No.117 Winter 2023/2024

the Comma

Regional Magazine of West Midlands Butterfly Conservation

Seen this year:
Top butterflies and rare moths

Aberrations:
Genetic or environmental?

Bringing *butterflies and moths* back to Britain • westmidlandsbutterflyconservation.wordpress.com

Cover story

Lyonetia prunifoliella (Striped Bent-wing) by Oliver Wadsworth (see pages 7-9)

Contributions

Please send articles and images to the Editor. Photographs should be as high-resolution as possible and sent as separate files (not embedded in a document).

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Contact the Editor for information.
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BC West Midlands Butterflies and Moths

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Chairman's Address


Michael Southall

Committee news

The recent October committee meeting was again well attended, with members present from all of the regions covered by the Branch. I was able to report that branch membership continues to rise: the latest October figure is 1,944 households comprising 2,641 individuals.

Recent two-monthly Chair zoom meetings with head office have given updates on the Threatened Species and Landscapes elements of the 2026 strategy with Wild Spaces next to come. A face-to-face Chairs meeting is planned for March, the first for several years. Members of the Senior Leadership Team from head office are planning to visit the Branch, also in March, to meet committee members.

The new Branch Secretary role is still open, and we are actively looking for a volunteer to fill this post. The Treasurer's report included a budget update, including several additional items. It was decided to move the Branch AGM to later in the year, possibly October or November when audited accounts would be available, and to move its location around the West Midlands region. The meeting also expressed the recurring desire to involve more members from around the Branch, starting with a list of county representatives and potentially leading to county-based members' days and the establishment of a more devolved administration.

Several project updates followed (see below) and then **Natalie Norton**, our West Midlands Landscape Officer, reported on ongoing conservation work at several sites including Throckmorton, Honeybourne and Feckenham Forest.

Pearl-bordered Fritillary

Mel Mason began with the Lost Fritillaries Project, reintroducing **Pearl-bordered Fritillary** to the Malvern Hills. Mel is planning to arrange a bookable event to see butterflies released next spring, probably in early May. He reported that the 'Pearl Hotel' is hosting more larvae in more pots than last year, requiring many more violets in the spring.


Kentish Glory Moth (Koen Thonissen)

Kentish Glory moth

Reporting on the **Kentish Glory** reintroduction project, **Mike Williams** said that the 16-hour a week role of Lepidoptera Conservation Co-ordinator (funded by Twycross Zoo and partnered by Forestry England, Natural England and our Branch) is in the process of being filled – proposed start date in January. The task is to support the conservation of

2024 Branch Calendar

Copies of our popular West Midlands Butterfly Conservation calendar are still available. The front cover features a study of roosting Common Blues, beautifully photographed by Nigel Ball. The cost is £8.50, including postage (£16 for two). To order, send a cheque made out to Butterfly Conservation (West Midlands Branch) to WMBC, 2 Dewberry Close, Stourport-on-Severn, DY13 8TB or, if you'd prefer to pay by bank transfer, contact Mike Williams at wmbutterflies@gmail.com

butterflies and moths within the Wyre Forest landscape. The number of applications has been encouraging and, at the time of writing, selection was underway.

Grayling

Jenny Joy reported that the Grayling Action Group is making good progress, identifying habitat management targets and the need to increase monitoring of egg-laying at various sites. Sadly, **Grayling** was not seen on the Malvern Hills last year and may be lost from that area.

My own sightings

My summer Garden Moth Scheme records have been very positive, with my highest combined count since the scheme started in 2003. My weekly trapping recorded larger numbers of the commoner species such as **Large Yellow Underwing**, **Setaceous Hebrew Character** and **Garden Grass Veneer**. It will be interesting to hear how others got on. As with butterfly transect recording, this long-term effort is the best way to see trends in populations.

During the mild spell in October, I was fortunate to see **Red Admirals** flying south, low over a large meadow. They were even seen heading out to sea from the south coast, migration in action. This species is also still being reported in the region, late into November, (Ed: One in my Shropshire garden on 11 December.) Let's hope this winter is kind to us, and we can soon look forward to next spring!

Michael Southall Branch Chair

Branch Secretary needed

Please get in touch if you feel you can help, in this role or in any other.

The Branch Secretary fulfils an important role in maintaining the smooth running of West Midlands Butterfly Conservation. The main tasks are to take and distribute minutes of our committee meetings (normally two a year, plus the AGM) and to support the Chairman in distributing information throughout the year, including requests for decisions on important items that require action between meetings. The Secretary needs to have access to a computer and printer and to be able to attend committee meetings, which are held at locations central to the Branch. If you'd like to discuss the role, please contact the Chairman by email or phone (see Branch contacts on page 27).

Holly Blue (Roger Littleover)

Butterfly of the Year

Spring: low numbers and late emergence

A cold and wet spring depressed numbers of many species right through until the end of June. The earliest butterfly for many observers was **Red Admiral**, reported first in January and several times in early February. The few sunny days in February and March brought out **Comma**, **Brimstone** and **Peacock**, the latter going on to a decent year. **Small Tortoiseshell** was notable by its absence from many areas. Two species to do reasonably well were **Orange-tip** and **Holly Blue**, the latter widely reported with an excellent second brood.

Most spring species emerged 7–10 days later than in 2022. The main hatch of Orange-tip was in April rather than mid-March and the first Holly Blue was reported at the end, rather than in the middle, of March. **Green Hairstreak** often appears before the end of March, especially where bilberry is the larval food plant, but was not seen until April this year. On Hartlebury Common in Worcestershire, a non-bilberry site, the first sighting was on 26 April and the main emergence in May. Other early fliers such as **Grizzled** and **Dingy Skipper** were scarce, as were first-brood **Common Blue**, **Brown Argus** and **Small Copper**. A consolation was a new population of Grizzled Skipper confirmed on National Trust land near Croome Court in Worcestershire.

Success for landscape-scale conservation

As usual, **Wood White** and **Pearl-bordered Fritillary** were first seen close together, on 4 and 5 May respectively. Numbers then built slowly.

Wood White continues to expand its range in Worcestershire, spreading from the reintroduction sites at Monkwood and Grafton Wood to new locations. It is reliably seen at Trench Wood and is established at Wildgoose nature reserve near Grimley and Penny Hill near Martley. Most remarkable was one photographed in Worcester Cemetery, 5–6km from the nearest known population! However, only a couple were seen in the

Red Admiral (Phil Dawson)

Wyre Forest, where numbers have declined in recent years despite a lot of conservation effort.

More Pearl-bordered Fritillary were seen in the Wyre Forest than in 2022 but sadly none for the second successive year at Haugh Wood in Herefordshire. Better news from the Malverns, where we witnessed the first adults to emerge on site from stock released in 2022 (see *Comma* 116).

The Awards

This year's nominations showed more agreement and the overall winner, Red Admiral, was almost unanimous. Most improved performance came down to two species that both enjoyed good seasons: Holly Blue had more nominations, while Peacock gained ground after narrowly avoiding 2022's dreaded Wooden Spoon. Strongest contenders for worst performance were Common Blue (back in the doldrums after a better 2022), Small Tortoiseshell, Purple Emperor and Painted Lady. As it seems unfair to give this award to a migrant or a species with a very restricted range, it goes to Small Tortoiseshell (formerly one of Britain's commonest butterflies).

Finally, an honourable mention for Humming-bird Hawk-moth, our Day-flying Moth of the Year for the second year running after another great season.

Butterfly of the Year
Red Admiral
Other nominees: Comma, Silver-washed Fritillary

Most Improved Performance
Holly Blue
Other nominees: Small White, Peacock, Orange-tip, Purple Hairstreak, Brown Argus, Gatekeeper

Wooden Spoon for Worst Performance
Small Tortoiseshell
Other nominees: Common Blue, Small Skipper, Purple Emperor, Painted Lady, Gatekeeper

Summer: good weather and fair numbers

June weather is said to be key to the abundance of high-summer butterfly species and this seemed to be the case in 2023. May temperatures were 1°C above the long-term average and June was the hottest since records began in 1884. While this did not have an immediate effect on numbers of adults, it seemed to help late larval and pupal stages. Worries about the impact of last year's drought proved largely unfounded, with **Meadow Brown**, **Marbled White**, **Ringlet** and **Gatekeeper** all present in reasonable numbers.

Emergence dates caught up with 2022. The first **White Admiral** and **Silver-washed Fritillary** were seen in mid-June; both species did well, although numbers of the latter were slightly down in the Wyre Forest.

