Insects & Bugs

I have lived in London for the past thirty five years so I guess I should call it home though I still think of Purbeck as being my spiritual home.

Growing up in Worth Matravers, barely a stone's throw from the sea, built almost entirely from local stone and full of character(s) was very special not least for its surrounding countryside, the sea and abundance of wildlife.

To this day I love returning home, seeing friends and visiting my favourite haunts.

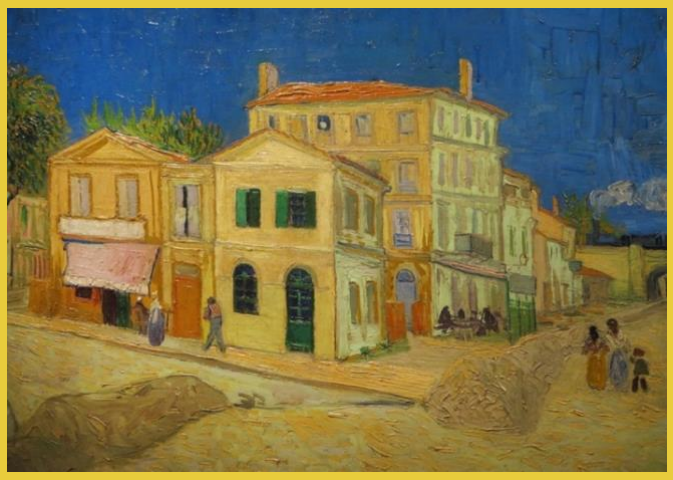
Like Purbeck's stone quarries, the heathland is incredibly special with it's mosaic of pines, woodland, scrub, heather and gorse that tolerate the poor soils, clays and sands covering the sedimentary rock deposits.

Arne and the surrounding heathlands are home to over 200 species of birds, a dozen or so mammals and our six native reptiles. All of which compete to complete their breeding cycles helped by the many species of invertebrates which provide a massive source of energy in the food chain.

Vincent Van Gogh: The Life

by Gregory White Smith and Steven Naifeh

Reading this biography during the pandemic inspired me to visit Amsterdam.



The Yellow House (1888)

Sunflowers (1889)

‘Seeing such a large number of Van Gogh’s drawings and paintings in one go was as an intoxicating experience as visiting the bars of Amsterdam as a young sailor almost fifty years previously.’

There are so many ways of exploring one's love of a subject and with different degrees of intensity. As far as the latter goes, Van Gogh's creative achievement with his stiff hog and boar bristle brushes and vast amounts of paint, that he regularly applied directly from the tube, is unsurpassed.

Studying his paintings, one really gets to appreciate his love of nature. Close-up, the detail of his brush strokes and the ridges of paint are almost 3D. From the flat canvas they leap at you as one gets drawn into the emotions they convey.

For Van Gogh yellow was not the colour of sunlight. It was a colour filled with symbolism: comfort, hope and longing.

Van Gogh Museum '26

That statement stirred some thoughts, especially of seeing the first of these butterflies each year.

Sulphur yellow Brimstones signal the beginning of spring..

and Clouded Yellows, my favourite species.

Red-tailed Bumblebee

There are over 24,000 recorded species of insects in the UK. Many are extremely rare, microscopic and difficult to identify while less than 5% of species worldwide are considered to be harmful. Examples from the main groups are included in comprehensive directories like Buglife Bug Directory and there are some excellent field guides. Our museums hold vast physical specimen collections and Apps are useful tools for quick identification and considered a great starting point for beginners like myself but even I am realizing they are not always 100% accurate.

Thousands of volunteers help the different charities like Butterfly Conservation to protect, nurture and create new habitats. Records are vital and for a set period each year butterfly transect walks monitor their numbers which are entered into national databases like Irecord.

Insects and bugs are the drivers of nature. Without them our fruits, vegitable and legume crops would not get pollinated and neither would there be the food source for the mass of wildlife that depend on insects for their survival.

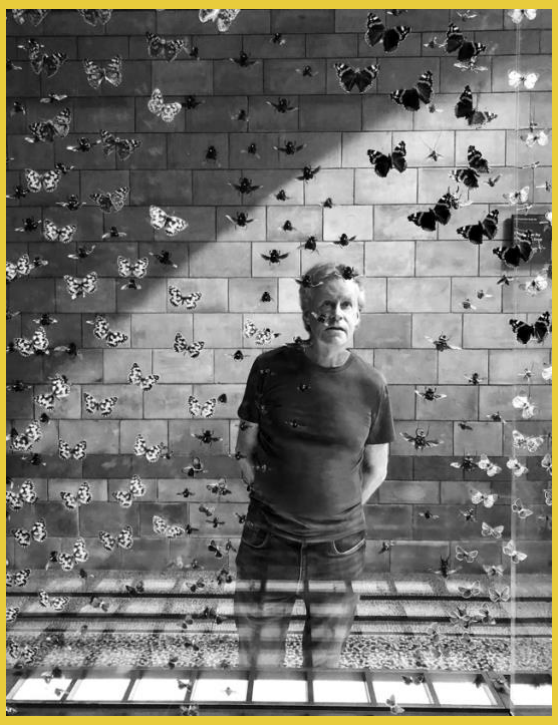
In the relatively short space of my lifetime there has been a sharp decline in insects worldwide which makes me think that the countryside around Arles in Provence may not be quite as colorful today as it was when Van Gogh decorated the Yellow House with his paintings of Sunflowers.

