

# NEW NATURE

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## ON THE COVER

Our wonderful cover shot this month was taken by Oscar Dewhurst. Oscar is an award-winning wildlife photographer from London. He has taken photos in locations ranging from the side of the A1 in London to photograph waxwings to the heart of the Peruvian Amazon. Find him on Twitter @OscarDewhurst and online at [www.oscardewhurst.com](http://www.oscardewhurst.com)

Images: 6, Robyn Rudland (@robynbaggins); 26, Elliot Montieth; 30, Jessica Hamilton; 32, SafetyNet Technologies; 36, Lucy Hodson; 40, PTES; 42, Tiffany Francis



# MEET THE TEAM



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WELCOME TO

# NEW NATURE

The sweet song of summer is gradually drawing to an end and the coming autumn begins to take hold. The months of September and October see a change not only in the weather for our wildlife, but the species that can be found here. Migrants such as swallows gather to wave goodbye to our land and fly to warmer climes for the winter, while flocks of noisy geese join us in abundance. It also marks a period of change for *New Nature* magazine with the publication of our very first bi-monthly issue! It is crammed full with advice for the season, as Elliot Dowding tells us what to watch for this month (p8), and we revel in excitement for the coming deer rut thanks to our glorious cover image taken by Oscar Dewhurst. You can delve into this species on p12 where Scott Thomson tells us all about this impressive mammal.

This time of year provides a chance for summer reflections as Sophie May Lewis takes us on a journey through the South Downs (p18) and I recall the glory of a coastal walk in late summer (p14). We continue to focus on conservation projects, including schemes to reduce bycatch (p32), and why nature is so important for our own health (p36). We also hear from Professor Adam Hart, the lead author of an interesting research article recently published in the British Ecological Society's journal *Methods in Ecology and Evolution*.

From the gorgeous greens of summer to the drifting russet leaves of autumn, we hope this first bi-monthly issue makes you want to revel in the season. As always we are grateful for everyone's support for *New Nature*, and if you want to write about wonderful wildlife, have a conservation concern, or are involved with a thriving nature project then we would love to hear from you.

ALICE JOHNSON  
Editor-in-Chief

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# Readers' PHOTOGRAPHS



This little water vole caused **Robyn Rudland** @@robynbaggins quite a surprise by hanging around long enough to get a photograph. Good job it did otherwise she wouldn't be able to share such an amazing shot!



**Luke Chambers**  
@@chambers35th  
has treated us to this incredible Roesel's bush-cricket emerging from its exoskeleton, what a great moment to capture!

What a fantastic macro shot  
**Emma Brisdion**  
@@embrisdion took of this lovely caterpillar in between the heather.



WANT YOUR  
PHOTOGRAPHS  
FEATURED IN THE  
NEXT ISSUE OF  
NEW NATURE?

We love seeing  
your nature pics  
and hearing the stories  
behind them so get in  
touch!

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# What to watch for in SEPTEMBER and OCTOBER

Words by Elliot Dowding

This period of the year is perhaps the most exciting in the birding calendar; with the migration of huge numbers of commoner species both in and out of the country providing plenty of interest, plus the arrival of scarce and rare vagrant birds from the continent and North America. In September, one of the main highlights in the north of England and Scotland is the appearance of the first skeins of wild geese from the Arctic. Pink-footed geese are one of the most numerous and as autumn progresses their flocks build up to impressive sizes in regular hot-spots such as Holkham in Norfolk. Later, in October, you can try some sound-only birding by going for a walk late in the evening and listening out for the very first redwings as they fly overhead in the dark – giving themselves away only with distinctive ‘seep’ calls.

If you fancy an adventure, and a chance to see one of the most amazing of Earth’s creatures, then this is a great time of year to go looking for humpback whales off the south-west coast of Ireland. Both humpback and fin whales can be seen in this area throughout spring and summer, but autumn is the time of peak occurrence and it is well worth either a boat trip or a seawatch from a headland (the Blasket Islands area is best) to get views of these awesome cetaceans.

Another mammal, though a very different one, that is of interest in autumn is the population of feral Kashmir goats on the Great Orme headland in North Wales.

These long-haired and large-horned animals were introduced over a hundred years ago from northern India and are now a very much established part of the landscape there. Practically wild, these goats come together in October for the rut and it is worth a visit to witness the clashes between competing males.

A greatly anticipated element of autumn is the emergence of the fruiting bodies of many different species of fungi. One of the most colourful and interesting groups of fungi to look out for this autumn are the waxcaps; there are around 112 technicolour species, some of which are very rare and they are specialists of unimproved grasslands. Today, refuges such as churchyards and cemeteries hold important populations of waxcaps as they have been lost from the surrounding countryside. Wales is a stronghold, with over half the British waxcap species found there; including species like ballerina, scarlet, violet coral, snowy and parrot waxcaps.

One of the latest flowering of all UK plants is ivy, so it is of great importance to many insects as a food source when most other flowers have gone to seed. On sunny days in September and October certain ivy bushes can become swamped with red admiral butterflies feeding up before they have to hibernate for the winter – this can be an amazing sight, with some bushes attracting many tens or even hundreds of these insects. How many will you count?

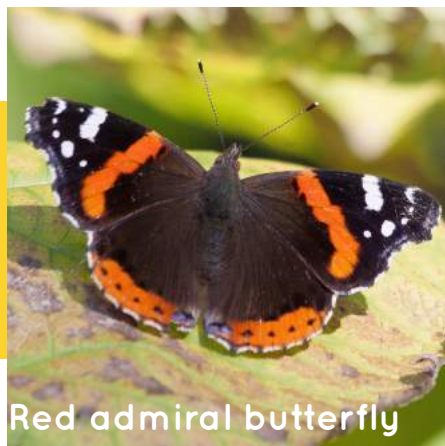


# PLACES TO VISIT

## RSPB Leighton Moss Nature Reserve



Nuthatch



Red admiral butterfly



Purple heron

With summer drawing to a close, the British countryside is becoming a hive of activity as autumnal evenings creep ever closer. In the heart of the Lancashire countryside is a birder's paradise. Home to the largest reed bed in the north-west of England, RSPB Leighton Moss Nature Reserve boasts a tremendous array of wildlife. Featuring a multitude of habitats, the site holds numerous titles, such as Site of Special Scientific Interest (SSSI) and RAMSAR Wetland of International Importance, as well as being a Special Protected Area (SPA).

Your senses will be enlightened by the breadth of colours on display in the woodland as the leaves change colour to spectacular golds, reds, oranges and browns. Within the wood, many bird species, like nuthatches, marsh tits, greenfinches and bullfinches visit the bird feeding station making it a fantastic place to perch whilst you watch our feathered friends prepare for winter.

If you venture to the top of the Skytower, you will not only gain a great overview of the reserve, but you will also get sensational sights of the surrounding Arnsdale and Silverdale Area of Outstanding Natural Beauty (AONB). Gaining height is also a terrific way to spot hunting marsh harriers over the reeds. Although most marsh harriers generally fly south for the winter, there has been one or two that reside at RSPB Leighton Moss for the whole year.

Afterwards take a walk down to Grisedale Hide where you may be able to find a common snipe, alongside an impressive great egret. Autumn is also a great time to watch wading birds like the water rail, which is more frequently heard than seen. Last year an extraordinary purple heron visited the reserve – although commonly elusive, maybe you will get the chance to witness this magnificent bird hunting this autumn?

The Allen Pool has delivered spectacular views of kingfishers



and delightful little egrets in past years. Migratory birds, like the Arctic skua, can also be seen along the coastline of Morecambe Bay as they make their migration south for the winter. As well as the birds, RSPB Leighton Moss is also home to many mammals, from red deer to a group of otters. On the smaller side, invertebrate diversity is extensive at this reserve, with red admiral butterflies, common darters and southern hawkers being the most commonplace in early September.

Overall, RSPB Leighton Moss is a Lancastrian gem that is not to be missed by any nature lover. Autumn is undoubtedly the best time of year for species breadth and frequency, particularly for wading birds. There is always something going on at this fascinating RSPB reserve, but for me, nothing beats being wrapped up in a comfy jacket and sitting quietly in a hide whilst watching the wildlife community going about their lives in the autumnal breeze.



### ANNAH RUDD

Hannah is an MSc Marine Environmental Management postgraduate at the University of York. She is an ocean advocate and her love for marine conservation has taken her around the world.

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# Species Focus

## RED DEER

Words by Scott Thomson

Few animals epitomise autumn quite like a red deer. Those of us who watch BBC's *Autumnwatch* regularly will be familiar with the rutting season where the males compete viciously for females in a noisy and violent display. Usually regarded as a British animal, red deer are actually found on every continent, having first been recorded over 12 million years ago in Central Asia and Europe. They only arrived in Britain about 11,000 years ago.

Standing at around 5 feet high without their antlers, red deer are the largest land mammals in the UK weighing in at up to 300kg. Interestingly the red deer in the hills of Scotland are smaller than the lowland English animals. The reason for this is that Scotland, along with small pockets of England and Northern Ireland, has a subspecies of red deer known simply as Scottish red deer. The red deer found in most of England and Wales belong to the larger subspecies known as Western red deer. It is a complicated tale as there are numerous examples of deer escaping from private parks and hybridising with wild deer, meaning it is impossible to say what a 'natural' red deer really is. A study from Edinburgh University discovered that one of the main reasons for Scottish deer being smaller is that they have hybridised extensively with the smaller Sika deer. It is a surprisingly controversial topic with researchers still unclear about how many subspecies of red deer there are.