Big Butterfly Count: marked improvement

July brought wind and rain: 170% of the long-term average rainfall made it the wettest July since 2009 (sixth wettest on record). Despite this, numbers for the Big Butterfly Count were the best since 2019. Possible reasons are the year's wet start benefitting food and nectar plants, and warm temperatures in June enabling larvae to find plenty of food and grow quickly (reducing predation).

Top five species were Red Admiral, Gatekeeper, **Large White**, **Small White** and Holly Blue. Red Admiral's phenomenal year saw good numbers through to late November, and this former migrant is clearly surviving UK winters in growing numbers. It's worth noting that, as white

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butterflies are often misidentified, Large and Small Whites may be over-recorded and **Green-veined White** under-recorded.

Mixed fortunes for our rarer species

Concern is increasing about **Grayling** in our region and it was not seen on the Malverns this year. Now confined to western Shropshire, it is present only in low numbers except on two sites. The newly formed Grayling Action Group (see *Comma* 116) is investigating how to arrest this decline.

In contrast, there were good numbers of second-brood Wood White at many sites, exceeding the first brood. It's interesting how the phenology has changed from being single-brooded in the West Midlands (sometimes with a partial second brood); a second brood has become regular over the past two decades and now tends to outnumber the first. Encouraging egg count results from Grafton Wood and Monkwood will inform habitat management.

Small Tortoiseshell was notable by its absence from many areas

Small Tortoiseshell (Melvyn Lambert)

Silver-studded Blue, on the wing by the first week of June, had a really good year. **Large Heath**, on the wing by the end of May, seemed to have a decent year. Both are single-site species but its habitat type makes Large Heath more difficult to monitor: photographers can help enormously by logging their sightings on iRecord. The same is true for **Wall**; this is poorly represented on our butterfly transects, so casual sightings are very important.

Purple Emperor had an indifferent season; numbers seemed low at Grafton Wood and Tiddesley Wood but reports came from new locations, including the Wyre Forest (see pages 19-21). **Dark Green Fritillary** seemed to struggle, although reports came from new locations including Trench Wood and a Pershore garden. Numbers recorded in its Shropshire strongholds were generally low but 50+ were recorded in a single visit to a private site discovered close to the Long Mynd. New sites were also found for **Small Pearl-bordered Fritillary** in the same area, although overall it had a below-average year.

Aberrations

Extreme temperature fluctuations at the early pupal stage are thought to cause unusual forms in butterflies and several were reported in 2023 (see pages 15-18). A Silver-studded Blue with male and female features (a gynandromorph) was spotted at Prees Heath and an extreme form of Comma was seen in Comer Woods near Bridgnorth; both feature in our 2024 Branch Calendar (see page 3).

Autumn: stronger second broods

Second-generation Brown Argus, Common Blue and Small Copper, while never numerous, were more plentiful than the first broods. Some lingered, with October records for both Holly and Common Blue. **Speckled Wood**, on the scarce side in the summer, produced an autumn flourish.

The first **Brown Hairstreak**, seen on 19 July, set a new earliest record for Worcestershire (and not at Grafton Wood, where most early sightings occur). This species' colonisation of Redditch continues, with the most easterly sighting at Winyates East. Most of its regular sites produced records and it was good to hear of two adults seen on 13 September at our Trench Wood reserve, as some years we only find eggs there. At Grafton Wood, six adults were seen on 25 September followed by a few individuals at our October work parties. Aside from Red Admiral, it was a poor year for migrants: **Painted Lady** and **Clouded Yellow** were seen only in low numbers, mainly towards the end of the season.

Article by **Mike Williams**

Unusual moths seen in 2023

Herefordshire

A couple of highlights from the county this year: *Eudonia delenella* from the Golden Valley in June, where it was recorded in good numbers, and then a **Large Ranunculus** from Ross in September, the first for Herefordshire since the 1800s – this species has not been recorded in the West Midlands at all for decades. Three other species are now spreading into the south of the county: **Privet Hawk-moth**, **White-Point** and **Dewick's Plusia** – all are now regulars in some parts.

John Walshe

Shropshire

Several new species of micro-moth have been recorded in VC40 Shropshire this year. The remarkable run of records over the last few years from the Dudmaston Estate in south Shropshire continued, with *Anarsia innoxiella* trapped by **Patrick Clement** on 17 June and *Elachista consortella* trapped by **Sue Wright** on 8 September. **Graham Wenman** swept a male *Lampronia morosa* on the Joy of Wildlife group's visit to St Mary the Virgin at Bromfield on 31 May. **John Martin** recorded the West Midland region's first *Yponomeuta irrorella* in his Shrewsbury garden on 12 July. At Mucklestone, **John Bryan** and **Mike Dale** discovered *Coleophora therinella* on 1 July and *Neocochylis molliculana* on 19 August. Finally, **Josh Boe** found a resting *Acleris logiana* on a walk around Harper Adams University on 21 October.

Mike Shurmer

Staffordshire

This has been a remarkable year for migrant Lepidoptera. One only has to think of the numbers of **Red Admirals**, the likes of which I have certainly never seen. Equally remarkable has been the numbers of migrant moths, especially on the south coast. Unfortunately, by the time one reaches Staffordshire, this cornucopia has all but fizzled out

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Eudonia delenella (John Walshe)

Large Ranunculus (John Walshe)

Anarsia innoxiella (Patrick Clement)

Acleris logiana (Josh Boe)

Clepsis peritana (Karl Stockton)

Silver Cloud (Bill Watkins)

Every cloud has a silver lining

In desperation after a poor spring for recording, on 28 May I put out two light traps in the hope of increasing my chances of attracting moths. In spite of a night-time temperature of 8ºC and a breeze, I was pleasantly surprised to see Pale Tussock, Light Emerald and Peppered Moth. My eyes then rested on an unfamiliar moth, so I carefully potted it up and began to search for its identity. Its stance ruled out Bird's Wing and left Silver Cloud, a Nationally Scarce category A species. Photographs sent to fellow moth-ers in Worcestershire who have recorded this species confirmed my hopes, a Noctuid new to me and possibly new to Shropshire.

This moth only occurs in the lower Severn Valley areas of Worcestershire, Herefordshire, Warwickshire and Gloucestershire, and in parts of Somerset, but its range is extending. The adults live in grassy fields, hedgerows, orchards and open woodland, and have been recorded feeding at blackthorn flowers. Their forewings are 16–18mm long and are often held in a roof-shape rather than flat when the moth is at rest. The abdomen appears striped and the thorax has central crests.

The young larvae disperse in the wind on silk threads but their food-plants are unconfirmed in the wild. There is one generation of adults, flying from mid-April to late May. This species over-winters as a pupa in a fragile cocoon underground.

Bill Watkins

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but that's not to say we haven't seen any good moths. There have been a number of reports of the once mythical **Clifden Nonpareil** – I even had one myself – with a supporting cast of **Dewick's Plusia**, **Vestal**, **Scarce Bordered Straw**, **Gem**, **Beautiful Marbled** (county first), **Silver Y**, **Rusty-dot Pearl**, **White-point**, **L-album Wainscot** and **Cream-bordered Green Pea**.

These are all overshadowed by a dingy micro, the tortrix moth *Clepsis peritana*, which was caught in North Staffordshire by **Karl Stockton**. Photographs were circulated on social media with no real decision as its identity. This is hardly surprising when one learns that it was new to the UK and, as such, did not appear in any of the field guides! It is widely distributed in southern Canada and the United States, where it is one of the commonest tortrix species. In fact, one of its names there is **Garden Tortrix** and it is a known pest of strawberries. It has been recorded widely across Europe since its first occurrence in Denmark in 1987. There have been several records in the UK since Karl's and one wonders how many others have been misidentified as a similar species.

David Emley

Worcestershire

On 30 August, **Edward Dean Butler** found a **Death's-head Hawk-moth** larva near Hanbury. It was wandering from the potato patch in his garden, looking for a pupation site. He contacted Wendy Carter at Worcestershire Wildlife Trust, who asked me to collect it. The larva successfully pupated, with the moth

Death's-head Hawk-moth (Oliver Wadsworth)

Palm Moth (Oliver Wadsworth)

emerging on 16 October and being released a few days later. We've had four similar county records in the past five years, three of larvae and one of an adult attracted to honey bees nesting in a house chimney.

The **Convolvulus Hawk-moth** is a more common migrant, with over sixty modern county records of adults in late summer and autumn, mostly in moth traps. However, at the end of July, **Paul Moseley** found and photographed a larva at Upton Warren Moors while pulling Himalayan balsam. Quite a lot of larvae have been found this year, mostly in the southern counties of England. These must have come from earlier migrants into the UK because both of these species, native to Africa and southern Europe, cannot survive the winter here.

