Preface

In all its incalculable ramifications and contradictions, nature is my love, and its study and interpretation – natural history – have been my life and my work for half a century. How many people, I often wonder, can indulge their private passion in their everyday job? I don't have to be told how lucky I am. But it doesn't end there. For more than forty years I have lived and worked surrounded by mountain scenery that can still stop me in my tracks, and by some of the most highly specialised wildlife to grace Britain's wild places. How many people in Britain today *ever* get to see a golden eagle?

In 1976 I set up a field studies centre here at Aigas, an ancient site in a glen in the northern central Highlands – it was Scotland's first. It is a place cradled by the hills above Strathglass, an eyrie looking out over the narrow floodplain of the Beauly River. Aigas is also my home. We are blessed with an exceptionally diverse landscape of rivers, marshes and wet meadows, hill grazings, forests and birch woods, high moors and lochs, all set against the often snow-capped four-thousand-foot Affric Mountains to the west. Golden eagles drift high overhead, the petulant shrieks of peregrines echo from the rock walls of the Aigas gorge, ospreys hover and crash into the loch, levering themselves out again with

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a trout squirming in their talons' fearsome grip. Red squirrels peek round the scaly, rufous trunks of Scots pines, and, given a sliver of a chance, pine martens would cause mayhem in the hen run. At night roe deer tiptoe through the gardens, and in autumn red deer stags surround us, belling their guttural challenges to the hills. Yes, we count our blessings to be able to live and work in such an elating and inspiring corner of Britain's crowded isle.

Yet, for me, the real joy and sometimes the pain of living in the same place for all these decades is that I have come to know it at a level of intimacy few can achieve, and as a result the Aigas place has infiltrated my soul. Of course, in that time I have witnessed disasters as well as triumphs. We have lived through insensitive developments and land-use practices that have been profoundly damaging to the essential wildness of the glen and its wildlife. But we have also witnessed the return of the osprey and the red kite, and the pine martens have recovered from being one of Britain's rarest mammals when I first moved here to being locally common and a regular feature of our lives.

Birds have been at the heart of my work and my life. So much more visible than most mammals, they are my gods of the morning, lifting our days with song and character. But they have also been important thermometers of environmental health and change – not always a happy story. Like so many other places, we have lost our moorland waders: curlew, lapwing, greenshank and redshank all nested on our moors and rough pasture thirty years ago – none now – and the quartering hen harriers and short-eared owls have

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vanished with them. Even the oystercatchers, whose exuberant pipings used to be the harbingers of spring, have gone from the river.

Whether these dramatic shifts in wildlife fortune have been brought about by climate change alone, or whether the various seismic shifts in agriculture and forestry policy we have lived through have changed the nature of the land, or whether some more insidious cause lies hidden is very hard to guess at, far less to know. It could be, of course, that, as is so often the case in ecology, the combined impact of several factors colliding at once has made survival so unpredictable for so many species.

I am wary of blaming climate change for everything. In my opinion it has become a touch too glib an explanation for too many aberrations in long-established wildlife patterns, such as the arrival and departure of migratory birds; a convenient get-out for those who are not prepared to admit that relentless human pressure on the globe and its natural resources has always brought about the extinction of species and the destruction of their habitats. That is what humankind has always done. But I cannot deny that in the last few years it would appear that the pace of climate change has accelerated and we have entered a period of total weather unpredictability.

We have no idea from one year to the next whether the summer will be hot and dry or dismally cold and wet; whether winters will be absurdly mild or gripped by snow and ice, or what extremes of heat or chill we can expect. We can no longer predict how successful our common breeding birds will be – the swallows didn't bother to nest

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in 2012 – and we aren't the only ones kept guessing and bewildered. Some wildlife can adapt quickly; others fail and disappear, with us at one minute and gone the next.

This is a book of encounters, observations and speculations based on what I have witnessed around me in my time. It attempts to explore how some of those changes have affected our common and not-so-common birds, their breeding successes and failures, their migratory arrivals and departures, their interactions with us and their populations around us. In the way that they respond quickly to shifts in climate and human behaviour, birds are also important and visible monitors of the success and failure of other wildlife, especially invertebrates. We dismiss or ignore these signals at our peril.

This book also focuses on some of our special Highland wildlife, mammals as well as birds, as perceived every day through the shifting seasons of a year by a working naturalist, perpetually looking, listening, watching, probing and taking notes, or, as my wife, Lucy, would say, with a shake of the head and a sigh of long-sufferance, 'totally distracted'.

