success. In any case, if consultation seems to be hampering your efforts, you can always decide that you're going it alone anyway. No one will stop you, but they might help. I would start with Rupert, because as stated above, he certainly needs to know about it.

AGM and Members' Day

We hope to hold at least an AGM and some form of Members' Event this summer. Obviously the restrictions caused by the Covid-19 epidemic prevent an announcement of the nature, date or venue at this stage. We would like to hold the usual Members' Day at the Lion Saltworks in July, but this may not be possible. At the other extreme we may try to 'stage' an event using *Zoom*. Decisions will be taken as and when the government restrictions permit. We will then notify all members for whom we have an email address and will advertise the event on the Branch website. I'm afraid that is all we can announce at this stage, so please look out for further news.

TICKS

Advice from BC HQ

What are ticks?

Ticks are small, spider-like creatures that feed on the blood of animals, including humans. They can vary in size with larvae being as small as freckle, to adults being similar in size to a baked bean. They have 8 legs and a bulbous body.

Where do you find ticks?

Ticks live in many habitats but are particularly found in long grass and leaf litter in woodlands, grassland, moorlands, heathland and some urban parks and gardens. They attach to skin when a host passes by and will feed for several days before dropping off. Ticks are found throughout the year but are most active between spring and autumn.

What are the risks?

Ticks can transmit diseases such as Lyme disease. It is important that you remain alert, even if you are not aware that you have bitten. Symptoms of Lyme disease can include:

- A red “bullseye” rash
- Flu-like symptoms
- Fatigue
- Muscle and joint pain
- Migraines

If you have been bitten or have any concerns that you may have been bitten, it is important to seek medical advice from NHS 111 or your GP. Lyme Disease is serious and, if not treated, ultimately life-threatening. It responds to antibiotics.

What can I do to avoid being bitten?

To avoid being bitten, you should try to stick to clear paths and avoid brushing against vegetation.

Ensure you have fine tipped tweezers or a tick removal tool on you whilst you are out.

You should try to wear long, light coloured clothing so that you are able to see any ticks that may get onto your clothing. Tuck your trousers into your socks. In particularly high risk areas consider wearing protective clothing such as full body overalls.

Repellents containing DEET will minimise the rick of any ticks biting your skin and you should always carry out a full check of your clothes and body after your outdoors activity.

What should I do if I have been bitten?

If you notice that you have been bitten, remove the tick as soon as possible using fine tipped tweezers or a tick removal tool. You should pull the tick from as close to the skin as possible, ensuring you remove the head. After removal, clean and monitor the area for any redness or swelling.

Seek medical advice immediately if you are unable to remove the tick or the head.

More information can be found on the NHS website and on Lyme Disease Action UK.

Cheshire and Wirral Transect Reports for 2020

Reports from individual recorders collated by Tim Ward

1. **Elmerhurst (Lyme Park) (SJ963837) and 2. Cluse Hey (Lyme Park) (SJ958814)**
No recording was possible on these Transects this year because of COVID-19 restrictions.

3. **Kerridge Hill (SJ944759) - Tim Ward**

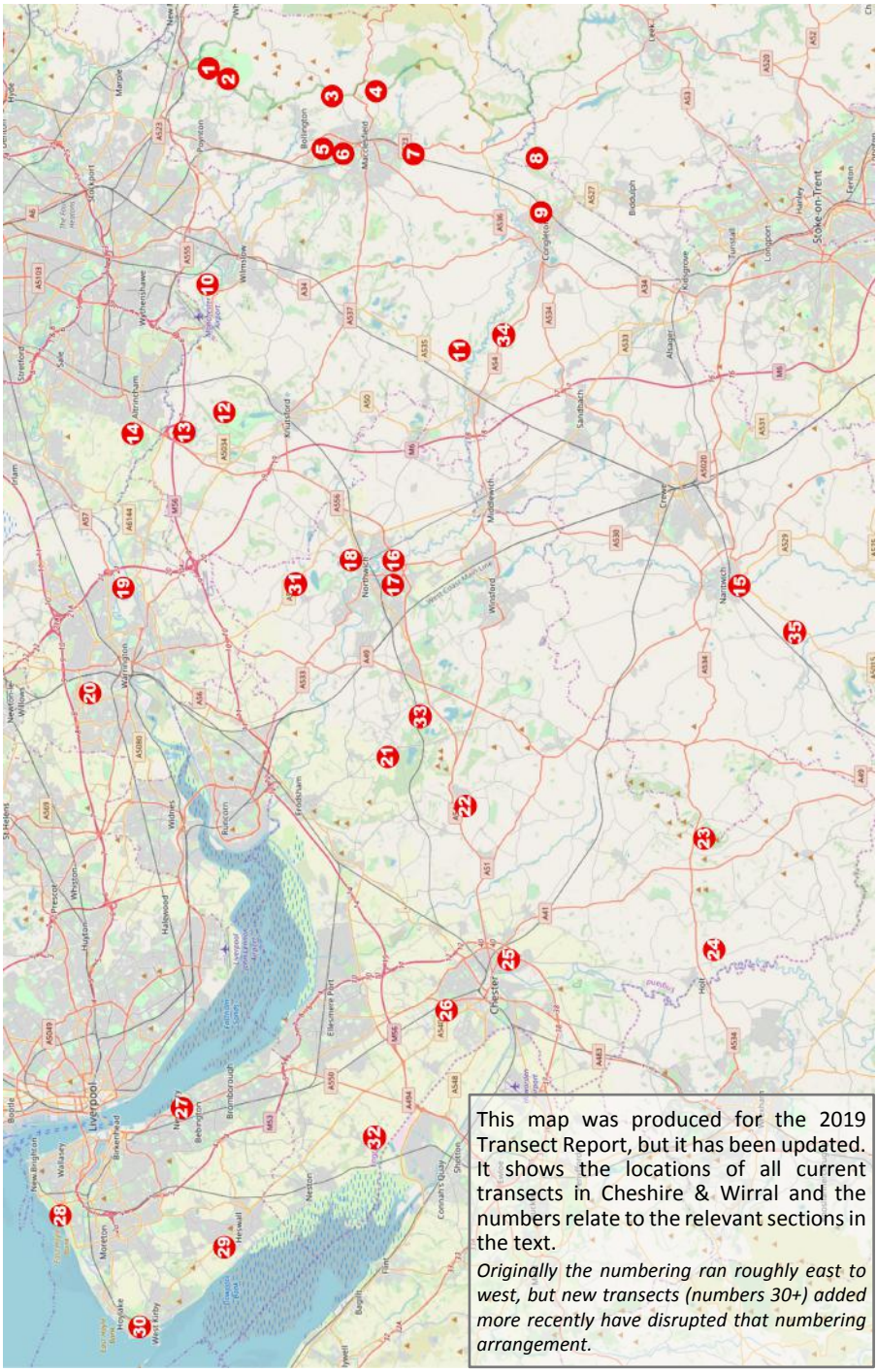
This new transect has been created following the establishment last year of a new Cheshire Wildlife Trust Nature Reserve on the slopes of Kerridge Hill. The most important feature of the transect is a healthy population of Wall Browns, with good numbers being observed in both first and second broods near the summit of the hill. Monitoring couldn't begin until Week 4 because of Covid restrictions but a few Orange Tips and Brimstones were seen in late April; Green-veined Whites were also flying at that time, with a larger second brood in July and August. No Small Whites were recorded but it is possible that some might have been incorrectly identified as Green-veined Whites. Small Heath made a short appearance in late June. Summer brought the expected surge of Meadow Brown and Gatekeeper numbers plus a smaller number of Ringlets (including a very late one on 1 September). Peacocks, Small Tortoiseshells and Red Admirals were all reasonably abundant but only 3 Painted Ladies and 3 Commas were seen all year. Speckled Woods were present all year in the woods, with a surge in numbers from August onwards. Small Skipper were recorded in July and Small Copper in August (on patches of Sheep's Sorrel).

4. **Tegg's Nose (SJ947723) - Tim Ward**

Overall numbers counted were virtually identical to 2019, which was a very good year, but within this total there were big variations by species. Green Hairstreak numbers were at record levels and were even more widely distributed across the hillside than in the previous year. The other Tegg's Nose speciality, the Wall Brown had a decent year, though the second brood was weaker than the first. Sadly, there was just a single Dark Green Fritillary recorded after the excitement of seeing a gravid female last year. Small Skippers had a strong year, as did Large Skippers to a lesser extent. Small Tortoiseshells had a very good year and Peacocks were also present in good numbers. Meadow Brown, Gatekeeper and Ringlet numbers were down on the previous year but still good. Speckled Wood numbers were down but picked up later in the Season. Most disappointing was the relative failure of the Common Blues again this year, with only 4 recorded. There were no Commas recorded, just 3 Painted Ladies and just 5 Small Coppers. Small White and Large White numbers were low, despite reports of large flocks of immigrants entering the UK, but the resident Green-veined Whites had a good year. Other species had an average sort of year.

