W i l d l i f e II

Revisiting this subject reminds me of using my first camera and a macro lens in the 70s and early 80s to record some of Purbeck's flora and fauna.

Clouded Yellows and Adonis Blues flitting across the chalk downs, Early-spider orchids and Bee orchids in the clifftop fields and adders and sand lizards soaking up the sun's heat on the heathland where dragonflies and damselflies deposit their eggs by dipping the tips of their abdomens into the acidic ponds.

Much has changed in the way of cameras and lighting since then but my favourite source of light which has been fundamental to photography since it's invention in 1839 has remained fairly constant.

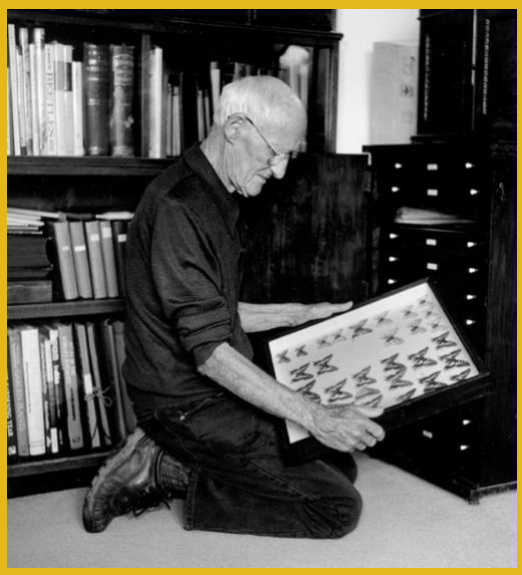
Earth absorbs heat from the sun and for the past 480 million years has provided energy for insects essential for their life cycles. While the amount of artificial light we are generating is causing problems for the invertebrates that are active during the night.

Met Office radars monitoring the weather have recently revealed that trillions of insects annually fly above our cities and countryside by day and many more during darkness but alarmingly the number of nocturnal species have plummeted due to artificial light pollution which is said to be one of the main causes in insect decline.

Since lockdown I have been visiting some of our nature reserves and waterways during the daytime, capturing the different species of butterflies and dragonflies that breed in the UK, many of which I have never seen before.

On the upper floor of the Hintze Hall in the Natural History Museum there is an eye-catching display of butterflies and moths created from it's Lepidoptera collection consisting of 13.5 million specimens, more than a third of the museum's total collection of 30 million insects. Combined with the other major UK museums their invertebrate collections' form an invaluable resource for science and biodiversity tracking.

Seeing that display reminded me of this beautiful sunburst of British butterflies which I saw in my childhood when butterflies and insects in general were far more abundant.



It belonged to Phil Grey, our local expert who lived in the neighbouring village of Langton Matravers. A lepidopterist and dedicated conservationist he was one of the founder members of the Dorset branch of Butterfly Conservation.

One wonders how much of our insect fauna would exist today were it not for our wildlife charities. Butterfly Conservation, Buglife, the Bumblebee Conservation Trust, the Woodland Trust, the British Dragonfly Society, the UK's 46 Wildlife Trusts, the Royal Entomological Society which is devoted to the science of insects and the RSPB which like the National Trust also protects and nurtures important habitats for wildlife.

Great Green Bush-cricket

Mountain Ringlet

Entomologists describe the success of insects as being largely down to the fact they are small and can fly. They all have an exoskeleton, a protective outer shell and are able to hide in soil for all or part of their lives enabling them to survive harsh conditions while rapid reproduction and an ability to enter diapause (dormancy) contribute to their incredible diversity and resilience. Certain inedible species of butterflies in the Amazonian rainforests are famous for ‘mimicry rings’ adopting similar colour patterns and flight behaviour of other toxic species in order to send warning signals to predators so they are not eaten.

Variety is one of the most fascinating features of insects.

Brilliant Emerald

Insecta are divided into two subclasses.

Pterygota - winged insects make up 99.9% of all insects. There are estimated to be around 24,000 species in the UK.

Apterygota - wingless insects of which there are barely a dozen species in the UK.

Butterflies, moths and dragonflies are among the most visible insects and special for their unique flight, colourful patterns, distinct life cycles and ecological roles as pollinators and predators.