Eight new moth species have been recorded in Worcestershire this year, mostly migrants or vagrants due to our warming climate. One of these, a micromoth *Lyonetia prunifoliella* (see cover), has been occurring along the south coast of England since 2007 and slowly spreading northwards. Its larvae mine blackthorn leaves and, stopping at Tiddesley Wood on 28 September on his way home to Scotland, **Nigel Voaden** found some mines. I searched nearby, on the edge of Deerfold Wood and Stoulton Community Woods, and found further mines on 29 September; moths emerged a few weeks later. **Oliver Wadsworth** found old mines at Kemerton on 7 October. We could not find this species elsewhere, so it seems newly arrived here from the south, but it may well spread further north next year.

A spectacular and unexpected find was a **Palm Moth** (*Paysandisia archon*) found by **Jared Tibbett** when he was at work in a Hagley garden centre. This is a South American species that has become resident in southern Europe after being accidentally imported in palm trees (the larvae bore in the trunks). It is now widespread around the Mediterranean and there a few UK records of adults emerging from imported palms. A day-flying member of the Castniidae family, it will be unable to survive here outdoors.

Tony Simpson

Convolvulus Hawk-moth caterpillar (Paul Moseley)

Old Lady (Andy Purcell)

Old Ladies shelter from grotty weather

At the very end of July, completely by accident, I discovered a large number of day-sheltering Old Lady moths. They were under a bridge that takes a main road over a canal in the Walsall area of the West Midlands. My initial guess was dozens; four days later I returned and made a fairly accurate count of 91 (3 August). On subsequent visits to the same spot, I counted 68 (10 August) and then only nine (24 August). I can only assume that the extremely grotty and unseasonal weather around that time made them take shelter en masse, a sort of reverse aestivation.

Andy Purcell

Viewing Nature in a Whole

Purple Emperor pupa in ultraviolet light

The same pupa in torchlight

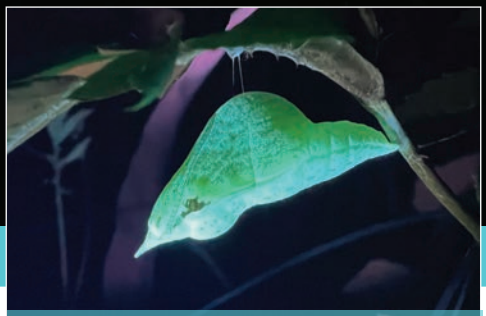
As many will know, some species of butterfly can be particularly elusive to find. A good example is the **Brown Hairstreak** and perhaps the **Purple Emperor**, both of which often only come down to eye level when there is a lack of salts or honeydew higher up in the canopies. If you don't look up, you could be missing out on a real spectacle. This can lead to difficulties with determining population numbers and discovering new sites for these species. So instead, keen lepidopterists have developed other methods of monitoring such as egg searching for Brown Hairstreak and larvae/pupae searching for Purple Emperor. These practices are normally undertaken during the day but recent successes with a new methodology may well have us regularly venturing out after dark.

Purple Emperor

On 20 June, I joined **Mike Williams**, **Simon Primrose**, **Geoff Thompson** and **Sam Macvie** (from The Heart of England Forest) on a nocturnal adventure to Tiddesley Wood, all of us armed with brand new UV torches in the hopes of finding Purple Emperor pupae. Studies have shown that certain pupae and larvae 'glow in the dark' when exposed to UV light. This was my first time undertaking such an endeavour and I'm not sure what I was expecting but it certainly

The benefits of bioluminescence are unclear: theories include protecting pupae from UV radiation and helping adult males to locate sallow in their search for newly emerged females.

New Light



Brimstone pupa on dog rose

Poplar Hawk-moth

wasn't the huge range of biofluorescence that sprang to life right before my eyes. It was like viewing nature in a whole new light – quite literally!

Among many other glowing insects, we found larvae of various species having a good ol' munch on their favourite food plants. The UV light made them glow a bright blue/green colour and they stood out from even a few metres away. Even the leaves on some trees (mostly the undersides) glowed dark red, which was bizarre to see. But these Emperors were tricky to find, even after two hours of searching. It wasn't until our trip back to the cars around midnight that Simon's shout of triumph echoed through the wood. Using UV torchlight, he'd found the *first ever* Purple Emperor pupa in Worcestershire!

The UV light made them glow a bright blue/green colour and they stood out from even a few metres away.

And what a sight it was. I'd prepared myself to have to squint high into the trees above to marvel at it but we were incredibly lucky to find it located just above head height, hanging proudly from the underside of a sallow leaf, glowing like a beacon. It was so well camouflaged that I'd wager it would've been almost impossible to notice during the day. The intricate markings on the surface looked much like the veins of the leaf it mimics so well, the horns were still present from its transition from larva to pupa, and it was big ¬– at least 3cm from tip to tip!

Turning off the UV light and switching over to normal torchlight, the thing vanished before our eyes, blending into its leafy surroundings, a testament to how these incredible butterflies have evolved to hide

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in plain sight to avoid predators. Sadly, only the one pupa was found but we all returned home on a high after a great evening.

Brown Hairstreak

Still buzzing from our success with the Purple Emperor, I visited Trench Wood with Mike, Simon and Geoff on 26 June to hunt for Brown Hairstreak larvae with the UV torches. Never attempted before by the West Midlands branch, we were all excited at the prospect. We soon discovered that these were much easier to find than Emperor pupae.

> ...switching over to normal torchlight, the thing vanished before our eyes, blending into its leafy surroundings...

Once the light started to wane, I found the first one of the night having a nice nap on a blackthorn stem. Soon after, Simon found another, though this one was a bit camera-shy and kept hiding its little face from our lenses. Another one was found a bit later on but, oddly, it immediately dropped off its branch into the long grass once the UV light was shone upon it. After plenty of crawling around on my hands and knees, I managed to locate it just in time to save it from a keen-eyed spider. It was rather small so after determining it was unlikely ready to pupate yet, I gently placed it back onto its branch where it promptly went back to sleep.

What a life!

As I understand it, Brown Hairstreak larvae are generally more active feeders at night, but these three were real snoozers. Perhaps they already had full bellies!

Other highlights from the night were numerous larvae feeding on a variety of different food plants, lots of spiders and plenty of moths too, along with a **Brimstone** pupa, located very low down on dog rose.

Now that we have the equipment and a bit more knowledge, I'm really looking forward to what 2024 holds for this method of monitoring. Hopefully, we will find many more pupae and larvae to aid in our understanding of these immature stages in the wild.

Article and photographs by **Gillian Thompson**

The three Brown Hairstreak larvae found at our Trench Wood reserve on 26 June

Our reserves: Trench Wood

Trench Wood is an ancient woodland in north-east Worcestershire, of which two-thirds (42 hectares) forms a reserve. This is one of a small number of sites within the region that's home to the nationally rare leaf-rolling weevil (*Byctiscus populi*). This metallic green insect relies on suckering and sapling growth of Aspen; the females lay their eggs on the leaves, creating a leaf roll – hence its name.

Background

In the 1960s, the wood was owned by the Harris Brush Company and was managed to supply timber for making brush handles. Traditional conservation management was resumed under a partnership of Worcestershire Wildlife Trust and Butterfly Conservation. The extensive ride network, in a grid formation, is characteristic of woodlands formerly owned by the Harris Brush Company, including Monkwood. The historic management regime provides a blueprint for techniques such as coppicing to create a mosaic of open habitats, including glades and ride-side scallops. This results in a plethora of woodland and grassland flora throughout the seasons, including bluebells, greater butterfly orchid, Devil's-bit scabious and meadow saffron (also known as Autumn crocus), to the benefit of various butterfly species.

Butterflies

Silver-washed Fritillary can be seen nectaring on bramble flowers in sunny scallops in the height of summer, while pairs gambol overhead as you walk along the shadier woodland rides. It's intriguing to watch a female laying her eggs in bark crevices on a tree trunk, with common dog violet covering the woodland floor below – a fine banquet for the descending larvae. **White Admiral** glide through the tree canopy and are also often seen on their preferred nectar source, bramble flowers, and yet bramble is often overlooked as a nectar source. Whenever I see these two species together, it's almost like being transported to a tropical paradise. Watching them, and other butterflies, nectaring on bramble is a reminder during management planning to maintain

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Silver-washed Fritillary –Valezina form

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patches of bramble in south-facing aspects.

