

Butterfly Conservation Dorset Branch

Newsletter No 95



Branch Newsletter

Autumn 2020/Spring 2021

www.dorsetbutterflies.com



**Butterfly
Conservation**

Saving butterflies, moths and our environment

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No printed Events List

We will try to go ahead with a walks programme this summer, but we will not be printing an Events List to accompany this newsletter, as the situation regarding holding events in the immediate future is so uncertain. All events will be posted on the Dorset Branch website, which will be kept up to date with any changes to the programme. If you do not have access to the internet, and wish to find out about any upcoming events, please phone Nigel Spring on 07981 776767 or Georgie Laing on 01305 766712.

We have not held Area Walkers' Meetings this year and the situation regarding our AGM remains uncertain at this time.

Photo on front cover: Large Tortoiseshell by Will Langdon

Editor's Note

You will have realised that the printing and mailing of the newsletters last year was completely disrupted because of Covid-19: for a long time we were not sure that we would ever get them printed at all. However, in the end we managed it and the Spring 2020 Newsletter (No 93) and Butterfly Report 2019 (No 94) were sent out in early December. Unfortunately, Butterfly Conservation HQ were introducing a new membership database system at the time, and the mailing list provided by HQ left out over 200 members' addresses who were expecting a printed newsletter, substituting a similar number of addresses that had opted out of a printed copy. This took a while to sort out, and the remaining copies were not posted until early January. Our apologies for the confusion.

I hope you enjoy this latest edition, which is a combined Autumn 2020/Spring 2021 newsletter. It is slightly larger than usual as we are not printing the Events List (see left) because of the uncertainty about which, if any, events will be able to go ahead. It is intended that the next edition will be the Butterfly Report for 2020, followed by the Autumn 2021 newsletter later in the year. We hope that in 2022 we will be back to our normal three editions.

Jane Smith, Newsletter Editor

Have you seen our new Butterfly Atlas on the website?

Our Techie, Dom Greves, has done a great job showing the mapped distribution of individual species, using data from Robin George, from 2014-2019 and comparing it to the 2000-2004 period. He also makes longer-term comparisons between 2005-2019 and 1990-2004.

Bill Shreeves' analysis done in 2016 is also retained, and we have (at last!) got up scanned images of two earlier, home-produced atlases.

View from the Chair

From Nigel Spring, Chair of Dorset Branch

It suddenly feels as though things are getting better! As I write this, Dorset is bathed in wall to wall sunshine for the fourth day and the endless rain of the last two months seems a thing of the past. There are Brimstones and Peacocks coming out of hibernation in good numbers and little black knots of Marsh Fritillary larvae have already been seen at Lankham Bottom Butterfly Reserve and other sites; and, particularly exciting, there seems to have been a strong emergence of adult Large Tortoiseshell butterflies on Portland which have clearly hibernated successfully. It is very likely that the ancestors of these were releases in 2018/19 but they now seem to be well established as the latest addition to the UK species list.

The restrictions caused by the Covid-19 pandemic have prompted many of our members to spend more time enjoying the outdoors, particularly in their



White-letter Hairstreak
Photo: David Parish

immediate neighbourhoods. Speaking personally, we found many new places and species as a result of our local walks last spring, some of them absolute gems, and we are aiming to extend some of these surveys this year. We embarked on a study of our local elms, followed up by searches for White-letter Hairstreak colonies in June and July. The healthy elms particularly stand out in the hedgerows in March when they are in flower and then with their clusters of fruits, long before most other tree species have come into leaf. We discovered that the earliest flowering elms tend to be the Smooth-leaved/Small-leaved elms,

sometimes called East Anglian elms, and these are frequently the ones which are most resistant to Dutch Elm disease. We invited help from BC Dorset members and were hugely encouraged by the response. The Dorset elm map is becoming well marked with pins and many of the elms which were visited later turned out to have previously unrecorded White-letter Hairstreak colonies on them. Not only are the butterflies extremely elusive, but the elm family turns out to be a very complicated group, with all the 'experts' having different theories on their taxonomy. But the more elms and butterflies we can record, the better. So if you would like to take part in the great Dorset elm hunt this year, please contact me. Perhaps the Large Tortoiseshells will move north from their present centres on Portland and we will see them on our elms too!

Another survey we asked branch members to help us with last year was into the distribution of larval webs of several moth species. The appearance in May/June of silken threads enveloping entire hedgerows never fails to arouse comment –

these are produced by a number of micromoth species called Small Ermines, some of them relatively rare; the defoliation of the hedges is almost always temporary. The most notable species that creates a tent (on blackthorn and hawthorn) is the Small Eggar, a larger moth that is reasonably widespread in Dorset but which is nationally scarce. The tents of the Small Eggar and the more common Lackey moth are much tighter than those of the Small Ermines, and are well worth having a close look at - with the handsome larvae twitching in response to being disturbed. We are inviting people to send in photographic records of the different web-building moth species so please join in if you can.



Lackey Caterpillar larval web.
Photo: Bob Ford



Chalkhill Blue female.
Photo: Donald Simcock

A butterfly species which has experienced a steep decline in Dorset is the Chalkhill Blue – the causes of this are very poorly understood. There are many chalk downland sites in this county which would have been heaving with these turquoise jewels in July and August thirty years ago, where now you will find none. Various people visited places last summer where this species had been previously recorded, and gradually an up-to-date distribution map is being produced – which is extremely depressing and puzzling. The next stage this year is to look into other factors on these downland sites which might explain the losses – if you would like to take part, please keep an eye on the branch website.

We shall be putting together the Dorset Butterfly Report for

2020 in the coming months, aiming for summer publication. This will be a distillation of all the different records that have been collated during the year – including transect data, the thousands of sightings sent into the branch website, the Wider Countryside Recording scheme and the Garden Butterflies survey, and in addition the records sent into iRecord, Living Record etc. It is a massive undertaking but at the heart of all our recording systems are the hundreds of individual recorders without whom none of this would be possible.

Whatever happens with the Covid-19 situation this season, however far you are allowed to travel, I hope you will continue to enjoy the wildlife around you and at the same time help us by sending in your butterfly records. As with the Chalkhill Blue, we cannot help to conserve our butterflies without an understanding of the population changes and the factors involved.

Enjoy your spring and summer – and we hope to see you soon!