Red deer are iconic due to their stunning red hair and, most notably, their antlers. Growing at a rate of up to an inch a day the antlers of a red deer can reach up to 45 inches (four feet) and weigh a whopping 15kg! The antlers are made of bone but have a soft, velvet covering when they are growing, usually from spring

to autumn. It is not uncommon, as the breeding season approaches, to see deer rubbing their antlers against trees to shed the velvet coat and leave sharp tipped antlers that will be their main sparring weapon in the months to come. Red deer antlers vary quite significantly with the main difference being the number of sharp points, called tines. The amount of tines is what determines the classification of stag and is often the method used to identify individuals. A 'Royal Stag' has 12 tines; an 'Imperial Stag' has 14 tines; and a 'Monarch' has 16. Due to selective breeding and escaped deer it is common for the deer in England and Wales to have more tines than those in Scotland. Older deer also show a reduced number of tines, so the amount an individual has can be a rough way of aging a deer. After the breeding season is complete, the males no longer need antlers and so they are shed and can be found in woodland and on hillsides from winter onwards. Red deer begin the energy intensive process of re-growing their antlers only a few months after they are shed.

Red deer, as with all deer, are not without controversy. Without any predators their population has increased which has resulted in the overgrazing of many areas. Places that would naturally be forested are left as bare grassland as trees are not able to establish before their shoots are eaten. Many people call for culls or rewilding of the countryside, with wolves being a common suggestion to control the deer.

Regardless of what the answer is, a red deer is a wildlife icon. A proud, majestic male looking across a misty hillside is one of the most incredible wildlife sights in Britain and one that we shouldn't take for granted.



### FACT FILE

Species: *Cervus elaphus*

Length: 1.7-2.6m

Height: 1.2m at the shoulder

Weight: 100-340kg

Average lifespan: 16-18 years

Diet: Grasses and small shrubs

Interesting Fact: Twice as many female deer are born as male deer.



# The Call of the COASTLINE

Alice Johnson recalls a walk by  
the sea in late summer

Standing on the cliff edge, the waves provided a continuous lull as the icy water touched the wealth of pebbles nestled amongst the sand. A constant rhythm, the waves continued, giving reassurance that nature will go on.

The cool, early morning meant I had the path to myself, with the exception of a few delighted dogs out on their first jaunt of the day; tail wagging with every step.

Ambling up the coastal path, the ground beneath my feet was so compacted – it had been traversed by many a walker and beach goer, yet the cheerful orange-red of the scarlet pimpernel flower held strong nearby, tentatively protruding onto the trail. The splattering of rain which had fallen the previous night made just the top surface slippery in places, so I spent time looking at my feet placing them one by one on the onward journey for a short time. Soon the wildlife distracted me, and I just had to risk a slip in the mud.

I could hear the tinkling of delightful goldfinches as I made my way up the steep incline. Once ascended, I peered up to the sky. There a charm of them flew to and

fro from branch to branch in their energetic flock, their wingbars like a flash of gold, reflecting the precious jewels these birds are. They seemed to follow me alongside the path, drifting purposefully together before landing on the plants by the cliff edge. As if by magic they were gone. I don't mean they took flight and left me, but their plumage made them almost impossible to spot amongst the foliage. The plants were not tall, I knew the birds' position well, they were simply camouflaged. I had never thought the goldfinch to be a bird capable of such perfect disguise, but it seems a chameleon like disappearance is a certain skill of theirs.

Breaking myself from my trance watching the engaging flock, I peered over the hedge to the scrub near the rock face. The rosy-red chest of a male linnet alighted a twiggy bush, bubbling away with its call. A flicker of russet red and a snow white tip; a fox's tail disappeared into the undergrowth. I scrambled forward along the path to get a better view, but this skulking mammal was not to be seen again.

Reaching the top of the cliff edge I peered at the endless ocean; onwards the blue mass extended

to the horizon. Imagine the life that is hidden from view, such species richness stays a secret from the land. I scanned the watery surface, but the rippling waves played tricks with my mind – no cetaceans or seals to be seen. The previous day I had been lucky to spot some dolphins far out at sea, just momentarily the fins were visible, an indication of the secret world below, but as quickly as they came they were lost to my eyes amongst the jostling of the waves.

Past the greenery covering the cliff and by the craggy rocks below, the black and white 'suited and booted' oystercatchers could be found with their glorious orange bills. The cormorants too were there, standing like dinosaurs on the ancient rocks as they held their wings out for the gentle touch of the sunshine.

The gulls glided past, herrings added full pelt their sound of the seaside to the air. I could see a fulmar approach from over the ocean, such perfect speed and accuracy with its spitfire like flight, a bird

truly to be marvelled at. Ever nearing closer, the excitement built as the feathered pilot soared past the coastline below me. Its tubular nostrils were clearly visible through the binoculars, and although their name means 'foul gull' in old Norse, due to their rather interesting ability to throw up an unpleasant oily stomach substance, I think this name is rather a shroud over their true splendour. When on the wing they are masters of the air.

The wind blew over the ocean gently pushing me along the path as I came to a patch of scrub. The rasping sound of the stonechat alerted me to the presence of a male, with its deep black head and red-orange blushed breast, perched on the stem of a dried out umbellifer. Flickering of tail movement could be seen in the patch of undergrowth behind, and a whitethroat popped into view, the characteristic naming feature clearly visible. A young stonechat distracted me, as a parent flew to feed this speckled robin-like bird in the hedge. Flickering feathers,

calls of delight, the chick had got its breakfast, while the scratching sound of the whitethroat cut through the breeze.

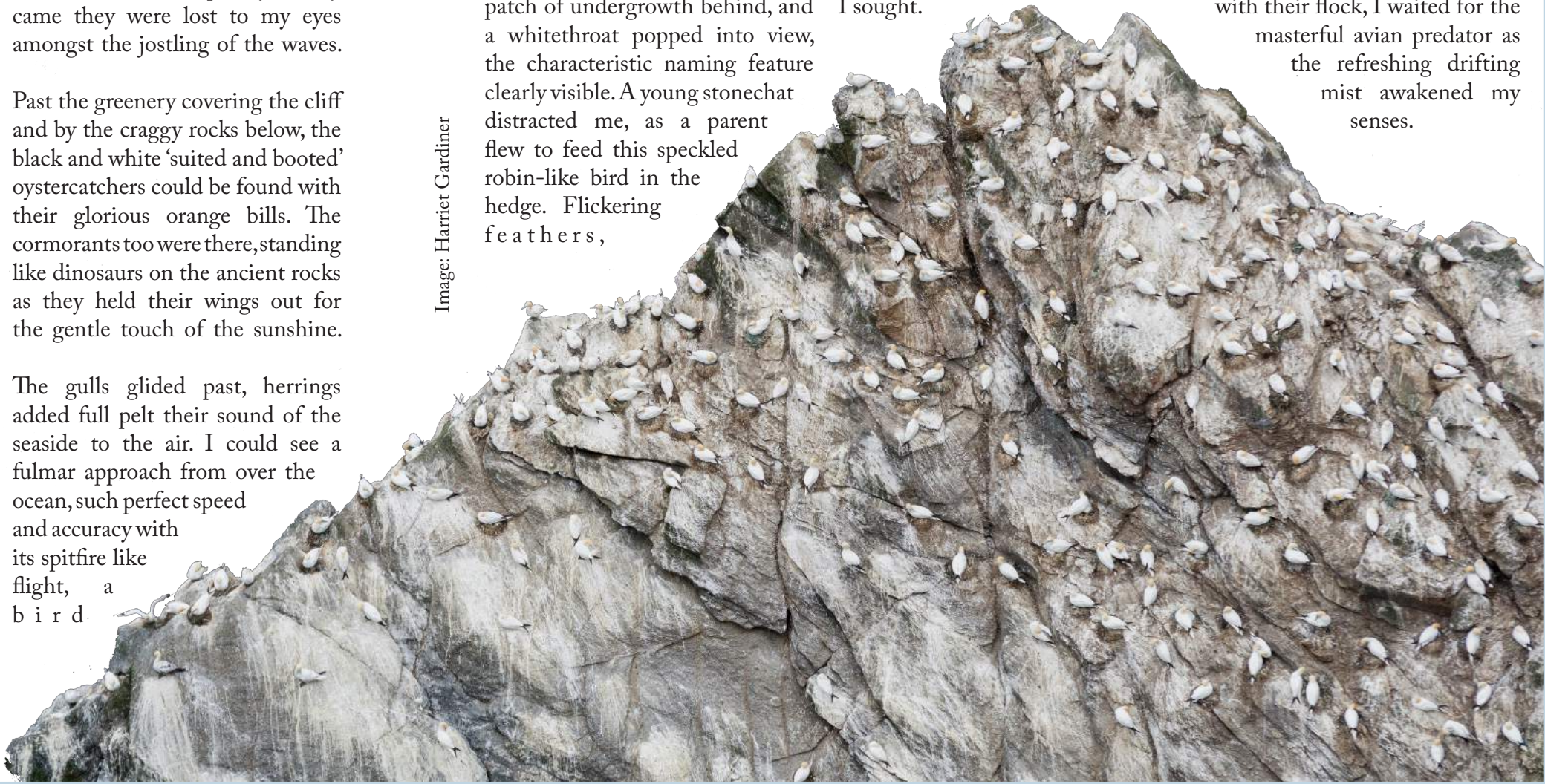
Winding hills, sturdy stiles, secluded beaches, rugged rocks; the meandering path went on. A wooden bench provided a welcome rest and the gentle touch of water droplets told me the mist was coming. Watching the tumbling of the waves had a welcome tranquillity; calm serenity despite their angry turn. Agile wings, grey barred underparts. A bird of prey had just appeared from below the cliff, breezing close to the bench and far along the path. Propelled into pursuit, I made my way forward in search of the awe-inspiring peregrine. The alarm calls of birds in the hedgerows guided me on to the one I sought.

