'Captivating'
Independent

A Buzz in the Meadow

Dave Goulson

'Glorious'
The Times

VINTAGE

Contents

About the Book

In *A Buzz in the Meadow* Goulson tells the story of how he bought a derelict farm in the heart of rural France, together with 33 acres of surrounding meadow and how, over a decade, he has created a place for his beloved bumblebees to thrive. But other creatures live there too, myriad insects of every kind, many of them ones that Goulson has studied before in his career as a biologist. You will learn about how a deathwatch beetle finds its mate, about the importance of houseflies, why butterflies have spots on their wings, about dragonfly sex, bedbugs and wasps. Goulson is brilliant, and very funny, at showing how scientists actually conduct experiments.

The book is also a wake-up call, urging us to cherish and protect life on earth in all its forms. Goulson has that rare ability to persuade you to go out into your garden or local park and get down on your hands and knees and *look*. The undiscovered glory that is life on planet Earth is there to be discovered. And if we learn to value what we have, perhaps we will find a way to keep it.

A Sting in the Tale, Dave Goulson's account of a lifetime studying bumblebees, was brilliantly reviewed and was shortlisted for the Samuel Johnson Prize for the best non-fiction book of 2013. *A Buzz in the Meadow* is another call to arms for nature lovers everywhere.

About the Author

Dave Goulson studied biology at Oxford University and is now Professor of Biological Sciences at the University of Sussex. He founded the Bumblebee Conservation Trust in 2006. *A Sting in the Tale* was published by Jonathan Cape in 2013 and was shortlisted for the Samuel Johnson Prize.

ALSO BY DAVE GOULSON

A Sting in the Tale

For Lara

A Buzz in the Meadow

Dave Goulson

JONATHAN CAPE
LONDON

Preface

In 2003 I bought a derelict farm deep in the heart of rural France, together with thirteen hectares of surrounding meadow. My aim was to create a wildlife sanctuary, a place where butterflies, dragonflies, voles and newts could thrive, free from the pressures of modern agriculture. In particular I was keen to create a place for my beloved bumblebees, creatures I have spent the last twenty years studying and attempting to conserve. This book, in part, is the story of this little corner of the French countryside, of the plants and animals that live there, of their natural history, and of my efforts to encourage them. Most natural-history documentaries and much conservation effort focus on large, charismatic animals: whales, pandas, tigers, and so on. One of my aims in writing this book is to inspire an appreciation for the smaller, everyday creatures that live all around us – the insects and their kin. As chance would have it, many of the insects and flowers that have colonised the farm are species that I myself have studied over the years in my scientific career, and I explain some of the research that has been carried out to explore their secret lives. You will learn how a death-watch beetle finds its mate; about the importance of flies; how some flowers act as thermal blankets for bees; and about the complex politics of life as a paper wasp, amongst much else. In telling these stories perhaps I can also convey to you the fun of discovery, the satisfaction to be had in teasing apart the details of the lives of the creatures with which we share our planet. More importantly, I want you to realise that what we know and understand about natural history is just the tip of the

iceberg. Even among the creatures that inhabit this single meadow, there is no doubt a near-infinite number of beguiling mysteries that have yet to be explained, animals that have never been studied, behaviours that have not yet been observed. What wonders have still to be discovered?

In the second part of the book I show you how the lives of the creatures in the meadow are interwoven with each other and with the wild flowers. Plants compete for space, water and light, are food for herbivores, hosts to parasites and diseases. They use diverse strategies to tempt pollinators to visit them, and in turn their pollinators have evolved numerous tricks so that they can learn which flowers are most rewarding and can gather those rewards quickly, sometimes robbing their hosts, at other times being duped into pollinating flowers for no reward. Plants depend on a horde of small animals and microorganisms to break down leaves and dung to release their nutrients, and they benefit from the actions of predatory birds, spiders and insects that keep down the numbers of caterpillars, grasshoppers and greenfly that might eat their leaves. Every species is linked, one way or another, to hundreds of others, in a web of interactions that are at present far beyond our ability to fully comprehend.