Nigel Spring

Second Brood Peacocks

This article was written by Tim Phillips in late 2019, but unfortunately I overlooked it when putting together the Spring Newsletter. Here it is at last, with some additions by me to bring it up to date! [Editor]

Having moved to Sherborne some four years ago, in 2019 I thought it time I switched from my old Branch, Somerset and Bristol to Dorset Branch. I received the Spring Newsletter with my welcome letter and was interested to see in it an article describing the lack of records in certain kilometre squares.

Summer 2019 was my second in retirement, and was spent in 3 main activities. My allotment flourished and nearby buddleias drew many Nymphalids, including of course some of that year's massive influx of Painted Ladies. Walking our dog provided opportunities to investigate local outlying areas, including the Terrace and Lenthay Common. In addition, I also walked the South West Coast Path between Poole

and Lyme Regis, along the whole of the Dorset coast. This is a glorious coastline and countryside, and that summer was full of insects like Graylings, Lulworth Skippers, ubiquitous Painted Ladies and many more. Every sighting I made was



Peacock on Buddleia
Photo: Tim Phillips

entered into the iRecord app. Seeing the lack of records in some parts of the county map, I contacted Bill Shreeves to find

out whether there are links between the app and our county records, which he assured me was the case.

In late August 2019, I came across two separate patches of black caterpillars, one near Lenthay Common on the western edge of Sherborne, and the other in Purlieu Meadow, to



Peacock on Buddleia
Photo: Tim Phillips



Pupating second brood Peacocks
Photo: Tim Phillips

the south of the town centre alongside the River Yeo. These were unmistakably second brood Peacocks. Soon some 50 of them were in cages in my new greenhouse, munching their way through buckets of fresh nettles. Over 40 pupated and, while eight proved to have been parasitised, 35 adults were released in late September, some pupae having

been attached to sticks for convenience.

In all my 50+ years of watching butterflies, this was the first time I had found what must be a rare event, although perhaps becoming less unusual as the climate warms. The Butterfly Report for 2019 shows that temperature and sunshine levels were above average in June and July with below average rainfall throughout the whole summer. This may have encouraged Peacocks to produce a second brood.

Here's to an equally exciting year in 2020 [though in the event it was of course somewhat constrained: Editor.]

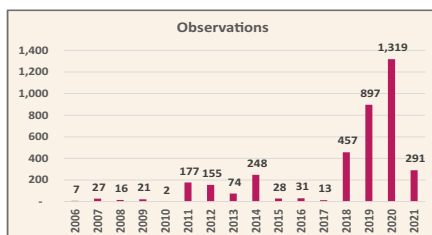
Large Tortoiseshells in Dorset

Will Langdon describes his exciting find of breeding Large Tortoiseshells on Portland in 2020

The Large Tortoiseshell (*Nymphalis polychloros*) must be one of the most sought after of British butterflies. The combination of its mysterious extinction, occasional re-appearances, and the tantalising possibility that it may yet return to us make it one of the most exciting butterflies to encounter in the field in the UK. For most lepidopterists, such encounters have always seemed to be largely the stuff of myth and legend, but following a good influx in 2007, recent years have seen an increase in the number of sightings in the UK, and catching up with one has become an increasingly real possibility for many observers.

Although Large Tortoiseshell larvae are widely bred in captivity for photography and sometimes clandestine releases, the increase in sightings and their distribution (mainly in southern and eastern counties, often near the coast) are strongly suggestive of a continental origin for many

of these butterflies. There has recently been a strong resurgence in the butterfly's fortunes in the Netherlands and Belgium, where it has a very similar history to here - a mysterious decline followed by



sporadic sightings over the last 50 years or so. However, there has been a massive increase in sightings in 2018 and 2019, continuing into 2020 (greater than the increase in observers over the same period). In a similar trend, the increase in sightings of Large Tortoiseshells on the south coast, with several instances of repeat sightings in the same area, or in different years, has renewed speculation that the butterfly may be able to re-colonise the UK. Much of this speculation has focused on

Dorset, which recorded good numbers in the 2007 influx, and has again seen plenty of Large Tortoiseshells in 2019 and 2020. Particular focus has fallen on the Isle of Portland, which has regularly recorded Large Tortoiseshells in the past, and has enjoyed a good run of sightings in recent years. These perhaps started with a magnificently fresh female photographed in Bottomcombe Quarry in July 2018, followed by regular sightings of several individuals (at least four) in the Tout Quarry area in 2019, and fresh adults in late June that were highly suggestive of local breeding. These then overwintered successfully, with post-hibernation adults seen in several locations across the island this spring – seemingly mainly around Church Ope Cove, with others further north near the Verne.

Having visited Tout Quarry in 2019, and been lucky enough to see two of the last of the spring generation, I followed the emergence of adults in June that year, and their successful overwintering with great interest. I have always been fascinated by butterflies and moths, particularly their immature

stages as a route to a better understanding of them. The idea that the magnificent, gregarious larvae of the Large Tortoiseshell might be quietly munching on an Elm on Portland, waiting to be found was too good to ignore. This year, with lockdown restrictions easing in late spring, I decided to head down for a look. To prepare I searched for ‘Large Tortoiseshell’ on Twitter, and was amazed to see John Gifford’s image of a superb final instar larva, found by a neighbour in Weymouth while wandering off to pupate – seemingly the first (wild) larva in the UK since 1983. This strengthened my resolve, and after emailing Martin Cade to check the details of the spring sightings, and the distribution of Elm on the island, I headed down three days later, on the 14th of June, intending to focus on the Elms in the Church Ope Cove area.

I parked at a rather misty Bottomcombe quarry just after 9:00 that morning, and began by checking the elms fringing the car-park there – tall, broad-leaved and south-facing, but no larvae. From there, I took the footpath down to Church Ope Cove, checking the large elm at

downcast – it was rather exciting to just be on the trail of Large Tortoiseshells, imagining a soaring female in each canopy gap. I felt like the big game hunters of old when tracking their quarry!

It was then, still with some enthusiasm, that I headed back up the steps, having spent over two hours on the job, and back up past the ruined church and my fellow millennials. As I passed by I risked a glance up at their campsite, and into the Elms behind the tent, where a stripped branch stirred happily in the breeze, like the tattered mast of some fallen ship – this was surely it! Suddenly, where pride had won before, there was only resolve, and I climbed up into the churchyard, and explained rather haltingly to the campers that I absolutely had to look for some caterpillars on a branch behind their tent. Unfortunately, the branch in question was 5 or so metres up in the tree, with no sign of any larvae still on it.