A glimpse is all I caught of the angular wings as this hunting master drifted over the cliffs from the path to the scrub and rock face below.

As moments passed and the waiting seemed fruitless, the smaller birds thought the return was unlikely as well and began to relax again. Suddenly, the foliage filled area was alive with tits – coals called their repetitive syllables, blues appeared meddlesome and happy again, while the long-tailed flock danced about the hedgerows.

Just by waiting, wildlife which occupies the zone where the land merges to sea showed itself, albeit sometimes briefly, as I passed through. Providing moments of intrigue, excitement, peace and longing, wildlife is very special indeed. As the long-tailed tits left with their flock, I waited for the masterful avian predator as the refreshing drifting mist awakened my senses.

Image: Harriet Gardiner





# FROM TINY ACORNS

Words by  
Jeni Bell

You don't usually associate rainforests with Scotland, but here on the West Coast where the climate is mild with plenty of rainfall the conditions are just right. The Sunart Oakwoods are an incredibly special example of these Scottish rainforests. Oak, birch and hazel dressed in glossy ferns and dripping with delicate lichens line the shoreline of the sea, providing a home for over 500 species of plants and animals. There are Atlantic oakwoods all along the West Coast of the UK, but none of this calibre.

The lush habitat attracts a huge variety of creatures like the chequered skipper and the pipistrelle bat that feeds on an abundance of insects above the canopy. Treetops here are often filled with birdsong from the likes of chaffinch to siskin, redstart, willow and wood warblers. A lot of the bird species here are attracted to the insects that feed on standing deadwood left in the area, the smaller songbirds entice in predators like the sparrowhawk. A strong example of a healthy ecosystem.

Whilst some of the species are easy to spot, there are some that are not. Secretive foxes and badgers live almost entirely hidden lives, their dens and tracks concealed in tree roots or under rocks. Voles and field mice scuttle around on the forest floor searching for food amongst the leafy detritus, providing prey for tawny owls which reside in the old oaks. The burns that tumble through the woods make ideal channels for enigmatic otters to travel by. They lead them directly

to food and provide them with somewhere to wash their coats free from salty loch water.

The most reserved of all the creatures though, and possibly the oakwood's biggest treasure is the endangered wildcat. A ferocious predator that commands its territory, skulking along woodland edges and using the encroaching environment to exist almost entirely out of sight.

Some inhabitants are more forthcoming, regularly venturing out of the oakwood's cover. I was lucky to catch my first glimpse of a pine marten tumbling out of a clump of ferns on the forest edge. It's chocolate coat, laden with viscous raindrops, as it bumbled toward me down the path, before being swallowed back into the undergrowth. Gone. Disappeared as if it had never been there in the first place. Pine martens were once heavily persecuted to the brink of extinction but here they thrive, in a haven of gnarled oak trees.

These woods are keepers of secrets, an undisturbed, almost untouched refuge for wildlife amidst tangles of trees, rocks and thick foliage. As I walk through this temperate forest I breathe in big lungfuls of its heavy air, thick with the tang of wet jungle and the musky undertone of earth. If green had a scent, this would be it. The flourish of chaffinch song cascades through the canopy as a roe deer appears on the treeline ahead and I can't help but wonder what else is watching from the undergrowth in Scotland's secret rainforest.



## SUSSEX FIELDNOTES

## DROVER'S AUTUMN FLOCK

After the languorous days of summer, the South Downs undergoes a complete transformation. As the colour fades from road verges and meadows, structural seed heads strung with spiders' webs, and tempting hues of hips and haws in the hedgerows are new joys in place of flowers. The soundscape changes too. The belligerent banter of black-headed gulls livens up the town pond, filling the void left by the screaming swifts; those thrill-seekers being one of the first migrants to head south, hoping their nest sites will still be there when they return at the end of spring next year. The robin picks up the tune it abandoned before the summer moult.

It is Friday afternoon, the 3pm sun has a crooked slant as though attempting to peer beneath the clouds that are gathering in the blue shadow of the Downs. There is the scent of damp earth, wet leaves and rotting wood, and something else unnamed that although vague seems to define the seasonal shift. Brambles snag and scratch at my trousers as I pass. The bark of the oak is rough under my hand. I press my palm against the mossed trunk for balance as I duck beneath drooping hazel branches, weighted with recent rain that collects as rainbow filled droplets on the point of each furrowed leaf, dislodged, cold and wet on my skin. I can hear a hidden stream, running between trees and sandy banks.

From the nearby field edge the startling alarm call and rapid whirring of wings of a cock pheasant sets my heart pumping for a moment or two. Stepping over a fallen birch log, its bark peels off in patches like old paint where sharp claws have ripped into the wood, I tiptoe forward, inspecting the soft rain-dimpled sand for footprints. The sand is part of a small mound in front of a dark, leaf-filled hole in the bank, beneath a sideways-growing crabapple tree. In spring, the twisted branches of this ancient tree run white and pale pink with blossom, petals fall and drift like confetti in the wind. Now, the leaves are yellowing and curling inwards, resigned to being blown away in autumn gusts. There's clearly nobody home; the hole looks unused. But I am a child again, exploring 'my

patch', creeping under branches and over logs to the outlying hole of the badgers' set, tracing the five-toed prints in the sand with a fingertip.

Beneath my feet is a thick layer of mulch, brown and rich, skeletons of leaf veins, sodden spongy sticks and branches, a feast for worms and seedling roots. Amongst this carpet lie hidden treasures, cracked acorns secreted by squirrel or jay, sweet chestnuts spilled from spikey cases, and over-ripe fruit brought down by heavy rain. Some seeds lie dormant, chewed by rodent teeth or crushed by passing feet. Others are soaking up moisture, tentatively stretching out feelers, reaching out hair covered roots, lodging themselves deeper, firmer into the woodland floor. They will wait; time is on their side. Eventually they will send up green shoots to punch through the blanket of fallen leaves to greet the dappled sunlight and unfurl into tender beauty, on a determined mission to produce seeds of their own.

Deciduous woodland holds a unique magic in its seasonal changes, but on those days when low golden sun lures me from the dappled shade, I delight in wandering the drovers' tracks; possibly even more so at this time of year than in the spring. Sussex drovers' tracks are historic rights of way, which follow ancient routes between downland heights and wealden market towns; deep lanes running between high banks. Tree roots bind the thin chalky earth of the banksides, leaning over the lane with boughs laden with cobnuts, haws, sloes and elderberries. The nooks and crevices between the winding knotted roots create lodgings for seeds and soil. Tendrils of honeysuckle and bryony, thorny limbs of bramble, and scrambling masses of wild clematis, all clamber to fill the light-gaps within the hedge canopy. In summer, orchids, agrimony, cranesbills, and umbellifers fill the waysides with flowers. Now, most has gone to seed. I can recognise the cleavers or goosegrass by the hard little sticky balls that cling to any material that brushes against them. Burdock disperses its seeds this way too, hooking into trouser leg or animal fur with a Velcro-like system of hooks. Scarlet spires of

wild *Arum* berries punch upwards at intervals. Herb Robert, its stems reddened by the stresses of sustaining itself on such poor soil, flowers on blithely. The frosts will have the final word later in the season, and the herbaceous plants will retreat to their roots, reduced to umber shells; empty seed heads and papery stem structures to be broken down by wind and rain.

These ancient farming routes might rarely see livestock these days, but there is another flock here. A mixed party of tits flits and darts amongst the hedgerow branches. Post-breeding, many families and non-paired birds gather in loose formations, seeming irrespective of species divides. Blue, great, coal, and long-tailed tits can all be seen together in a roving flock, working their way along the hedgerows and woodland edges gleaning invertebrates and fruits from the curling leaves and lichen bark crevices. Occasionally other birds will tag along at the edges of the elastic flock, such as nuthatches, treecreepers, and goldcrests. You hear the flock first, a flurry of squeaks and chirps, contact calls that keep the family groups in touch. Then they are there, as though patches of moss and lichen on the branches have come to flickering life. They buzz around, past, through, then a few flights and they're gone again, across the field corner to the next hedge. In the lull, the robin resumes his solo song practice, and I walk on in search of a few more blackberries.



## SOPHIE MAY LEWIS

Based in rural West Sussex, Sophie finds inspiration for her writing and photography in the South Downs and the Weald. Introduced to wildlife and landscape history through family walks as a child, she has been hooked ever since.

 @sxfieldnotes  
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# UNDERRATED SPECIES



## Common Shrew *Sorex araneus*

Words by Elliot Dowding

How often do you think about shrews? My guess would be not very much at all, unless you're a mammal surveyor. It's not often that shrews are a hot topic amongst nature-lovers, and if you think about them at all it is most likely in relation to their more charismatic predators – such as barn owls. Then again, when was the last time you saw a shrew? One that wasn't dead on a path or brought in by your cat? Based on my own experiences I'd guess that most of you have only seen a living shrew in the wild a handful of times, if that (again, unless you're a mammal surveyor).