I have no answers. I am as bewildered by what appears to be happening as anyone else, although I am suspicious that man's addiction to fossil fuels and our obsessive rush for wealth at any cost during and since the Industrial Revolution may have accelerated and possibly caused the systemic instability in our global weather systems, which may yet prove to be our nemesis. Yet living and working closely with wildlife, and birds in particular, has enabled me to witness some direct effects and thereby share some experiences and pose some questions of my own.

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Blackcap

> Sitting calmly, embowered in thick foliage, he pours forth, without effort, a delightful flow of soft and pleasing melody; then suddenly elevating his voice, he warbles aloud a cheering, liquid strain, which, at least in these islands, is unrivalled.
>
> *The British Cyclopaedia of Arts, Sciences, History, Geography, Literature, Natural History and Biography*, Charles F. Partington (ed.), 1838

> Autumn already! So why dismiss the everlasting sun, if we are sworn to search for divine brightness – far from those who die as seasons spin . . .
>
> 'Farewell', Arthur Rimbaud

Yesterday a small bird flew into my study window and died instantly. The soft thud, barely audible, lifted my head as I sat at my desk in the afternoon sunshine. It was loud enough for me to know that it was a bird and that it had meant almost certain death. I tried to return to my work, but couldn't. My spirit plunged.

These deaths occur far too often. We have tried hanging CDs in front of the windows, sticking hawk silhouettes to the panes, moving bird tables and feeders away from

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windows, but to little avail. Every year a toll of winged victims falls to window strike: tits, sparrows, chaffinches, siskins, greenfinches – even, occasionally, the heavier *dunt* of a blackbird or a thrush shatters my concentration and brings me, sighing, to my feet.

A few years ago a collared dove powered into the glass. Its neck snapped instantly, and the force of the strike flattened the whole bird against the pane, head, breast, wings outstretched, so that a pale ghost was left imprinted on the window in the oily bloom from its feathers. I left it there for weeks, hoping it might deter others.

They see the sky reflected in the glass and fly joyously at its illusion of freedom. They're heading out: that's why they're flying so fast, so purposefully and so fatally. Occasionally, after a spell of dazed concussion, a bird recovers and flies uncertainly away to a bush or a tree, but all too often I have held them in the palm of my hand and felt the tiny heart flutter to a halt; far too often, I've watched the eyes mist in a slow, final eclipse.

So, yesterday I rose from my desk and went outside. The tiny form lay directly below the window, like a small grey leaf. I bent to pick it up and found that it was a blackcap, a male blackcap, the little *Sylviid* warbler that graces our gardens every spring and summer with a cascade of song, haunting in its tender melancholy, as melodious as a flute and as rich as plum cake.

It shouldn't have mattered what it was. Is not a sparrow's life equal to that of a blackcap? ('Are not two sparrows sold for a farthing . . .?') A siskin equal to a blue tit, a greenfinch

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to a chaffinch? But it did. I have revered that song ever since blackcaps first arrived here in our northern Highland glen some twenty-five years ago. Back then they were exciting new arrivals, southern birds we didn't expect to see or hear in the Highlands at all. But something was permitting them to colonise new ground; some shift in climate or food supply gave them a new niche they were quick to grab. We came to know them as summer visitors slowly edging their way north, year on year, until finally they were no longer unusual.

They became a seasonal norm, belonging here, warbling ecstatically from every clump of brambles or willow thicket, a virtuoso exhortation to the songscape that awards passion to our spring and splashes musical glamour on the dull face of our summer. And they changed me. I came to long for their arrival every May and mourned their sudden absence every autumn. Without my realising it, blackcaps had warbled their way through my auditory meatus like a drug, imprinting on my subconscious so that I dreamed of them at night and awoke to their song in the dawn.

Sometimes if I stood still in the garden I would catch sight of one flitting nervously from branch to branch, hawking invisible insects high in a sycamore canopy or deep in a thicket. Through binoculars I could tell the sexes apart: the male with his little black *kippah* and the female's in rusty red. They became real companions, like trusted neighbours you would always cross the garden to chat to. And always that refrain brought a smile to my face; sun or rain they made me happy to be out there, sharing my life with such exuberant songsters.

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To hold this one dead in my hand, limp and still hot, summarily silenced, its eyes shut and slender bill clenched, seemed to me yesterday to be a tragedy greater than normal – if one can detach sufficiently to accept the death of garden birds as normal. I felt empty, hollowed out by an overpowering sense of injustice.