Emperor Dragonfly

The idea they evolved from crustacean-like ancestors roughly 480 million years ago was first aired in the early 1900s. Entering the fossil record somewhere between 400-410 million years ago they peaked in terms of total biomass during the Carboniferous period 359-299 million years ago and over the course of time have survived five major mass extinctions.

There are differing views as to whether or not we have entered the “sixth mass extinction” but most scientists agree that we are in a severe biodioversity crisis which does not bode well for our future.

It is worth reading the address Edward O. Wilson gave in America in 1987 “The Little Things That Run the World” (The Importance of Conservation and Invertebrates).

Insect Colour

Six-spot Burnet

Scientists are forever discovering clues about the origins of insects by studying their fossilized remains, the oldest of which was found in Scotland and dates back 400 million years.

Their most recent observations, made through the lens of a powerful microscope, has focused attention on how and when insects evolved their colours.

Studying the blue-green and yellow hues in the scales of two extremely rare 13,000 year old fossilised weevil beetles from the Pleistocene of Switzerland they have been able to shed light on the evolution of highly complex colour-producing structures known in insects as 3d biophotonic crystals. Primarily in Lepidoptera, Briefly these structures are able to manipulate light in all directions.

Their colour is thought to have evolved primarily as a means of camouflage rather than to attract attention.

LukeT. Mc Donald / Vinodkumar Saranathan

The Royal Society of Publishing 2020








Peach Blossom - Grayling (Underside)
Chalkhill Blue (Underside) - Silver-washed Fritillary
Maiden’s Blush - Brimstone
Adonis Blue - Lime-hawk Moth

Insect Wings

Painted Lady

When migrating, a few species of butterflies, dragonflies and several flies for that matter can reach heights of 6000 meters with a little help from the wind!

Butterflies like dragonflies are equipped with two pairs of wings, ie four in total. Bees, some moths and most wasps wings hook together allowing them to function as a single unit. Beetles also have four wings, the front two called **elytra** are hardened to protect the delicate hind wings they use for flight which are known as ‘sheath wings’ and true flies only have one pair of wings.

These aerodynamic animals play a vital role in keeping a balance in our ecosystems and as many as 1,500 species are responsible for pollinating our fruit and vegetable crops whereas predatory dragonflies, the true masters of flight, are not regarded as effective pollinators as they do not possess the structures required to carry pollen.

Brown Hairstreak

Winged insects have several things in common. Most eye-catching are their wings, especially butterflies and moths (Lepidoptera) with their array of intricate patterns and colours for attracting mates or to disguise themselves from predators. While dragonflies (Odonata) have a reputation of being the true masters of flight - reflected in some of their names - chasers, hawkers, darters and skimmers.

Northern Damselfly

Recent research from the Marine Biological Laboratory in Massachusetts has drawn on past scientific papers and state-of-the-art genomic approaches to identify how insect wings evolved.

The research reveals that their wings originated from an out growth or “lobe” on the legs of an ancestral crustacean after this marine animal had transitioned onto land around 300 million years ago.

Heather Bruce/Nipam Patel
Marine Biological Laboratory
Affiliated with the University of Chicago

Emperor Dragonfly

Semaphore Fly

Morning-Glory Plume Moth

Some of the key orders of native UK insects

LEPIDOPTERA

Butterflies 59

Macro moths 900 approx.

Micro moths 1,600 plus

HYMENOPTERA

Solitary Bees 250 approx.

Honey Bee 1

Bumblebees 24

Solitary Wasps 9,000 Social 8

Ants 50

ODONATA *

Dragonflies (Anisoptera) 25

Damselflies (Zygoptera) 17

COLEOPTERA

Beetles 4,000 approx.

DIPTERA

True flies 7,000 approx.

