

ON

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EXTINCTION
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how we became estranged from nature



melanie challenger

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On Extinction

How We Became Estranged from Nature

COUNTERPOINT
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There was a whispering in my hearth,
A sigh of coal,
Grown wistful of a former earth
It might recall.

I listened for a tale of leaves
And smothered ferns,
Frond-forests, and the low sly lives
Before the fawns.

Wilfred Owen, 'Miner'

Beginnings

Natural History Museum, London

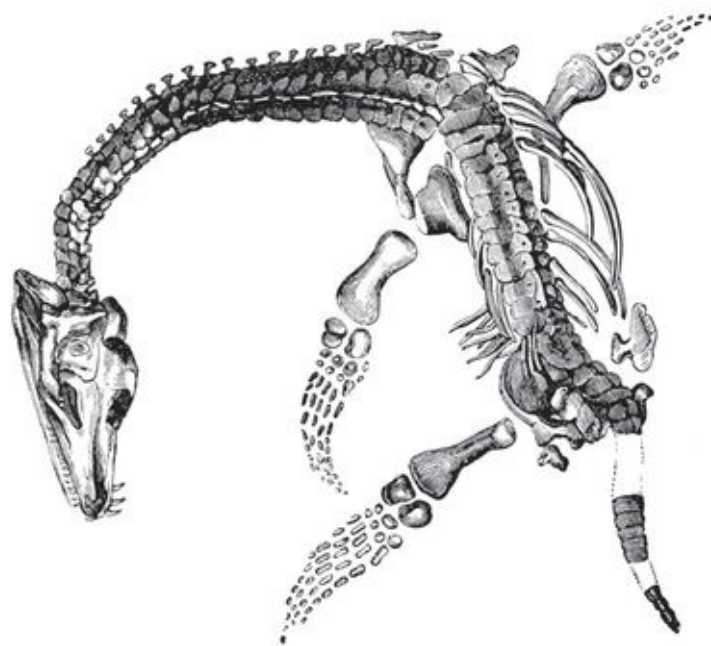
An albatross dips towards the sea, then lifts again, beating its wings as if repelled by the opposing magnetism of the water. At first, nothing else stirs. The sea is deathly calm, spread out like a cerecloth. Then a giant rocketing breath hurls a rainbow into the air. As the whale arches and begins to descend under water, the dimpled grey of its back turns into the blue sheen which earned it its name. I see the whale more completely in my imagination. In reality, each sight of it is a jigsaw piece. The whale is simply too huge to be viewed in its entirety. It disappears and moments later, surfaces at a great distance, its blows sounding notes of both discontent and deliverance.

Watching the blue whale that day, I questioned what it was that I hoped to capture in writing this book. I had been travelling for several months through the southern waters where the blue whales live, determined to understand why these and other marvels of nature were imperilled and why that should matter. Reflecting on the dreamlike moment of the creature's fleeting show, I saw myself as a child again, staring up at a model of a blue whale suspended from the ceiling of a museum.

I first visited the Natural History Museum in London when I was about nine or ten. The architect, Alfred Waterhouse, scaled the building to the dream of diversity, its curves decorated with Daedalian sculptures of living and extinct forms of life. It was a panorama of metamorphosis, a treasury of the wonders of how life evolved and the sobering realities of how life could end. In the alcoves and galleries that lined the echoing building like confessionals were the serried remains of extinctions. The guttered brow of a Neanderthal skull, the bevelled flint tools of early human ambition. Beyond these, the brittle silhouette of *Archaeopteryx lithographica*, the feathered and fearsomely toothed 'strange bird' crucial to Darwin's defence of evolution. The palaeontologists of the previous generation were convinced that the entire class of birds sprang suddenly into existence, whereas the discovery of the first archaeopteryx fossil gave evidence of their painstaking transition from carnivorous dinosaurs. The ancient bird lived on the Earth 150 million years ago, its wings tipped by two large claws, its body flaunting a long lizard-like tail. The discovery of this beast, Darwin wrote, proved more forcibly than nearly any other find how little his generation knew about the Earth's former inhabitants.

Near to a display of the armoured anatomies of trilobites was an ichthyosaur skeleton scoured from its hiding place in beds of shale by Mary Anning, the fossil hunter who gained notoriety in the nineteenth century for several spectacular

finds. She kept her family from debt by hawking the remains of extinct life in her glass-fronted shop in the English seaside resort of Lyme Regis. She was led to her profession by a local character called Captain Cury, the 'curiosity-man' who stole on to the coaches that stopped at Lyme Regis on passage between London and Exeter. He touted fossils given fashionable names to make them more appealing to female clients: Ladies' fingers, Crocodile's backs, John Dore's petrified mushrooms. After her father fell to his death from nearby cliffs, Mary began rummaging around the seashore in search of her own curiosities. She was only ten years old when she sold her first ammonite to a wealthy lady for half a crown.



There were the grey splintered remnants of a toxodon. On the voyage of the Beagle, Darwin and his companions witnessed the unearthing of one of these 'perhaps one of the strangest animals ever discovered'. A native of South America, the flexed bow of its teeth was like that of a rabbit, while the angles of its eyes, ears and nostrils seemed to ally the giant animal with the manatee. Beyond the toxodon, there was a skeleton of *Mammuth americanum*, scraped out of the dust of Missouri, its tusks trained upwards like bugles to the skies. Ceiling panels depicted plants both day-to-day and exotic. These gilded illustrations reflected an era when the flowering world was a source of sentimentality and fascination. A specimen-collector brought seeds and cuttings from all around the world, the wealthy of the eighteenth and nineteenth centuries rushed to embellish their gardens with striking and tropical species, while glasshouses and public parks opened up to exploit their new fancy. Some imported plants became widespread while other species became rare, their delicate replicas floating above the exhibits as memories of an old season.