In the final part, I explain how the modern world has become increasingly inhospitable for wildlife, as humans squeeze ever more from the land to provide for our many needs. I give some examples of the devastation we have caused – and are causing – to our planet, from the effects of primitive man’s prehistoric spread out of Africa to the insidious damage that we continue to do through our overuse of poisonous chemicals in the countryside. Many of the fascinating creatures with which we share our world are slowly disappearing as a result of our actions, often before we have learned a single thing about their lives, or of their role in the tapestry of life. This book is intended as a wake-up call, to remind us that we should cherish life on Earth in

all its forms. As species become extinct, so the mysteries of their lives are lost for ever. We are destroying our children's inheritance, stealing from them the joy of discovery and exploration of the natural world. What is more, we are undermining the ability of our planet to support us; although we understand very little about the myriad complex interactions between the many creatures on this Earth, we do have good evidence to suggest that these interactions are vital to the health of the planet, and hence are vital for our own well-being and perhaps for our very survival.

I want to make you look at our world with new eyes; to persuade you to go out into your garden or a local park and get down on your hands and knees and *look*. There is so much to see. If you look closely enough, you cannot fail to begin to appreciate the precious undiscovered glory that is life on planet Earth. If we learn to value what we have, then perhaps we will find a way to keep it.

PART I

Tales from the Meadow

WE INHABIT A spherical rock, just 13,000 kilometres across, floating in the unimaginable vastness of space. It is at least ten thousand billion kilometres to the nearest planet that might possibly support any other life, a distance of which our brains cannot begin to conceive. We spend much time and effort on building telescopes that can look ever further into the void, and on listening to and analysing radio waves from distant galaxies, in the hope of detecting signs of other life forms. Many films, TV shows and novels speculate about what might be out there. Yet there are real wonders of the universe right here, all around us, and we pay them little heed. We are lucky enough to share our little rock with perhaps ten million different species, and many of them have not yet even been given a name.

I am fortunate enough to own a small hay meadow in rural France. Being something akin to the entomological equivalent of a train-spotter, I have so far identified more than seventy bee species, fifty types of butterfly, sixty bird species and well over 100 different flowering plants living in this meadow. This is just a small fraction of the grand total; I have not yet begun to tackle the springtails, mites, worms, spiders, beetles, snails and other creatures that live there, and in all likelihood I will never find time. The vast majority of the creatures that we ignore are small, many so diminutive that they can barely be seen with the naked eye,

and others much smaller still. But if you take the trouble to place one of these minute creatures under a microscope you will reveal their precise symmetry and exquisite structure. Each and every one has a different story, a life history; it must find food, grow, evade predators, find and court a mate, lay eggs, and so on. Every step involves challenges, obstacles that must be overcome, and every species has evolved its own unique combinations of strategies to survive and thrive; if it had not, it would long since have disappeared. Even in western Europe, where we have a long tradition of studying natural history, we know almost nothing about the lives of most of these wild creatures.

In this section I will introduce you to some of the insects and other small animals that live in this meadow, to some of the very few that have been studied at least a little, and to what is known about some of their relatives that live in more exotic climes. I will try to explain some of the fascinating details of their behaviour and ecology, what roles they play in the ecosystem, and my own efforts to encourage more and more species to colonise this little corner of the French countryside. Welcome to the meadow . . .

CHAPTER ONE

A Stroll in the Meadow

24 APRIL 2007. Morning run 5.8 miles, 42 mins 2 secs. As ever, the French countryside was almost devoid of human life; I saw no people, but was barked at by five dogs, unused to seeing a runner passing by. It was a lovely cool morning, clear blue sky above, thick dew on the grass, cowslips bursting from the hedge banks. Butterfly species seen: 6 – I distract myself from the pain of running by seeing how many I can spot without stopping. I've tried this with bumblebees, but they are mostly too tricky to identify at speed. Today's butterfly haul included a holly blue and a male brimstone, sulphurous wings flashing in the sunshine. I also disturbed a pair of green woodpeckers anting on the lane above the top field, their alarmed yaffle and undulating flight unmistakable. Lesser whitethroats were singing in every copse I passed, a melodic, liquid song; the mating season is clearly in full swing – I can still hear them from all directions as I sit on the patio bench by the front door, dripping sweat on to my notes.