Then I realised it was September. I'd thought they had gone. The song had stopped a few weeks back. For several mornings I had stood at my open bedroom window staring out at the dawn, waiting for the blessed refrain to burst. All I'd got was a robin, 'the first god of the morning'. I love robins too – and, for heaven's sake, they do their best. They stay with us all year and keep going, always first at dawn and last at night, come frost or snow, driving sleet or bright blue sky. I do not mean to slight them. But for me they are outclassed by this little warbler – a morning deity if ever there was one – that some consider a rival for the nightingale.

I looked closer at the tiny corpse in my hand. Was it adult, or a youngster? A late fledgling that never made it to migration? I opened a fawn wing, blew gently up the breast feathers to see if there was the slightest hint of down. No clue. I knew only that it appeared to be a fully grown male, its cap as dark and glossy as liquorice. Yet in its death it had taught me something new. Blackcaps stop singing some weeks before they depart. And, as is the coda for all natural-history study, its death posed more questions than answers.

Was it young or old? Had it done its work? Had it mated and raised a brood, multiplied itself, fired the blackcap future

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with its warbling genes? If so, would its offspring return to our patch, snatch aphids from our aspens, bugs from our brambles, sip sugars from our wild fruits? Questions I couldn't answer. I could only hope that this tiny, untimely death was not entirely in vain, that good would somehow come of it.

When we were children, with an irony wholly unimagined, we buried such corpses with ponderous funereal ceremony and erected little crosses to mark the passing of our pet mice or guinea pigs, birds like this one or fledgling orphans we had failed to raise. We were sublimely unaware that we were completing the cycle of all living things, of returning nutrients to the earth whence they came. I took the blackcap to a spiky and impenetrable *Pyracantha* thicket and tossed it gently in. Just the sort of place it might have chosen for itself.

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That was yesterday. Today it dawned on me that the blackcaps had been one of the few normalities of our year so far. They had arrived, played out their particular summer pageant and now, as the first mists wafted over the river and the loch, and the first frosts crisped my footprints on the lawn, they were about to depart again, to slip away in the dawn, to chase the dwindling bug swarm south to England, over the Channel to Belgium, on to Germany, whispering unseen through the high passes of the Alps and down into Spain and Italy, all far more productive climes for the bugs, seeds and nectar they need.

This autumn departure is one of the very few normalities of our seasonal Highland story, a standard by which to measure what has otherwise made 2013 an extraordinary year. That little warbler had fired something in my brain and caused me to write this down, and that departure, as the season wafted silently away from summer, was where I needed to start. Perhaps, after all, its death was not entirely in vain.

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That Time of Year

> That time of year thou mayst in me behold
> When yellow leaves, or none, or few, do hang
> Upon those boughs which shake against the cold,
> Bare ruin'd choirs, where late the sweet birds sang.
>
> 'Sonnet 73', William Shakespeare

You would think, wouldn't you, that the logical and proper place to start was January: the freshly washed face of a new year? But in all due deference to the double-faced Roman god Janus, the god of beginnings and transitions, I must point out that his month is of rigidly human designation and precious little to do with nature. It misses the plot. Whoever plumped for naming it was not thinking seasons or wildlife or weather, or even, with months of winter yet to endure, the human spirit. January may be the beginning of the Gregorian calendar year, but it is hardly a month of transitions.

It straddles the plunging nadir of the Highland winter; it records our most gripping frosts down to –25° Celsius when diesel fuel turns to jelly, your skin instantly sticks to metal and, of course, January snows, from a powder dusting to drifts of three feet, are always just around the mountain. Even in mild winters when a warm Atlantic airstream clashes with a

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front of Continental cold we are raked by sudden storms of swirling sleet, despite the most valiant efforts of the Gulf Stream, huffing and puffing like the big bad wolf on the western side of the mountains. Not much transition there.

January is when the chimney moans as south-westerly gales howl through the trees and hammer at our door. It is the month of brief, crimped days when the dogs won't stir from their baskets; the month of thick gloves, neck-hugging scarves and fur hats, of tightly drawn curtains and glowing firesides; it is the month of hunkering down and staying put. Many mornings I have arisen in the dark, peered out of the window into whiplash sleet or icy rain squalls so fired with spleen that I have chosen to crawl back to bed rather than face the world.

Neither, of course, is it the beginning of anything but the eponymous month. So, to do justice to nature, the nature of this mystical land of hills and glens, forests, lochs and rushing rivers, and to the confused seasons of what has proved to be a discomfiting and bizarre year, I need to start at a real transition, in late September when fidgets of swallows were gathering on telephone wires like chittering clothes-pegs; when the first tug of departure was fizzing in blackcaps' tiny brains; before moonlit frosts cantered rust through the bracken; before the chlorophyll finally bled from blushing leaves; even before the last osprey lifted and wheeled into its long migration to Senegal or the Gambia. I need to start when the word was fresh on our lips, in the incipient, not-quite-sure-if-it's-happened-yet autumn of 2012.