5. **Tytherington (SJ918756) - Julia Harding**

There were early sightings of Small Tortoiseshell and Peacocks in the spring but it is disappointing to have only recorded two Orange Tips early in the season and four Commas in the whole of the season with Speckled Wood numbers being well down until the end of the season. The overall numbers are only a very slight improvement on last year's count – all the same species (Brimstone, Orange Tip, Peacock, Large White, Green-Veined White, Comma, Red Admiral and Speckled Wood) as last year with the exception of Small White, Holly Blue and Painted Lady. However, it is entirely possible that one or two of the whites may have been Small, rather than Green-Veined and that a Holly Blue was seen in my garden which is adjacent to the transect. One explanation for the decline in numbers may be the lack of nectaring sources on the transect itself – the border of flowering plants on one section is completely overgrown and a rather large buddleia has become more straggly, resulting in less flowers for the butterflies to nectar on. There were more butterflies (and nectar sources)



This map was produced for the 2019 Transect Report, but it has been updated. It shows the locations of all current transects in Cheshire & Wirral and the numbers relate to the relevant sections in the text.

Originally the numbering ran roughly east to west, but new transects (numbers 30+) added more recently have disrupted that numbering arrangement.

in this transect walker's garden and, no doubt, in many of my neighbours' back gardens.

6. **Riverside Park, Macclesfield (SJ913745) - Frankie Badcock**

I was only able to start Transect recording in the 3rd week of May. There were still some Orange Tip butterflies on the wing. The Garlic Mustard on Sections 1 & 2 of the Transect is a magnet for this species in the early Spring. Otherwise Sections 1, 2 & 3 have low butterfly numbers because there are few suitable flowers, except Bramble on railway bank. Sections 4 & 5 had more variety but my impression was that numbers were down this year and with less variety. After the spring drought it was often wet and quite cold, so I was not able to find suitable times to record on a weekly basis even though here most of time. There were possibly more Small Tortoiseshells than last year but numbers were still low. I didn't see any Painted Lady. To be attractive to more butterflies the site would benefit from the introduction of some plants to increase the number and range of nectar sources. Like everywhere the Himalayan Balsam has not been able to be managed and so is covering everywhere.

7. **Danes Moss to Sutton Reservoir (SJ910706) - Diana Moss**

I started walking the transect at the beginning of May. Brimstone and Orange Tip are the most frequently recorded butterflies on the transect in April and consequently their overall numbers were down this year. Small White and Green Veined White were seen in good numbers. Green Hairstreak had another good year with three being recorded on the transect. The meadow at the bottom of the dam at Sutton Reservoir is no longer mown several times over the summer and the taller vegetation now supports increasing numbers of Large Skippers and Ringlets. Gatekeeper numbers were down this year again with only a third of the numbers recorded two years ago. Of particular note was the large number of Small Tortoiseshell with 36 being recorded compared with 7 in 2019 and only 1 in 2018. These were seen feeding on heather on Danes Moss and on a patch of knapweed at Sutton reservoir. Habitats along the transect change as a result of management or natural succession from year to year but Comma, Speckled Wood, Meadow Brown and Ringlet seem to be relatively unaffected by changing conditions with fairly consistent numbers from year to year, and 2020 was no exception. It will be interesting to see how the varying fortunes of the other species of butterflies along this transect compare with national records.

8. **Bosley Cloud (SJ903635)**

This Transect was not walked in 2020, as a result of the COVID-19 situation.

9. **Dane-in-Shaw Pasture (SJ878626) - Jack Swan**

Recording on the Transect was not started until Week 7 after notification from Butterfly Conservation. The numbers of butterflies were quite reasonable over the recording season. A few Large and Small Skippers were present this year. It has been a good year for Green-veined White with a peak of 18 in mid-July and small numbers recorded until the third week of September. Small White was present in small numbers in mid-July to mid-September but only occasional Large White. Meadow Brown was the commonest butterfly with the first in late May and a peak of 86 on 25th June and some present until late August. Ringlet numbers were down with a peak of 10 on 12th July. Odd Red Admirals were seen during recording period whilst Small Tortoiseshell was regularly seen from late June. Speckled Wood numbers were best during September. Common Blue was disappointing with only one transect record whilst Gatekeeper numbers were also poor.

10. **Quarry Bank (SJ834830) - Derek Hatton**

Due to Covid restrictions I was unable to commence my transects until 11.8.2020. Small Tortoiseshell, Small Copper and Comma numbers continue to be good and Peacock numbers

were higher than last year. Small Whites were numerous as were Large Whites. Green-veined White numbers were lower than previous years. Painted Lady were present but again in lower numbers. Common Blue was present in good numbers and is increasing on site. Of interest I was able to carry out a personal survey in an area adjacent to transect 4 from April 2020. Large and Small Skipper numbers were good and Orange Tips were numerous. Ringlets were present and small numbers of Small Heath were also seen.

11. **Swettenham Meadows (SJ804675) - Alan Chadwick**

I am sorry to report work commitments meant I could undertake only 14 surveys at Swettenham between 20th April and 22nd September. The five surveys undertaken during the very sunny months of April and May saw no more than 73 butterflies in total (with a back drop of strong bird song from the nearby wood). Whites were not seen in any great numbers. In June things improved and decent numbers of the common Summer species were seen. The first visit to achieve over a hundred sightings (102) was on June 25th. This was followed on July 12th with 131 and 162 on the 24th. Numbers then dropped into the fifties for the two August visits. Finally, three visits in September produced totals of 24, 29 and 19. Nothing outstanding was seen across the season.

12. **Tatton Park (SJ758819) - Mark Sills**

It's been a frustrating, pandemic-hit 2020 on the Tatton transect. Only half the number of walks were completed comparative to last year and this has left a few recording gaps for 2020. Those we did manage to complete reflected national trends, with good numbers of Gatekeeper, Ringlet and Meadow Brown seen earlier on. Small and Green-veined White tended to predominate later in the year. Neither Large Skipper or Painted Lady were seen this time and Comma was only seen out of transect. Holly Blue were present in the park, but have still not graced us with an appearance on the transect! Better numbers of Small Copper were recorded, including sightings in a section where they weren't seen last year, so a little bit of encouragement going into 2021.

13. **Rostherne Mere NNR (SJ743841) - Bill Bellamy**

The Reserve was fully closed from late Mar until early Jun due to COVID-19 restrictions. It is still partially closed for the foreseeable future. The early butterflies were therefore missed including the Orange-tips. It was probably a very good year for the species as I saw many during walks in the countryside near my home. However, there were some notable highs at Rostherne during the reduced survey season. These included an amazing 73 Small Skipper records with a maximum count of 26 seen on 17th Jul. The Small Skippers were photographed at every opportunity from the correct angle to rule out Essex Skipper which was reported from several sites in Cheshire throughout the summer. There were also good counts of Large Skipper. It was an excellent year for Small White with 499 records and 123 seen on 17th Jul. The largest counts were recorded on a field sowed with Oilseed Rape but which also had a many wild flowers present including a large patch of Scented Mayweed. There were 312 records of Green-veined White which favoured the wet margins around the Mere. Purple Hairstreaks were recorded in many of the Oak canopies on the Reserve in early Jul. Small Copper, Common Blue and Holly Blue were recorded in low numbers. One of the highlights of the year was the first ever occurrence of Ringlet on the Reserve with two seen on 1st Jul and one on 10th Jul. There was a total of 1286 records of Meadow Brown with 318 recorded on the unimproved pastures on 24th Jun. Painted Lady was not recorded in contrast to last year's influx. It was a good year for Peacock with 25 recorded on 22nd Jul. Speckled Wood and Gatekeeper counts were also high. Several Commas were seen at specific locations around the Reserve throughout early Oct.

14. **White Oak Wood & Yew Tree Farm (SJ732880) - Sophie Bray**

Unfortunately due to the restriction placed on us over summer we haven't been able to do any butterfly monitoring. It's been a real shame as I think it would have lifted peoples' spirits.

15. **Nantwich Lake and River Weaver (SJ648516) - Malcolm and Gill Reid**

The 1.5 km long transect in Nantwich Riverside Park, close to Nantwich town centre, consists mainly of deciduous woodland, scrub vegetation and areas of regularly-mown grass. We started recording on 19th May (Week 7) and consequently missed the sightings of the Orange Tips, which have been so prevalent in previous years. The most common species throughout the season were Small Tortoiseshells, Peacocks, Commas, Red Admirals, Green-Veined and Small Whites. It was a delight to see so many Meadow Browns in late June on the Creeping Thistles growing along the riverbank. Ringlets were recorded in late June to mid-July, but they were noticeably less common than in 2019. Fairly significant numbers of Gatekeepers were evident in late July, when a Brimstone and small numbers of Small Skippers were also seen. As in previous years, the Green-Veined Whites significantly outnumbered the Small Whites. Unfortunately, despite the warm weather, no Painted Ladies were recorded.