Culicidae - Mosquitoes 36

HEMIPTERA *

True Bugs - Aphids, cicades etc. 2,000

NUEROPTERA

Lacewings, Antlions. Mantidflies 72

ORTHOPTERA *

Grasshoppers 11

Bush-Crickets

& True Crickets 23

EPHEMEROPTERA *

Mayflies or upwing flies 51

* Incomplete metamorphosis








Golden-bloomed Grey Longhorn Beetle - Superb Ant-Hill Hover Fly
Small black Ant - Nettle Weevil
Summer Chafer - Meadow Plant Bug
Swollen-thighed Beetle - Green Bottle Fly








Marmalade Hoverfly - Emperor Moth
Sun Fly - Scarce blue-tailed Damselflies
Large Emerald - Chequered Skipper
Large Skipper - Dark-edged Bee-Fly








Mountain Ringlet - White-faced Darter
Red-eyed Damselfly - Black-tailed Skimmer
Downy Emerald - Broad-bodied Chaser
Grizzled Skippers - Common Blues

‘Catastrophic Loss’

It is impossible to ignore the fact that flying insects have declined so dramatically over the past fifty or so years and are in ‘crisis’ as they are such a crucial part of biodiversity and vital to the well-being of many other animals and birds.

An article written by George Monbiot in 2017 for the Guardian titled Insectageddon referred to my generation that can feel the change. Where have all our insects gone?

Dramatic headlines such as these emphasize the crisis. ‘Plummeting insect numbers threaten the collapse of nature’ and ‘The rate of insect extinction is eight times faster than that of mammals, birds and reptiles’.

Three Norfolk Hawkers, Stodmarsh NNR, Kent. Jun ‘25

AI’s overview states that dragonflies appear to be doing better in so far as they are generally not declining, infact many species are increasing. This was highlighted in the British Dragonfly Society’s 2021 report, The State of Dragonflies in Britain and Ireland.

The report says there are far more gains than losses and that climate change is effecting dragonfly ranges which is understandable as they are mainly a tropical group of insects.

It also states that 19 of our 46 resident and migrant species have increased while just five have declined. The Black Darter is one species that has suffered especially in southern England. Found on heathlands and moorlands, it relies on acidic ponds, bog pools and ditches to breed which are particularly vunerable in long periods without rain.

BLACK DARTER

Low water levels in the ponds at Fifty Acre Piece, Berkshire. Aug 6th 2025.

When I became interested in lepidoptera at the age of nine in the 1960's insect conservation was just beginning to take hold. Today it is impossible to be interested in the subject without being aware of the intense focus on conservation.

Biodiversity underpins everything and relates to the health of our ecosystems while conservation is about protecting and restoring natural environments which includes nurturing specific habitats for our most threatened species.

This vast subject is best understood by our ecologists, entomologists and conservation biologists.

Having a positive nature helps enormously when it comes to taking inspiration from the dedicated work of our wildlife charities and their volunteers. Their efforts and success stories prove there is a great understanding of what is needed to reverse the decline in our wildlife, given the resources.

We seem to have a large number of Nature Reserves in the UK, varying in size, that are protecting some unique habitats for wildlife while bit by bit the rest of the countryside appears to be under the constant threat of developers, leaving isolated pockets of land where many of these animals are struggling to breed successfully.

Clouded Yellow

My favourite butterfly.

Before getting hooked on photography I made a small collection of butterflies and moths which were far more abundant in my childhood. Learning the names of the different species and which family they belong to I got to recognise some of their host plants while rearing various caterpillars.

The life cycle of a butterfly is undoubtedly one of nature's greatest wonders. From a tiny egg a caterpillar appears, shedding it's skin several times until full grown. At which point it creates a chrysalis and inside a magical transformation takes place and after several weeks the imago emerges, expands it's wings and we get to see the most beautiful creature of all.

I like the unpredictable nature of spotting different animals much more than the unpredictable nature of our weather and the impact it can have on the quality of light.

The bright sunlight passing through the pupils in my eyes is regulated by the tiny muscles in their irises in a similar way to the aperture in my camera lens.

While I find it captivating watching butterflies and dragonflies the simple act of taking a photograph of any insect can help enormously when it comes to identifying exactly what one's seeing for the record and proof for that matter.

The best days in the field are often the result of seeing something for the very first time, something a little unusual or even better still something rare which strangely doesn't seem to happen that often.

The more I look as these creatures through the viewfinder of my camera the larger the subject gets. Each one belongs to a scientific order which is sub divided into familes. This is the way we have orgainised them to get a better sense of their world or should I say our world.