Visiting some of the UK's nature reserves over the past few summers has been an emotional experience. Seeing some of our least common or rarest species of butterflies for the first time has been exciting but more often than not this has been overshadowed by the low numbers of butterflies and insects in general, especially on occasions when I would have expected to have seen a lot more. Some years have been marginally better than others while the decline in Small Tortoisehells, especially in southern England, is just one example of how some things have changed since my childhood.

Pursuing a subject over a decent period of time is a good way of learning. After the clocks have changed and temperatures begin to rise, I like to get my eye-in exploring the local park before venturing further-a-field.

In winter I like sifting through the years take and listening to some of the informative talks given by the experts on behalf of Buglife, the British Dragonfly Society and of course Butterfly Conservation.

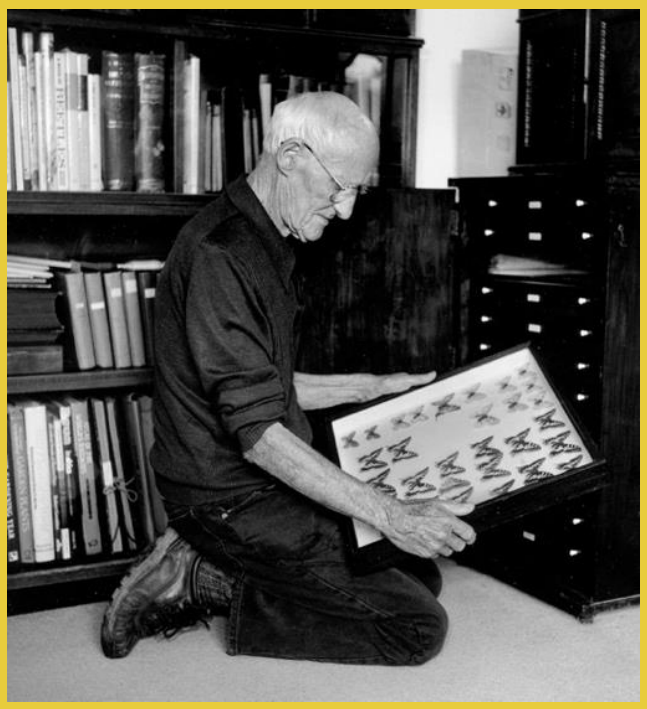
A friend recently asked me what I was up to, his parting line was 'I guess one could say you've caught the bug' which made me laugh!



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 in the museum reminded me of this beautiful sunburst of British butterflies.

Gerald 'Jed' Corbett



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.

I wonder 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.