16. **Leftwich Woods (SJ666717) - Rupert Adams/Mike Perchard**

2019 had seen a number of the 15 year old Wych Elm falling victim to Dutch Elm disease. Although these had been felled, the very wet winter and early spring conditions meant that they could not be removed from the site. Of course the pandemic then arrived and removal could not be undertaken even as the weather improved in late spring 2020. Inevitably they would be the source of beetles during 2020, and this proved to be the case with several more Elms showing early sighs of infection during the year. However, good numbers still remain. My daily walks for exercise allowed me to undertake transects almost as normal. Early butterfly sightings were disappointing and the warm hollows within the woodland that often reveal my first sighting of a Comma or Brimstone for the year, revealed far fewer sightings than previous years. As April arrived, flower and then leaf damage caused by White-letter Hairstreak larvae became apparent. The anticipation that this would again be a good WLH year was high. Emergence of WLH was earlier than normal with the first being seen on 13 June and low numbers, never reaching double figures at any one part of the site, were maintained with the species being encountered on most suitable Elms, including disease resistant elms, just off the transect. The final individuals were seen on 17 July. Unlike 2019 no individuals were seen at low levels or taking nectar from the areas of Thistle and Knapweed at edge of the transect. Searching for Purple Hairstreak, which had been seen at the site for the first time in 2018, and again in 2019 proved successful and the species was encountered, but only as individual specimens, on a number of mature Oak along the transect route. There were good early numbers of Orange Tip, but initially many other of the more common species were only encountered in low numbers. Subsequently large numbers of both Peacock and Small Tortoiseshell larvae could be found amongst the nettles and good numbers of both species were seen in a number of generations. There were no sightings of Small Skipper, Ringlet, Painted Lady or Small Copper along the transect route during 2020 although they could be found tantalisingly close.

17. **Marshall's Arm (SJ649719) - Paul Kenyon**

Much of Marshall's Arm was subject to flooding and a sewage leak over the winter and as a result areas of the vegetation were ruined for the start of the season. Orange Tip numbers were down as were Brimstones. Holly Blues were less prominent . Small Heaths all but disappeared but Meadow Browns and Ringlets were in good numbers away from the affected areas, as were Large and Small Skippers. Common Blues still had a tenuous hold though difficult to find. Not one Painted Lady was seen on the transect counts and only one seen all summer just outside the route. The small colony of White Letter Hairstreaks were difficult to see not helped by the fact that the main English Elm appears to be succumbing to

Dutch Elm disease. Others have been planted in this area. However it's not all doom and gloom. Adjacent to the Saxons Lane end of the reserve is a path up to a grassed field surrounded by Oaks , Ash and a couple of Elms. The area was part of the Marshalls estate and many of the Oaks are between 100 and 300 years old. As a result they been inhabited by a large population of Purple Hairstreaks. This area is going to be the basis of a new transect for next year and is really an extension to the existing one. I also found White Letter hairstreaks here towards the season end so I look forward to next year.

18. **Ashton's Flash (SJ666749) - Rupert Adams/Mike Perchard**

Monitoring during the early part of the season was lost due to the coronavirus pandemic lockdown restrictions so the whole of the Orange Underwing flight season was missed this year. The walks commenced in early May during the peak Dingy Skipper flight period. However, numbers observed on the transect were very disappointing. The weather during this period was very warm and Birds-foot Trefoil along the transect was parched and sparse and it is hoped that the Dingy Skippers had migrated to adjacent areas where the Birds-foot Trefoil was growing strongly. Although not recorded during a transect walk 2 individual Dingy Skipper were seen on 8th and 10th August along the route and were part of a small 2nd generation that was reported at sites in Cheshire. This is the first occurrence of 2nd generation dingy Skipper in Cheshire and The Wirral. Meadow Brown had another good year, although not quite up to the numbers observed last year whilst Gatekeeper numbers were similar to last year. Although total numbers of Common Blue were down on the previous year, this was at least partly due to missing counts during the first flight period and numbers of second brood were quite strong. Small Heath also had a pretty good year but Small Copper and Ringlet were both very disappointing. In total, 18 species were recorded this year which was 3 down on the previous year, the absentees being the Large Skipper and Holly Blue, both of which were sighted in very small numbers last year and the Painted Lady. Limited monitoring of Six-belted Clearwing was undertaken during their flight season using pheromone lures. The surveys suggest that the population continues to thrive across the Ashton's and Neumann's complex wherever Birds-foot Trefoil exists. Individuals were still being seen well into August.

19. **Woolston Eyes (SJ652881) - Dave Hackett**

As will be the case with many transects, the restrictions resulting from Covid 19 meant that monitoring was limited to the period July to September, exactly half the normal season. By the time surveys began the weather had become more unsettled and perhaps as a result fewer butterflies than usual were recorded. In contrast to the previous year there were only two sightings of Painted Lady with a maximum of 2 butterflies. Peacock and Gatekeeper were down on 2019 with maxima of 33 and 37 respectively compared with 62 and 60. A single Small Skipper was recorded and other species were seen in below average numbers. Transect maxima included 13 Green-veined White, 14 Small White, 16 Speckled Wood and 15 Red Admirals. A late survey on 20th October found two Red Admirals and a Peacock flying in and out of one of the hides no doubt looking for a suitable place to hibernate.

20. **Sankey Valley Park (SJ592894) - Pat Thurston**

A full season of counting was possible this year, due to close proximity of the transect to home, enabling a good comparison with previous years. There have been some changes to the vegetation in some of the sectors. Notably there is now virtually no bird's-foot trefoil in the meadow sector and for the first year no Common Blues were seen. Elsewhere there has been some large scale cutting back of hedgerows by the council to widen pathways. This does not seemed to have significantly affected the profile of species across the sectors. This year there has been a significant increase in Small and Green-veined Whites. Pleasingly, the Small Tortoiseshell population is increasing year on year well with a three-fold increase since

counting began on this transect. Commas and Peacocks also had a successful year. Good numbers of Speckled Woods and Gatekeepers continue to be recorded. Meadow Browns showed a decline compared with last year although this does not appear to be a long term trend.

21. **Hatchmere (SJ551721) - Diane Sumner**

No recording was possible on the Transect this year because of COVID-19 restrictions.

22. **Kelsall1 (SJ523681) - Barry Mills**

This is the second year of running this modest transect. Overall, the butterfly numbers seen were up by 10% on 2019 despite not starting formal recording until week 7 due to restrictions. The weekly average number seen was also up by around 37%. However only 14 species were recorded compared with 18 last season. Large parts of the transect had become very overgrown last year and these areas were subject significant cutting back over winter. Not sure if this impacted any species but it did make for better conditions to carry out the walks this year The early spring butterflies had largely faded away by the time recording started on the transect, so certain butterflies such as Orange-tips did not feature this year. Therefore direct comparisons of certain species fortunes year on year have been made difficult. However, clear winners this year have been all three of the "whites" and in particular, Large Whites, with increased numbers over last year. Small Tortoiseshells also did well with first and second broods out in good numbers. The summer "browns" were similar to last year apart from Meadow Browns which were ahead by almost threefold. Sadly, no Painted Ladies on the transect this year and despite a good showing late summer, Red Admirals were at similar levels to last year. Highlight of the walk this year has to be finding a Purple Hairstreak on some oaks, which is a first for the transect. Just the one recorded but I will be on the lookout for more next year and hopeful of an ongoing colony.

23. **Bickerton Hills (SJ495529) - John Roberts**

The transect at Bickerton Hills was started in 2018 and continued in 2019 and 2020 with some slight modifications to the route walked. In 2020, there were 4 different walkers of the transect with each walker contributing about 1 walk per month. Due to the Covid-19 restrictions, transect walking did not start in earnest until June and only 12 visits were made in total over the season. No visits were made in October due to inclement weather. In 2020, a total of 15 species of butterfly was recorded at an average count of 13.8 individuals per visit. The top 3 species recorded in descending order were Small White (37 counts), Large White (20 counts) and Small Tortoiseshell (18 counts). Other noteworthy species were Green-veined White (17 counts), Small Copper (13 counts), Peacock (14 counts), Red Admiral (11 counts), Green Hairstreak (2 counts) and Purple Hairstreak (3 counts). In comparison to the previous year (2019) zero Painted Ladies or Ringlets were recorded. A total of 165 butterflies was recorded in 2020 which is quite respectable given the late start to recording and the extremely changeable weather from mid-summer onwards.

24. **Stretton/Caldecott, West Cheshire (SJ435522) - Julia Drage**

The three lowland grassland fields on boulder clay in the Dee valley have yielded the same 19 species even though recording started four weeks later and missed most of the Brimstone and Orange Tips. Despite the late start the totals for 2020 were well up on the two previous years: 2018 total 470, 2019 total 1201, and 2020 total 1614 on a transect 800m long. The grassland butterflies, Small Skipper, Large Skipper, Gatekeeper, Meadow Brown and Ringlet constituted 83% of the total count. Reflecting the management for a late cut hay crop and un-grazed and un-cut boundary strips. Very few Common Blue, Small Copper, and Purple Hairstreak were disappointing, but the Small Tortoiseshell did very well and probably reflects the increase in stinging nettles in the uncut boundary strips. I tried to look for the Essex

Skipper as instructed but found fast flying skippers somewhat tricky.