Therefore, although the damage to the leaves looked like it must be the handiwork of Large Tortoiseshells, I felt I couldn't be certain, and that a closer

examination was required. Thus I found myself climbing the tree, as the campers below gradually cottoned on and started whispering excitedly to each other: 'he's in the tree', 'what's he doing?'. Hearing the rising tide of confusion below, I bit the bullet and delivered a fairly passable potted history of the Large Tortoiseshell's extinction in the UK and possible return from my would-be lectern halfway up the tree. They seemed amply satisfied by this, and they returned to breaking camp, murmuring approvingly about the 'big tortoiseshell' as they headed off and I climbed higher.

From my rather precarious perch at the base of the stripped branch, I was certain that there were no larvae left on the branch, or any nearby, but there was also no clear indication of their former presence – no shed skins, and no egg shells which I knew normally remained in place for some time. Unfortunately the branch was also too thin for me to get right out to the end and inspect the nibbled leaves to prove the absence, and so upon returning to the ground, I decided more drastic measures were needed. I got straight on

the phone to the Bird Observatory, and having explained my goal, and climb thus far, asked if I could borrow something to cut the branch down for a closer inspection. To her great credit, Erin the Assistant Warden only laughed briefly at my request, before telling me to come on down to the Observatory, where I was greeted by an impressive stock of shears, saws and loppers. Choosing the latter, I returned to the cove, and shimmied up the Elm, and after removing the branch, brought it up into the churchyard for closer inspection,



Two views of the hatched Large Tortoiseshell eggs. Photos: Will Langdon

hardly daring to look.

This revealed exactly what I had hoped for – a perfect batch of glassy hatched Large Tortoiseshell eggs encircling the branch, along with batches of shed larval skins still attached to the leaves. It was an immensely exciting moment, and confirmation of the breeding many had suspected for some time. In total, there were 175 hatched eggs, laid around the branch about a foot below the tip, on two year old growth, and a lesser number of 2nd (c. 55), 3rd (c. 45) and 4th instar (5) larval skins still attached to some of the nearby leaves. The second and third instar skins were all bunched together on a couple of leaves close to the eggs, but the fourth instar skins were much more widely spread, and with fewer of them, the larvae presumably wandering much further in their later stages. The feeding damage left by the larvae seemed quite methodical, starting at the top of the leaf and eating the leaf tissue between the veins, right down to the midrib. Leaves had been eaten like this down to about a metre below the tip of the branch (all leaves on growth two years old



Second Larval Instar Skins
Photo: Will Langdon



Fourth Larval Instar Skins
Photo: Will Landon

or younger), creating quite a large area of distinctive feeding damage that was very obvious from the ground. Comparison of my pictures with those of nests and larval damage from the Netherlands suggests all of this is quite typical for Large Tortoiseshells, as was the egg-laying site – reasonably high up on a sheltered young tree in a sunny spot (in this case a south-west facing tree line).

If this is the start of the Large Tortoiseshell's return to the UK,

looking out for this distinctive larval feeding damage in May and June may be a good way to chart the butterfly's spread, although inevitably the picture of this butterfly's status will always be clouded by murmurs of captive breeding and other skulduggery. Indeed, rumours of a release on Portland in late 2018 (eventually giving rise to these larvae), are persistent, and their veracity accepted by many. It seems likely though, that any release will now have been supplemented by genuine continental immigrants, given the butterfly's increase in the Netherlands and Belgium, followed by widespread records on the south and east coasts in the last couple of springs.

Despite this, some doubts will probably always remain about the ultimate origins of these larvae, but that seems fitting for a butterfly like the Large Tortoiseshell, which has always posed as many questions as it answers. If it is indeed making a bid to return to the UK, it seems right that it should be with a whiff of controversy and excitement, and it's been thrilling to play a small part in that story.

Butterflying in Lockdown

Colin Burningham writes about a short transect he set up last March near his home in Yetminster

Late in March 2020 the effects of the Coronavirus were such that our nation was enclosed by a lockdown which affected all our lives. For myself, living in a village meant that apart from any necessary shopping trips, I was confined to Yetminster. Butterfly transect walks were not permitted, nor was it acceptable to visit any of the local butterfly sites by car. We decided to attempt to create a local butterfly transect walk using public rights of way.

My partner Christine joined me in constructing a walk which, after leaving my home, passed along a minor road leading to the village, followed by a sector through a glade in a local Woodland Trust wood. It then continued along a track by the side of the wood, followed by a footpath passing two small areas of rough pasture. This footpath eventually met up with a short stretch along a wooded bridleway, then a public footpath

through an unimproved hay meadow. The public footpath continued a little later along the side of two further unimproved hay meadows before passing along a bridleway which returned to the original minor road and so back home. All observations were made over the surrounding rough pasture and meadows from the designated public paths.

The first walk was carried on 25 March with the intention of then carrying out the walk on a daily basis, weather permitting, until the end of lockdown. In fact, the transect walk has been continued to the present day with results gathered at least twice a week and sometimes more often. The results surprised us with an overall number of butterfly species counted over the whole period of 25. This was helped by the variety of habitats covered. The gladed woodland accounted for species such as the winter hibernators Comma, Peacock, Red Admiral, Small

Tortoiseshell, Brimstone as well as Speckled Wood, Orange-tip, Green-veined White, Silver-washed Fritillary, Ringlet and Holly Blue. The track by the side of the wood was also particularly well supported by Orange-tips, which appeared to have a very good season with high numbers being seen. In fact, Orange-tips were sighted at one time or another in many of the other habitats encountered.

As to be expected, the unimproved meadows were to show the greatest variety in species, with lesser numbers of similar species showing in the rough pasture areas. The species seen on these sites included Common Blue, Small Copper, Marbled White, Large Skipper, Small Skipper, Grizzled Skipper, singles of Dingy Skipper and



Grizzled Skipper 12 May.
Photo: Colin Burningham

Small Heath. Also, we were really surprised to see good numbers of Brown Argus.

The frequency of the walks carried out made it possible to identify the growth and decline of each species. The results showed that there was a initial slow growth in numbers followed by an eventual rapid growth to the apparent maximum number, before dropping equally rapidly back to a low number. Where applicable, the second emergence could clearly be seen although this was unfortunately interrupted by the unimproved meadows being cut as part of the yearly hay harvest. An indication of the effect of this cut on butterfly numbers can be seen from the second generation Brown Argus counts. The first generation began to show on 10 May with four counted, rising to an apparent maximum of 25 on 25 May and then all but finished on 10 June. Nothing was then seen until 3 July when the second generation began to be apparent with a count of five. This increased to seven on 5 July (including a mating pair), 11 on 6 July and reaching 39 on 11 July. The fields were cut that evening and the next day, the transect

walk revealed a count of only two in the unimproved meadow sites. A couple of days after the hay was cut, we finally made contact with the owner and found out very quickly that she was very conservation minded and with a strong interest in butterflies. She was initially upset about the timing of the cut but we found out that the hay cutting regime had been going on through her generation as well as previously when her parents ran the farm.