The flutter of a patrolling male **Wood White** is becoming increasingly common. This species has colonised Trench Wood in recent years, presumably as a result of individuals wandering from nearby Grafton Wood. With the abundance of bird's-foot trefoil and meadow vetchling within the ride verges, and appropriate management, establishment of a permanent population should be inevitable.

If you walk further, you might see **Purple Hairstreak** puddling on wet areas of the rides. **White-letter** and **Brown Hairstreak** are more elusive but their larval food plants are there to see: disease-resistant elm trees for the former are prominent in ride-side scallops and blackthorn for the latter in marginal scrub habitat. Branch volunteers monitor Brown Hairstreak eggs every year, with very good numbers found already this winter. Alder buckthorn, found in the scrub margins in the central glade, is the larval food plant of **Brimstone**; as well as being a harbinger of spring at the reserve, when seen in flight in autumn this species is a reminder of warmer days.

Leaf-rolling weevil

Wood White

Thanks to all the volunteers who work so incredibly hard at work parties

Work in progress

Volunteers working to coppice and manage scrub during winter work parties will appreciate the amount of effort required to create the scallops and open habitat; it is a continuous rotational cycle of cutting and clearing. To maintain open space created by clearing scrub for a longer period, Butterfly Conservation has been working with Worcestershire Wildlife Trust staff and volunteers to identity rides that would benefit from targeted management (particularly widening by creating large scallops). Funding through Severn Trent's Butterfly Mosaics project has enabled a contractor to undertake stump-grinding; this prevents regrowth and removes obstacles, so that ride verges can be managed using cut-and-collect machinery.

The warmth of a summer day seems very distant as we approach the depths of winter but I hope those of you who visited Trench Wood this summer have wonderful recollections of the species to be found there. Thanks to all the volunteers who work so incredibly hard at work parties and/or on surveys for their contributions to the conservation of this wonderful reserve.

Article by **Natalie Norton**
Photographs by **Julia Saunders**

the Comma
4-PAGE EVENT PULLOUT

Event Calendar

At a time when you may be thinking about New Year's Resolutions, do consider taking part in some practical habitat management. Our event organisers would love to hear from new volunteers. The Branch Chairman was recently asked what a work party entails and here two of our regular volunteers share their experience at Grafton Wood.

SOMETHING • GIVE • BACK

What is a work party? A chance to help with practical conservation, but so much more!

Some years ago on a visit to Grafton Wood in search of **Brown Hairstreaks**, we met **John Tilt** (the Reserve Manager) who, as well as giving us a lot of information about the wood, encouraged us to consider joining the regular work party. We did and encourage you to do the same. Tasks vary from site to site but the underlying ethos is the same: a wish to do something practical to provide the best possible habitat for our butterflies and moths, while appreciating being in the great outdoors. You'll get a chance to learn new skills, widen your knowledge of the natural world, meet like-minded people and see the effects of the work carried out, with the added bonus of the benefits to your health – why go to a gym?!

Fencing a pond

Requirements

These are basically the same wherever you go: suitable (old) clothing (come rain or shine), a good pair of protective gloves and stout footwear. We take our own protective eyewear but this may be provided, as tools often are. Last of all, don't forget refreshments for breaks and lunch.

New volunteers are always welcome and you will receive a warm welcome from friendly folk everywhere. Work at Grafton involves blackthorn management, footpath & ride maintenance, coppicing and other woodland tasks. These may involve raking, carrying brash and stacking it or feeding a fire, creating log piles or even making fences. No specific skills are needed but you will be supported by the work party leader and can expect to broaden your knowledge of the habitats in which you are working and the rationale behind the site work plans. Other sites may involve different tasks, depending on their location, and information with contact details for all the work parties are to be found in the *Comma* and on the Branch website.

Benefits

Our personal experience of work parties has only been positive but does come with a warning: the benefits have led to our regular attendance at four different sites in Worcestershire! We've always been greeted by friendly faces and an appreciation of our being willing to pitch in and help each other in the day's tasks. Volunteers bring a great deal of expertise and are always willing to share it. Despite the label of 'work' party, the amount of physical effort required is governed by the task in hand and one's own ability to comfortably perform that task. Attendance is valued, even if you only put one twig on the fire at a time.

Being able to return to sites around the region in the 'butterfly season' and see the beneficial effects on the habitats in which we've worked give us (and hopefully many other wildlife enthusiasts) a lot of pleasure. Remember though, that these habitats, like most natural resources, do not manage themselves and need helping hands – why not make them yours?

Article and photographs by **Richard & Lynne Horton**

IMPORTANT: Always contact the organiser before attending an event.

Worcestershire

Our Branch AGM will move from spring to autumn next year (see page 2). Look out for details in the Autumn 2024 *Comma*.

Ankerdine Common

Sun: 10 Feb – in partnership with Worcestershire County Council

10am in a small lay-by on A44 close to the turn off to Martley (SO736557)

Contact Trevor Bucknall: 07704 138398, trevor.bucknall@outlook.com

Grafton Wood Work Parties

Every Wed to the end of March 2024, ride management and coppicing

10am at Grafton Flyford Church; tools provided; bring heavy gardening gloves, wear appropriate clothing

Contact John Tilt: 01386 792458, john.tilt2@btopenworld.com

Grafton Wood Brown Hairstreak Egg Searches

Sat: 27 Jan

10am at Grafton Flyford Church

Contact Simon Primrose: 07952 260153, simonjprimrose@aol.com

Simon says: 'We're continuing our regular weekly **Brown Hairstreak** egg searches on Thursdays. It'd be great to have more people involved, so if you'd like to join us – for an hour, a day or the whole season – contact me for more information.'

Monkwood Work Parties

Sun: 7 Jan, 4 Feb, 3 Mar

Thu: 18 Jan, 15 Feb, 21 Mar

10am in the reserve car park (SO803603), usually finished by 3pm

Contact Phil Adams: 01905 610830, pdadamsrainbow@gmail.com

Penny Hill Landfill Site Work Parties

Sun: 21 Jan, 18 Feb

10am at the site entrance off Pudford Lane, Hillside, Martley (SO752613)

Contact Trevor Bucknall: 07704 138398, trevor.bucknall@outlook.com

Brown Hairstreak on blackthorn cut six months earlier (Richard & Lynne Horton)

Trench Wood Work Parties

Sun: 28 Jan, 25 Feb, 24 Mar

10am in the reserve car park (SO930588)

Contact Matthew Bridger: 07801 568334, bridge1805@btinternet.com

Wyre Forest Work Parties

Sun: 28 Jan

Tue: 16 Jan, 20 Feb, 19 Mar

Tuesdays are joint events with Natural England. 10am in Earnwood Copse car park on the B4194 Bewdley to Kinlet road (SO744784) Bring your own gloves and refreshments – tools and hand sanitiser will be provided

Work is mainly removing ride-side coppice to benefit **Pearl-bordered Fritillary** and sometimes other species.

Contact Mike Williams: 07802 274552, wmbutterflies@gmail.com

IMPORTANT: Always contact the organiser before attending an event.

Cutting and clearing blackthorn and willow (Richard & Lynne Horton)

Herefordshire

Ewyas Harold Meadow Work Parties
Tue: 9 Jan, 6 Feb
11am at the northern Cwm Hill end of Ewyas Harold Common, adjacent to the top cattle grid (SO382302). Approach from Abbey Dore off the B4347 (SO384306). Bring gloves, hand tools, lunch and a drink.
Contact Natalie Norton: nnorton@butterfly-conservation.org, 07485 372199

Ewyas Harold Reserve and Common Work Parties
Sat: 20 Jan, 17 Feb, 16 Mar, 20 Apr
10am at the northern Cwm Hill end of Ewyas Harold Common, adjacent to the top cattle grid (SO382302). Approach from Abbey Dore off the B4347 (SO384306). Bring gloves, hand tools, lunch and a drink.
Contact Dean Fenton (fenton@littleburyfarm.co.uk), Ian Hart (yellowrattle4@aol.com) or Natalie Norton (nnorton@butterfly-conservation.org)

Haugh Wood Work Parties
Sat: 6 Jan, 3 Feb, 2 Mar, 6 Apr
9.30am in the Forestry Commission car park on minor road from Mordiford to Woolhope (SO592365)
Contact Robin Hemming (07501 020605, robinhemming@btinternet.com) or Kate Wollen (07786 526280, kate.wollen@forestryengland.uk)

Staffordshire

Cannock Chase Work Parties – Small Pearl-bordered Fritillary
In partnership with Staffordshire County Council
Work to benefit this species is planned – details to be confirmed
Contact Rob Taylor, Countryside Ranger: 07817 122760, robert.taylor@staffordshire.gov.uk

Birmingham and Black Country

Scarlet Tiger Project Work Parties, Stourbridge
Every 3rd Fri: 19 Jan, 16 Feb, 15 Mar
Contact Joy Stevens: 01384 372397, joystevens@blueyonder.co.uk
Meeting points and tasks to be determined

Expenses: mileage allowance

The Branch committee has agreed to pay a mileage allowance to people attending work parties and committee meetings. Forms are available from the Treasurer (see page 27) and from work party leaders.