25. **Caldy Nature Park (SJ423649) - Ken Walker**

Despite the pandemic we were able to start the transect walks early on as Chester's Caldy Nature Park is adjacent to home, but the high hopes generated by the fine spring weather were not fulfilled in the transect's second year. There was a summer week or two when minimum conditions for recording were not met at times the two recorders could manage. We recorded 12 species of butterfly, down 3 on last year. Of those missing, Brimstone and Holly Blue were seen outside recording hours and in neighbouring gardens, and it wasn't a Painted Lady year. Small White was by far the most numerous and showed an increase along with Green-Veined White. Large White was down but still regularly seen and Speckled Wood has a good hold. Orange Tip had mainly flown before our recording began. Other species made mostly occasional individual appearances in our returns - Common Blue, Red Admiral, Small Tortoiseshell, Peacock, Comma, Gatekeeper and Meadow Brown.

26. **Countess of Chester Country Park (SJ397693) - Peter Smith**

Transect recording began on a bright 22nd March with five Commas enjoying the sunny day. Whites, Large, Small and Green Veined were up in numbers this year the Small White making a more than three fold increase. Numbers of Small Tortoiseshells and Commas showed a good increase. On the 13th June it seemed that every bramble bush in section 3 had a Small Tortoiseshell basking on it. It definitely wasn't a Painted Lady year. I only saw three which is about normal. Small Coppers didn't show well. Common Blues were scarce this year. They started well on the 28th May when I disturbed a female. She leaped into the air when she was immediately pounced upon by a male. Within ten seconds they were mating - some courtship! I hoped for a good Common Blue year after that but it wasn't to be. Early in July Meadow Brown and Ringlet numbers surged just like the year before, however a weather system with lots of rain knocked them out of the sky. The Meadow Browns recovered but Ringlet numbers were half that of the previous year. On 19th July I saw an aberrant Speckled Wood. I got very excited about that! I didn't see any new species on transect this year but all those that I recorded last year did make an appearance. Overall butterfly numbers were up 8.5% in 2020, mainly thanks to the Whites, so that's got to be good news.

27. **New Ferry Butterfly Park (SJ333850) - Pat Thurston**

The first counts were not carried until late May and so a full season of monitoring has still not been carried out on this transect. However, despite its relatively small size and its urban location, this transect has a variety of habitats and is very well managed. As well as a good planting of various larval food plants there are also good sources of nectar throughout the season. Most predominant species are Small White and Speckled Wood. There are very healthy populations of Gatekeeper and Meadow Brown and other meadow butterflies such as Common Blue, and Small and Large Skipper are also present. Of note, whilst not recorded on my transect counts this year, there has been a confirmed sighting of the Essex Skipper during a separate study. Hopefully it will be possible to carry out a full set of counts next year.

28. **Wallasey Sandhills (SJ276925) - Dave Costello**

Brimstone continue to move into North Wirral generally, and this site has been returning healthy numbers for a couple of years now, particularly in spring. Grayling numbers were down again. My transect records only reflected single numbers at the height of the flight season. I did undertake a thorough survey of the entire site on one occasion, recording 20 individuals which was a season high for either of the two remaining sites for this butterfly. Its future in our area is somewhat tenuous. Small Heath continue to do well but Common Blue were absent from the grassy picnic grasslands completely, surviving in only a few sheltered spots on the sand-hills themselves. Not an encouraging year!

29. **Cleaver Heath (SJ257827) - Alan Irving**

No recording was possible on the Transect this year because of COVID-19 restrictions.

30. **Red Rocks Marsh Nature Reserve (SJ207876) - Dave Costello**

Last year I reported "This reserve is the second of two sites in VC57 where Grayling can be found. The site is managed by Cheshire Wildlife Trust. I now have good contacts there and a dynamic conservation plan for this species is beginning to take shape." Sadly events overtook me. The first casualty was a survey in early March with a CWT botanist to identify the most likely areas of larval food plants to survey for 5th instar caterpillars in May. We need this information to understand what's happening with this species and implement a proper strategy for them. The survey of the caterpillars fell by the wayside as did the arrangement with John Moores University for 2 research students to spend the adult flight season on Red Rocks and Hilbre Island recording, observing and preparing a full report on the Grayling population which would have helped with their conservation and also any possible funding for the sites. In fact the only element that had been put into place that survived related to the Graylings favoured nectar source on the site, Sea Holly. Through CWT, Chester Zoo obtained a licence to propagate this plant form stock on site (Sea Holly is a protected species in the wild). Several hundred new plants should be in place by 2021's adult emergence. Numbers this year were lower than at Wallasey Sandhills so the Grayling need all the support they can get. Other species, including Small Heath appeared stable but there were no Dark-green Fritillaries recorded this year

31. **Marbury (SJ651777)**

No recording has been possible on the Transect this year because of COVID-19 restrictions. Mary Jeeves who has walked the transect for many years has decided to retire and the Transect is being redesigned for 2021.

32. **RSPB Burton Mere Wetlands (SJ314734)**

No recording was possible on the Transect this year because of COVID-19 restrictions.

33. **Crown Farm (SJ572704) - Mike Perchard**

The transect at Crown Farm Nature Reserve runs for 1.25 Km through a mix of long grass, short grass and species rich wildflower meadows. The aim is to walk the transect once a week from the beginning of April until the end of September, recording all butterflies seen within a 5 metre wide corridor centred on the transect line. Butterflies outside this envelope are not recorded. The transect can be walked on any day when the weather is suitable, noting that access is not available at weekends. Due to the coronavirus restrictions, access to the site was not possible until early June. Since then, the site has been visited on 16 occasions and a total of over 1600 butterflies of 17 species have been recorded. Meadow Brown are by far the most common species with counts over 100 on several occasions but other grassland species have also done very well. Small Heath, Gatekeeper, Large and Small Skippers and Common Blue have all been seen in good numbers during their individual flight seasons. Ringlet and Speckled Wood have also been observed but in smaller numbers. Small Copper have been seen on most visits but never in large numbers. These specimens have been seen over a wide area of the site and are not confined to any one particular location. As the transect walks didn't start until June, we missed the main flight season of the Dingy Skipper but we did record a couple of specimens in early August. I believe this is the first year that second generation Dingy Skipper have been recorded in Cheshire. Another notable highlight in August was confirmation of the presence of Essex Skipper. These are very similar to Small Skipper but a couple of specimens did remain still long enough to allow a detailed observation. The various Whites have also been present with almost 100 seen during the year. This was a fairly even mix of Large, Small and Green Veined White. Small Tortoiseshell,

Peacock and Comma complete the list of species seen this year.

34. **Brereton Heath Country Park (SJ797651) - Mark Arnold**

Brereton Heath Local Nature Reserve benefitted from staff and volunteers being able to monitor the transect throughout the season despite early lockdown restrictions. The good spring weather is reflected in good numbers of Brimstones during April and May, as well as good numbers of Peacocks. Meadow Browns and Gatekeepers both recorded high numbers during the summer and both appear to have been rather early in the appearance, with Meadow Browns being recorded from the first week in June, and Gatekeepers from the second week in July. Increasing numbers of Small Tortoiseshells were seen from mid -July to early September. Ringlets, relatively new to the site also appeared in small numbers, although unfortunately there were no sightings of the Dingy Skipper which were first sighted in 2019.

35. **Sound Common (SJ620480)**

It has not been possible to produce a report this year, due to gaps in the data.

Are you interested in setting up or joining others in walking a transect? Perhaps you have a favourite walk that might work as a new transect? In either case, please contact Tim Ward (see page 4) as soon as you can if you want to participate this year.

Maverick Rewilding - The Recorder's Conundrum

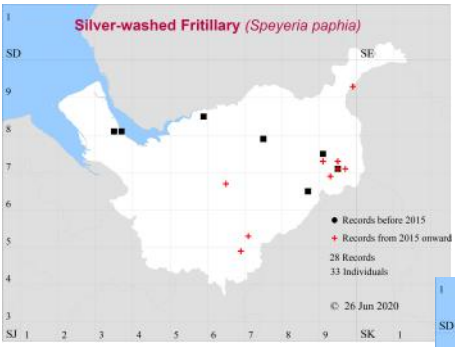
Rupert Adams

I've been taking a long hard look at the butterfly records in the Cheshire and The Wirral database during the Covid lockdown, especially those that seem to be unlikely species' occurrences or those that have odd dates or have been found in odd locations.