Sixty-five kilometres north-west of Limoges, near the lovely Roman market town of Confolens on the River Vienne, stands an old farmhouse. Roughly halfway down France, going north to south, and about 110 kilometres inland from the west coast, the farmhouse lies in the Charente, a large, sleepy *département* of rolling countryside, oak forests, rust-coloured Limousin cows, and fields of sunflowers,

intersected by the lazy meanders of the Charente River. The house was built perhaps 160 years ago, presumably by a Monsieur Nauche who gave the farm its name, Chez Nauche. There are many grand and beautiful Charentais farmhouses in the region, built of dressed stone three or more storeys high, with ranks of tall windows arranged symmetrically around an imposing central entrance. This is not one of them. At Chez Nauche the thick walls are built from undressed, local limestone, irregular lumps of rock full of fossils and presumably dug from the local fields. The stones are held together with orange clay for mortar, also dug straight from the ground. The walls have shifted since they were built, and now lean at interesting angles. The windows are mostly small and irregularly arranged, with ancient weathered oak beams for lintels and loosely hinged old oak shutters from which the paint has largely peeled. The house is long, low and squat, facing south; the intention was that all accommodation should be on the ground floor, a common design among the more modest farmhouses in the area. The large attic was for hay storage, which provided insulation during the winter for those living below. The floors to the attic are made from thick planks of oak, laid upon massive square oak beams. The timber would mostly have come from local trees, hand-sawn, and indeed the beams still bear the saw-marks. The labour involved in building a house like this must have been Herculean, although the costs of material would have been close to zero.

To produce an oak beam, the practice was simply to find the nearest oak tree with a fairly straight trunk and chop it down. The builders would then dig a pit under the fallen trunk, deep enough for one of them to lie in, and they would saw the trunk into square beams using a huge two-man saw, with one person lying in the pit, his face sprinkled with sawdust, and the other standing on top of the trunk. Finally

they would use a horse to drag the beam to the house, and ropes to winch it into position.

The terracotta tiles on the roof are also fired from local clay. They are known as canal or channel tiles, a design that dates back to the Romans, and are laid in alternating rows of gulley and ridge. I doubt that Monsieur Nauche made those himself, since firing them is a bit of a specialist job, so they are probably one of the only major items that he had to buy in, but they would not have come from far away. Otherwise, pretty much the entire building, and its surrounding barns, was constructed from materials that could be gathered for free from the immediate surroundings, and this gives the buildings a natural, organic feel, almost as if they grew up from the ground of their own accord like an eruption of unusual, rectangular mushrooms.

I bought Chez Nauche in 2003, from an old farmer named Monsieur Poupard. So far as I could establish with my feeble grasp of French, he had lived there all his life, keeping dairy cows and growing arable crops. Well into his sixties and with no children to leave the farm to, he had decided to sell up and retire. He had not looked after the old place, allowing it to fall gently into ruin. The roof leaked, so that the internal timbers were slowly rotting, and the old lime plaster was stained black with mould and was peeling from the walls. The window frames were rotten, the glass was cracked and covered with patches of old plastic sheeting, and the front door was rotted away at the base, with old pieces of tin can hammered flat and nailed over the gaps. The plumbing consisted of one old dripping tap above a stone sink – there was no bath, shower or toilet, and the lavatory facilities consisted of a bucket in the shed.

It was, to put it mildly, a doer-upper, but for all its shortcomings it held one huge attraction for me, as a wildlife-obsessed biologist. Monsieur Poupard’s lackadaisical maintenance schedule had allowed the house and its surroundings to be infiltrated by a myriad of creatures. In

many modern British houses, house-proud home-owners are horrified if they see a single woodlouse on the carpet, or an ant in the kitchen. This attitude must swiftly be abandoned at Chez Nauche, or a nervous breakdown would inevitably ensue. The house has slowly settled into its environment over the decades, and is swamped and overrun with plants and animals. Although I have made some improvements in the ten years since I bought it, it remains to this day a haven for wildlife. The roof tiles are crusted with orange, black and cream lichens, which are grazed upon by caterpillars. Mosses grow in the gullies between the tiles, particularly on the north side of the house, and millipedes, woodlice, water bears[fn1] and numerous other small insects live amongst the damp green cushions. The walls are also encrusted with lichens, and are smothered under the lush foliage of the grape vines that cling to rusting metal brackets along the wall. When the sun shines, as it often does, these walls are a popular basking spot for butterflies, bees and flies, warming themselves before going off to look for a mate or nectar to drink. These insects are hunted by zebra-striped jumping spiders and mottled brown-and-green wall lizards, agile creatures with long, clawed toes that scurry impossibly quickly over the vertical masonry, dashing into holes in the soft clay mortar at the first sign of danger. Most of the insects are too quick to be caught, especially if they have managed to keep warm and ready for take-off, but once in the air they run the gauntlet of the swallows that nest in the barns and swoop low past the house. From the base of the wall at the front of the house sprout old lavender bushes, their twisted, woody stems sagging under the weight of purple blossom in summer, alive with bumblebees, butterflies and the blurred wings of hovering hummingbird hawkmoths, their long crooked tongues reaching down into the nectaries of the flowers.