If anything else prevents you from coming to work parties, please contact Mike Williams (see page 27) to discuss how we could help. There's a great need for more practical help, especially from the Branch's younger and fitter members!

Shropshire

Prees Heath Common Work Parties

Wed: 17 Jan, 21 Feb
10.30am on the access track opposite the Steel Heath turning off the A49 (SJ557363)
Contact Natalie Norton: nnorton@butterfly-conservation.org, 07485 372199

Telford Millennium Nature Reserve Work Parties

Volunteer work parties are due to be held over the winter.
Please contact Peter Mcnee for details if you would like to help: 07730688924 or Peter.Mcnee@groundwork.org.uk

Shropshire - The Upland Commons project

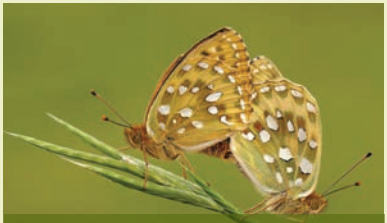
The Upland Commons Project is a three-year, £3m, 25-partner project helping to secure the future of various upland commons, including three in the Shropshire Hills – Clee Liberty, Long Mynd and Stiperstones.

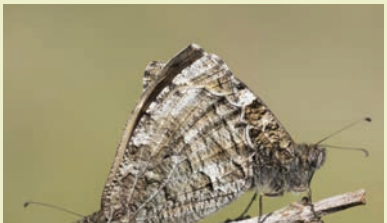
Batch Valley, Long Mynd

Fri: 2 Feb. 10am in the Batch Valley National Trust car park near All Stretton (SO455955). Management work to improve habitat for **Dark Green Fritillary** and **Grayling**.
Contact Mike Williams (07802 274552, wmbutterflies@gmail.com)

Cardingmill Valley, Long Mynd

Fri: 12 Jan. 10am outside the National Trust Tearoom, Cardingmill Valley, Church Stretton. Help the Grayling Action Group remove gorse from Cow Ridge.
Contact Mike Williams (07802 274552, wmbutterflies@gmail.com)


Dark Green Fritillary – male & female (Iain Leach)


Grayling – male & female (Bob Eade)


Privet Hawk-moth (John Walshe)

UK Moth Recorders' Meeting

Saturday, 27 January 2024
Birmingham and Midland Institute (B3 3BS)
Find out more at: butterfly-conservation.org/moths/uk-moth-recorders-meeting

Don't forget to check Butterfly Conservation's websites and groups for other events:

- westmidlandsbutterflyconservation.wordpress.com/events-and-work-parties
- www.facebook.com/groups/westmidlandsbutterflyconservation
- www.facebook.com/groups/250738579030862 (Malvern Butterfly Group)
- butterfly-conservation.org/events

IMPORTANT: Always contact the organiser before attending an event.

Butterfly Variations, Aberrations and the Environment Part One

This year we've seen more than usual numbers of interesting reports and images on social media of aberrations and variations among our British butterflies and moths. Plenty of discussions, too, about what they are and what causes them. To clarify, an aberration is a difference from the first description of the Type form of a species; however, named aberrations are often just snapshots in a range of variation. Their causes can be both genetic and environmental.

Female Common Blue (Craig Jones): example of the usual genetically brown form, with scantiest of blue scales almost exclusively adjacent to the body, distinguishing it from Brown Argus

Over the last century, remarkable numbers of aberrations were documented during extremely hot years, mostly preceded by very cold winters (for example, 1918–19, 1941–42, 1976 and more recently 2018). However, 2023 has seen an unusually prolonged cold and wet first half of the year, after several years of prolonged heat and drought, quite the opposite of previous examples.

So, are aberrations actually more common, or just being spotted more often? Perhaps improved phone cameras, and a higher profile of natural history and conservation photography in general, now enables more natural history enthusiasts to view examples closely and upload discoveries of curiosities and oddities. Whereas previously, with fewer good digital photos to examine and share, many peculiar forms were probably overlooked.

Temperature during pupation

This is the first of two articles illustrating some examples of environmentally-driven variations and aberrations from usual forms, known to be caused by environmental effects and/or extreme conditions interfering with genetically-determined expression of wing colour and pattern. Here, I'll explain how environmental temperatures during pupation can influence variations in wing appearance, and show examples of the interaction between temperature and genetic expression of wing appearance, in two common British species. Some aberrations illustrated are genetically determined, as proved by breeding experiments, but their expression is often strongly influenced by environmental conditions during the pupal stage.

Interaction between environment and gene expression is a fascinating and beautiful area, deserving greater scrutiny. Metamorphosis from final larval stage to pupa to adult imago is an immensely complex process. Captive rearing across many species reveals a sensitive period influencing colour

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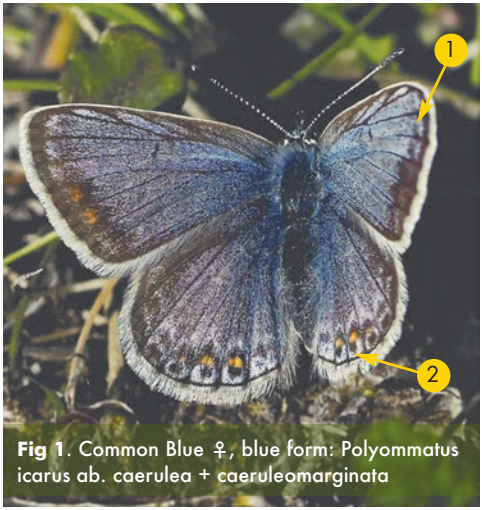

Fig 1. Common Blue ♀, blue form: Polyommatus icarus ab. caerulea + caeruleomarginata

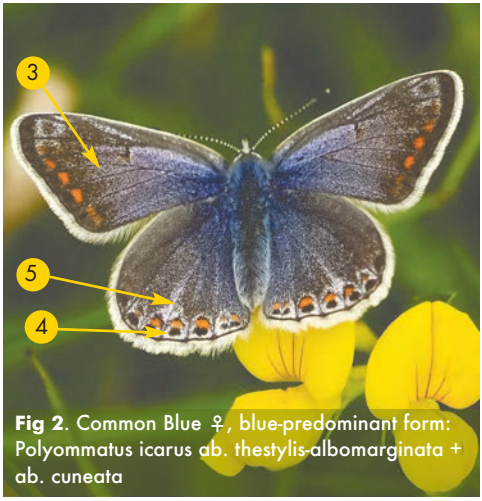

Fig 2. Common Blue ♀, blue-predominant form: Polyommatus icarus ab. thestylis-albomarginata + ab. cuneata

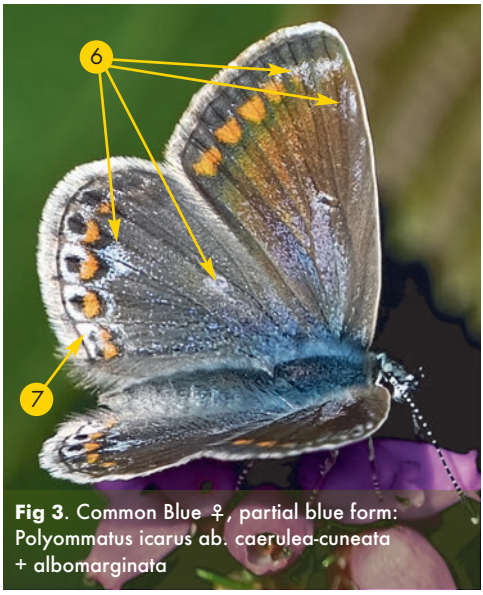

Fig 3. Common Blue ♀, partial blue form: Polyommatus icarus ab. caerulea-cuneata + albomarginata

Fig 4. Common Blue ♀, brown-predominant form: Polyommatus icarus ab. caerulescens + albomarginata

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and pattern markings in many Lepidoptera. During the last two larval days before visible onset of pupation to the first 2–3 days of pupal development, temperature and day-length can markedly influence the adult wing appearance. After this period, progression of scale colour and pattern development is more resistant to alteration.