You can often hear them (unless you are of a certain age and can no longer discern their high-pitched whisperings), calling almost constantly from within the leaf litter of a woodland or from the base of a hedgerow. Many a time have I leant down to try and spot the tiny animal creating the squeaky racket, then after ten minutes of staring at a disembodied voice concluded that shrews have the ability to turn invisible.

I think the fact that they are so much in the periphery of our senses results in us underrating shrews – so often they're reduced to just a mention in a list of prey species and I can't imagine that the general public ever give them a first thought, let alone a second. Yet the UK population of the common shrew is estimated at 41.7 million; so clearly, they're not moping around wondering why humans never pay them any attention, they're getting on with it and doing pretty well.

It's hard to imagine what being a shrew must be like; they have to eat at least once every two to three hours or they die, whilst they're looking for food they have to watch out for predators or they die, they also have to fiercely defend their territory from other shrews or they won't have anywhere to feed and they'll die. And if they don't die from any of that, they only have a maximum lifespan of 12-14 months anyway.

During a female common shrew's brief existence on Earth, she can give birth three or four times to litters of six or seven pink shrewlets. As time is short, shrews are highly promiscuous, meaning one litter may have multiple fathers – this also ensures genetic diversity in the population. But, perhaps the most remarkable thing about shrews, for which they deserve a 'wow' as I don't see any humans doing this, is their ability to reabsorb large parts of their body during the winter in order to survive! Rather than hibernate they can reduce the size of their skull, their brain, their spine and all their major organs for an overall reduction of 18% in body size.

Shrews live in a microworld of tree roots and leaf-litter, scuttling beetles and slugs almost as big as themselves; it's a manic, non-stop race to stay alive for as long as possible, so they can ultimately get a chance to pass on their genes. Maybe spare these ecologically important little survival-machines a thought?



# The 'GREAT BRITISH' Sundews

Words by Josh Styles

Sundews are amidst a rather odd group of plants within the family Droseraceae which are represented by three indigenous species throughout the British Isles, comprising the great sundew (*Drosera anglica*), oblong-leaved sundew (*D. intermedia*) and round-leaved sundew (*D. rotundifolia*). All three species are perennial, with leaves coated in sticky, red-tinged hairs and are characteristic of peat bogs and wet heaths throughout the nation – habitats that are both wet and highly deficient in soil nutriment.

## THE MECHANISM

In order that these sundews are able to tolerate otherwise inhospitable environments, they have evolved a special strategy in order to obtain nutrients such as nitrogen. Each leaf hair is tipped with a gland that produces digestive mucus, thus allowing the sundew to obtain nutrients from invertebrates that become ensnared in its sticky ooze. Once entangled in the mucus, the plant hormone auxin is released, triggering the leaf of the sundew to curl over and engulf its prey in more of its digestive mucus; Darwin described this as the 'outer stomach' of the sundew.

## ECOLOGY AND CONSERVATION STATUS

Although all three British species look superficially similar, each species is individual in both its morphological traits as well as habitat requirements. Great sundew prefers the often damper peaty hollows. Contrastly, oblong-leaved sundew is able to tolerate drier conditions, and is rarely ever found amongst Sphagna. Round-leaved sundew is by far the most common species, found across a range of acid and peaty habitats, and is almost always found as a common associate for both great and oblong-leaved species. Degradation of lowland peat mires through drainage, forestry, and peat extraction has resulted in large-scale declines in a raft of peatland species in the lowlands, all damp-loving *Drosera* species included. Round-leaved sundew is red-listed as 'Near-Threatened' in England, whilst great sundew and oblong-leaved sundew are listed as 'Endangered' and 'Vulnerable' respectively.

From their fascinating adaptations to their sheer beauty, sundews are amongst the most peculiar of the British flora and their decline is ever more incentive to restore and preserve the peatlands where they are found.



Great Sundew



Oblong-leaved Sundew

Images: Great Sundew, Dr Richard Bate; Oblong-leaved Sundew, Stephen Barlow.





# ADAM HART

We talk to the scientist, author and broadcaster about how social media can be a key resource for ecological research.

A study entitled ‘Testing the potential of Twitter mining methods for data acquisition: Evaluating novel opportunities for ecological research in multiple taxa’ was published in the British Ecological Society’s journal *Methods in Ecology and Evolution* at the beginning of September 2018. The research used Twitter mining methods to find social media posts linked to the emergence of winged ants, house spider appearances in autumn and starling murmurations. The data were analysed, then the results compared with those from previously published studies, and similarities were found. *New Nature*

spoke to the lead author of the study, Professor Adam Hart from the University of Gloucestershire, about the research to find out more.

*Your study showed some similarities between Twitter mined data and previously published studies for all three ecological phenomena that were analysed, especially in monthly level and national scale temporal patterns of winged ant emergences. Do you think your study shows Twitter is an underestimated and perhaps overlooked tool when it comes to considering data from tweets for scientific studies?*

We think so – although with caution! What we found was that Twitter has great potential for finding out about some aspects of some ecological phenomena but provided us with next to no information about others. However, we were very surprised at just how effective it could be in the right circumstances. Social media is not going away and we are more and more likely to share what we see and experience with others. With the right approach this kind of ‘passive citizen science’, where we harvest data from social media feeds, has real potential in ecology.

*Why do you think tweets about starling murmurations were fewer in number than those including references to flying ants? Are these factors something that need to be taken into consideration when contemplating whether to use social media data for research?*

We suspect there were a number of factors. First off, murmurations are less widespread and less ‘common’ than flying ants. Secondly, it often takes a bit of effort to go to a murmuration site and those people undertaking that trip might not be the sort of people that tweet – however, we still have much to learn about motivation and demographics. Thirdly, we think it’s possible that people are more likely to tweet about negative aspects of an ecological experience – sadly. So, many of the flying ants tweets were less than positive about the experience. Likewise, most people were complaining about house spiders! We are looking into this idea more in future research.

*You mentioned downsides of using Twitter mining, such as not being able to gain in depth information about a certain event or sighting. Would you therefore suggest social media could be useful in analysing largescale ecological events, but more focused citizen science is needed for specific detailed research?*

Absolutely! For example, we were able to replicate aspects of the flying ant survey, involving considerable effort over three years, with some Twitter mining, but we could not get the insights into the effect of being in an urban area (earlier flights) or nests being associated with brickwork or paths (again, earlier flights). When it came to starlings and the influence of predators, which was a major finding of the study we were trying to replicate, we were hopelessly lost! Twitter mining also gives us the chance to look back in time, especially now that we are starting to get a handle on how precise and useful tweet-derived data can be.

*Is there a concern when using information from social media that the quality of data from members of the public isn’t as reliable as from professionals? How would you suggest this is taken into account when analysing results taken from these online platforms for use in research?*

This is always a concern I suppose but when someone tweets, “God, there are flying ants everywhere in my garden at the moment,” and you can derive a date, time and location for that tweet it seems reliable. And of course, the data from Twitter are so similar in many ways to data derived from other sources. But care needs to be taken – we examined all tweets manually, although of course it would be possible (and desirable) to automate the process, especially if dealing with large numbers of tweets.

For more detail about this research go to  
[www.methodsinecologyandevolution.org](http://www.methodsinecologyandevolution.org)

To find out more about the British Ecological Society visit  
[www.britishecologicalsociety.org](http://www.britishecologicalsociety.org)



# CORNELL TRIP REPORT

Words and Images by Elliot Montieth



For the past two years The Cameron Bepolka Trust has awarded a scholarship for one British ornithologist to attend a young birders event at the Cornell Lab of Ornithology in Ithaca, New York state. On the 10th of April, the news came through that I had been awarded this year's scholarship. Eureka!

The event was created by the staff at the lab with the aims to not only bring teenagers with a deep-rooted passion for birds together, but to inspire and help them to pursue a career in the field of ornithology. It was an utter privilege to be at this year's camp.

## JULY 12<sup>TH</sup>

Having only visited the States once before, the birding here for me was going to be a major highlight. On my first day, Chris took me to Lott Farm to see something rather special – upland sandpiper! Fewer than 20 breed in New York state. Whilst on route Chris informed me that there'd been no sightings of this regular pair for several weeks. So, when we arrived and I picked up not one, not two, but three upland sandpiper and even better all were juveniles, I was fairly chuffed as I'd proven that they must have bred at this site!

Back at the lab, Chris introduced me to the other young birders I'd be with for the event who'd come from across the planet to take part. I wasn't expecting this, such a diverse array of next generation ornithologists all being united under the roof of the Cornell Lab of Ornithology with no barriers, it was something really tremendous.

After our introductions at the Lab we headed straight into our first talk by Kyle Horton, a Rose Postdoctoral Fellow of the lab who's been studying bird migration across the North American continent via radars. After Kyle's talk, we fitted in blue jay, ruby-throated hummingbird, monarch butterfly, racoon, pileated woodpecker and chimney swift, whilst at the lab and afterwards we headed to our overnight accommodation as it would be a 5am wake up call.

## JULY 13<sup>TH</sup>

It was a new dawn, it was a new day and boy we were feeling good! Up at the crack of dawn two choices were given to us, either join Chris and Ian for some dawn birding or Jessy and some of the sound guys for an early morning's sound recording. I took the latter option. For the next few hours we roamed the Sapsucker Woods

documenting as many birds as we could. The morning duets and melodies certainly rivalled that of any I'd previously encountered back in Europe: Blackburnian warbler, grey catbird, black-throated blue warbler, red-eyed vireo, common yellowthroat and chestnut-sided warbler, among others. The numbers of warblers in just a small area was quite simply astounding.