An old cobbled path runs to the front door, and the cracks between the stones are inhabited by bulbous-headed black

crickets, the males singing cheerfully and incessantly to attract a mate. The lizards and young western whip snakes also make use of the holes amongst the warm stones, hunting there for beetles and spiders. In front of the house is a stooped and gnarled selection of ancient nectarine and plum trees, with bracket fungi sprouting from some branches, and chubby green caterpillars of the scarce swallowtail grazing on their leaves. Great green bush crickets perch on the branches, the males rasping out their incessant chainsaw-buzz in an attempt to drown out the black crickets down below.

Inside the house, where it is cool and dark and the buzz of the crickets is just a distant hum, crepuscular creatures abound. Spiders of numerous species spin their webs amongst the ancient beams; spindly daddy-long-legs spiders spin irregular, shoddy webs from which they dangle upside-down, while giant *Tegenaria* house spiders prefer to make close-woven, funnel-shaped webs leading to a deep hole in which they can hide. The beams themselves are tunnelled by the fat white grubs of long-horn and death-watch beetles, and also by woodworm (not a worm, but a tiny beetle). Under the furniture and in the kitchen cupboards lurk satin-black darkling beetles, ponderously slow but heavily armoured, so they have no need for speed.

At night, the mice take over; on the floor, house mice scurry, with the occasional larger, huge-eyed wood mouse. They search for scraps of human food, tasty spiders or day-flying insects that have blundered into the house and become trapped. On the walls and beams, dormice scamper: garden dormice, with delicate racoon-like facial markings and a long tail ending in a fluffy tip; and the scarcer edible dormice, favoured as a delicacy by the Romans. Endearing to look at they may be, but the garden dormice are aggressive little beasts, churring at each other through the night, and they often wake me with their rumbustious skirmishes. Because of the nuisance they make

of themselves, I have trapped many dozens of them; they are absolute suckers for Cantal, a hard and pungent cheese from the mountains of the Auvergne – it gets them every time. When my eldest boys Finn and Jedd – at the time about seven and five years old – first saw one of these garden dormice, growling angrily at them from the trap and gnawing at the mesh to escape, they rushed to wake me up with the news: ‘Daddy, come quick, we’ve caught a tiny demon!’ It did look pretty ferocious – the poor thing had rubbed its nose red-raw trying to get out. I always release the little demons far away from the house, having given them a good feed, but my efforts never seem to make any dent in the population. The edible dormice seem to be much gentler, with a beautifully thick fluffy tail; they are so large as to be easily mistaken for small, exceedingly cute squirrels. I cannot bring myself to evict them from the house.

The various mice are nervous, for barn owls roost in the attic, leaving huge piles of pellets, which are consumed by the grubs of clothes and skin moths, species adapted to feeding on the desiccated remains of animals. There is also another, mysterious beast that they should fear. Some years ago I installed some Velux windows in the old roof, and soon afterwards noted the footprints of a largish animal on the glass. I also found pungent, elongated scats, sometimes on the drive to the house, and once on an inside windowsill. Whatever this beast was, it could take on formidable prey; on one occasion I found a wing and the head of one of my barn owls strewn in the attic. On another occasion, when on an early-morning excursion, my young boys found a bleeding chunk of flesh on the drive, all that remained of a large whip snake. From its width I would guess the snake had been a good one and a half metres or more long, but everything had been consumed, apart from a fifteen-centimetre section of its midriff. The beast took on a mythical status in the family, with the children speculating

wildly as to what it might be, and it was many years before I finally worked out what it was.