Many of these dubious records are attributable to escapes or releases from breeders and, in this category, there are those that are easy to identify as "none natural" such as tropical species, or those associated with funerals or weddings, like Monarch which is regularly reported in cemeteries! Others, such as Geranium Bronze, are known to be imported via plants in garden centres. This is a South African species and its larvae feed on cultivated Geraniaceae. It is now established and relatively common around the Mediterranean and is arriving in the UK via its imported food-plants. We have also had a report of Long-tailed Blue, which almost certainly came from Mange-tout peas; an assertion reinforced by its discovery in the gentleman's kitchen. This can lead to confusion as Long-tailed Blue has migrated across the Channel and seasonal breeding is established each year from migrants in Kent and Sussex. It is unlikely to arrive by natural means in Cheshire unless our winters warm sufficiently to enable its survival and establishment. Equally, extinct British species such as Mazarine Blue are unlikely to occur unaided

in Cheshire.

However, native species are harder to validate, especially if a particular species is showing signs of geographical expansion. Comma, Ringlet and more recently Essex Skipper have moved into the recording area and all have got here under their own steam as part of a natural range expansion. Isolated reports of Essex Skipper further north than us are possibly attributed to movement of hay containing eggs and we may have had our numbers boosted in this way, but the patterning of reports across the country and adjacent counties, with increments year-on-year, indicates natural spread.



We are also possibly seeing the arrival of both Silver-washed and Dark Green Fritillaries as part of their expansion, and Silver-washed Fritillary may even have already bred in the county in Macclesfield Forest. Dark Green Fritillary has been a stable breeder in Derbyshire since national records have been collected and its appearance in Cheshire may be increasing (see the maps). Both species have been reported occasionally in Cheshire each year, but their appearance seems to be developing more solidity. As climate change progresses the expansion of these two species my be strengthened, which would be a welcome outcome to balance other less desirable consequences.

Occasional records, including some submitted in 2020, of species such as Small Blue, White Admiral and Marbled White present a more difficult challenge. Perfect specimens of a species outside their normal range are hard to explain, unless they've been bred and released. Worn specimens are sometimes seen outside their range, but more importantly outside their normal dates of appearance and again they are likely to have arisen from someone's breeding attempts. On the whole this group are easy to validate.

But, it's the final group of records that gives County Recorders their biggest headache. Species that are native to the recording area but appearing suddenly or in significant numbers where there have been no previous records, or those that occur outside their normal emergence periods. Those that stand out most obviously are either rare in the area, or are widely but sparsely distributed (often requiring specialist habitat), or are enigmatic.

One species that happens to fulfil all of the above criteria is White-letter Hairstreak; whilst it is undoubtedly under recorded, because of its arboreal habits, its habitat, general distribution and life cycle is well understood. In addition a number of keen observers of the species watch it closely every year. As such, when as County Recorder, I see records at sites that have never held the species before (or indeed after) and/or where recorded numbers are higher than any other known site within the recording area, or when adults are seen earlier than any other site nationally, I begin to question their validity, at least as sightings of natural populations.

So what's going on? There are of course authorised and known releases; nationally there's the English release of Chequered Skipper, and nearer to home there's the release of Large Heath as part of the Manchester Mosses Project. Both of these follow the documented protocols for the introduction/re-introduction of invertebrates. But, back to the White-letter Hairstreak conundrum in Cheshire, where there's no published account of any formal release or breeding programme. Clearly, whoever is behind their breeding and release is extremely knowledgeable their skill has to be admired.

From the County Recorders perspective the question is what should be recorded in the database? Should we accept and enter all records without question? From a Butterfly Conservation point of view their advice is that "known or suspected releases, except where these are an official and planned reintroduction by a recognised conservation body, should be omitted from the national database". Richard Fox from BC argues that we (County Recorders) should follow this advice "otherwise distribution, phenology and trend analysis might be distorted."

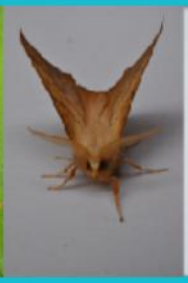
Once again I return to the White-letter Hairstreak example I've related above. In this instance, but only on questioning, one recorder has subsequently informed me that some of the sightings of this and for that other of other species they'd recorded relate to relocated ova, often from felled, or to be felled, trees and sometimes from outside the County area. In other cases the records relate to bred specimens that have then been released to "suitable" sites. Interestingly, during discussion with another recorder it became clear that some "bred" specimens were released early as adults because the captive conditions were warmer than the natural conditions; this is what triggered me to questioning the record in the first place.

In conclusion, as far as the National Database is concerned the correct procedure is to exclude known or suspected releases (except for official reintroductions). However, there is justification in keeping records of unofficial release and relocations locally. In cases where such releases give rise to long-term and self-sustaining populations consideration should then be given to their inclusion in national datasets. What's important though is that we (County Recorders) know that a particular record originates from a release or relocation thereby enabling the record to be dealt with appropriately.

Finally, a provocative, informative and eye-opening article about unofficial butterfly releases has been written by Patrick Barkham, the author of Butterfly Isles, see https://bit.ly/3l3o2t8.

Moths

Fancy attracting these moths to your garden?


We can lend you all the kit you need to try recording moths!



KIT CONTAINS:

Compact Moth Trap with bulb and cable

Field Guides

Glass containers

Carry bag and other accessories

Choose a spot in your garden to put the trap, where you can run the mains cable from your house.

We will deliver the kit to you and take it back after an agreed period.

We just ask you to record the moths you see. Take photos if you can!

IF YOU WOULD LIKE TO BOOK THE KIT:

Write to Dave Maddy, Cheshire County Moth Recorder, at d.j.maddy@btinternet.com for further details

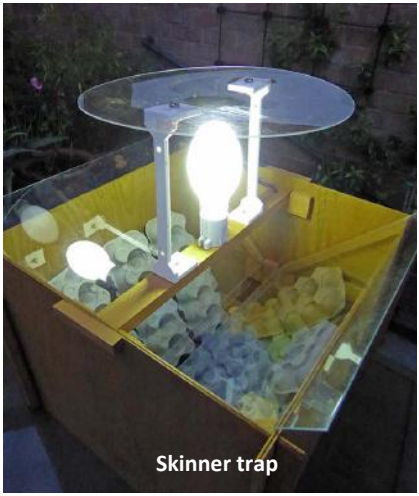
Moth trapping during lockdown

Sheila Coverdale and Nigel Earp

When the country began to close down in March last year, with the government introducing severe restrictions to control the virus pandemic, it seemed that opportunities to spend Spring in the countryside enjoying our native wildlife would be few and far between. However, being largely confined to our homes and gardens was an ideal opportunity to delve into the world of moths.

We had both had some experience of light-trapping for nocturnal moths whilst volunteering with the National Trust at Lyme Park, Disley during 2019. We had learned many of the common species to be found in the park, mentored by our guide, David Tomlinson, from whom we also learnt basic trapping and moth-handling techniques. We also found it invaluable to be part of a small group of novice moth-ers. We had been bitten by the moth-ing bug and had been looking forward to light-trapping at Lyme again in 2020 but, due to the pandemic, this was not be. So we decided to obtain our own moth traps and trap moths in our gardens in Marple Ridge and Disley instead.

There are several types of moth traps available which can be purchased on-line from specialist retailers or which could be home-built although care is required for the electrics. The three main designs are the Robinson, Skinner and Heath traps. The Robinson trap is generally considered to be the best design for collecting moths mainly because few can escape from it once trapped. We had used a Robinson trap at Lyme Park in 2019. However, it is relatively expensive and fairly bulky to store. The less expensive Skinner trap appeared to be a good alternative and we both opted for this design. The trap consists of a box with two clear Perspex sheets on top, forming a V with a slot in the middle through which the moths enter the trap. One of the advantages of this design for us as beginners is that the Perspex sheets allow a very clear view of what is going on inside the trap and allow moths to be extracted a few at a time and the Perspex sheets replaced to maintain confinement of the rest of the catch. This can be especially important when emptying the trap in warm weather when the trap may be full of



Skinner trap

restless moths. The Skinner design can usually be dismantled and is easier to store. There are some drawbacks. Some moths do escape from it and in wet weather, the design is prone to flood as water is funnelled down into it. The rain-guard fitted as standard to most Skinner traps just protects the bulb and its electric supply. It really needs an improved rain-guard to cover the slit and protect the moths.

Having decided on a trap design, the most important decision we had to make was the type of bulb to go with it. Traditionally, Mercury Vapour (MV) bulbs have been widely used and are usually considered to attract the greatest number of moths. However, there are some drawbacks. The bulb is very bright and in many gardens would be an unacceptable nuisance to neighbours at night. Also MV bulbs are now

in limited supply as they are being phased out. This is because they contain mercury and so are potentially hazardous if broken. MV bulbs get very hot in use and are prone to shatter violently if they get wet. The alternatives to the MV bulb are various types of Actinic tube and blacklight bulbs. These produce light largely in the blue to ultra-violet spectrum and thus are much less obtrusive to humans. These type of bulbs are generally considered to draw fewer moths than the MV bulb but their advantage is that they are much less likely to be a nuisance to neighbours in a garden environment. In the end this advantage proved decisive for Sheila in her garden at Marple Ridge while Nigel in Disley opted for an MV bulb as the trap could be located out of view of neighbours.