Afterwards, the two groups swapped and I joined Chris and Ian for a few hours birding at Roy H. Park. If you're not aware of the American ways, playback/tape luring is common practice. It's a method that's seen as bad field-craft back in the Western Palearctic, however there is some reasoning behind the concept. A wide variety of species can be seen in a short space of time, so all the group is more likely to see the birds and in areas where there is little to no data, you're able to stop off for no more than several minutes at a site, play the tape and within seconds have virtually all the local species crowded around the speaker. I myself will remain playback free on my return to the British Isles, however it was interesting to encounter first-hand the differences in field-craft techniques used.

A few meters into the reserve the tape lure was played for the first time in a small conifer plantation and well, it worked to say the least: common yellowthroat, chipping sparrow, ovenbird, prairie warbler, black-billed cuckoo and alder flycatcher to name but a few.

Back at the lab for the afternoon, John Fitzpatrick (Associate Director), Tom Schulenberg (Avian Taxonomy Specialist) and Daniel Fink (Research Associate) all gave utterly outstanding talks that truly blew our minds! If there was one speech which stood out for me it was 'Birds Can Save The World' by John. The underlying theme of his lecture was that birds change people (they saved me from myself), by understanding their populations, movements and requirements then we don't just understand them, we see the bigger picture, the whole ecosystem. If one thing in the chain is altered then the birds will be affected and given how they're the easiest group of organisms to study, by studying them and conserving the birds we aren't just conserving them, but the habitat and in turn the entire ecosystem.

By the time the talks were over there was just one more thing before we could call it a day, a night in the museum tour with Irby Lovette. For two hours we were given unrestricted access to the 58,000 specimens!

## JULY 14<sup>TH</sup>

Once again, an early wake up call for a sunrise at Montezuma. We were greeted with views of sandhill crane, bald eagle, willow flycatcher, bobolink, green-winged teal, turkey

vulture and American wigeon before the site's first Louisiana waterthrush shot over calling!

Ending the day bird-wise was a trip to Cayuga Lock and River Road as news had come through that a 'greater' snow goose had shown up. It was in fact an injured bird that had been shot several months before by hunters and had survived with its entire summer spent on the lake. It provided close views, as did a Caspian tern.

## JULY 15<sup>TH</sup>

Our final day in Ithaca birding was no different from the rest, just total insanity with the first port of call being a small bog off the side of a typical country road. At first it seemed lifeless, but as soon as the tape started playing... Virginia rail and sora! Afterwards we went to the best site in town for fish crow, nailed on call, and then back to the lab and to say our farewells.

The trip was absolutely fantastic and a complete privilege to have had the opportunity to attend. Not only was the birding just insanely good (144 species over three days of which 107 were lifers!), but those who we heard from, professors, researchers and students, had an impact upon us all. The one message I'll always carry with me from Cornell is this – life is short. Do everything you can and if there's an opportunity then you take it. The list of people to thank is just endless.

Read Elliot's full trip report and species list on the Cameron Bepolka Trust's Young Nature Blog: [www.cameronbepolka.com](http://www.cameronbepolka.com)





## Research Focus

# A HELPING HAND FOR



# HOGS

Words by Emily Gilford

What draws wildlife into our gardens? Could it be our taste in decadent outdoor furniture, our fine fancy flower pots or our lavish patio tiles? Whatever their preference, the European hedgehog (*Erinaceus europaeus*) is a firm garden favourite and pest control expert that has been the hot-topic of media coverage during the recent summer heat-wave. Unfortunately, research has shown that our local hogs have seen a shocking 97% population decrease since the 1950s.

In an attempt to study what might draw these critters into our gardens, myself and a small team of students at the University of Exeter campus in Cornwall are looking at factors which might be associated with hedgehog presence (and absence). We hope that this will help us to understand ways in which people living in the UK can change their gardening practices to attract

hedgehogs into their gardens and help numbers to increase from the comfort of their own homes.

The first stage of our research involves people! A short survey asks the public whether they have seen a hedgehog in their garden, their postcode, and a bit about the structure of their outdoor space. Responses will all be used to help researchers assess distribution of hedgehogs in gardens across the UK, and will aid with the second stage of the study.

The second part of the study is much more field-research based. The research team will contact select members of the public who have completed the survey to conduct a small number of field studies, in gardens both with and without hedgehog sightings.

Omnivorous hedgehogs have huge and varied appetites. Worms,

crunchy beetles, slugs and snails form the carnivorous part of their diets, accompanied by side servings of plant material. They have occasionally been known to snack on frogs, fallen fruit and egg shells. Their diet changes depending on the season. Like the way that supermarkets have different seasonal fruits and veggies, so do our gardens. During September and October, the menu includes earwigs, scarab beetles and earthworms, with the latter being a year-round course.

To study prey species in each garden, we will be using three different specialist survey techniques. To survey for worms we will be using a non-toxic mustard powder solution poured onto small patches of grass, which will draw the worms to the surface of the soil. We will also use pitfall traps, which are comprised of a small pot or jar slightly buried into the

ground. Organisms such as ground insects and frogs will walk into the traps and get stuck. We will then be able to assess the number of species which are present in each garden and set them free. Snails and slugs are immune to the pitfall traps, as they are able to climb up the sides of the pots. For these slimy rascals we'll visit gardens at night time and see what we can find. We predict that hedgehogs will be present where their prey species are more abundant.

Hedgehogs, despite their size, are very athletic. They can walk over one mile per night trying to find food or mates, and most of their routes are through our gardens. The popular phenomenon of the 'Hedgehog Highway' is a great way to help hedgehogs pass freely through your local area. A few small holes (13x13cm) at ground level in your fence is a great way to allow hogs to pass through.

During our surveying, we will also be examining garden accessibility by looking at what gardens are bordered by. Whether this is bushes, trees, picket fences or stone walls. Owners of more accessible gardens are more likely to see these prickly pals as a frequent garden visitor. Gardens with more shrubbery or wilder areas will also be more likely to see greater hedgehog numbers, as the hogs have more places to hide and hibernate.

We will be assessing hedgehog numbers by using camera traps and hedgehog footprint tunnels. Footprint tunnels are a great tool as they're completely non-invasive, and also give us an idea of other small mammals and birds which may be living in the gardens. Animals walk over a small patch of ink (made from charcoal powder and water) and leave their prints on the paper floor of the tunnel. This can give us an idea of hedgehog

numbers, and the presence of species which may be competition for the hedgehogs.

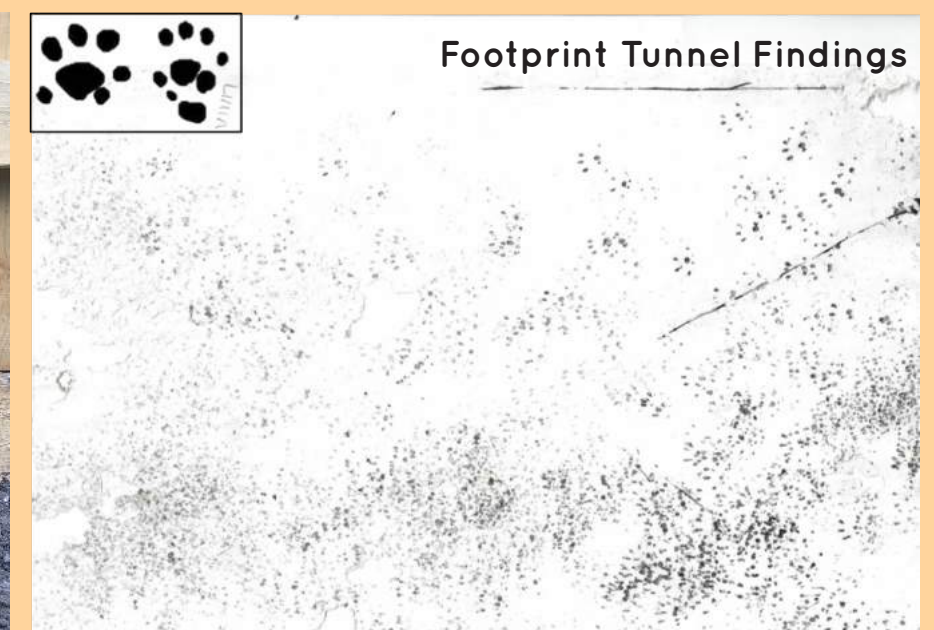
Studying these factors will hopefully help us to find the perfect combination of conditions that makes a good garden for hedgehogs, and will allow us to change our behaviours to aid an increase in hedgehog numbers.

If you would like to become a citizen scientist, please complete our survey by following the link below. You could even win a £20 Amazon voucher!

[smartsurvey.co.uk/s/exeterhedgehog](https://smartsurvey.co.uk/s/exeterhedgehog)




Images: Hedgehog Highway, Emily Gilford; Footprints, William Harbert





## How I got involved with the BSBI

Words and Images  
by Jessica Hamilton,  
BSBI Kerry local  
group leader

 **Bee orchid**  
*Ophrys apifera*

I originally started dipping my toe into the world of botany a few years back when I was in the earlier stages of my degree in wildlife biology at the IT Tralee. Nature has always been an inspiration to me and I'm so lucky that I live and study in the wonderful County Kerry. We did a botany module or two and it coincided with me setting a goal of identifying and photographing every wildflower, grass, sedge and so on that I found. At one point I wanted to get more involved in botany in Kerry and boost my botanical experience, so the first port of call was the BSBI website.