For some well-known species, such as **Small Tortoiseshell**, exposure of the new pupa to cooler ambient temperatures (<11°C) leads to significantly darker and more strongly pigmented adults, compared with those exposed to warmer (11–24°C) or hotter (29–34°C) conditions which develop progressively lighter pigmentation with higher temperatures. This adaptive variation likely confers evolutionary advantage, to accommodate territorial range and seasonal broods varying from coolest to warmest

Figure	Type of variation / aberration	Relevant features (HW = hindwing)	Aberration name	Notes
1	Environmentally-modified genetic (cool/cold enhances blue traits)	**1**. Uniformly expansive blue **2**. Blue at outer HW margin	ab. *caerulea* ab. *caeruleomarginata*	North Staffordshire, 21/05/2019, mild
2	Environmentally-modified genetic (cool/cold enhances blue traits)	**3**. Blue scales well-expressed beyond discal spot **4**. White at outer HW margin **5**. Submarginal HW wedge	ab. *thestylis-albomarginata* + ab. *cuneata*	North Staffordshire, 09/08/2023, cool
3	Environmentally-modified genetic (heat suppresses blue traits) + genetic natural variation	Blue scales very scanty, despite the genetic expression of *caerulea* phenotype: **6**. Extensive blue distribution beyond discal spot, HW central blue spot; submarginal HW wedge (*cuneata*) **7**. White at outer margin	ab. *caerulea-cuneata* with heat-limited expression of blue + ab. *albomarginata*	North Staffordshire, 08/08/2022, very hot
4	Environmentally-modified genetic (heat suppresses blue traits) + genetic natural variation	**8**. Brown with very scanty blue scales, mainly in basal area, very occasional scattered blue scales beyond **9**. White at outer margin	ab. *caerulescens* + ab. *albomarginata*	North Staffordshire, 31/07/2018, exceptionally hot
5	Temperate climate usual form	**10**. Bright clear glittery wings including wing bases **11**. Red-copper veins, no significant melanism **12**. Generally smallish black spots (variable)	*Lycaena phlaeas* ssp. *eleus* Usual temperate form	North Staffordshire, 26/07/2021, cool
6	Environmental natural variation (heat increases melanic suffusion) + environmentally-modified genetic (unusual heat at temperate location suppresses expression of blue traits)	**13**. Darker copper ground colour, melanic scales suffusing wing base and along veins **14**. HW blue spots common genetic variation, but scanty expression due to exposure to unusual heat	ab. *suffusa* + ab. *caeruleopunctata*	North Staffordshire, 10/07/2018, exceptionally hot
7	Environmentally-modified genetic expression (heat)	**15**. Blue spots reduced to just 8 scales on left HW, none on right HW; melanic scale suffusion of wing base and veins; deeper orange colour, larger black spots	ab. *suffusa* + ab. *caeruleopunctata*	North Staffordshire, 13/07/2018, exceptionally hot

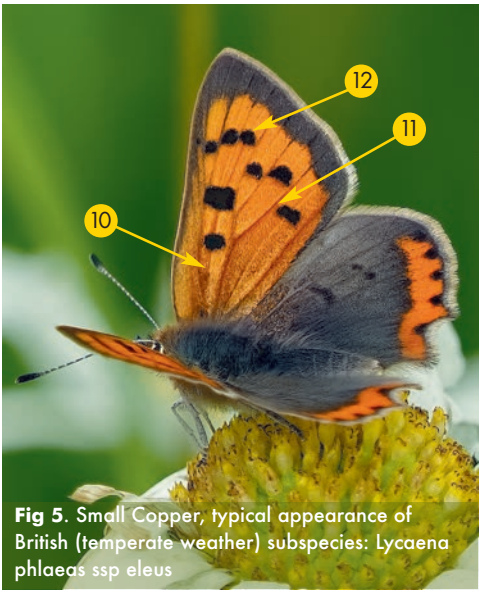

Fig 5. Small Copper, typical appearance of British (temperate weather) subspecies: Lycaena phlaeas ssp eleus

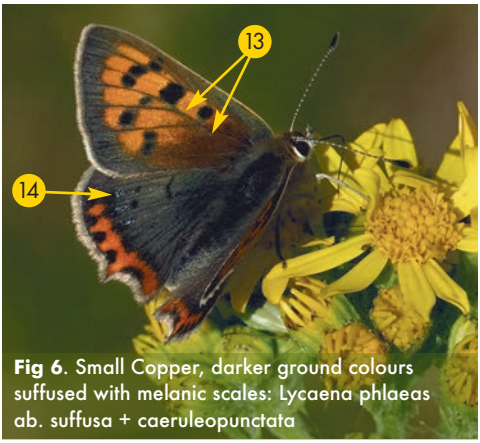

Fig 6. Small Copper, darker ground colours suffused with melanic scales: Lycaena phlaeas ab. suffusa + caeruleopunctata

Fig 7. Small Copper, darker suffused form: Lycaena phlaeas ab. suffusa + caeruleopunctata

viable environments. Darker wings exposed to sunlight warm the insect more rapidly, enabling it quickly to fly, feed and engage in courtship; this is particularly helpful in cooler conditions, especially when direct sunlight is intermittent. Lighter markings allow longer flight spells during hot conditions, before the insect has to close its wings against the sun, seeking shade

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cover to avoid over-heating. This thermobiological effect on colour expression is also seen in continental **Large Blue** in montane colder regions, where it's generally dusted with dark (melanic) scales and darker on its upper side compared with milder and/or lowland locations.

Conversely, in **Common Blue** experimental pupal exposure to cold substantially increases expression of paler blue iridescent scales; this is especially noticeable among females in which the individual's expression of blue colour is partly genetically determined by a few variant recessive alleles of a gene for blue colour. However, in the female (but not the male) pupal exposure to heat reduces the expression of blue scaling. In extreme heat seasons, such as the very hot spring and scorching summer of 2018, this may explain why females (in general) expressed rather less blue scaling than usual for their locations, across the hottest areas of UK. It's unclear why this happens in Common Blue, and **Adonis Blue**, and why heat-related browner appearance only affects females. It could be an adaptive variation related to visibility and camouflage for ground-hugging egg-laying females; these species are both double-brooded, inhabiting grassland that tends to brown off in very hot or dry conditions later in the year.

Historically, the extraordinary variation in expanse and brightness of blue on the female Common Blue has been divided into a couple of dozen discrete named aberrations, despite clear evidence that they can also be viewed as a variable continuum. Their individual genetic colour template is moderated by environmental effects upon metamorphosis and so the aberrations overlap each other. Many named aberrations, therefore, simply describe a point on a continuum of variation rather than a discrete entity (Figs 1–4).

The **Small Copper** commonly expresses iridescent blue spots on the hindwing (Figs 6 and 7), a genetically determined variation (ab. *caeruleopunctata*). Like the female Common Blue, the expression of blue may be reduced or barely noticeable in size and number if the pupa had started to develop during unusually hot conditions for that location. Also, the bright copper wing background colour (Fig 5) becomes darkened and suffused with black scales, especially closer to the body and along the length of the wing veins, an appearance historically named ab. *suffusa* (although it's actually a natural hot-weather variation, common around the Mediterranean). It was locally the prevailing form in North Staffordshire during the first two broods of 2018, for example (Figs 6 and 7). The seasonal forms of the **Whites** (darker markings from cooler temperatures) and the **Holly Blue** (black wing margins with longer day length) are also examples of interactions between environmental conditions and expression of genes.

Conclusion

Butterflies show adaptive variations to help tolerate some degree of climatic and seasonal variation. In Part 2, I'll illustrate what happens when the adaptive mechanisms described above are overwhelmed by more extreme environmental conditions, with dramatic consequences (Fig 8).

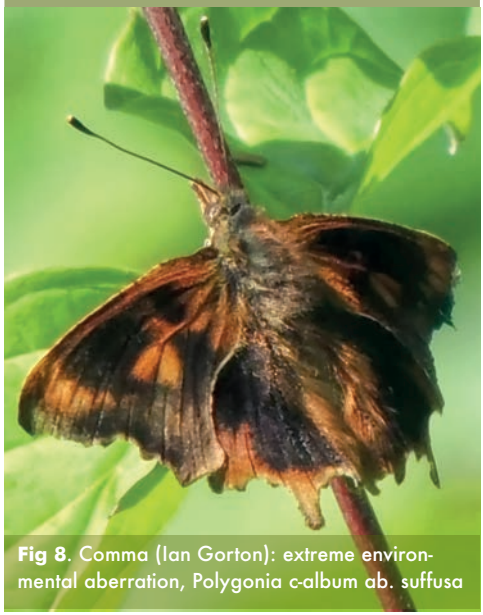

Fig 8. Comma (Ian Gorton): extreme environmental aberration, Polygonia c-album ab. suffusa

Article and photographs (except where credited otherwise) by **Andrew Magnay**

In search of Purple Emperors

Under ultraviolet light, pupae glow light-blue and are very noticeable from a distance.