Let me take you for a stroll. We'll start at the top of the drive, to the north of the house, by the big horse-chestnut tree. It is late afternoon, towards the end of May, and the tree is in full bloom, the cones of frothy cream flowers attracting scores of bumblebees, whose bustling dislodges petals from the older flowers that rain down upon the drive. We amble down the old tarmac drive, its warm surface cracked by tree roots pushing through from beneath, sparse tufts of crested dogstail grass sprouting from the crevices. On the left we stop to admire the wood-ant nest, a gentle dome of cut, dried grass stems thronging with large chestnut-coloured ants. The nest has been in the same place for ten years now, to my knowledge. My boys love to watch and poke the ants, and occasionally, I suspect, they throw them insect prey. The slightest disturbance causes ripples of activity to spread across the nest as the ants release alarm pheromones warning of danger. The ant trails radiate from the nest across the tarmac, with incoming ants carrying all sorts of fragments of plants and insects to feed to their brood in the nest.

Beyond the ants' nest on our left is a thick hedge of gorse, five metres or more across. A male stonechat perches on the highest point, his trademark call sounding very much like two dry pebbles being struck together. The female is no doubt sitting on her cup-shaped mossy nest somewhere deep in the gorse thicket, incubating her clutch of sky-blue eggs. Peering through the thick gorse hedge, to the east of the drive we can just see my orchard: fifty well-spaced young apple trees that I grew from pips. The largest are now nearly four metres tall, and two of the trees bore fruit for the first time last year. My three boys are chasing butterflies fifty metres away amongst the trees, the two eldest, Finn and Jedd (now aged twelve and ten) leading the way through the long grass, chattering excitedly, each armed

with a huge kite net. Behind them our youngest, Seth (aged three), is gamely battling to keep up, his white-blond shock of hair all that is visible of him amongst the greenery.

On our right I point out a bee orchid, its single purple flower mimicking the smell and texture of a female bee and thus luring male bees to attempt to copulate with it. All they get for their trouble is a ball of pollen glued to their heads, but they must be foolish enough to make the same mistake again or the bee orchid's strategy would not work.

Further down, the drive is shaded by a line of large oaks on the right, and a mix of elm and oak on the left. Brittle brown acorns from last autumn still litter the ground. The elms are repeatedly attacked by Dutch elm disease, which quickly kills the trees once they reach six or seven metres in height, but luckily the trees spread rapidly by suckers, so there is a constant crop of new saplings coming up. A territorial male speckled wood butterfly dashes up from a warm sunspot on the drive to chase away a brimstone that has dared to enter its domain.

I love the French names for butterflies, compared to which many of the English names are a little unimaginative; for example the English *orange tip* is simply descriptive, while the French *l'aurore* – the dawn – is rather more poetic. What do we call a speckled butterfly that lives in woods? The *speckled wood*, of course, while to the French it is *le Tircis*, named after a shepherd in a seventeenth-century fable by Jean de La Fontaine. A few years ago I hit upon the idea of organising a guided butterfly walk at Chez Nauche for any interested locals. I sent posters advertising the walk to the mayor of Épenède, the local village, and also to the mayor of nearby Pleuville, asking for them to be displayed on the village noticeboard. I bought lots of lemonade for my visitors, and boned up on all the French names of butterflies and other insects, although I was somewhat worried that my inability to say much else in coherent French might be a handicap. On the day of the event I waited nervously

outside the house, but no one arrived at the allotted time. Ten minutes late a car at last drew up; an English lady, and her young daughter, who lived nearby. I had not met them before, but was happy to take them for a walk in the meadow, though also a little disappointed by the turnout of the French contingent. Perhaps chasing butterflies is an eccentric English activity, and not something that appeals to French country-dwellers. It is certainly true that membership of conservation charities such as the RSPB and Butterfly Conservation is far higher in the UK than in any other country in the world. We had a pleasant walk, spotting bumblebees, butterflies and grasshoppers. Towards the end of the walk I took us past an old piece of corrugated tin that I had laid out on the edge of the field. Snakes love to bask under tin sheeting, and I had a pretty good idea that there would be something dramatic underneath, to form the perfect finale to the walk. Sure enough, there was a sizeable Aesculapian snake underneath, which I managed to grab with a flourish. We walked back to the car so that the mother could take a photo of her daughter stroking the snake, and finally we let it go. I hadn’t quite anticipated what happened next. The snake shot under their car, then climbed up into the still-warm engine. We spent the next hour with the bonnet up, trying to find it – without success. In the end the poor lady and her daughter had to drive away reluctantly with a snake somewhere in their car. I very much hope they all survived the journey.