It was back in 2016 that I went on my first ever BSBI outing and that was joining Maria (BSBI Irish Officer) and Rory (County Recorder for Kerry and leader of the 'Rough Crew'). I was not very savvy with Latin names back then, but I was introduced to some really great plants that you don't see everyday such as allseed, marsh clubmoss and the delicate pale butterwort.

Since then I've been to many fantastic outings—I can't emphasize enough how great field meetings are to increase your knowledge and identification skills of species and as we say in Ireland, the 'craic' is always mighty! Being a part of the BSBI community also allowed me to speak at the 2018 Irish BSBI conference, where I spoke about what got me into botany and about our local group (BSBI Kerry). We have a dedicated Facebook Page as well where I post details of upcoming outings and photos of the plants and scenery we have admired on previous ones.

During the summer of 2017 there was a five day recording event in Kerry, and now I co-lead the BSBI Kerry local group alongside Rory and Therese (botany lecturer at IT Tralee). We take people out to various locations in the county to boost plant records for the upcoming atlas 2020.

Since being set up, we have had 10 outings, averaging one a month. If you would like to read about some of our expeditions check out the BSBI BlogSpot for a rundown of some of the places we have been to and plants we have seen.

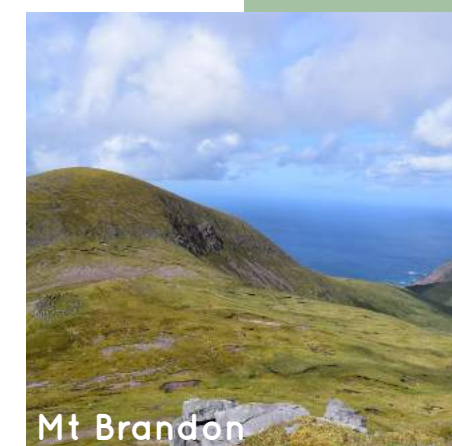
I always find the BSBI News blog a great source of nostalgia when I go back and read some of the botanical outings I've been a part of. For example, the recent outing back in June, when I went with the 'Rough Crew' to Dursey Island, where we saw many fantastic species including the tiny small adder's-tongue, which was a new record for County Cork!

If you would like to get involved in botany in your local area check out the BSBI local group page or get in touch with your local county recorder, they will be delighted to help you get started!

TO FIND OUT MORE:  
BSBI Kerry Facebook page – [www.facebook.com/BSBIKERRY](http://www.facebook.com/BSBIKERRY)

A summary of some of the BSBI Kerry outings – [www.bsbipublicity.blogspot.com/search?q=BSBI+Kerry](http://www.bsbipublicity.blogspot.com/search?q=BSBI+Kerry)

BSBI Local group Page (who to get in contact with to get involved) – [www.bsbi.org/local-botany](http://www.bsbi.org/local-botany)





# FISH AND CHIPS

THE TECHNOLOGY  
SAVING OUR SEAS

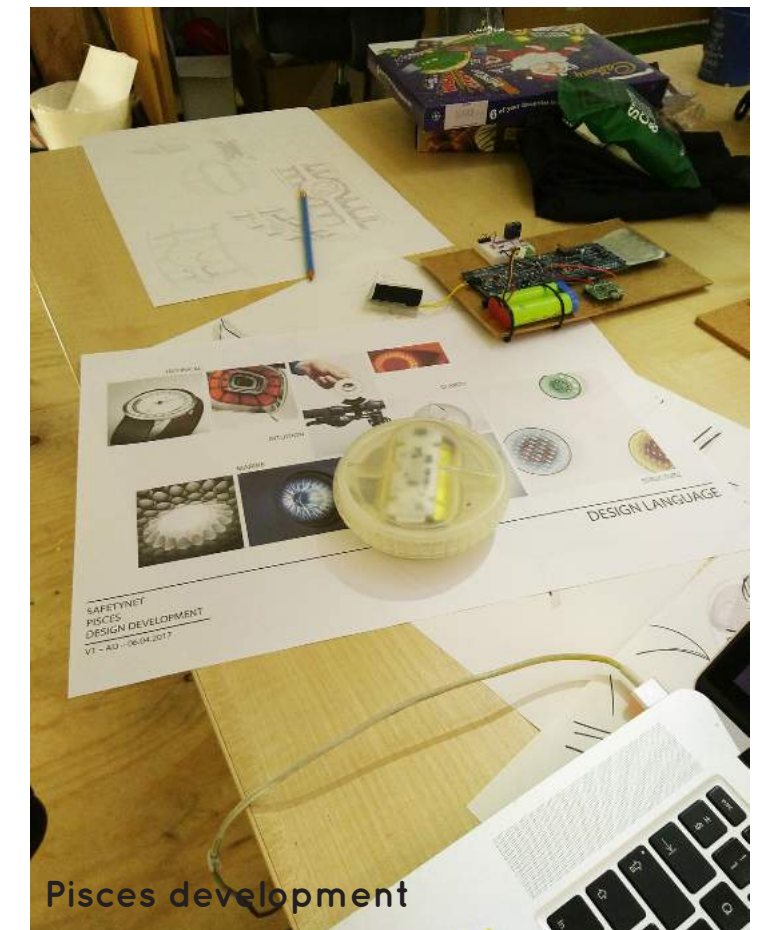
Words by Sarah Gaunt

Steely grey waves crash against the fishing vessel, jolting it from side to side. Towards the stern, planted as firmly as on dry land, a fishing crew hauls its gear from the turbid waters. Hand over hand, the net pools behind them, while spotlights glint off the jewel-like scales of its cargo. Amongst the writhing mass of piscine bodies, a constellation of lights sparkles.

Light, it turns out, could prove to be the international fishing industry's silver bullet, and one that an engineering start-up from London is hoping to commercialise.

Overfishing and bycatch – the incidental capture of non-target species – are two of the biggest threats to the health of our oceans. The UN's Food and Agriculture Organisation estimates that up to a quarter of all fish caught by commercial fisheries each year are tossed back into the sea, unwanted and wasted. In some areas, this can amount to almost 40 million tonnes of discarded marine life. Global solutions to the problem are few and far between.

Over the last few years, the engineers at SafetyNet Technologies have devoted their skills to designing and building LED devices to make commercial fishing practices more sustainable. The result of their labours is Pisces, a small plastic disc that clips onto existing fishing gear and improves the selectivity of the catch.



Pisces development



Pisces ready to be deployed



“The idea of using light as a tool to aid fishing isn’t a new one; shrimp fisheries in Oregon are already required by law to employ light-based bycatch reduction technologies,” said Dan Watson, Founder and CEO of SafetyNet Technologies, “but nobody has yet found a way to employ it at scale, in a way that is useful and affordable.” “We know that as fish have evolved, their eyes have become more or less receptive to light, depending on their environment,” he explained. “Red light wavelengths are the first to be absorbed in water, so fish living further below the surface can’t see them. Our goal was to untangle which light wavelengths different fish can see, and how it makes them behave.”

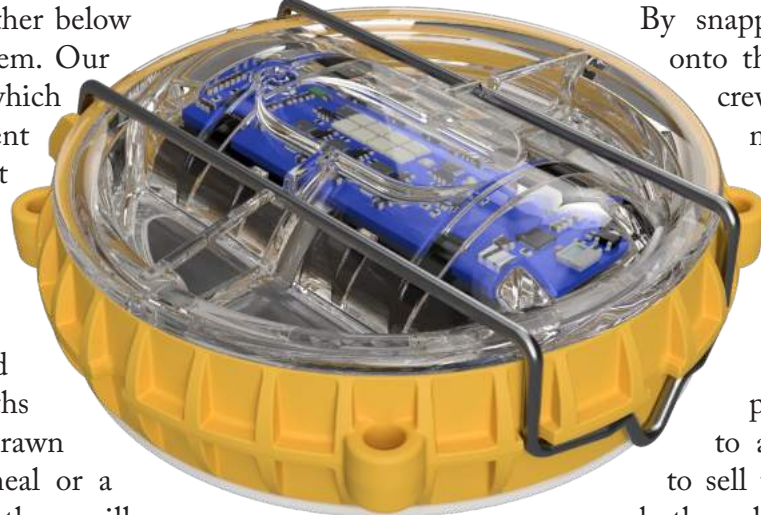
Through a series of crude experiments, the team have determined that certain wavelengths will attract certain fish, drawn by the promise of a meal or a potential mate, while others will sense danger in the light and swim away. By exploiting these reactions, the team are able to use light to drive fish either towards or away from the nets, allowing fishing crews to control their catch.

The project began life as a device akin to a flashing polo-mint that lined the inside of trawl nets and illuminated the path to freedom for smaller fish, like a series of emergency exits. The latest design, finished in January of this year, is a much sleeker and more refined

version, with initial experiments showing bycatch reduction of up to 90%.

The first batch of 120 finished devices is now in the hands of 10 pilot users around the world and is being put to the test by governments, major retailers and industrial fishing crews.

While some results have been seen in shallow waters, the technology currently works best in darkened conditions, with the devices mainly being used by deep-



sea fisheries and pelagic trawlers. Once the gear has been deployed and the devices reach a certain depth, detected by on-board pressure sensors, the lights will spring into action and begin corralling the shoals around them.