Autumn may arrive slowly, but it gives itself away.

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Something ethereal arrives in the night, some curious edge to the breeze, some abstract quality of the breathed air, so that when you step outside you just know in your bones that the whole world around you has shifted its focus from summer and is now interested only in preparing for winter.

It is a climacteric, a moment of physiological and psychological shift in nature's thinking, especially for the birds. Summer birds depart, winter migrants begin to arrive. In the Highland glens, bird numbers plummet as their food supplies – natural fruits and every kind of creeping, crawling, slithering or flying bug – begin to disappear. Not just the swallows and house martins have vanished from round the houses. Gone are the insect-snatching wheatears, whinchats and stonechats from the hills; redstarts and flycatchers have fled the woods. Pied wagtails no longer flicker across the lawns, while sandpipers and grey wagtails have deserted the riverbanks. Farmland and hedgerow species have vanished in the night: the linnets, yellowhammers, and all the warblers have decamped from the thickets. By the first frosts the hills will have emptied to a few hardy stalwarts, such as the golden eagles, the raven and the irrepressible hooded crows. Silence settles across the land. The few species that are left frequent a changed world. Soon only the buzzards and wood pigeons will hang on in the woods, and the coniferous forests will host flocks of chaffinches, tits, siskins and crossbills passing through.

Waders from Russia, Scandinavia and the Arctic will flood to our shores and flotillas of ducks and geese will gather on the tidal mud – but I am getting ahead of myself.

On a full moon the temperature plunges overnight, a

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careening splashdown to zero as the Earth's heat soars to the Milky Way. By dawn Lucy's dahlias have collapsed at the thought, the last nasturtiums have flopped like burst balloons and the stinging nettles are hanging their heads, like convicts awaiting execution – they know their number is up. Even if we are blessed with an Indian summer for a week or two in October, the natural world isn't fooled for long. There is urgent business afoot. To ignore the signals and loiter is to court disaster. Suddenly everything has changed.

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A dank drizzle settled over the Highlands. By dawn the river had risen from a whisper to an urgent murmur. Mists shrouded the dark flow and clung between the bankside alders well into the morning. We awoke to a damp, rusting-away world of yellow and umber. The shortening days seemed to be draining the paling chlorophyll with them. Trails of fieldfares and redwings chattered across the sky and descended like archangels onto rowan trees now bright and laden with scarlet fruit, hurrying, stripping them bare, moving on in undulating squadrons as though they had some pressing appointment elsewhere.

Later the sun came sidling in. It is low now, its power vanquished, enfeebled by the year's reeling. It will track a lower path every day until midwinter, 21/22 December, the winter solstice and the longest night, when, imperceptibly at first, it will begin to lift again. At our latitude, north of

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the 57th parallel, a laggard sun rises late in midwinter and barely lifts above our hilly horizon, sloping off as soon as it can, by about three in the afternoon. Cool and remote, it's a token appearance, a mere gesture to remind us that spring and summer will, with luck, one day return.

At eleven this morning it cut swathes of gilded light into the trees and across the green lawn, absorbing all the colours into one glorious October gleam charged with a cool and ruthless beauty. I stepped from shade into its glamour, then back again to see if I could detect any warmth. I could, but only just. That alone should be enough to tell the natural world to hurry along, to wrap up and get ready for what is to come.

Yet it is the intensity of the light that dictates the radiance of the autumn leaf colour. Leaves absorb red and blue wavelengths from sunlight, reflecting the green light to us. Green is good. Green tells us the tree is alive and well. If something goes wrong, such as a drought, the leaves begin to yellow because the green chlorophyll is no longer being fed, causing it to break down. It can't absorb the red light any longer, so it gets reflected outward to our eyes. It is this mixture of red and green light that creates the yellow. The loss of green is a biochemical phenomenon with high, show-stopping drama and profoundly poetic consequences.

Autumn colour is the universal manifestation of the same process. Dictated by plant hormones, as the length of daylight recedes, the water and minerals, especially phosphate, that have fuelled photosynthesis all summer long, are cut off in deciduous plants at the stem of the leaf. The

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powerful green pigment in chloroplasts, *chlorophyll* – which, as every biology pupil knows, is the essential component for converting sunlight into sugars and is responsible for what John Cowper Powys described as 'an enormous green tidal wave, composed of a substance more translucent than water, has flowed over the whole earth' and what I call the 'great green stain of summer' – begins to fade because it can no longer replace itself.