Returning to our stroll, we are coming towards the end of the drive. On our left is a rectangle of stout walls – the Alamo, as my father has christened it – all that remains of a very large barn. When I bought Chez Nauche this barn was in a terrible state, with gaping holes in the roof and the beautiful old oak frames well rotted. I couldn’t afford to repair it, so I took the roof off and sold the remaining half-decent timbers to a reclamation yard. The old walls provide a suntrap for lizards and warmth-loving butterflies; teasels

and thistles sprout up in profusion from the stony ground; and whip snakes are common amongst the stones and weeds.

On our right is a small hollow, overgrown with blackthorn and ash, once a shallow seasonal pond, which I mistakenly filled in with building rubble. I have since been slowly clearing it out, in the hope that the newts that once lived there will return.

Let us strike right off the drive, past the pond and across the open meadow. This western side of the meadow is where I have set up a large, long-running experiment to try to increase the numbers of flowers. I sowed squares of meadow with yellow rattle, eyebright, bartsia and meadow cow-wheat, all partially parasitic plants that sap the strength from nearby grasses by tapping into their roots and sucking up nutrients. Suppressing the grasses leaves a little more room for other flowers, or so the theory goes. The rattle is in full flower: a pretty annual with small yellow flowers tipped in purple, which has established itself in little clumps across the experimental plots. It is too early to say whether this has increased the number of flowers, but in any case the meadow looks pretty good at this time of year. After ten years without any fertilisers or pesticides, quite a lot of wild flowers have established themselves. The main grasses are cocksfoot, Yorkshire fog and false oat grass, large and dominant species that tend to smother all else, but over time they have been declining and have been partly replaced by the finer, less aggressive grasses typical of a proper hay meadow: fescues, sweet vernal grass and meadow foxtail. Amongst the grasses, some flowers have become common: wild geraniums, forget-me-nots, ragwort, white campions, hawkbit, clover and meddicks, to name but a few. Some of them tend to occur in distinct patches, either because their seeds do not spread readily or perhaps because some subtle variations in the soil properties suit them better in some places than others.

As soon as we leave the drive we enter a patch thick with cinquefoil, a low-growing, prostrate relative of the rose, with simple yellow flowers, much like those a child might draw. Its creeping, horizontal stems snag our feet as we walk through. Five metres later the cinquefoil ends abruptly, and we encounter a dense clump of meadow vetchling, a pea with twining tendrils with which it clambers up the taller grass stems. Amongst the close vegetation we hear the high-pitched shrieks of shrews fighting; these tiny but voracious predators live their short lives at a hectic pace, eating constantly and fiercely defending their territory against one another. After the vetchling, a dense patch of red clover is thick with long-tongued bumblebees, garden bumblebees and common carder bumblebees, gathering its protein-rich, toffee-coloured pollen and sweet nectar. Then we move into a dense sward of lady's bedstraw, a fragrant spreading plant with tiny, dark-green leaves and heads of abundant but minuscule yellow flowers. In days gone by, before comfy sprung mattresses, it was used as sweet-smelling bedding – whence, of course, it gains its name.

We are walking south-west, down a gently increasing slope, with the old farm buildings of the tiny hamlet of Villemiers visible on the other side of the valley a kilometre away. The Transon meanders in the bottom of the valley below, a lazy trickle of a stream with small muddy pools at intervals, home to numerous coypu, a South American rodent that escaped from fur-farms long ago and has found a home-from-home in the many rivers and lakes of the Charente. They are semi-aquatic, resembling beavers in all but their long, rat-like tails. They can be something of a nuisance, as they are great burrowers, creating huge holes in the banks just on the waterline, which does little harm in a stream, but can be disastrous in a man-made lake, since their burrows can puncture the dam.[fn2]

Away to our left, the plaintive cry of the wack-wack bird can be heard in the distance. My boys and I have spent

many hours trying to stalk this beast, which I have only ever heard at Chez Nauche. It calls most days in spring and summer, usually from the south-east, a nasal wack, wack with a distinct but brief pause between the notes. There only ever seems to be one of them. Whenever I try to do an impression of it to my knowledgeable ornithological friends, they laugh and tell me it is a duck, but that is simply my inability to replicate the noise. We have crept towards the source of the noise through the long grass of the meadow. It usually sounds as if it is coming from a large oak tree on the boundary, but whenever we get close it ceases to call, and we see nothing fly away. The boys speculate that it is some dramatic creature, brightly coloured and a metre or so tall, with a crest and a long sharp beak, but if so, it must be very good at hiding. I wonder whether it may not be a bird at all, but some peculiar species of frog. Perhaps one day we will find out.