Spring fifth instar larva

The **Purple Emperor** is the largest butterfly to be found in the Midlands, although perhaps one of the trickier species to see.

Some were released into Oversley Wood in Warwickshire in the early 2000s and appeared to stay within this area until the excellent breeding season of 2013. Since then, they have colonised Worcestershire, most notably at Grafton Wood and Tiddesley Wood but with other sightings around the county and even a few in the West Midlands. In 2023, a dead male was found in a conservatory in the Wyre Forest, just a few hundred metres from the Shropshire border. These sightings suggest the species could be more widespread in Worcestershire than we currently know and may begin to colonise new counties, if it hasn't already done so! It is, therefore, worth looking out for it to increase the number of known locations.

Adults

Perhaps the easiest way to locate a new site is to find a male territory. During afternoons in the flight season, male Purple Emperors gather and perch on the end of branches waiting to fight other males that fly through their territory; they also perform frequent, gliding patrols. These actions make established territories easy to spot if a male is present.

Territories are formed in small glades in woodland or in gaps between large trees, on or close to hilltops with suitable breeding habitat nearby (lots of sallow, especially goat willow). Territories are most often formed between oak trees locally because of their stiff branches and leaves, which are less buffeted by wind; other trees with this property are also used, such as beech, along with ash and other species if they are sheltered enough. In flatter landscapes, territories are around the largest trees.

It is well-known that Purple Emperor can be attracted down to the ground using a diluted mix of south-east Asian shrimp paste; this is best done in the first half of the flight season. Significant sap runs on oaks are even better at attracting this species, if you can find them. They are most frequently found on old, diseased or injured trees.

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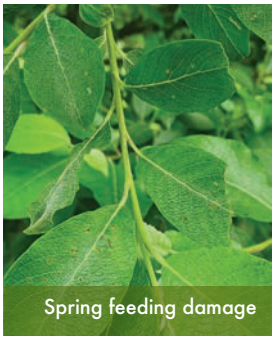
Autumn feeding damage


Spring feeding damage


Three territories near Alcester, Warwickshire: red - what to look for, orange - perching locations


First find in Worcestershire


Autumn third instar larva

Caterpillars

In autumn, you can search for the caterpillars on sallows. The best leaves to look for are those which are mid-green in colour, soft to touch and matt in appearance (as opposed to shiny leaves with a significant wax cuticle). Suitable leaves at this time of year are also often those that are shaded, either by surrounding vegetation or aspect, or are within the interior of the sallow crown. The caterpillar creates a small silk pad at the end of the leaf and, facing down it, eats the vegetation either side of the midrib leaving a small pier. This feeding damage is recognisable once seen and diagnostic.

Another method to find larvae is 'dangleleaf;' this is caused by the caterpillar using silk to attach the leaf petiole to the twig it grows from. Come late autumn and early winter when almost all leaves have dropped, these leaves remain, dangling by the short silk threads. Dangleleaf has the advantage of being more obvious than feeding damage, although it requires sufficient silk to secure the petioles firmly and an absence of early storms that would detach them (this eventually happens). Leaves also do not dangle very well following rain!

Caterpillars can still be found by following signs of feeding damage the following spring. Their large size at this stage means that damage is sustained to the whole lower leaf, and the silk pad may extend along an entire leaf. The best time to search for larvae in spring is around May and it's worth checking sunnier locations on the tree, to which the caterpillar will move for its fourth and fifth instars.

Pupae

Perhaps the most remarkable way in which the Purple Emperor can be recorded is using an ultraviolet light at night to find the pupae (see pages 10–12). Under UV light, the pupa glows light-blue and is very noticeable from a distance. Although I have not used this method much as yet, experience to date suggests that it is far easier and more efficient than searching for feeding damage, and far more fun! For example, I spent a day

searching a small group of sallows in Warwickshire last year and found a single caterpillar; this summer, two colleagues and I spent a couple of hours looking for pupae in the same area and they found two pupae, which I must have missed as caterpillars in autumn.

Article and photographs (except where credited otherwise) by **Sam Macvie**

Classic behaviour (Ion Riley, Worcestershire Wildlife Trust)

Hagley Park cafe (Alex Clare)

If you spot any Purple Emperors, please add them to iRecord. This will expand our knowledge of the species in the Midlands.

Good places to look

Arrow Valley, Redditch (Adrian Richards)

As Sam suggests, there is increasing evidence that the Purple Emperor's range is expanding in our region and we hope his tips will help members find new sites. Although numbers fell at both Grafton and Tiddesley Woods this summer, records came from other new sites in Worcestershire as well as the Wyre Forest, mainly on the eastern side of the county. The species being well established in the Heart of England Forest may explain a sighting in the Arrow Valley Country Park, probably a female and rather surprisingly sitting on a flower! Another potential search area is south-west Birmingham, where recent sightings around Rednal and the Clent Hills were followed up by one at the cafe in Hagley Park! There was also an unconfirmed sighting at our Trench Wood reserve (see pages 13–14), plausible given its proximity to Grafton Wood and the large amount of sallow present. In his definitive work on the Purple Emperor (reviewed in *Comma* 108), Matthew Oates refers to a male fluttering at the window of a building near Rugeley in 2019; this year there was a record from the same area, close to Cannock Chase. It is perhaps too early to talk about the West Midlands turning purple but clearly we are now part of the Purple Empire.

Mike Williams

Ringlet (Nigel A Ball)

Creating Biodiverse

Many butterfly species do well in grassland, such as **Meadow Brown** and **Ringlet**, but the grassland found in most farmers' fields is often totally unsuitable for them. It is usually sprayed with weedkiller and ploughed every few years, and then sown with high-yielding grass seed mixtures based on perennial ryegrass. The plant list is poor and the grass is often cut three times a year or heavily grazed, so nothing seeds and any caterpillars go to the silage pit. Nettles and docks are often spot-treated with a selective weedkiller.

Many conservation-minded individuals wish to create biodiverse grassland, with lots of flowers and butterflies, but they often have problems managing it. If you leave grassland to its own devices, unmanaged, you will get hawthorn and bramble from seeds dropped by birds, ash and sycamore will spring up from windblown seeds and blackthorn will spread in from the hedges. Wait twenty years and you cannot walk through it. It will eventually become secondary woodland. To counteract this, you either have to cut it or graze it.

Grassland

Cutting regimes

Cutting hay on a field in late summer not only reduces the fertility but, because the cut is late, allows flowers to set seed and butterflies to complete their life cycles. Many grassland butterfly species will survive an annual hay-cut but **Skippers**, who lay their eggs inside a furled leaf, benefit from cutting parts of the field in alternate years. On a small scale, you can do this with a scythe and rake off the cut material. On a larger scale, you need a contractor prepared to do it; this is not easy – small bailers are a rarity nowadays.

Reducing the fertility by removing a hay crop encourages grasses like Yorkshire fog, the food plant of several butterflies, and other less-productive grasses. It also encourages flowers like bird's-foot trefoil, the food plant of the **Common Blue**. Another way to reduce fertility is to introduce yellow rattle, a parasite of grasses that will weaken the grass and encourage floristic diversity. If you are starting from scratch, removing the turf and sowing a wildflower seed mixture is a good start.

Yellow rattle weakens the grasses

Grazing regimes

Many fields are very difficult to cut: too steep, too rocky or too wet. The alternative is late grazing by cattle, preferably in August and September, which is what I did to manage a wildlife field on our smallholding. We used our own Dexter cattle but several old breeds such as Belted Galloways, Longhorn or Welsh Black will do. Keeping your own livestock, particularly cattle, is a 365 days a year responsibility and, unless you've been brought up with it, has a steep and long learning curve. TB testing, regular if not daily checking, winter housing and feeding, calving, artificial insemination, de-horning and foot trimming are not exactly common experiences for most people. Cattle need TB testing and this is compulsory at least annually.