In all trap designs, the bulb is mounted on top of the trap. The moths are attracted to the light, particularly the UV part of the spectrum. Having been drawn to the light, they then drop down into the trap where hopefully they cannot escape until they are released the following morning. To enable the moths to roost, sheltered from the brightness of the bulb above, we provide egg boxes for them inside the trap.

If purchasing a moth trap sounds expensive or building your own is beyond your skills, it is possible to attract moths by putting out a bright light with a white sheet for the moths to rest on once drawn in. The sheet can be either draped vertically or just laid on the ground under the light. Obviously you will need to wait around to see the moths as they won't be trapped, but it may give some indication of the moths that are about.

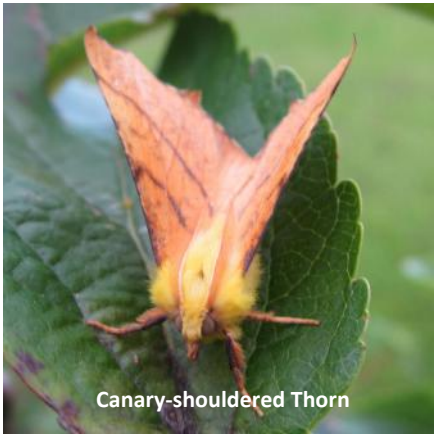
So what else do you need? A few small sample pots are essential for storing specimens requiring further identification. Screw-top plastic ones work best as they can be opened easily without disturbing the moth. A good field guide is also essential. We have found the Bloomsbury guides to be excellent. Finally, a camera capable of taking macro photos is very useful. When starting out, many moths will defy identification in the field and a good photo is essential for studying at leisure later or for confirmation by others more knowledgeable. We have found it helpful to keep in contact through the Internet with a few 'Moth-ing Buddies' to confirm or challenge our ID's, report what we have seen in our area recently and generally encourage one another by passing on ID hints we have discovered. This has been particularly rewarding during lock-down. In addition, there are a number of useful websites which provide a range of photographs together with advice on difficult to identify species.

The number and variety of moths in our gardens in summer can be astonishing and identifying them all can be daunting. Looking at the variety and beauty of many of our species is rewarding enough but we both wanted to identify and record the species that we have encountered right through the year. Over 2500 species of moth have been recorded in the UK. Of this total, nearly 900 species are classified as larger, or macro, moths while the rest are classified as micros. For the beginner, the macros are generally much easier to identify and we have mainly concentrated

Alder Kittens

our efforts on identifying these. Quite a few species on the UK list are either rare or very localised and also the number of species which may be encountered tends to increase as you go south. However, through the year in our area of old Cheshire, including Marple and Disley, up to 400 different macro species have been recorded, although they will not necessarily all come to our gardens. We reported all of our garden moth records to the County Moth Recorder at the end of last year.

We normally put our traps out once a week, sometimes twice if conditions warrant this although never on consecutive nights. This is because we release the moths back into


Canary-shouldered Thorn

our gardens and we don't want to retrap them the following night. The great thing about recording moths regularly through the year is seeing the change in the species that we find. Nearly every week, we found species which we had not seen previously during the year. The variety has been amazing. For us, after a very wet February, the moth year started in March and we ran our traps, weather permitting, through until November. It is even possible to catch


Oak Hooktip

moths in the middle of winter if there is a mild spell. However, this winter has been on the cool side and even now, as we write in mid March, the 2021 moth season has yet to get going properly in our gardens. The number of moths and the number of species tends to be fairly low at either end of the year while the peak months are June to August. For a beginner, early spring or late autumn are good times to start as there is a more limited range of species to identify.

We have learned that the weather conditions have a major impact on the number of moths that we catch. Temperature is very important. Below 12 degrees Celsius won't bring many moths although early and late in the season, night-time lows less than this are more normal at Marple Ridge and Disley. This is due to the altitude of our gardens at 170 to 200 metres above sea level. Wind is a


Leopard Moth

significant deterrent for the moths and a windy night in an exposed garden will produce few, if any, moths. Rain, unless heavy, seems to be less of a problem for the moths than for the moth-trapper who may risk having a lot of soggy egg boxes or even a blown bulb. Dull, overcast or misty nights tend to bring more moths than bright clear nights.

In the summer, we always check and empty our traps as early as practicable in the morning before the moths get too warm and become more active. After identification, all of the moths are released unharmed into garden vegetation. It has been interesting discovering the different behaviours of some groups of moths. For

example, many geometrid species like carpets and pugs tend to be very quick to


Elephant Hawkmoths

take flight so the golden rule is to photograph these moths before disturbing them in any way. Noctuid species like quakers, rustics and clays tend to be much easier to handle while yellow underwings can be very troublesome as they tend to flutter about inside the trap and disturb the other moths. Some species, often some of the most interesting species, habitually don't actually go into the trap and a thorough search of the area around the trap is required to find them all. This is best done as early as possible since, if their background does not provide camouflage, they can present local birds with an easy breakfast. We are both keen birders, but would rather not feed them with moths.


Poplar Hawkmoth

On the whole, the moth species that we have encountered in each of our gardens have been fairly similar. This is not surprising as many of the common species are found in a wide variety of habitats. However, a greater number of species tend to be recorded in the Disley location, which is slightly lower and more sheltered than Marple Ridge. Also, it may be that the MV bulb is pulling in more moths. It is impossible to be sure, these things are never clear cut. Over the 9 month period of March to November 2020, and counting only the macro species, Sheila in Marple has recorded 126 species and a total of 1,792 moths while Nigel in Disley has recorded 2014 moths of 165 species. Until we started trapping, we were blissfully


Red Underwing

unaware of the huge variety of nightlife using our gardens. There have been one or two surprises, including Leopard Moth, Red Underwing, Alder Kitten and The Shark in Disley and Northern Spinach and Streamer at Marple Ridge. In addition, we have both had our share of Poplar and Elephant Hawk Moths which, though quite common, always impress with their size.

Moth trapping has proved to be an addictive and absorbing hobby, especially so during 2020, when so many of our other activities and interests have had to be curtailed. Experiencing the great diversity of different moth species flying about at night in our back gardens is only really possible with a moth-trap so if you have never tried it, why not give it a go? We can't wait for the 2021 moth-ing season to begin in earnest.

Sugaring

John Dover

In a previous article (Dover, 2020) I mentioned that I had been employed in the early 1980s at a small Studies Centre on Southampton Common making an inventory of the Common's butterflies and moths (Dover, 1985). Writing that article reminded me of the fun that I had sugaring and I thought I'd share with you some of the experiences I had doing it.

The Common is substantial (148 ha), probably Anglo-Saxon in origin, and situated near the centre of the City (Thompson 1979). A major road, The Avenue (A33), bisects the Common, with the largest extent to the west of the road, which is where I mostly worked. There are three large water bodies, a covered reservoir, an old Cemetery, and a public house: The Cowherds. It has is a mosaic of grassland types, running from flower-rich wet areas in woodland glades to large open swathes of close-mown amenity grassland. There is much mature woodland with plenty of old oaks and also some patches of heather.

Prior to working on the Common, my work with moths was restricted to those feeding on Brassicas, and exclusively in the daytime. I'm not a party animal and working at night is not my favourite activity. Nevertheless, I threw myself into the activity with gusto. Whilst I had access to light traps, I was also keen to try my hand at Sugaring. I'd read about this in the Lepidopterist's Handbook (Dixon, 1976) and it had the lure of Alchemy for me with the creation of heady and exotic mixtures in a cauldron (or more prosaically a saucepan)!

The basic idea behind sugaring is that a sweet, sticky, and deliciously smelly mixture (to moths) is cooked-up at home and then painted onto tree trunks and/or fence-posts, as a stripe, at dusk. After a couple of hours or more the stripes are revisited to see if they have attracted moths. The moths do not stick to the sugar, but sit around the edge of the stripes sucking-up the sweet concoction with their long tongues. The cunning part is that the alcohol in the mixture makes them somewhat tipsy and when you come along with a torch (one on a headband is best for this) they simply, like a woozy drunk, keep on sucking at the good stuff rather than flying off. It is worth checking the sugar stripes several times during the night; also, try not to use the full beam of your torch directly on the moths but use the edge of the beam. Moths you want to capture can be easily encouraged into a pill box or other container and identified *in situ* or taken home for photography. It is not known if the moths suffer hangovers.

I used both recipes from Dixon's book, the first which he called 'Traditional Sugar' is the most easily made as obtaining amyl acetate for the 'Modern' sugar might be a little more difficult:

Traditional Sugar:	*Modern Sugar:*
2 lb Barbados Sugar	2lb Barbados Sugar
1 lb Fowler's Black Treacle	2lb Over-ripe bananas

1/2 pint Stout or brown ale	25 ml Methylated spirits (I used absolute alcohol)
1 tbs Old Jamaica rum	5 drops Amyl acetate (smells like pear drops)

For the traditional sugar the process is simple: mix the sugar (I used dark Muscovado), treacle and beer in a saucepan and bring to the boil – it will fizz at first because of the CO_2 in the beer – it is nasty stuff, so keep an eye on it as it can boil over quickly without close attention and remember to stir regularly. Allow to cool and only add the rum just before venturing out. The Modern sugar is easier to boil but messier at first: remove the banana stalks and blend the skin and fruit in a liquidiser/food processor. Mix this mush with the sugar in a saucepan, bring to the boil and simmer for 10 mins with lots of stirring, then cool. As with traditional sugar, add the meths and amyl acetate just before you go out. Dixon (1976) gives much more detailed instructions and notes that it is probably best to make up just enough for the night as sugar does not keep well (so the above amounts may need to be reduced).