Despite the reassurance gained, we were naturally concerned about the status of the colony but patience can be a virtue. Our transect walks continued and eventually on 17 September, the wait was rewarded with the start of a partial third generation heralded by a single Brown Argus. This had increased to a count of four on 20 September, before the run of fine warm weather brought sightings to a halt. This has given us confidence that the colony has survived the hay cut. The fresh first emergence in May 2021 is awaited. Suffice to say, we are still pleasantly puzzled by the ability of our butterflies to survive such an experience.



Brown Argus mating pair.
Photo: Colin Burningham

The carrying out of these walks gave us a constant source of joy through the somewhat dismal time of the lockdown, particularly in the discovery of a number of species that we had not seen before in our local area of Yetminster. In 2021, we intend to carry on with the walk and study in more detail the available larvae foodplants as well as nectar flowers. Obviously, there is a raft of information available from the transect walking that was carried out and eventually we hope to be able to draw further conclusions for other species from the database. However, if anyone is interested in looking at the data, I am more than happy to transfer a copy over. Contact me on colinburningham@hotmail.com

Painted Lady Migrations

This follows on from **Steve Brown's article about the 2019 Painted Lady invasion, reviewing recent research**

There have been a number of scholarly articles on Painted Ladies over the last few years, just in time for the 2019 invasion. My interest was piqued when in March 2019 I started hearing over Twitter of thousands of Painted ladies heading North West towards us from Cyprus and later in the middle of the North Sea a cargo ship covered with resting butterflies. In Shetland the butterflies were heading South in May, the first recording in the islands was the very northern Isle. Talking about isolated islands, over 300 were recorded on St Kilda, far out into the Atlantic with 20 or so landing on the boat ferrying people out to the site. This means that a huge front of butterflies, many thousands of miles wide, was sweeping north in May and June carrying millions of butterflies. Then, at the end of September, they vanished. No one saw flocks heading south at

the end of the season. Where did they go? Where did they come from? I decided to search for the answer in the scholarly articles available.

1. **Ecological Niche**

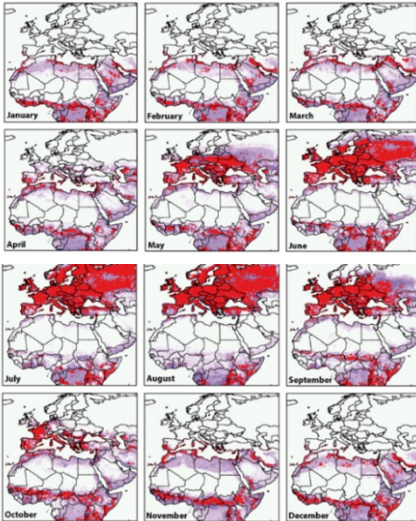
Modelling* from paper by Menchetti, Gueguen, Talavera 2019 (Royal Society)

The main problem with butterfly recording, as we all know, is not the lack of butterflies, but the lack of recorders in the right place at the right time. This project set out to devise a modelling system that used recorded data to predict other data by extrapolation. Without going too much into detail (I don't really understand everything!) they used Painted Lady data gathered by citizen recorders around the world. You know that Painted Lady you saw in 2018? They used that in their data! It is very encouraging that every time we go out and record

*Spatio-temporal ecological niche modelling of multigenerational insect migrations. M Menchetti, M Gueguen, G Talavera. 2019. Royal Society Publishing.

butterflies, that data feeds into the machine that helps understand the ecology of butterflies.

The result of the study was this map plotted to show the



predicted presence of butterflies in each month of the year. Red shows a probability of 95% to 100% of butterflies occurring. Concentrating on Europe north of the Mediterranean Sea there are no Painted Ladies in November to April and high densities for the rest of the year. The area of the Sahara Desert understandably has no butterflies but just to the north in Morocco there is a concentration and amazingly south of the Sahara

there are Painted Lady butterflies.

It is amazing enough that this little butterfly migrates north from Morocco up to Norway and the Arctic, but to cross the Sahara as well? This needs more research!

2. Tracking the flying butterfly source from book “Life Cycles of British and Irish Butterflies” by Peter Eeles. 2019 Pisces Publications.

Scientists show a strong correlation between wind patterns and the ability of the butterfly to migrate large distances in a corresponding direction, concluding that the butterfly hitches a ride on the wind currents in the upper levels of the atmosphere when undertaking long-distance flights.

The scientists confirmed this theory by using vertical-looking radar to show that different insects, including the Painted Lady, regularly fly at altitude and out of sight at a height of up to 1,200m. Radar signatures were correlated with insects caught in a net suspended below a helium-filled balloon attached to a motorised winch, making subsequent radar detection

surprisingly accurate, with an ability to distinguish a Painted Lady from the equally migratory Silver Y moth and for their direction of travel to be recorded.

Based on their data Chapman and Nesbit were able to determine that 11 million Painted Ladies reached us in the spring of 2009, with an incredible 21 million butterflies emigrating in the autumn, with most butterflies flying at a height of between 200 and 400m. Up until this study the return migration was not proved, and it was thought that the butterflies just died. It was shown that although Painted Lady butterflies took up to six generations to travel north to the Arctic circle, they return to Africa in one generation, probably flying at night as well as during the day, as individuals occasionally turn up in moth traps. Chapman and Nesbit also write: "Wind speeds 500m above the ground are often four or five times faster than the butterflies' flight speed, so that if they were to fly at these heights they can reach