The alternative is late grazing by cattle, preferably in August and September

Dexter cattle on our wildlife field

While cattle can use their tongues to tear long grass away from the ground, sheep struggle with it and permanent sheep grazing leads to short grass with few flowers and few butterflies. Sheep are easier to keep but they need shearing, protection from maggots and lambing. Grazing by sheep can adversely affect **Orange-tip** butterflies because the sheep eat the cuckooflower, its main food plant.

There are alternatives to cattle and sheep. I've known fields managed fairly successfully with donkeys,

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A well-managed species-rich meadow

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although they need hay in winter and appreciate shelter. Sanctuaries and seaside operators often want to farm out donkeys for the winter. Some conservation organisations use ponies, which are less trouble than cattle but tend to keep the grass too short. The National Trust uses semi-wild goats very effectively.

The timing of grazing is important, depending on your aims. Mid-summer grazing may be appropriate to get on top of scrub, especially re-growth after clearance, but otherwise spring and summer grazing are best avoided. Restricting stock to smaller areas makes them graze more intensively; they can then be moved when they've eaten the scrub re-growth.

We kept both sheep and cattle on our smallholding, and only managed one large field for wildlife because the animals had to go somewhere else for the rest of the year. The cattle were in-wintered on bought hay or silage and we never spread the muck on the wildlife field. This field, which had never been ploughed, was undrained and very wet in winter; we put a few sheep on it before lambing, and then closed it up at the beginning of March. Occasional 'topping' with a tractor-mounted mower helped stop seedling trees and bramble taking root.

Some conservation organisations use ponies, which are less trouble than cattle but tend to keep the grass too short.

We took our stock elsewhere when we could, grazing other people's land, but TB testing requirements can make this very difficult for cattle. However, the principle of collaborative grazing is highly recommended because most commercial farmers are not interested in grazing small areas of land and will normally only bring sheep. The long summer growth period in our wildlife field allowed many flowers to appear, especially thistles and bugle that provided essential nectar sources for bees and butterflies.

Article and photographs (except where credited otherwise) by **Simon Spencer**
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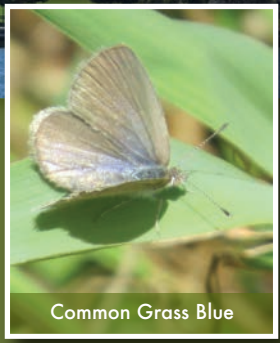
Find out more at westmidlandsbutterflyconservation.files.wordpress.com/2023/12/creating-biodiverse-grassland-v2-i1.pdf

Sydney Opera House and Harbour Bridge

Painted Lady



Common Grass Blue

Butterflies of the Botanic Gardens of Sydney

… and one very large moth!

I was lucky to see many butterflies in the three botanic gardens that I visited while on holiday in Australia:

- **Royal Botanic Garden Sydney**, the oldest, is in the heart of the city, overlooking the harbour.
- **Blue Mountains Botanic Garden Mount Tomah** is a UNESCO World Heritage Site in the stunning Greater Blue Mountains Area.
- **Australian Botanic Garden Mount Annan** is the largest of Sydney's botanic gardens.

The damage caused by the fires of 2019 and the floods of 2022 in New South Wales is still visible and has had devastating effects. Nevertheless, I saw a good selection of butterflies and, as in England, getting them to pose for photos was not easy, especially given the speed at which they moved. But, with patience and a lot of leg work, I was rewarded in many ways.

The same but different

On the way to Mount Tomah, we stopped at the famous pie shop on the side of the road for breakfast. While there I spotted an **Australian Painted Lady** (*Vanessa kershawi*) that was about 2cm smaller than the ones I've seen in Shropshire (*Vanessa cardui*). Also, it had some blue spots on its hind wings. (Ed. Here in the UK, blue spots in *Vanessa cardui* are associated with the *ocellata* aberration.)

The range of sizes

We do have various sizes of butterflies in the UK: the **Small Blue** is 20–30mm and the **Swallowtail** is 80–90mm. I was delighted to be surrounded by tiny

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Common Grass Blue butterflies that were even smaller at only 20–23mm. The **Orchard Swallowtail** did many fly pasts – it took me seven weeks to get its picture – and can be 120mm in size. So, Australian butterflies range from fingernail-size up to hand-size. Amazing!

The wanderer

As well as seeing **Monarchs** in the botanic gardens, I also saw one sitting in a tree when out walking to see the kangaroos.

The unexpected

Those first moments of watching something special – it is then that I really feel like De-borah the Explorer. I spotted this **Black Jezebel** (*Delias nigrina*) going from flower to flower on a nectar-rich plant. It then revealed its upper-wings, gloss white and glimmering in the sunshine with grey-black tips, in contrast to under-wings that were mainly black with red and yellow. Stunning!

The moth

We were visiting New Italy, about eight hours north of Sydney, and suddenly we noticed somebody photographing a wall. They'd spotted a moth measuring about five inches in length, with a very large wingspan – a **Giant Wood Moth**. I would love to have seen it fly, but no way was I waking it up!

The others

I saw many other butterflies, including **Rayed Blue**, **Yellow Admiral**, various **Darters**, **Common Brown**, various **Whites**, **Blue Triangle** and **Macleay's Swallowtail**.

Many thanks to my hosts, the Taunton family, for very successful butterfly safaris. However, I never did find the mysterious 'drop bear'.

Article and photographs by **Deborah Hotchkiss**

Giant Wood Moth

Black Jezebel

Orchard Swallowtail

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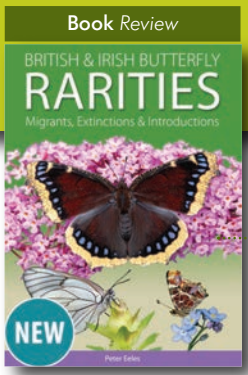
Book *Review*



British & Irish Butterfly Rarities

Migrants, Extinctions & Introductions

• **ISBN**: 9781913994105 • **Author**: Peter Eeles • **Publisher**: Pisces Publications • **Publication date**: September 2023 • **Cost**: £32.50 • **Format**: Hardback, 388 pages

Written by a well-known famous butterfly authority, this book is a detailed and comprehensive study of all 'non-native' butterfly species recorded on our shores. The first surprise I got when I received it was its size – much larger than I expected – which is mainly due to the astonishing number of species covered, 64 to be precise! Three main sections are followed by a look into the future for butterflies in Britain and Ireland.

Primary Listing (25 species)

This covers extinct species (either resident or regular migrant); rare migrants and vagrants (extremely rare migrants but whose normal migration routes would not bring them to the UK). It provides a wealth of information for each species, often extending to many pages, and documents in fine detail the life cycles, habitat requirements, and (foreign) current status and distribution; together with a complete account of all officially recorded British and Irish sightings.

The primary listing contains many surprises, not least the presence of species such as the **Apollo** – old records of which include some from mountainous areas of Scotland! and beautiful European butterflies like **Scarce Swallowtail**, and **Spotted Fritillary**. Those surprise species appear alongside some much more familiar ones in our butterfly history: the extinct **Large Copper**, **Black-veined White** and **Mazarine Blue**; together with migrant species that today are becoming much more frequent here, such as **Long-tailed Blue** and **Queen of Spain Fritillary**.

Adventive Species (29 species)

This deals with all other species which have been recorded and confirmed here, but which couldn't realistically have arrived under their own steam. It includes 'accidentals' and attempted introductions, but excludes butterfly farm or captive-bred 'escapees', and consists mostly of butterflies that arrived originally as pupae hidden among imported consignments of flowers or fruit, the circumstances surrounding the discoveries, often being described in very amusing anecdotes. These species are much less familiar to us but include some wonderfully exotic-sounding, tropical species, such as the **Brown Playboy** from sub-Saharan Africa, the **Zebra** from the rainforests of Central America, and three species of **Owl** butterfly from South America.

Questionable Records (10 species)

This is fairly brief and lists species which have appeared in documentation relating to UK butterflies, but for which the records are either unconfirmed or errors (for example, specimens misplaced into old collections of otherwise British species).

Future Prospects

This examines possible and even likely scenarios for our butterfly fauna going forward, due to continuing changes to both our wild habitats and climate. This is followed by appendices, references, and an index.

In summary, this book is a comprehensive examination of the history of all of our little-known 'rarities'. A fascinating and entertaining read, it provides lots of detail about these species and gives many thought-provoking insights into a possible future for our butterfly population – the numbers of species to be regularly found on our shores could well increase in coming decades.

Review by **Simon Primrose**

We carry a book review in each issue of *The Comma*. Newly published titles are ideal but particularly interesting or useful books from the past are also worth highlighting. See page 2 for contribution details.