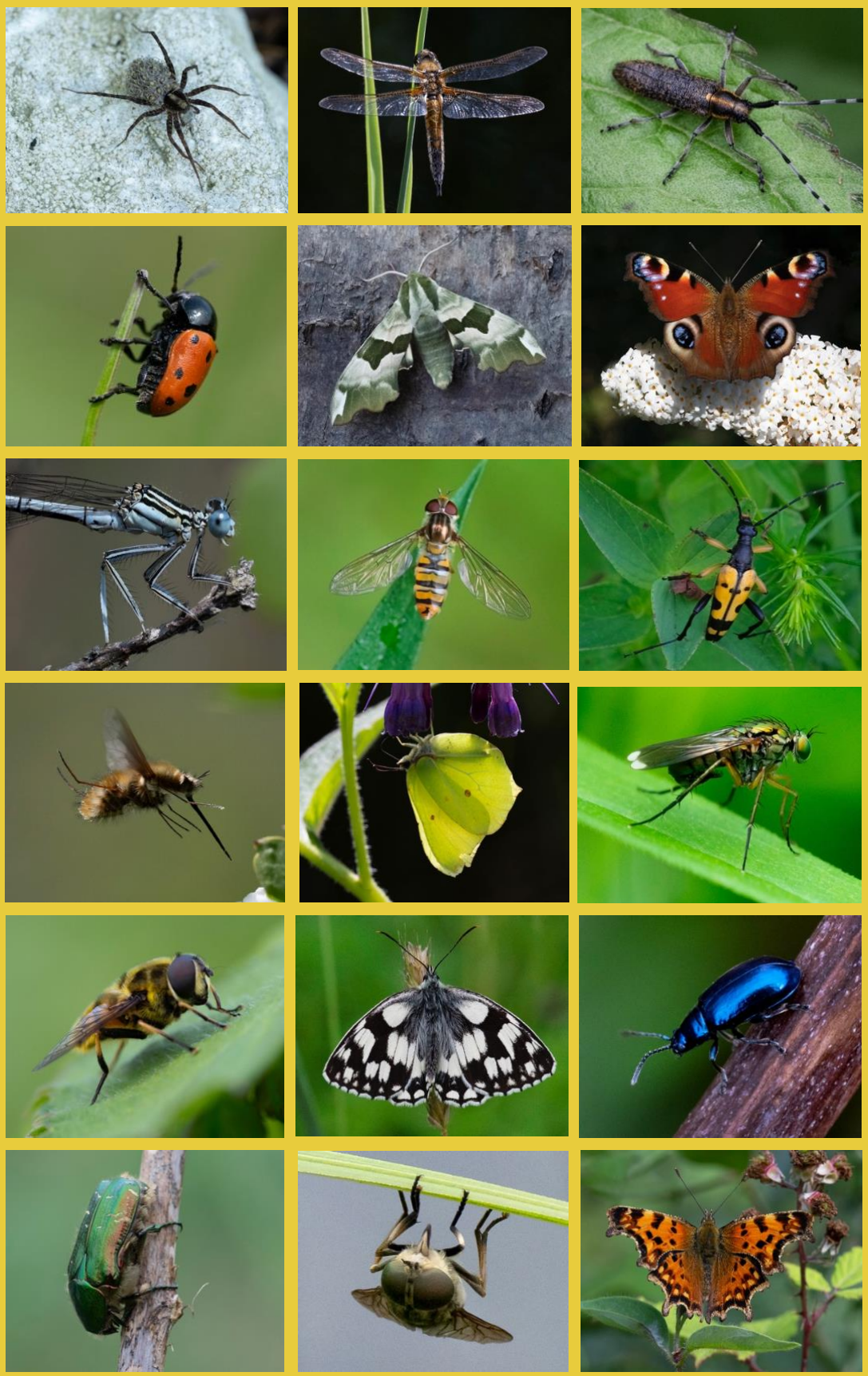
The spiritual value of butterflies and their wonderful colours and shapes have captured our imagination for over 4,000 years.

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.

Great Green Bush-cricket

Mountain Ringlet

The humorous term ‘critters’, tiny creatures was first coined around 1810 for the largest and most successful group of animals that are fundementaliy different to us. For a start they are incredibly diverse, however one thing we have in common is the need of sleep. I am told we should think of them as being inside out as their skeletons are on the outside, or upside down. They have no lungs, but breathe through tiny holes in the body wall. They smell with their antennae, some taste with their feet and others hear with special organs in their abdomens, front legs, or antennae. Features which restrict their size but allow them to live in places that are inaccessible to other animals.



Variety is one of the most fascinating things about insects,
most noticeable in their wonderful colours and shapes.

Gerald ‘Jed’ Corbett

Brilliant Emerald

The first Invertebrates evolved in the 640 - 540 million years ago from a single celled organism.

Entomologists divided Insecta 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 insects 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

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

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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

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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

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

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

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‘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.

Gerald ‘Jed’ Corbett

It is also virtually impossible to be interested in Lepidoptera without being aware of the intense focus on conservation.

Ecologists, entomologists and conservation biologists are the experts on biodiversity which is crucial for the health of our ecosystems which we are dependent on while conservation focuses on protecting and restoring natural environments as well as nurturing specific habitats for our most threatened species. Connectivity becoming evermore important.

I get inspiration from the dedicated work of our wildlife charities and their volunteers. Their efforts and success stories prove there is a much greater understanding today of what is needed to stabilize and hopefully reverse the decline in our wildlife, given the resources.

We have a large number of Nature Reserves in the UK, varying in size, protecting some unique habitats for wildlife while bit by bit the rest of the countryside seems to be under the constant threat of developers which in many cases leaves isolated pockets of land where alot of these animals are struggling to complete their breeding cycles successfully.

Clouded Yellow *(Colias croceus)*

Before getting hooked on photography I made a small collection of butterflies and moths (this was not one of them), 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 or metamorphosis as it is known is undoubtedly one of nature's greatest wonders. From a tiny egg a worm like caterpillar with 10 to 16 short legs, twelve eyes and two jaws 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 we get to see the beautiful adult creature with it's two feelers called antenna for smelling and detecting pheromones, four wings and a curled up proboscis for sipping sweet liquids.

As well as the spiritual and aesthetic value of nature and wildlife I enjoy 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 at 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 so as to get a better sense of their world. E.O Wilson coined the phrase "The little creatures that run the world".

I enjoy organizing images and archives as much as I like taking photographs. Occassionally I'll get excited by a particular picture but looking for the perfect photograph has never been the driving force.

Exploring this subject has generated a myread of emotional thoughts and encouraged me to..

- ***Join various wildlife charities and use IRecord***
- ***Share my pictures in relationship to wildlife conservation when asked.***
- ***Volunteer in my local park.***