Without the supply of water and phosphate, chlorophyll burns itself up and disappears, allowing other pigments that are always there but drowned by the green wave, to begin to show through. These are principally *carotenoids*, bright yellows and oranges, and *anthocyanins*, the reds and purples, hence the drama and the rush for the poet's pen. But their celebrity is brief: they, too, are doomed to the same fate as the chlorophyll, which is why this whole process is uncharitably dubbed 'autumnal senescence'.

As the nights grow steadily cooler, the anthocyanins are responsible for removing sugars from the leaves the tree is about to shed. Only when the leaf is of no further use to the tree do the leafstalks grow cork cells to close off the conductive veins with plugs of special water-absorbent tissue. These freeze with the first frosts and the cells burst open, causing the leaves or needles to fall.

Bucking the trend, our oaks and beeches lose their chlorophyll like the rest, but stubbornly refuse to drop their leaves, an esoteric adaptation known to botanical boffins as 'marcescence'. No one knows quite why this is, but there are several plausible theories. Some say the dead leaves hide the

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new buds and deter damage by herbivores, such as deer, evidenced by the measurable observation that the lower, younger branches, those within browsing reach, hold their leaves longest.

Others proffer subtler and rather more imaginative hypotheses that retained dead leaves collect snow, which acts as an insulating blanket to protect developing shoots in the depths of winter and also hold it longer in the spring thaw, thereby providing a water supply to their roots at a time when the ground may dry out too rapidly for the tree's comfort. I find that idea challenging. Yet others have proposed that the dead leaves contain sugars that will better benefit the mother plant if released in the spring when the nutrients are most needed. The theory I consider the least likely is that oaks and beeches (hornbeams too) are slightly backward from an evolutionary perspective – less biologically intelligent (the very suggestion!) – and haven't yet fully worked out how to shed their leaves quickly. Whichever is the case, or maybe none, I draw comfort from the notion that nature reveals its motivations only slowly; mysteries within mysteries that keep us arrogant, would-be know-alls firmly in our place.

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There is so much going on in October that there should be a better, more uplifting name for the passage of autumn into winter. The Mellowing, or the Misting perhaps, or the more intimate *double-entendre*, the Rustling. That's what I

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hear when I close my eyes and stand underneath the rookery at the end of the month. For the moment the rooks had upped and gone, leaving only a vapid sky and an unavailing silence behind them. I wouldn't expect them back permanently until February, but if they happened to be passing in their unruly troops, they'd occasionally drop in for a few hours and clog the trees with their quarrelsome bustling, like school-kids claiming their spaces well before the bell goes. But in today's soft rain they were absent, and the oaks and sycamores solemnly dripped in an uncluttered, graveyard silence. When I stood completely still, a transcendental moment with only the pluming of my breath to reveal my presence, the silence bent to a lower urgency than a rowdy rook could comprehend. Beneath my feet, all around me, busy, industrious life was at work.

I have often noticed that life beneath the rookery is fuller, richer and more diverse than similar habitats nearby. Logically, when you consider the rainfall of nitrogen-rich droppings from on high during at least five months of each year for well over a hundred years, coupled with the annually layered carbohydrate of mouldering leaves from the sycamores and oaks, it is hardly surprising that the soil is rich. Here, beneath the trees, despite the shade, the naturalising daffodils I have planted are always finer, taller, grander and a richer gold than elsewhere.

Off to my left, with quick, jerking thrusts, a blackbird was cashing in, flicking rusty leaves, as if turning the pages of an ancient tome in a rushed search for wisdom. A restless robin fluttered from the wooden fence to the ground and

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back again, always pert, chinking its little metallic assertions, always checking out where my footsteps might have delivered up a worm, a bug or a centipede. And somewhere invisible, somewhere under the wind-blown waves of leaf litter, a shrew was blindly burrowing in its own private, nose-quivering, bristle-trembling quest.

Everything alive knows that winter is coming. Everything needs to hurry, to feed, to lay down fat, to burrow down, to bore deep into the sanctuary of timber or soil, to crawl under stones, into hollow logs or mud, to build nests, to take in bedding, to batten down. Need and haste: those are the two bywords for this moment in the year. They are the apothegm by which so much survival hangs. The bell for last orders has sounded loud and clear. Even the moon seems to know it, as it rounds to its chilly apogee, trailing mercurial pallor across the lawn and freezing the shaggy world with an icing that crackles like fire beneath my morning feet. By the time the stifling snows and vicious frosts arrive, for many it will be too late. Nature takes no prisoners; it renders no quarter to the unprepared.