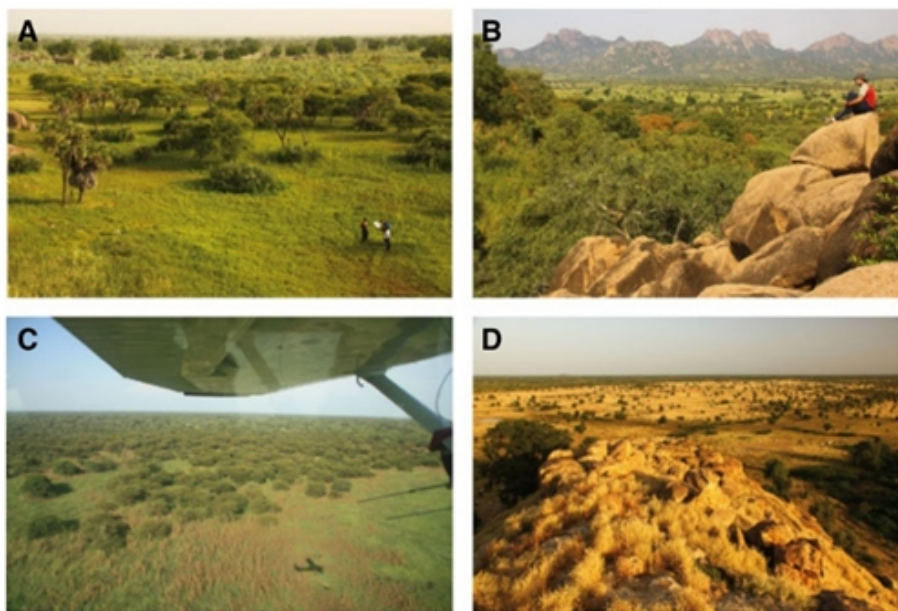
Painted Lady. Photo: Luc Michem

speeds of almost 100km/hr (60 mph)". This would give them the speed to return to Africa in a few weeks!

3. Field studies in tropical and sub-tropical Africa*

The next study looks at the situation in the Sahel, the countries just south of the Sahara Desert. In Chad the researchers were there in October at the end of the rainy season. The land was very green and many Painted Ladies were seen, heading south. On a plain near Karme (south west Chad) six butterflies a minute were recorded for several hours, equating to several thousands per day all heading south out of

*Discovery of mass migration and breeding of the painted lady butterfly *Vanessa cardui* in the Sub-Sahara: the Europe-Africa migration revisited. G Talevera, R Vila. 2016 Biological journal of the Linnean Society.



A-D Different habitats studied in Chad

the Sahara. Most settled in the valleys, many thousands on shrubs. In Benin in the West Niger National Park – near Alibori, thousands of caterpillars were detected, very few adults, and no pupae. This meant that the researchers must have missed the southern migration and had picked up the evidence of breeding.

In Kaumanua near Niger river the scientists arrived just when the adults were emerging, so a few weeks later than at Alibori. In an area of 1.5 hectares, they recorded three emerging every

metre equalling an amazing 21,000 butterflies and over the next two days, emergence seemed only to increase! They only found two caterpillars, however, suggesting the life cycle of the butterfly is completed simultaneously for most individuals.

The researchers concluded the pattern of movement of the butterflies was likely to be as follows:

Dec, Jan, Feb Painted Ladies in tropical Africa.

Feb, Mar, April move north into the Magreb – North Africa

over the Sahara Desert.

April, May, June reach Southern Europe.

June, July, Aug Central and Northern Europe.

Sept beginning to head south.

Oct, Nov arrive in the Sahel, south of the Sahara, (some may remain in the Magreb).

4. Round Trip across the Sahara – isotope tracing

The final proof of the Sahara Desert crossing of the Painted Lady butterfly was from this study.

This involved measuring the hydrogen isotope values in the butterfly wing. Depending on the signature they could identify where the butterfly pupated and hence the natal origin. Samples were collected between February and April in each year from 2014 to 2017 throughout the Mediterranean.

From the results they were confident that 45% of tested butterflies had origins South of the Sahara. The rest were more ambiguous: they could have

come across the desert but may have originated in North Africa, Southern Europe and the Middle East. Butterflies collected in February were more likely to be of sub Saharan origin, while later months tended to be more local. Field observations made at Taroudant in Morocco showed butterflies migrating north in large numbers without breeding in the region.

This small butterfly migrates 4,500 miles northwards over six successive generations, from sub-Saharan Africa to the Arctic. The return migration southwards in the autumn is by a single generation only. This is almost twice as far as the famous migration pattern of the Monarch butterfly in North America.

The Painted Lady weighs not much more than 0.5g, its brain is about the size of a pin head and has no way of learning from an older, experienced generation: what an amazing butterfly!

*Round-trip across the Sahara: Afrotropical Painted Lady butterflies recolonize the Mediterranean in early spring. G Talavera, C Bataille, Dubi Benyamini, M Gascoigne-Pees, R Villa. 2018 Royal Society Publishing.

Seeking Butterflies in 2020

Brian Arnold describes his experiences seeking butterflies during the travel restrictions in 2020

Since mid March all butterfly activities have been somewhat restricted. Normally we would have travelled throughout England and probably done some foreign trips for sightseeing, and the inevitable butterfly excursions. This year has been different, and most of it we have spent close to home in Dorset. We are quite fortunate in this county to be able to get outside and enjoy our butterfly hobby without much risk of Covid-19. From our house in Harman's Cross near Swanage we were able to take long walks directly to the hills of Nine Barrow Down, Ailwood Down and through to Corfe Castle or Swanage passing many great sites for butterflies both below and on the ridge. We could also walk on footpaths that run along the edge of our garden to the Priests Way, and then down to the coast to some magnificent butterfly areas and great scenery from Chapman's Pool in the west to Durlston in the east. To begin

with we were walking and seeing almost nobody - it felt a bit strange being on Ailwood Down or on the coast path by Dancing Ledge and not seeing another soul - but the butterflies were there as usual. Later in the summer these areas became much busier with the huge influx of visitors to our area, mistakenly thinking they could escape the cities to go somewhere quieter.

Just before the Lockdown in early March I was down at Church Ope Cove on Portland and saw two Large Tortoiseshells. Little did I know that by the end of the 2020 season I would see another four, including on my butterfly transect at Durlston. Being unable, or unwilling, to travel much we found ourselves spending far more time than usual in our own garden this year. Our garden species count is 28, one higher than our previous highest count of 27. I suspect that our garden species total has

always been around this number, but in previous years we have not been at home every day to count them. Our count this year did not include Grayling, which we had in 2019, but we saw Dingy Skipper and Small Heath which were missing from our 2019 count. The magic number 28 was achieved when I saw and photographed a Clouded Yellow in the garden on 22 September.

This year our first garden butterfly during Lockdown was a Comma in March. This was quickly followed in April by Orange Tips, which always seem to signal the start of summer for us - newly emerged and beautiful colours flying around the garden. In May our walks along the base of Ailwood Down into Corfe Castle were providing us with lots of sightings of Green Hairstreak and Dingy Skipper.