I also used a cold-mix *'Honey Sugar'* from Stewart (1913):

1 lb Fowler's Black Treacle

2 tbs Honey

2 tsp Dark rum

I found the Traditional and Modern sugars to be much more effective than the Honey sugar.

Once prepared, I poured the sugar into old instant coffee jars and used a doorstep milk bottle caddy/carrier to tote them round my sugaring 'beat'. A cheap, clean, paint brush can be used to apply the sugar to tree trunks at about 1.25/1.5 m above the ground. The stripe should be about 30 cm long (vertical) and 4 cm wide. To save your hand getting covered in gunk, cut out a circle of stiff cardboard, put a slit in the centre, and push it down to the base of the brush handle, securing it in place with tape. The sugar will stain the tree trunk, so be careful to use trees that will not be easily seen from a footpath, and only sugar in places where you have obtained permission. Repeated sugaring in the same place over a number of weeks seems to improve the attractiveness, so if you don't get much the first night you try it don't despair. Weather conditions and light sources will affect catches; cold, clear, moonlit nights and trees near streetlights are best avoided. My best catch was 22 moths at one sugar stripe, but many times I found none at all.

There are several pleasing aspects to sugaring: one is that you get to see some species of moth that never, or rarely, come to light. I remember vividly the first time I saw an Old Lady at sugar – such a large moth, and the wings were just like the fabric you see in those old family photographs that are kept from one year to the next in an old battered suitcase. One of the other benefits is that you get to finish the can or bottle of stout/ale used to make traditional sugar – it will not keep until next time, and it would be a waste to throw it away…

With sugaring you also see a different side of life. There is something exotic about shining your torch onto a group of feeding copper underwings: the bright reddy-bronze reflections of your torch from their eyes, their antennae waving, is very otherworldly. When you are out sugaring your senses, particularly hearing, are heightened; there is a strange frisson of excitement at being quite alone in the dark, and maybe feeling a bit vulnerable. I used to work well past midnight and, being a public space with a well-frequented pub, there were often a few people wandering home through the Common

at closing time. But later, at midnight or 1 am, with straining ears, the silence almost became oppressive. The occasional animal rustling noises, the high-pitched clicking from bats foraging over the lakes, and the croaking of frogs and toads seeming preternaturally loud. But, sometimes, a couple of people would walk briskly along the paths talking in low or high, excited, tones – then I would move slowly backwards, melt into the deep shadows of the trees and shrubs, and let the wanderers pass without knowing I was there.

Sometimes, as I shone my torch on a sugar stripe I would find others had been there before me. I remember finding a couple of toads sitting below the sugar, on a little outgrowth from the old oak I was visiting, capturing moths as they arrived. I had similar issues when moth trapping with a generator on the Common: bats would sometimes home-in on moths attracted to the light, and I would see only a pathetic set of wings floating down into the mercury-vapour beam, stripped from the thorax, as the bats moved quickly onto their next victim. On evenings with the occasional shower I would have to watch the ground carefully as dozens of frogs and toads moved onto the glistening footpaths as they migrated to and from the Common's ponds and ditches or foraged for slugs and beetles. Even the odd fox took advantage of the sugar, rearing-up on its hind legs to lick the sugar off the bark. Whilst moths will have left the sugar stripe by dawn, other visitors were often found on the remains during the day. Typical finds included wasps, flies, and Speckled Wood and Red Admiral butterflies.

In terms of efficiency, sugaring is not that effective compared to light traps; nevertheless of the 269 species of moth I found on Southampton Common seven were only found by sugaring: the Brown China-mark, the Purple Bar Carpet, the Pearly Underwing, the Common Chestnut, the Brick, the Sallow and the Red Underwing, with a further 26 found by sugaring and other methods. At best that means I only found just over 12% of the moths by sugaring (the majority were found using various light sources, with additional species found using leaf mines, pheromone trapping, or direct netting).

So, is sugaring worth doing? Not if you are going for bulk catches – light trapping is clearly superior. Does it catch some species you will never see using light traps? – yes, but it may depend on local circumstances. At Southampton Common I only caught the Sallow using sugar, but at home in Cheshire I have caught it at light. Does it give you a different perspective on moths? emphatically yes! Sugaring is great fun, gets you out of the house, you get to see (some) moths you never would otherwise, and you can cover a much wider area than you can using light (unless you can afford a lot of traps). I used to run light traps and sugar simultaneously, though in different areas. Sugaring definitely, and quickly, gives you a feel for potentially good and bad moth habitat. Sugaring is also very social – whilst I usually had to work alone (it was my job after all), on the occasions I had others with me it was particularly enjoyable - sharing experiences is really what it is all about, and having company is much safer. Choose a nice warm, cloudy or moonless summer evening, take sandwiches and a thermos and enjoy a different side of mothing.

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STEALTH MOTHS

Editor

It is refreshing to note that clever engineers have realised that nature sometimes does a better job than they can. I have read several articles and scientific papers recently showing how biological phenomena have opened windows to engineering developments. Of course some of this comes from weapons research and I have very mixed feelings about that, but I live in hope that spin-offs will benefit the rest of us, not just the military.

So, the weapons boys are interested in any natural arms race and the relation between moths and bats is a fascinating example. As you will know, bats use echolocation to track prey whilst 'hawking' for food and moths form a major part of the diet for most species of nocturnal bat. The bat is likely to use Doppler shifts in the echoes of its click noises to judge speed and direction of its prey. But some species of moth make their own click noises to distract and disorientate the bats; in this country the Tiger family are best known for this. They have a thin area of cuticle, called a *tymbal*, which can be distorted rapidly by muscles to make the click. One of the larger American hawkmoths has also been shown to produce distracting sounds in response to bat pursuit, in this case by rubbing its genitalia together, a process known as *stridulation*.

How are these responses triggered? Many species of moth can "hear" the bat's click sounds. I use inverted commas because they do not have ears like mammals, but they have modified proprioceptors, called *tympani,* which respond to sound waves, activating special nerve endings to send signals to the brain. These are mostly on the thorax and abdomen. They are very sensitive and are receptive to sounds in the frequency range used by bats (20-80 kHz). Once the bat clicks are detected, most macro-moths make avoidance manoeuvres and those that can do so begin making distracting clicks.

Can we assume that these mechanisms evolved specifically in response to echolocating bats? Yes. It is unlikely that moths use perceived sounds for any other purpose. There is no evidence that they use sound in communication with other moths, unlike grasshoppers or cicadas, so predator evasion is the only reasonable explanation and bats are the major predator of night-flying moths, plus a few birds like nightjars. Further evidence comes from the finding that these specialised organs are not well developed in moth species that emerge early or fly in the winter months - i.e. when bats are not on the wing.

I started this account with reference to novel engineering. Everything so far is old information and the phenomena are no more advanced than today's warplanes. The new information relates to moths that do not have "ears", but still have to wrestle with the bat problem. Marc Holdereid and his colleagues at Bristol

University have discovered that moth wings can function as an acoustic metamaterial. This is a composite material that is engineered to have a property not found in any natural single material and which is made up of an assembly fashioned from components that individually do not exhibit the same properties. Marc suggests that an acoustic metamaterial has never been discovered before in nature. This property comes from the composition of wing scales in moths and the composite functions as an ultrasound absorber. The peak absorption is 72% of sound intensity at 78 kHz, with significant absorption of sound at all the frequencies present in the spectrum emitted by bats. In other words, the composite formed by the scales on the membranes covering the wings significantly diminishes the echo returned to the bat.

The Bristol research concentrated on two moth species, *Antheraea pernyi (*Chinese Oak Silk Moth, *Saturniidae)* and *Dactyloceras lucina (*a large moth from central Africa, *Brahmaeidae),* which do not exhibit enhanced hearing or the ability to make defensive click sounds. The acoustic properties of wing scales were examined both in isolation and in position as part of the composite. Their shapes and organisation were also studied by detailed microscopy. Properties and structures were compared with butterfly wing scales.

Moth scales varied in shape and area. Many were V-shaped with different parts of the scale having different resonant frequencies. Inherent resonant frequencies were also modified by the other adjacent scales, so that the range of resonant frequencies gave the wing array its combined metamaterial properties. In contrast, butterfly scales were uniform in size and shape and the wings did not have the same acoustic properties. The extent to which this critical heterogeneity of wing scales is found in other species of moth remains to be determined, but you may want to look carefully at any high resolution pictures you have taken if you run a moth trap. The structural clues may be there.