The meadow becomes drier as we continue on to the steep south-facing slope at the southern end, and ribwort plantain becomes common underfoot. This is an unspectacular little plant, with strapline leaves and inconspicuous brown flowers from which dangles a fringe of yellow anthers, but the leaves are the favoured food plant of the lovely Glanville fritillary. This butterfly is named after Lady Eleanor Glanville, one of the very few female lepidopterists of the eighteenth century. She first described this pretty species, which she found near her home in Lincolnshire. Glanville fritillaries have long since disappeared from most of the UK; they are now found only on the south coast of the Isle of Wight, but it is one of the most common butterflies at this time of year at Chez Nauche, and we disturb dozens from the grass as we walk. They have an orange-and-black chequerboard upper side to their wings, their creamy underside being streaked attractively with orange and dotted with black spots. Their bodies are furry, giving them a rather cuddly appearance. I

bred Glanville fritillaries in my bedroom as a child, after buying the pupae from Worldwide Butterflies, and I have always been rather attached to this species. The caterpillars are unusual in that they are gregarious; the female lays large mounds of yellow eggs, which hatch into velvet-black caterpillars, which live together on plantain in silken webs that they spin. Once they have consumed the plant on which they are laid, they somehow agree that it is time to depart and set off in a convoy to the next one.

We are approaching a deep-sunk green lane that marks the western boundary of the meadow. A dense stand of oak, hazel and blackthorn lines both sides of the lane. We push through a slight gap in the hedge, our legs getting scratched by the terrifically spiky butcher's broom that thrives on the hedge bank. In the lane it is shady and sheltered; on hot days flies congregate here to escape the heat. I have brought us through to see the wood whites, delicate, ghostly-white butterflies that patrol slowly up and down the lane, their flight so weak it seems they may expire at any moment. This is another species that is in precipitous decline in the UK for reasons that are not well understood, but here they seem to be flourishing. We turn left down the lane, continuing steeply downhill to the Transon, a stream that is just beyond my land. There is a small pool before it gurgles under the lane, and a swarm of shiny whirligig beetles gyrates crazily on the surface. I've often seen grass snakes hunting fish and tadpoles in the shallows here, but there isn't one today. Just as we turn to retrace our steps a male demoiselle flits by, its metallic blue body glinting in the sunlight. This is the king of damselflies, larger than other European species and by some margin the most spectacular. Aside from the male's iridescent body, its wings are decorated with large splashes of blue-black pigment, so that they flash with every wingbeat. The females are a slightly more understated iridescent green, and a pair sitting together, as they often do, is a breathtaking sight.

We walk a little way back up the hill and cut back through the hedge into the south corner of my meadow. We climb up a steep slope, heading north-east, towards a small tree standing in isolation. It is a walnut that I planted there some six years ago, now grown to about three metres in height. One day it will be large enough to make a splendid shady picnic spot, and perhaps also provide walnuts to eat. On the slender grey trunk there is a praying mantis, newly adult, its triangular head following our every movement, as if sizing us up as potential prey. In green vegetation praying mantises are nearly impossible to spot, but this one has chosen the wrong place to perch. Its powerful forelegs are folded beneath it, their rows of sharp spines locked together, poised to strike out in the blink of an eye, should an insect be foolish enough to come too close. If attacked by a bird, the mantis can flash its wings open, revealing large eye-spots, designed to frighten into retreat all but the boldest bird.[fn3]

Just beyond the walnut is a gentle hollow perhaps twenty metres across. Here the grass is thick with wild basil, thyme and mint, which create a heady aroma. Sitting down, you cannot be seen from anywhere; it is a wonderful place to relax and soak up the sights, smells and sounds of the meadow. A male stag beetle drones past; they are common at this time of year. These huge beetles are clumsy fliers, encumbered as they are with massive jaws for wrestling with rivals for a mate. They are so slow that it is easy to snatch them out of the air, but I leave this one be.

From here we head east, the meadow falling away again into a gentle valley, at the bottom of which is a small spring. The spring was once the main water supply to the farm. French water is metered and amongst the most expensive in the world, so Monsieur Poupard used to pump all of his water up from the spring to a rusty old tank in one of the small barns, thereby avoiding having to pay for it. A well has been dug into the ground, lined with stones, and from this a