Green Hairstreak on Ailwood Down 6 May 2020. Photo: Brian Arnold

Both seemed to be doing really well along the base of the hill, and we recorded large counts. Both are relatively easy to photograph. My wife Lerida was often well ahead of me on the path, saying she had seen quite enough Green Hairstreaks for one day! Also in May I was hearing that lots of Small Blues were being seen to the west side of Durlston in the Centenary and Johnston Meadows. So off I went for a long afternoon walk and could not believe just how many there were. I kept taking “Just one more photo”, until I realised how late it was getting and I had a long walk home.

During May we started to feel a little more confident about meeting up with others. It is many years since I have seen Grizzled Skipper, so we decided to form a “Bubble” with a friend from school days, David and his wife Madeleine, to go butterflying with. We met at Badbury Rings and were rewarded by lots of good sightings of Grizzled Skipper and Dark Green Fritillary, plus the opportunity of seeing good friends and a picnic lunch on the rings. We followed this in June by a trip together, albeit in separate



Wood White in Lyme Regis 2 June 2020. Photo: Brian Arnold

cars, to Lyme Regis to see Wood White. I have seen them before but not in Dorset, so we wanted to see them in our home county. We arrived at “The Spittles” and immediately saw one. I dived in quickly and got a good photo, thinking this would be the first of many, but despite seeing several over the next three or four hours, I did not get another photo. I felt elated at having seen them and getting a photo, but was rather disappointed at how many were out of reach of my camera.

Still in June, several of us did the count of Small Pearl-bordered Fritillary on Godlingston Heath.

They appeared on cue, and we saw similar numbers to previous years, but they remain a small very fragile colony, and the only one left in Dorset. Finally in June, I saw on the Dorset BC website and on Twitter that Silver-studded Blues were being seen in large numbers on Higher Hyde Heath. David and I met there and we saw huge numbers of them right from the moment we stepped onto the Heath. They were just everywhere, and almost impossible to count. I like to get photos of both male and female, upper and under sides, plus a mating pair. Sadly a mating pair eluded me, so is something for another year - there is always

room for improvement and a better photo next time.

July was the first of two big excitements in my “Butterfly Year”. Being at home for almost all of the butterfly season meant we could easily do our Durlston East transect every week. News came through from Bill Shreeves that someone had seen a Large Tortoiseshell at Durlston on 8 July. We did our transect on 17 July hoping that it might still be there, and “Bingo” we found one on the transect route by Durlston Castle. It seemed to be in good condition and I got several great photos. It was still there the following day, and again on 21 July. I could not resist going back for another look and more photos. We assumed that we were seeing the same butterfly that had been seen on the 8th, but when I compared my photos with the photo Bill



Large Tortoiseshell at Durlston
17 July 2020. Photo: Brian Arnold

Shreeves had been sent, it was clear that they were two different butterflies with distinctly different markings.

We subsequently did a search for Elm trees and bushes in the area, and discovered that they are to be found in various places at Durlston including very close to where our butterflies were seen. We assume that they may have emerged from eggs previously laid at Durlston - we just don't know? Others have suggested that they may have flown there from Portland where a number were seen this year. It is interesting to note that I have seen more Large Tortoiseshells than Small Tortoiseshells this year!

September was the second big excitement for me. We decided we needed a break from Dorset, and booked a holiday chalet near Arundel in Sussex for a few days in order to do some walking and sightseeing. Before going I checked the Sussex BC website and Twitter for sightings and there were lots of sightings of Long-tailed Blue! The best site seemed to be Whitehawk Hill in Brighton and we were going to be quite close. The day turned



Long-tailed Blue at Whitehawk Hill
Brighton 18 September 2020.
Photo: Brian Arnold

out to be quite windy, but you know you are at the right place when you see several people sporting cameras with long lenses, and rucksacks with picnics! I counted about eight Long-tailed Blues, some in near-perfect condition, others battered and faded. I got some photos, but the strong wind did not help. Going back to our holiday chalet I felt elated, but yearned for another look, so we decided to call in on our way back to Dorset. However this time although sunny, the wind had really got up and was blowing right across where we had previously seen them. Someone told me they were sheltering on the other side of the hill, and there in a large patch of Michaelmas Daisies, several Long-tailed Blue were

nectaring. Inevitably we overstayed somewhat, and we then had to drive back along the south coast in the rush hour - it takes an age to get through Brighton, Arundel and Chichester at the wrong time of day. I was happy: I had managed to get male and female, upper and under sides, plus a mating pair, which shows they are breeding here in England.

At home in our garden during September we have seen lots of Small Coppers including the aberrant form *Caeruleo-punctata* which has a row of blue spots on the rear wings. Fresh ones emerged nearly every day, presumably a third brood. I am never sure if this is a good thing, as they can be killed off by the colder weather before producing the next generation.

I am writing this on 20 October (it is blowing and raining outside), and my most recent butterfly sighting in our garden was a Peacock on 16 October. (Whoops - spoke too soon, sun just came out - three Speckled Woods and a Red Admiral in the garden). Hopefully we will see more in the next few weeks if the weather is right.

David Jeffers

Bill Shreeves writes about David Jeffers, who died on 1 July 2020.

I was very sad to hear from Tony Jeffers that his brother David had passed away in a local Dorchester care home on 1 July, aged 92. Thankfully he died of old age and frailty but unfortunately Covid-19 had posed problems for visiting him. Tony has helped me in writing this article.

David was born in Bournemouth in 1928 and educated at Dorchester Grammar School where he gained his Higher School Certificate in Maths, Physics & Chemistry in 1946. National Service in Germany followed and after that a BA at Emmanuel College, Cambridge. Deciding to enter the teaching profession, he gained his teaching certificate after returning to do his practice at Bournemouth Grammar School for Boys and Talbot Heath for Girls. Following a temporary post at Dorchester Secondary Modern he left Dorset to take up a position as a Physics teacher at Stockport



County Grammar School. Here, as well as teaching he helped to organise extra-curricular activities in astronomy, chess, cricket and camping in the Peak District. From camping near Edale he would explore areas like Kinder Scout and Bleaklow, which he came to love. He became interested in natural history, starting with bird watching and recording, and then widening out to include insects of all types. When he returned to Dorset in 1993 he joined Butterfly Conservation.