The red squirrels were busy building a new drey. I was watching one yesterday, scurrying (its Latin name is *Sciurus*). It was pruning fresh larch and pine fronds and bearing them along in its teeth, fronds sometimes fully its own length, then weaving them together with the practised eye of a gypsy wife making baskets, pushing, bending, pulling, intent, labouring away with paws and teeth, totally oblivious to, or more likely just ignoring, my silent presence a few yards from the foot of the tree. Time-served though they may be,

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my field skills cannot boast the fooling of a squirrel on high. It knew I was there, all right, but I was no threat to that tail-flicking, nose-twitching, bright-eyed red, busy about its urgent affairs. Only one thing burdened its mind: winter.

Earlier in the day I had watched two of these enchanting native squirrels at the nut box I had put out for them. (We have no pox-carrying greys in the northern Highlands yet – they haven't crossed Loch Ness – and I pray that we may have the resolve to keep them out.) They were busy feeding, laying down fat, but also carrying off the hazelnuts in their teeth and burying them with rapid, jerky forepaws, scrubbling out the shallow cache pit, carefully dropping the nut and filling it in again, even scattering a few leaves over the top, all in a matter of a few seconds. Then back to the box for more. What makes me chuckle at this important caching of winter supplies is the ritual furtiveness of the process: the casting-around to see who else might be watching, with the shifty look of a shop-lifter about to pocket something, the nipping off to a quiet corner, the frantic digging, then more furtive glances while sitting upright on its tail for a better view, and scuttling back for another nut.

And the question I am so often asked: can they remember where they have buried the food? The evidence seems to be that they can – at least some of the caches. It would be a dangerous waste of energy and food if they couldn't. But undoubtedly some nuts survive to germinate and grow a hazel tree and the squirrels must be saluted for fulfilling that important, if accidental, ecological role. I am glad I saw them building that drey and I noticed that, whether by chance

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or design (surely design), it was built on the sheltered side of the trunk, away from the prevailing wind. Squirrels don't hibernate, so I find it a comforting thought that when the bitter winds slice through in the long December nights they will be in there, tucked up in their long fluffy tails, curled as tightly as a barrister's wig.

This moment in the year is also marked by the very sensible migration indoors of wood mice, *Apodemus sylvaticus*. Voles and shrews are fascinating, but wood mice are classy. Hamster-golden with huge ears and big glossy eyes as black as polished ebony, underbellies as white as the rose of York, and their extravagantly long tail (they used to be called long-tailed field mice) pursues them, never touching the ground, flowing with all the elegance and style of Elizabethan calligraphy. They skip across the ground with the grace of a gazelle, barely seeming to touch the surface, and they can climb and leap like a trapeze artist. I'm entranced by their speed. I have always admired them and, unlike Lucy when she's in hyper-efficient housekeeper mode, I am overcome by a downward somersault of the spirit when called upon to trap them. The notion of poison has always been abhorrent to me – out of the question.

There are times when I have had to set my natural-history instincts aside and give in to lobbying from household and family. After all is said and done, they are mice – beautiful mice – but with all the mouse potential for causing trouble. If they do become a nuisance and I am harried into taking action, I use Longworth live traps and transport the captives

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a few miles up the glen before releasing them, wishing them well and apologising as they go.

At first I made the mistake of thinking that releasing them in the garden was good enough until one day I caught one with the tip missing from his tail. The very next day he was back in the trap in my daughter Hermione's bedroom. I was pretty sure it was the same mouse so I took him much further away, about three hundred yards. Two days later he was back in the trap. To be certain I now marked his back with a touch of nail varnish between the shoulder blades where I reckoned he couldn't groom it away. I took him to the village a quarter of a mile to the east and furtively released him into someone else's garden. This time it took a week, but back he came, straight into the trap, proudly showing off his tell-tale smudge of oyster-shell pink. I was left scratching my head, pondering the mysteries of animal behaviour. Just how does a mouse, two inches high and six inches long, find its way over a quarter of a mile of what, presumably, must have been entirely strange and hostile territory? Is it scent? (We know that a male moth can detect a female's pheromones up to a mile away.) Or is it some electro-magnetic homing compass we don't properly understand? It seems entirely logical that any foraging species with static young in a nest must be able to find its way back over distances appropriate to that species. But a quarter of a mile? That seems absurdly adventurous for even the most ambitious mouse foray. And yet I know very well that I shouldn't allow myself to be surprised by this amateur circumstantial evidence of my own concocting.