By working directly with commercial fisheries to develop Pisces, the increased selectivity of fishing practices has been shown to benefit both industry and ocean health. Alongside deterring juvenile fish and potential bycatch

species from entering trawl nets in the first place – and therefore safeguarding stocks for future generations – the greater efficiency of fishing practices directly impacts the crews.

“Ultimately, fishing is a hard job,” said Dan. “Pisces improves the quality of life for fishing crews, meaning they spend less time and energy sorting their catch. Fishing is also a business. These devices aim to offer financial incentives to crews for adopting them.”

By snapping the lights directly onto their current gear, fishing crews are able to land more marketable fish from each trip, while avoiding the harsh penalties that accompany illegal, non-target catches. In addition, employing sustainable fishing practices allows fisheries to access premium markets to sell their catch, while saving both on labour and the additional fuel needed to reach their quotas.

Although Pisces is still young, the team behind it are already making waves in the world of ocean engineering, from leading a UN research group this summer to heading to San Francisco for a two-month accelerator programme to raise their scale capital. These little LED devices and the engineers who make them could prove to be a shining light for the world’s declining fish stocks.



Pisces on a fishing net





## GREEN PRESCRIPTIONS

Images: Lucy Hodson

Lucy Hodson tells us how nature can give us the TLC we need

Imagine you're feeling under the weather; sickly, unfit and lethargic. You visit your doctor expecting a diagnosis of an ailment and to be sent home with a rattling packet or some nasty-tasting remedy. Instead you're prescribed a month-long course of birdsong. *One ten-minute dose to be taken twice-daily, with or without sunshine, until symptoms alleviate.*

It might sound like something straight from the Mad Hatter's mouth, but our doctors and the healthcare sector are increasingly recognising the link between our health and connecting with nature. Green prescriptions, ecotherapy and forest bathing are all terms used to describe the benefit the natural environment has on a person's physical and mental health.

It's becoming ever more acknowledged that modern societies are disconnected from the natural world. The term 'Nature Deficit Disorder' was coined by Richard Louv in 2005 and is used to describe the problems arising from people, particularly children, spending less time outdoors and in greenspaces.

We perceive children having freedom to roam outdoors to be more dangerous nowadays than it used to be. Couple this with a loss of greenspaces and increasing distractions from technology, you can see how Louv reached his book title of *Last Child in the Woods*. As we spend more time indoors, we become less active and have less awareness and respect for nature, leading to an increase in health risks.

Evidence supports this as in a 2016 study 74% of British children spent less time outdoors each day than the average prisoner. In 2017, over 50% of adult survey participants were unable to identify a sparrow. At the same time, we're becoming more aware of our mental health and the health impacts of inactivity and exposure to air pollution.

As the evidence mounts, the government, organisations and health services are listening. Research has shown that being outdoors reduces blood pressure, stress hormones, heart rate and inflammation. The NHS have recognised the clinical benefit too as patients have been found to recover from operations faster simply by having a natural view through their hospital window. As

a result, they have launched the NHS Forest project to increase the amount of greenspace on NHS land. Mind, the mental health charity, have developed a range of nature-based programmes under the term 'ecotherapy', recognising the ways in which nature can benefit your mental wellbeing.

Perhaps this benefit of connecting with nature is simply us obtaining a glimpse into what should be our natural state. The biophilia hypothesis theorises that humans have evolved to enjoy being in nature and have an innate urge to connect with wildlife and the natural world.

A little over three years ago, I found a peculiar lump in my neck, and was diagnosed with Hodgkin Lymphoma at the age of 23. Taking six months out of work for chemotherapy, I added nature to the long list of my daily pills, antibiotics and medicines. The boost to my mental health, my energy levels, and my immune system was incredible and I've craved that natural connection ever since.

Hopefully, medicine and health guidance will continue recognising and working towards green prescriptions, to the benefit of both our health and the natural environment.

I'll finish with a quote that I think many of us biophiles can relate to:

*"I went for a walk in the woods, and came out taller than the trees."*

-Henry David Thoreau



# How Does GEOLOGY Influence FLORA?

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Words by Alex Clarke

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Life on Earth is affected by the environment that it exists in, but to what extent does geology influence what lives above? Does the diversity of geology control the diversity of flora on Earth? The relationship between geology and flora is not a direct one, although observations can be used to understand this complex and ever-changing relationship.

The influence of geology on flora stems from two fundamental areas, the effect of the rock type itself and the influence the rock type plays in the formation of soils. Perhaps the greatest influence a rock type has on flora is the landscape it creates, from the igneous slopes of extinct volcanoes in Edinburgh, to the sedimentary chalk cliffs of Dover. A number of studies have emphasised that local variations in the nature of cracks and crevices are far more influential in the formation of flora than the overall chemical properties of the rock.

A study undertaken by Jarvis and Pigott (1973) revealed that *Lychnis viscaria* demonstrated significant growth on limestone cliff faces that are high in phosphorus, in comparison to granite cliff faces in the same geographical area.

Soils can form in two ways, from a parent material at the surface of the earth or as material carried by natural forces such as, blowing winds, moving glaciers or flooding rivers. This is important within the United

Kingdom as many soils have formed from deposits of glacial material which travelled hundreds of miles.

One of the most important aspects of a soil is the length of time it has been forming for. Effects from the parent rock are greatest in the early stages of soil formation. Through time, climate and biota gradually replace the influence of the parent rock. One of the main components in soil formation is the weathering of the parent rock; this weathering is dependent on the rock's resistance. Therefore, it could be said that rocks of higher strength, such as granite (igneous) and serpentine (metamorphic) may not provide the environment with sufficient soil formation to sustain substantial plant life.

If weathering is present, a soil product may form with specific characteristics related to the nature of the geology weathered. Sand and gravel deposits are very common throughout the United Kingdom; these deposits generally tend to be low in nutrients due to their high porosity which may inhibit plant growth. Whereas, clay and silt soils may hold a more significant quantity of minerals to support plant life.

Perhaps at first glance geology has little influence on flora in comparison to factors such as climate, biota and topography. Yet, when we look into and unpick each influence, they all seem to be controlled by the geology that lies below.





## HEDGEHOG OFFICER FOR HEDGEHOG STREET

Hedgehog Street is a joint campaign from two wildlife charities – the People’s Trust for Endangered Species (PTES) and the British Hedgehog Preservation Society (BHPS).

buzzing, when seeing animals like hedgehogs and badgers would be as rare as spotting a tiger!”

### HEDGEHOG OFFICER

Helping to preserve these beautiful creatures is a highly rewarding job to have, but what does the role of hedgehog officer involve? Explaining about what a typical day looks like, Emily commented: “I help to run the Hedgehog Street campaign – a national campaign that seeks to inspire people to help hedgehogs in their very own back gardens, by making it as ‘hog friendly’ as possible. In addition to this, I support research into hedgehogs, work with developers and planners to mitigate for these creatures, design courses to teach land managers about hedgehog conservation and give talks and interviews to promote the cause.

“The best part of the job is speaking to the impassioned public about hedgehogs. I have yet to meet a single person who does not love them, or want to help them in some way. From funny stories, to wonderful rescues, I have heard countless tales of dedication and true conservation, and it gives me hope that we can bring these animals back from the brink.”

The ‘cute factor’ is a large reason why hedgehogs are many people’s favourite animal, but they are also an important species for ecological reasons. Emily explained more about this and why she wanted to work with these mammals specifically: “Hedgehogs are such

an important indicator species. This means that their disappearance from the environment implies something is very wrong. It could be that insect numbers have fallen dramatically, meaning there is no food for many mammals and birds, or the habitat has been destroyed or disrupted at such a level that animals can no longer survive there. If we help hedgehogs as a priority, we can help so many other species at the same time.”

### HEDGEHOG STREET

Wanting to find out how Hedgehog Street has helped Britain’s struggling population of these mammals, we asked Emily what it was all about and what PTES’ role in the scheme has been. “PTES is a joint partner of the Hedgehog Street campaign, along with BHPS. This campaign was set up in 2011 in response to the sad state of our hedgehogs revealed by PTES mammal surveys and supported by findings from other wildlife organisations. These results were published in the first ever State of Britain’s Hedgehogs report in 2011, and so far two further reports have been published in 2015 and 2017. Both charities came together to create a public campaign that would inspire the British public to help hedgehogs in their own back gardens. By putting out some food, or linking up your gardens with ‘hedgehog highways’ you can help hedgehogs. PTES and BHPS are also currently commissioning various research projects into the reasons for their decline and measures that could be taken to reverse the effects.”

### CAREER ADVICE

Finding your way into a conservation role can be difficult, so Emily shared with us her advice for young wildlife lovers. She said: “Volunteering is great. It not only allows you to get hands on experience helping the habitats and wildlife that you one day hope to

protect, but it also gives you a level of understanding about how biodiversity interacts with the environment, which sitting in an office all day can sometimes make you forget. It’s also fantastic for making contacts for the future, but also great for your mental and physical well-being.

“Otherwise, I would say social media is vital. Get on Twitter or start a blog and share your stories about conservation at the same time as keeping an ear to what is going on around the world. It’s a free tool to keep an eye on the research that is coming out about various species and habitats, but helps to keep you aware of the changing world of conservation.”

### WHAT YOU CAN DO TO HELP!

There are various ways Hedgehog Street advise you to help hedgehogs in your local area. These include:

- Linking up your garden with others by creating a 13cm x 13cm hole in your fence.
- Making sure your pond is hedgehog safe by adding a ramp.
- Taking away any harmful rubbish or products (such as plastic netting).
- Providing supplementary food (such as specific hedgehog food, or meaty dog or cat food), as well as water.
- Letting a wild corner develop.