David's contribution to Dorset Branch was enormous. His expertise on guided walks was much appreciated and he was always willing to explain very patiently the key points in identifying what was seen. His knowledge of other insects beyond butterflies was infectious. Running his own moth trap made him an expert in moth identification, but he was also able to get people interested in hoverflies and dragonflies. One occasion which has always been held firmly in my mind was when a special visit was planned to recently planted woodland and a new pond near Gillingham. The intention was to carry out thorough recording but it was David who extended our knowledge by spotting that the pond had not only attracted the Common Darter Dragonfly but also the much rarer Ruddy Darter.

David's most important contribution was his work for the computer side of butterfly recording. In 1995 Butterfly Conservation set up its first five-year atlas project. The data collected for each county was to be entered into a new kilometre square computer format called

'Levana'. It was David who took full charge of this part of the operation by mastering 'Levana' and entering all the data for the whole country when it came in from branches. In addition, he invented a system for converting Transect Walker data so that this also could be entered into the atlases. I recall frequent meetings with him at his home when we studied the provisional distribution maps for Dorset butterflies and picked out those which looked unlikely for further checking. At the end of the first two five-year maps, 1995-99 (in black and white) and 2000-04 (colour) we produced our own printed results for Dorset. Of course David's contribution to this was huge, right down to the very meticulous lists of the over 400 names of those who had contributed records.

It was typical of David that when he relinquished his driving licence he still made use of his bus pass and railcard to make lengthy day trips. We were delighted to get a visit from him in Shaftesbury. Dorset Branch will not forget the contribution he made to the campaign to conserve butterflies.

New Holly Blue behaviour?

Shona Refoy records some unusual nectaring behaviour by a Holly Blue on Bluebells

On 1 May 2020 I went on one of my favourite lockdown walks, along the Roman Road footpath through Corfe Mullen. In the Cogdean Elms area, on a patch of Bluebells, I spotted a female Holly Blue flying around. I followed and photographed her for four minutes or so, during which time she landed and moved around on several

Bluebells, but always on the upper part of the flower. I wasn't sure what she was doing, until I was able to have a good look at the photos back at home. I could see that she was nectaring by inserting her proboscis between the petals at the top of the flower. This surprised me, because I had always assumed that the upper part of a Bluebell is fused like the



Holly Blue feeding at the top of the flower Photo: Shona Refoy 1st May 2020

trumpet of a Daffodil, so I learnt something from this butterfly!

When she saw the photo which I had sent to the Gallery on the Branch website, Lyn Pullen commented that this was unusual behaviour for a butterfly. Butterflies are generally not known to 'cheat' flowers in this way, unlike many species of Bees which will steal nectar from holes bitten into flowers. I looked online for other photos of a Holly Blue nectaring on Bluebells in the same way, but found nothing conclusive. There were many photos of Holly Blues nectaring on shallower flowers, but none on Bluebells where I could see the proboscis.

For comparison, I had seen a Large White on the same patch of Bluebells eight days previously, nectaring by going up inside the flower from below. Later on the



Large White nectaring up into the flower.
Photo: Shona Refoy



Orange Tip nectaring up into the flower. Photo: Shona Refoy

same day, I saw a male Orange Tip nectaring on Bluebells at Happy Bottom; his head almost disappeared inside the bell at times, as he fed from below. On 17 April 2019, in High Wood near Badbury Rings, I had seen a female Brimstone, also nectaring from the open end of a Bluebell.

All of these butterflies are much larger than a Holly Blue, so I would expect that they would all have a proboscis longer than that of a Holly Blue. Perhaps she was 'cheating' because her proboscis was too short to reach up the inside of the flower from below?

Has anyone else observed a butterfly behave in this way?

Barberry Carpet Moth project

Fiona Haynes is BC's Project Officer for this 'Back from the Brink' project and sums up progress

Well the Barberry Carpet Project is coming to an end and I have no idea how that has flown by so fast! I wanted to tell you a little about what we've been up to in your area since the start of the project in July 2017, and how you can still get involved even though the project is ending.

The Barberry Carpet *Pareulype berberata* has just 12 known colonies left in the UK – one each in Oxfordshire, Dorset and Gloucestershire, while the rest are in Wiltshire. It is a Red Data Book species and section 41 species (listed on the NERC Act) and is protected through the Wildlife and Countryside Act of 1981. It is severely restricted and isolated by lack of its only available foodplant in the landscape. It has very particular tastes – the leaves of *Berberis vulgaris* are all that will do for the caterpillars to eat, and this plant is uncommon nowadays in the

UK. The plant was removed on a grand scale when it was discovered that it could act as an alternate host for a species of stem rust *Puccinia graminis*. The last outbreak of this rust in the UK was in the 1950s and there has been considerable work by BC and independent ecologists since the 1970s to try and reverse the decline in the moth.

An additional factor in the decline of the moth is that the majority of colonies are in hedgerows, and if those hedges are cut back too early in the autumn this can directly affect the larvae as they are feeding on the leaves throughout September. Therefore, the method of leaving hedge-cutting until at least October, and leaving sections of hedge uncut each year can really help Barberry Carpet as well as species such as Brown Hairstreak and birds that feast on the berries over winter. The National Heritage Lottery Funded Barberry Carpet Back

from the Brink project set out to plant at least 3000 more Barberry plants to help the Dorset, Wiltshire and Gloucestershire colonies. Butterfly Conservation have collaborated with crop scientists to ensure that new plantings of *B. vulgaris* never interact with stem rusts, by planting at least 20 metres away from arable land. In Dorset the plan was to secure the colony and encourage it to spread by planting lots more Barberry in the general area. In Wiltshire and Gloucestershire we aimed to link up the remaining colonies by planting

‘stepping stones’ of suitable habitat around and between them, enabling new colonies to form and individual colonies to become less genetically isolated. Additional aims were to increase the awareness of the needs of the moth, and raise its profile in the colony areas.

It is fair to say that we have experienced both highs and lows over the course of the project! Lows when we have visited planting sites and found that rabbits have dug up all of our plants for instance, or when we found that our plants have been



Barberry Carpet on Common Barberry Photo: Alex Hyde

accidentally strimmed! Highs, though, when we have found new suitable planting sites and the plants have grown well. Also we have successfully surveyed for adult Barberry Carpet, sticking out light traps to draw in moths, and were especially happy when in May 2019 we caught 17 Barberry Carpet in one night. These were photographed and released unharmed, of course.