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Lucy once had a Labrador dog that was accidentally left behind at a friend's house some ten miles in a straight line from home. But those ten miles included crossing the Beauly Firth, a tidal estuary more than two miles wide, or a circumnavigation round the end of the Firth, increasing the journey to more than twenty miles. Frantic searches in the vicinity of the friend's house revealed nothing, but twelve hours later the old dog turned up at its own back door, wagging its tail. It was remarkable enough that he knew his way home, but that his homing instinct had caused him to swim across open sea or had taken him many miles in the wrong direction if he had gone round also seems to indicate some powerful impetus at work. I marvel at animal behaviour but it never surprises me. Nature has had a long time to hone its secret skills.

Throughout the spring and summer, these engaging little mice are more than happy to live in the woods and fields where they belong, and are one of several small mammal prey species upon which so much of our wildlife depends. Tawny and barn owls, foxes, badgers, wildcats, pine martens, stoats and weasels, buzzards and kestrels, even herons, crows and brown rats all eat wood mice when they can. With bank and field voles, they are the staple diet of our owls. Without them the owls would perish and disappear altogether. But the wood mice are hard-wired to find a warm, dry place to nest for the long cold months. We have generously provided them with an endless selection of choices: garden sheds, byres, stables, garages but, best of all, centrally heated houses, often with a fast food supply readily tipped in for good measure.

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In this old house (some bits are eighteenth-century and earlier) the thick outer walls are of large round whinstones of hard metamorphic schist gathered from the fields and burn beds, heaved and levered into position by men with aching shoulders and rough hands, whose craftsmanship was passed down from generation to generation. However skilfully the Gaelic-speaking Highland masons placed these stones to create a handsome vertical wall on the outside, there were always hollows and gaps in the interstices that had to be packed with lime mortar to hold everything together. Inside the walls, which were always two or more large stones thick (up to twenty inches), there were spacious cavities loosely filled with end-of-working-day lime tossed in, along with any handy rubble. (While plumbing in new heating I once found a George I halfpenny dated 1718 in one of the walls – I'd treble your money for your story, Mr Highland Stone Mason, if only I could.) Lime mortar doesn't clench in a rigid chisel-resistant grip, like cement: it sets yet remains friable and crumbly, like damp Demerara sugar. Any diligent mouse can scrubble away at the weaknesses and burrow through.

Once inside the thick old walls, the mice enjoy a labyrinth all their own. They can go where they please. They travel through the hollows, up, down or sideways, as safe and secure as any city metro system. Modern insulation makes perfect bedding for a wood mouse – warmth and comfort laid on. At night I lie awake and hear them scuttling back and forth in the roof, up and down the ancient plaster and lath walls and occasionally popping up inside rooms. From

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time to time I see them nipping out from under the kitchen units to sample left-over meal in the Jack Russell terriers' bowls – a source of constant frustration to the dogs, which charge, skidding across the vinyl, to crash land among the bowls, always far too late.

We are lucky: our neck of the Highland woods does not have the very destructive and invasive house mouse, *Mus domesticus*, originally an alien species from Asia, trans-located all round the world by man, and the progenitor of all pet and laboratory mice, which can carry unpleasant diseases such as leptospirosis, typhus and meningitis – even bubonic plague. They are present in the Highlands, but mainly restricted to the grain-growing areas of the east coast and to towns and cities such as Inverness. Happily, they don't venture up the glens. House mice will gnaw through just about anything: lead and copper pipes, electrical cables, plastic, woodwork, plaster, skirting-boards and structural joists, even limestone.

Our wood mice, alas, are not entirely blameless: they delight in shredding polystyrene pipe insulation, and if they elect to nest in a wardrobe of stored clothes their actions can be very distressing. By comparison with house mice, though, the damage they do is slight. They are very clean living and are not known to transmit disease. When I find their nests in the woods, exquisitely crafted balls of grass, moss and leaves, often lined with sheep's wool, there is virtually no smell.

Years ago I brought some reindeer skins back from an expedition to Lapland. I thought they would make cosy

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bedside rugs for our growing family, but I was wrong. Reindeer fur has a fine woolly undercoat but the outer fur consists of longer, hollow, air-filled hairs for efficient insulation in an Arctic climate. These hairs are brittle. The regular passage of children's little feet broke the outer fur into a constant fall-out of shards, which stuck to everything, itched in their socks, clogged the vacuum-cleaner and drove their mother to drink. The pelts were banished to a cupboard in the cellar, securely contained (we thought) in sealed polythene bags.