You can find out more about Hedgehog Street by visiting [www.hedgehogstreet.org](http://www.hedgehogstreet.org) or the People’s Trust for Endangered Species by going to [www.ptes.org](http://www.ptes.org)

Hedgehogs are one of Britain’s most-loved mammals, yet despite this their population has undergone a significant decline from an estimated 30 million in the 1950s to less than one million in Britain today. Everyone wants to help these creatures, and *New Nature’s* Alice Johnson spoke to Emily Wilson, the Hedgehog Officer for Hedgehog Street, about what the public can do to get involved, as well as delving into what a career based around these spiny mammals is all about.

### A CURIOUS CREATURE

Asking about how her interest in wildlife, especially hedgehogs, started and where her passion comes from for these animals, Emily said: “I like hedgehogs because I love their gentle nature. There is still so much to learn about these night time visitors and this piques my natural curiosity, but one thing I do hear a lot is how people are seeing less of them. So I want to do whatever I can to help the plight of this popular British species.

“I have a master’s degree in conservation biology and several years of working and volunteering in the conservation and animal welfare sector. Protecting our wildlife is very important to me, so that I can continue to enjoy walks in the countryside and not worry that one day it will be silent, with no birds chirping or bugs

### WHAT HEDGEHOG STREET HAS ACHIEVED SO FAR



Image: Emily Wilson, PTES



## ARTIST FOCUS



# Tiffany Francis

Discover the inspiration  
behind some of her  
favourite images

### HAZEL DORMOUSE



This dormouse was one of a collection of notecards I designed to accompany the publication of my first book, *Food You Can Forage*, which was released earlier this year with Bloomsbury. I wanted something that would reflect the book's values of nurturing a connection with wild plants, animals and landscapes. This collection was based on edible plants and the species we share them with – including a dormouse sleeping in a pile of hazel leaves. It was painted with acrylic, which is my usual painting preference because I don't have the patience to wait for oils to dry!

### BLACKCAP AND SLATE-COLOURED SOLITAIRE

I'm fortunate enough to curate the nature news section for each issue of *Project Calm* magazine, a mindfulness, craft and nature publication full of inspiration and uplifting ideas. These two birds were taken from an illustrated piece I wrote about the dawn chorus. I was asked to feature six birds from around the world that have the most beautiful morning songs, so I chose the blackcap and skylark from the UK, the wood thrush from North America, the slate-coloured solitaire from Mexico, the tawny-crowned honeyeater from Australia and the New Zealand bellbird.





## GOSHAWK

When I first started creating art again after finishing my English degree, pencil was my favourite medium to work with. I love the different textures and markings you can make with a soft pencil, and I used it to draw sixteen species of wildlife to decorate the pages of my first book, which is divided into different habitats. This goshawk came from the 'woodland' section. I have only ever seen one once, far in the distance in the depths of the New Forest – if it hadn't been pointed out to me I'd have never identified it myself!



PINE MARTEN

I usually only paint animals I've seen with my own eyes, but sometimes there are exceptions. I've never seen a pine marten in the wild, but I was asked by a good friend to donate a painting to the Devon Mammal Group for their annual fundraising auction. As the group are so passionate about mammals, it was a nice opportunity to paint something different, and I've always admired the pine marten's reddish-purple coat, cream front and slender body. This was painted in acrylic.



TAMWORTH PIG

This isn't exactly wildlife, but this year I've been writing an illustrated column on conservation grazing for *The Countryman* magazine, covering the sheep, cattle, pigs, goats and ponies we use to manage our natural habitats. Pigs are still used for pannage, an autumn tradition in the New Forest where they are released to eat fallen acorns, beechmast and chestnuts which can be toxic to the free-roaming ponies and cattle. As a vegan with experience in animal husbandry, I'm fascinated by livestock and the role they can play beyond just being food on a plate.



## POLAR NIGHT

My second book *Dark Skies* will be published with Bloomsbury next summer – a nature memoir inspired by a year exploring the landscape at night. I swam in the Helsinki archipelago under the midnight sun, hiked through Kingley Vale and its haunted yew forest, listened to nightjars churring, and watched a 35ft wickerman burn to the ground. This fineliner drawing is a sneaky peek at one of twelve chapter headings I've created for the book, taken from my chapter on Arctic Norway.



SWIMMING TIGER

While most of my work focuses around British wildlife, I can't help being fascinated by more exotic species. I visited India last year, and although we weren't in the right area to see wild tigers, I was captivated by the landscape and loved hearing conservation success stories about how people were learning to live more harmoniously with tigers rather than immediately seeing them as a threat. This was taken from a new project I'm working on to raise money and awareness for tiger conservation – watch this space!

## ABOUT THE ARTIST

Tiffany is a writer and artist from the South Downs. Her second book *Dark Skies* will be published next summer with Bloomsbury, a nature memoir inspired by a year exploring the landscape at night.

[www.tiffanyfrancis.com](http://www.tiffanyfrancis.com)



## READERS' CORNER

### BOOK REVIEW: *Why Willows Weep*

In the style of Rudyard Kipling's *Just So Stories*, *Why Willows Weep* is a beautiful collection of short stories based on the anthropomorphisation of trees and their inhabitants. The volume consists of 19 tales; each penned by a different author, including some of Britain's most celebrated writers, and is edited by Tracy Chevalier. Amusing, charming and poignant; each story tackles a different species and creates a backstory of how their certain attributes came to be, including 'Why Birches Have Silver Bark' and 'Why The Yew Tree Lives So Long'. I personally found 'Why Elms Die Young' by Terence Blacker very emotive as it touches on the epidemic of Dutch elm

disease, a reminder of just one of the tragedies our trees are currently facing. This heart-warming, easy to read collection can be enjoyed by both children and adults alike, with each story decorated with elegant illustrations by Leanne Shapton.

Your purchase will also have a direct positive impact on British trees too, as each edition sold will enable the planting of one tree by the Woodland Trust.

Words by Alex Pearce

AVAILABLE FROM INDIE BOOKS,  
£9.45



Images: Creatures Lurking, Trustees of the Natural History Museum

### WHAT'S ON THE BLOG:

Keep up to date with *New Nature* and news from the natural world by reading our online blog.

#### CREATURES LURKING IN THE DARKNESS AT THE NATURAL HISTORY MUSEUM

HANNAH RUDD

Leaving the daylight behind, embark on a journey into the tenebrous setting of our world under the cover of night. First unearth a reminiscent scene of a Beatrix Potter novel, with a European rabbit and a fox specimen letting you feel their soft coats. Creatures of all shapes and sizes are around every corner. Some you can spot, others you'll have to look closer for – allow your eyes to adjust to the darkness before attempting to locate the elusive nightjar. As you delve deeper into the exhibition to explore caves and the depths of the oceans, the organisms you will uncover become less cuddlesome and more monstrous...



#### A MOUNTAIN TO CLIMB

JO CUTLER

Frequently, a vibrant splash of pink-purple will greet your eyes on a summer walk; Himalayan balsam is a delightful plant, with its lustrous flowers and exploding seed pods. Yet, under the façade of simple aesthetic appeal, these pretty flowers hold dark secrets. Victorian's endless desire to show off their riches saw an influx of exotic and exciting plants into British gardens. Of course, the more luxurious your garden, the more fashionable. Thoughtless of anything but their pride, they planted swathes of Himalayan balsam, the seeds of which then infected our countryside. The epidemic had begun...



Read the full story on our blog at [www.newnature.co.uk](http://www.newnature.co.uk)



# OUR CONTRIBUTORS

Check out our amazing young contributors and connect with them online!

## Alex CLARKE



Alex is an engineering geologist with two years professional experience working in Africa and the UK. With a passion for all things geology, he aspires to one day open his own fossil shop.

## Emily GILFORD



Emily is a BSc Zoology student at the University of Exeter. She intends to continue her studies working with mammals and has recently spent two months working at a bear sanctuary in Romania.

[@emilygilford](#)

## Jessica HAMILTON



Jessica is a 4th year Wildlife Biology student with a passion for botany, nature and photography. She lives in County Kerry, and loves exploring with her dogs. Co-leader of BSBI Local group (BSBI Kerry).

[@Jessica\\_Ham9](#)

Website: [jhnaturephotography.com](http://jhnaturephotography.com)

## Sarah GAUNT



Sarah is a nature writer with a secret love of engineering and technology. With a background in conservation biology and science communication, she loves inspiring others with words.

## Elliot MONTIETH



Elliot is a Zoology student at the University of Cumbria who specialises in ornithological identification of subspecies and ageing. He's an Ambassador for The Cameron Bepolka Trust and Viking Optical.

[@VikingBirding](#)

Website: [elliotsbirdingdiaries.wordpress.com](http://elliotsbirdingdiaries.wordpress.com)

## Jeni BELL



Jeni is a keen wildlife and travel enthusiast with a passion for British wildlife. She is currently touring the UK in search of all things wild.

Website: [seekingwildsights.co.uk](http://seekingwildsights.co.uk)

## Josh STYLES



Josh Styles currently works as an ecologist on the Sefton Coast in Merseyside, is a plant-obsessive and also founded the North-West Rare Plants Initiative.

[@joshual951](#)



# CONTACT US

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Let us know what you thought about this issue of New Nature, or what you would like to see in future issues.

We are always on the lookout for young writers, photographers and artists. Please get in touch if you are interested in submitting work.

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