In total we have planted over 4000 plants on 167 separate sites. 1600 of these plants have been planted in north Dorset over 42 sites. Planting sites range from glades within woodland and woodland hedgerows on pasture, to newly planted woodlands, private nature reserves, school gardens, orchards and private gardens. We hope that our new planting sites will also be excellent sites for the moth in terms of providing a wide range of nectar sources and varied habitats. In Europe the moth often inhabits woodland rides and woodland edges. In the UK, the majority of colony sites are in hedgerows on arable land, but that is where the majority of Barberry plants are found here nowadays, which isn't necessarily

the most optimal habitat for them.

Volunteers have been essential to the success of the project. Many people with suitable planting sites have been interested in helping, and I've also had the benefit of a great team of volunteers who have been involved with the planting, maintenance and aftercare of plants. As they know all too well, Barberry are slow-growing plants in the first few years and are easily out-competed by Nettles and Brambles. They also don't do well in drought conditions. This great team of volunteers have kindly offered to carry on looking after our young plants that have been planted out on nature reserves, so you can still help by looking out for opportunities to help them. The Dorset Council Ranger team are also growing more plants.

There aren't many places where you can get hold of Barberry plants, despite the fact that it is such an attractive and valuable plant for wildlife! The yellow flowers are sweet smelling and attract a wide range of pollinators, while the leaves are

eaten by many invertebrates including at least 20 moth species. The edible red berries are packed with vitamin C and are very good for us as well as the birds! *Berberis* is a very common genus of garden plant, with many interesting cultivars available at garden centres.

However, there is only one nursery currently selling them in the UK - www.wildflowers.uk

We are trying to ensure that plants are more widely available to help the moth in the long-term. Therefore, I have listed nurseries at the end of this article that will be starting to supply Barberry plants in the future. If you would like to grow on your own plants, BC can provide germination and growing advice, and seeds can be collected in the wild or bought from Chiltern Seeds - www.chilternseeds.co.uk

Most importantly, Barberry shouldn't be grown within at least 20 metres of arable land. We don't have the stem rust in the UK at the moment, but keeping a good distance from crops ensures that if there was

ever any issue with rust again in the UK, our Barberry plants and the Barberry Carpet shouldn't be affected.

A huge thanks to all who have been involved in the project and let's hope that we start to find new colonies of the moth in Dorset in years to come!

Fiona Haynes, Butterfly Conservation - fhaynes@butterfly-conservation.org

National Moth Night 2021

is 8-10 July, and will have a theme of reedbeds and wetlands.

Records of any moths are needed for these nights, and for day-flying moths on these dates too.

For more information and ways to trap moths (they are let go later) can be found at www.mothnight.info. For identification help see www.dorsetmothgroup.info or look for the app called What's flying tonight.

Butterfly Conservation Dorset Branch						
Income and Expenditure account for year to 31 March 2020						
		2019-20	Notes	2018-19		
Expenditure						
Conservation	Travel & Subsistence	£648		£537		
	Training	£365		£0		
	Field equipment	£198		£400		
	Water rates	£48		£14		
	Reserve maintenance	£12,960	1	£12,048		
			£14,219			£12,998
Education	Schools & Educational access	£0		£61		
	Printing	£194		£177		
	Workshops/ training days	£289		£239		
			£483			£477
Fund-raising	Events	£0		£15		
	Cost of sales	£457		£264		
			£457			£279
Membership	Newsletters	£2,835		£3,045		
	Website	£1,305		£1,250		
	AGM costs	£30		£30		
			£4,170			£4,325
Administration	(eg stationery, postage, meeting costs)	£103		£107		
	Insurance	£194		£273		
			£298			£380
Total expenditure		£19,627		£18,458		
<i>Notes</i>						
1 Main contractors :-EuCAN, Nigel Spring, Kathy Henderson (ponies)						

We remain concerned about our long-term funding situation, as described in detail in newsletter 93 (Spring 2020). Although our finances look healthy at the moment, the strong possibility of government grants reducing or ceasing means we could run out of money in the next few years.

Butterfly Conservation Dorset Branch						
Income and Expenditure account for year to 31 March 2020						
Income		2019-20		Notes	2018-19	
Receipts from Head Office						
Grants		10,515		2	11,612	
	Membership subscriptions	5,655			5,601	
	Other (Gift Aid, interest)	136		3	528	
			16,305			17,740
Donations			1,229			2,570
Legacy			500	4		10,000
Fundraising						
	Sales stall	883			636	
	Other fundraising	245			199	
			1,128			835
Contract income			575	5		1,002
Total income			19,738			32,148
Excess income over expenditure			111			13,689
Notes						
	2	Includes repayment of RPA monies overpaid 2018-19				
	3	Not all Gift Aid receipts been refunded. Will follow next year.				
	4	John Alan Ruppertsbery (deceased)				
	5	Rooksmoor pony grazing				

Anything you can do to help us raise money, especially to gain regular income, would be most welcome.

Email Lyn Pullen if you want to discuss any ideas:
cobblers@btinternet.com

Butterfly Conservation Dorset Branch			
Balance sheet at 31 March 2020			
	March 2020	March 2019	Note
Bank (current account)	£8,017	£16,198	
Bank (deposit account)	£24,000	£20,000	
VAT	£63	£59	
Stock	£461	£588	
Prepayments	£79	£233	
Accruals		-£50	
Deferred income	-£580		1
Debtors	£6,486	£218	
Creditors	-£1,457	-£175	
	£37,069	£37,071	
Represented by			
General funds	£27,069	£27,071	
Designated funds	£10,000	£10,000	
Excess income over expenditure	£111	£13,689	
Irrecoverable VAT	-£113	-£124	
Movement in funds in year	-£2	£13,566	
General Funds			
Balance brought forward 1 April 2019	£27,071	£13,505	
Surplus (deficit) for year	-£2	£13,566	
Transfer to Designated fund in year	£0	£0	
Balance carried forward 31 March 2020	£27,069	£27,071	
Designated Fund- Reserve management Alners Gorse and Lankham Bottom			
Balance brought forward 1 April 2019	£10,000	£10,000	
Surplus (deficit) for year	£0	£0	
Transfer to Designated fund in year	£0	£0	
Balance carried forward 31 March 2020	£10,000	£10,000	
Note 1: Deferred income- two donations to be spent on sites - but only after January 2023			
Changes to accounting methods from 1 April 2020			
All Branch bank accounts have closed. Balances transferred to one central account.			
Head Office will cover all VAT liabilities.			
There will be an opening balance adjustment of £204.49 to correct for VAT anomalies from 2017.			
No change to Branch responsibilities and budget setting.			

Photo on back cover: a Small Skipper, a bumble bee and a crab spider by Paul Godier

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