From the engineering standpoint, the Bristol research has discovered an acoustic absorber (i.e.a 'sound-proofer') that is a few hundred microns thick and appears to be very efficient. Apparently no materials currently used (for example in buildings, vehicles, other machines) adopt similar principles and for the most part are very bulky by comparison. The concept might produce acoustically absorbent wallpaper, for example. As regards stealthy warplanes, who knows? I have no idea what sort of covering layer(s) are currently used there. I suppose that multiple testing might have arrived at a similar approach by serendipity. For me, the idea that moths might give rise to acoustic wallpaper, albeit rather pricey, is appealing. Perhaps Boris' girlfriend will get to use it.

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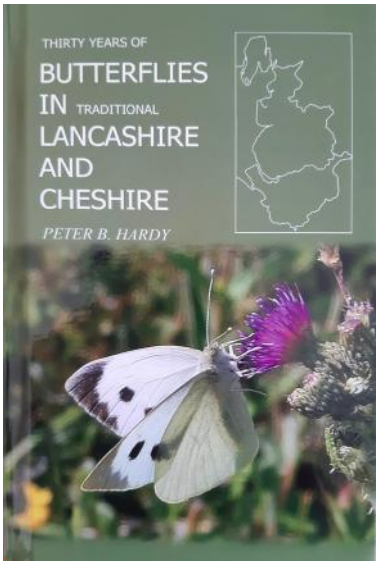
Book Reviews



Thirty years of butterflies in traditional Lancashire and Cheshire

Peter Hardy

Upfront Publishing ISBN: 9781784567071

Review by Rupert Adams

The last few years have seen a number of butterfly county atlases produced, some of which have broken new ground and are excellent, e.g. *Butterflies of Sussex* by Blencowe and Hulme. The last county atlas for Cheshire was published in the 1990s, by my predecessor in the role of County Recorder, Barry Shaw, and for Lancashire in 2019 (*The Butterflies and Day Flying Moths of Lancashire*) editors Marsh and White. What is certain is that the fortunes and distribution of butterflies in the region have certainly changed in the last 3 decades.

This new book takes a very different approach from that of the typical atlas. Taking three ten-year periods (the last decade of the 20th century and the first two decades of the 21st), the book documents the changes in distribution and abundance of all the butterfly species which occur or have occurred within vice-counties 58, 59, 60 and the Furness portion of 69, which equate to the true historic or traditional English counties of Cheshire and Lancashire. No legislation has ever changed the boundaries of Britain's traditional counties. From his base in the Mersey Valley, close to the boundary between the counties, the author explores the length and breadth of both of them, noting how the butterflies have been affected by human activities as well as by the forces of Nature, and also takes a closer look at the 1974-created administrative areas of Merseyside and Greater Manchester, and their central cities of Liverpool and Manchester.

I like data and argument, and the book certainly has a good deal of both, but I suspect that for many casual readers there will be too much data and analysis in this book and, for example, the nuances of how many digits should make up a recording grid reference, and the author's views on the merits of the various the methods of recording butterflies will exceed their interests. Similarly, there are tables of data by species and grid square and "detailed" maps (100 m scale) of species distribution for 6 X 5 km zones around the centres of both Manchester and Liverpool set against topography and habitat that will be of minimal interest to the generalist.

However, the inclusion of such details will satisfy the true enthusiast as there are those of us who revel in data, discussion and argument of this kind, and for those of you who know Peter; this is him embodied on the page!

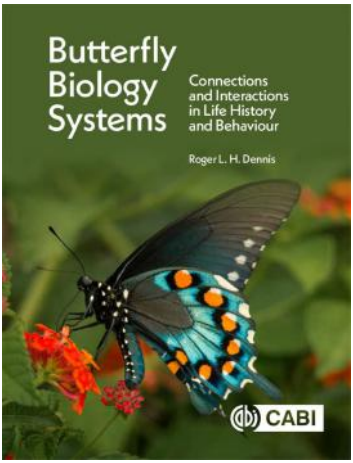
What might be argued is that the detailed data could have been published elsewhere, for

example on-line or as an accompanying CD, thereby reducing the cost of the publication; at £45 this is one of the most expensive regional atlases.

There is an extensive section listing sites across the region which, although far from being exhaustive, is useful. The species accounts themselves are generally concise and pay particular attention to changes in distribution during the period covered within the book, including maps that depict the changes, and these are particularly useful.

I do have criticisms. The small size and quality of photographic images throughout makes some difficult to see and the use of images that show specimens taken outside the area that is covered is frustrating, why for example do we need an image of a Chequered Skipper taken in Scotland to accompany the 3 line text that confirms that the one historical record must be held in doubt? Equally, the photos for the Essex Skipper were taken in Surrey when excellent quality images could have been made available from the newly colonised Cheshire sites. Fewer, larger and better quality images would have been beneficial.

Overall this is a book that will split opinions. As intended, it is not a traditional atlas and what it does differently will not appeal to all. But if you want data, analysis and argument alongside up to date information there's nothing else available for the counties of Cheshire and Lancashire at present; so if you want detail I would recommend it. It is available on-line from Waterstones and other sellers.



BUTTERFLY BIOLOGY SYSTEMS – CONNECTIONS AND INTERACTIONS IN LIFE HISTORY AND BEHAVIOUR

by Roger L.H. Dennis

CABI, ISBN 9781789243574

Review by Peter Hardy

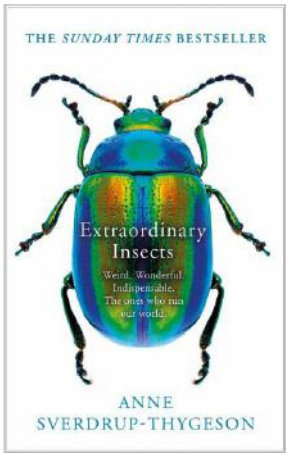
This monumental work, consisting of 500 pages, 10" X 7½" is the culmination of a lifetime of butterfly study. The author, a well-known expert on butterfly biology, has aimed to bring together in one volume all the main points of the nigh-innumerable papers in scientific journals on this subject, giving due acknowledgement to every one of the sources. Thus, unlike his previous books, which have centred on the British butterflies, this one relates to butterflies worldwide – a vast field of knowledge.

The main text comprises four sections: (A) language and concepts of systems theory (35 pages); (B) perspectives on butterfly biology (64 pages); (C) butterfly life history – basic trade-offs in reproduction, development and survival (101 pages); (D) butterfly behaviour – interactive adjustments in the habitat (103 pages) A short epilogue (9 pages) follows, summing up and pointing towards the future; then there are a glossary of terms (19 pages), an appendix giving a key to symbols, a list of references and an index.

Some readers may find section (A) a trifle heavy-going. It is worth persevering with, however, to understand just what constitutes a "System" in this context, and once it has been mastered the remainder of the book should readily fall into place.

The book is lavishly illustrated, mainly with coloured flow-diagrams, but these are in many instances supplemented by photographs, mostly of live butterflies, though museum specimens have been resorted to in just a very few instances (one such being the plate showing Batesian and Müllerian mimicry, and another the comparison of typical (yellow) and white (helice) Clouded Yellow females).

Some idea of how much knowledge has been crammed into this one volume may be gained from the fact that the bibliography of references is 120 pages long. At a recommended retail price of £150 (sometimes a little less on Amazon), the book is certainly not cheap, but it is well worth every penny.



Extraordinary Insects

Anne Sverdrup-Thygeson

Mudlark (Harper Collins) 2020
ISBN 978-0-00-831637-2

Review - Ed.

The author is a Professor of Conservation Biology at the Norwegian University of Life Sciences as well as a scientific advisor at the Norwegian Institute for Nature Research. She specialises in the role of insects in the status and ecology of trees and forests, so she has special expertise on arctic and nearctic taiga all the way down to urban landscapes. You don't meet many people like that.

The first part of the book is concerned with physiological and behavioural specialities in insects in general. She covers the basics and goes on to specialisations for different habitats and processes such as communication, feeding, defence and reproduction. She then moves on to relations between insects and us humans, pointing out the many aspects of their and our lives that are interdependent. Finally she reviews the status of insects in various parts of the world, the dangers to which they are vulnerable and the consequences of their demise.

She writes well and the translation (by Lucy Moffatt) is good, if a little 'Americanised'. But the book is hugely informative and fascinating. I enjoyed it. It would make an excellent introduction to insects for someone who is interested but naiive about the subject and it is written in a fashion that would entertain and enthuse kids. At £9.99 it would be money well spent and make a good little present for someone.

PHOTO COMPETITION 2020

Highly commended and Second and Third placed entries

Alder Moth caterpillar
Suzanne Butters

Brimstone (M)
Terry Ottway

Chalkhill Blue (M)
Barry Mills

Silver-studded Blue (F)
Barry Mills

Third place

White-letter Hairstreak

Roger Cope

Second place
Buff-tip Moth caterpillars
Muriel Dale