The wood mice said, 'Thank you very much.' It took them no time at all to find the bags, nibble in and rearrange the rolled-up skins to their liking. Several months later, one of the field centre's education officers needed a piece of reindeer fur to demonstrate the efficiency of natural fur insulation to some visiting school-children. I opened one of the bags and was astonished to find that large patches of the pelt had been shaved clean down to the leather and the removed fur, both woolly and brittle, had been skilfully woven into an orb-shaped nest the size of a cantaloupe melon. On pulling it gently apart I found that the hairs had been systematically sorted and separated: the long hairs for the structure of the ball and the softer wool for the inner lining. The inside of the nest issued the essence of fertility, like leaf mould, making me think of wood anemones and unfurling ferns in spring – none of that uric rodent reek I remember from keeping pet mice as a boy. I was sorry I had disturbed it and put it back carefully, glad that they had found a use for the reindeer skins and happier to have them living in the cellar

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than in my wardrobe. It would be hard to imagine a warmer, cosier or more secure winter refuge from which to produce a family.

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As I walked back to the house from the rookery, the unmistakable yelping chorus of geese floated to me on the damp air. I stood still and squinted into a sky of dulled metal. They were high, just below the ruffled cloud base at around three thousand feet; it took me a moment to locate them. There they were, in an uneven V-formation, shifting and flickering in a large wavering skein of tiny silhouettes, like flies on a high ceiling. I shivered. Not a shiver of cold – I was well wrapped – but a shiver of deep, transcendental unity. No sound in the world, not even the rough old music of the rooks, etches more deeply into my soul than the near-hysterical 'wink-winking' of pink-footed geese all crying together high overhead. It is a sound like none other. Sad, evocative, stirring and, for me, quintessentially wild, it arouses in me a yearning that seems to tug at the leash of our long separation from the natural world.

Their arrival in the early autumn sets a special seal on the turning year, repeated again with their departure, back to their Arctic breeding grounds in the spring when the last few rise, with rattling pinions, and wheel away into the north. Autumn or spring, I never tire of their unrestrained dissonance, which surrounds us during the winter months when tens of thousands of grey geese gather on the Beauly

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Firth. Scarcely a day goes by without a skein or two passing over, or when we go east to the Black Isle, the moist coastal fields are always cluttered with their corn-gleaning and grass-plucking flocks.

It seems that naturalists (and perhaps not just naturalists) need these sounds to help us locate our passions, to ground us in the beliefs we hold about the natural world and to link us with our origins. My old friend Brian Jackman, the celebrated wildlife journalist, who has enjoyed a forty-year love affair with East Africa, tells me it is the night roaring of lions as he lies awake in his tent on the Masai Mara that does it for him. For Lennart Arvidsson, the half-Lapp-half-Finnish doyen of the Arctic forests, who first showed me wild lynx tracks in the Sarek snows, it is the long-drawn howls of timber wolves, rising and falling on a moonlit night. Dame Jane Goodall insists it is still, after nearly half a century since they catapulted her to world fame, the hoots and pants of a troop of chimpanzees deep in the forest that sets her blood tingling. Television wildlife cameraman John Aitchison recounts that, for all his globetrotting, it is the calls of waders – greenshank, curlew and redshank especially – on the Scottish salt marshes of his Argyllshire home in the crisp air of a morning in early spring that raises the hairs on his neck. And Roy Dennis, my ornithologist (and a brilliant all-round naturalist) colleague and friend of more than forty years, once told me that the combined fluting calls of tens of thousands of common cranes assembling on the wetland steppe of Hortobágy-Halastó in Hungary was a moment of pure transfiguration for him.

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My geese and the shiver pass together. It is autumn, late autumn, and winter is no longer imperceptibly snapping at our heels. Its clawing fingers have finally gripped. I know there will be a piercing frost tonight. I pray that the rooks still gleaning manna from the barley fields are well prepared; bad luck for the hungry barn and tawny owls – I know that at least some of the wood mice have moved indoors. Like the robins and the blackbirds, the shrews have no choice: they have to keep going whatever the season, bound to the treadmill of twitching out from the dark confines of the leaf litter their own body weight of invertebrates every day.

The squirrels are well stocked up and these last, straggling goose arrivals will have joined the vast flocks that are gorging on the late spillings from combine harvesters on the stubbles of the Black Isle. A final few ash leaves gyrate silently to the yellow carpet of their own design. The crinkly oak leaves hang stubbornly on, only reluctantly releasing when winds scour through. And the silky-haired beech leaves will rattle like crisps until the spring when the new growth will finally force them off.

As I return to the house I see wood smoke pluming from a chimney. Lucy has lit the sitting-room fire, a sight that brings an inner glow and a smile to my tingling face. As the darkness closes in I shall repair to my old armchair with a book. The Jack Russells will yawn and sigh as they stretch themselves across the hearth rug at my feet. Winter brings blessings of its own.

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