I visited the museum again not long before beginning my travels, a nostalgic retracing of youthful fascination. The sturdy wreaths of a diplodocus's vertebrae patterned the floor like footprints mocking its former animation. The fogged glass

of the windows filtered the winter sunlight. It shrouded the hall in a cadaverous yellow. A knot of schoolchildren muscled one another for a peek at one of the oddest animals in the hall, the glyptodon, a giant armadillo most probably hunted to extinction by humans thousands of years ago in South America. The beast's small mouse-like head and tail like a huge ice-cream cone softened the ferocity of its bulging hauberk. The children chattered together about the possible revival of such monstrous forms. 'We can bring them to life again,' they said. 'We can make a zoo of monsters!'

In the shadows of the museum, the brooding shapes of earlier creations unsettled the assurances of our tangible human world. It was here that I first encountered the slightness of human life. Beneath the magnetic appeal of the giant creatures and plants was a terrifying suggestiveness, the millions of years since their demise. Looking at them with a child's eyes, I experienced a kind of mental vertigo at the abyssal distances that lie before and after our brief lives. It was akin to the rising sickness I sometimes felt while lying awake in the darkness contemplating the existence of my parents before the arrival of me and my sister.

Darwin described a related vertigo on encountering the giant mammals that once inhabited South America. How might one reflect on the Americas without a sense of disbelief and awe, he asked, when formerly the continent swarmed with great monsters? Darwin's theories on how the diversity of life on Earth arose fortified an old idea that something larger than our own reality haunted us. This idea was there in the ancient Greek myth of the Hekatonkeires, three colossal beings with a hundred hands each, who ruled the world at the beginning of time. These giants were the offspring of earth and oceans, their spirits expressing themselves as forces of nature in earthquake, hail, storm and eruption. Those who came in their wake eventually conspired to banish them, fearing as they did the volatile powers.

But the chief touchstone of my awakening to extinction hung in the Large Mammals Hall, built in 1934 to house the skeleton of a blue whale that beached on the shores of Ireland's Wexford Bay at the close of the nineteenth century. Below its bones, strung in the air as an aide-memoire to mortality, was a full-size model of the whale. Each time that I visited the museum, I nagged my father to take me back to the exhibit. The blue whale, in large part due to its gigantic proportions, had become an obsession of mine. Entering the hall, I stared across this colossus of saxe-blue flesh and the perspective of bone pinioned to the ceiling, the air transmuted to ocean. Over the years, I never tired of the exhibit. Only when my sensibilities matured to adulthood did I begin to shrink from it. I saw now as a harbinger of extinction, one of the museum's reliquiae, a totem of impermanence. Years later, I would write one of my first poems about the beast's hold on my imagination:

. . . she's heavy
In the air, drowning beneath her fathoms,
The mighty eloquence of her breast-stroke, attuned
To the echoes of waves, leadens to extinction.

Throughout the twentieth century, commercial whaling drastically reduced the population of the blue whale, forcing the beast to the brink of extinction. Gazing at its sleek magnitude, sculptured by the boundlessness of the waters, I did not want my generation to become the last for which this model could evoke the reality of the animal, still living in the ocean, where its exquisite shape evolved over millions of years.

Darwin thought it likely that a raft of natural laws gradually drew the spectacular range of species out of a few, elementary originals. 'From so simple a beginning he said, 'endless forms most beautiful and most wonderful have been, and are being, evolved.' But why? To what advantage? According to the Bible, God created the great whales, along with 'every living creature that moveth'. We have no religion in my household and I found the idea that an undetectable consciousness was the source of life's range and singularity profoundly unsatisfying. If this supernatural intelligence chose to create all the forms of existence on Earth, what stayed its hand from saving them from destruction?

From the beginning of time, life proceeded and foundered through no sensible motive. The first geological era of the Earth, the so-called Precambrian time stretched from the origin of the world to the oldest fossils, the prokaryotes, single-celled organisms without core or genetic history, to the first primitive animals patterned by multiple cells that took shape in the later stages of the era. The shift into Cambrian time signalled the arrival of animals with skeletons, epitomized by the darkly toughened bodies of trilobites that seethed across ocean floors. These and other entities endured mass extinctions unavoidably and for reasons associated with the loss of conditions to which they were accustomed. Extinction was a consequence of huge spans of time, where transformations were mindless processes - an asteroid from outer space, a spilling inferno of molten rock from the netherworlds of the Earth, or the unimaginably slow movement of land masses over one of the magnetic poles - each leading to altered landscapes in which the earlier adaptations of life forms were no longer effective. Slowly, the range of species shrank and its numbers dwindled until they were gone; sometimes a hint of their former glory was preserved in the rocks and sometimes they left a undreamed-of absence. In the great swathes of time given to the Earth, did it really matter if some forms of life died out? Across these spans of almost imperceptible evolution, other entities always emerged in the place of those that perished. What of the improbable bottle-shaped chitino-zoa that shrank through the aeons as their outer walls gained spurs, loops and other embellishments, until they disappeared from the fossil record altogether? What creatures might have nosed forth from their odd structures? And of what animal did they, themselves, form some elementary, perhaps almost unrecognizable stage? Did it matter that a great episode of climatic change, in which the whole world seemed to become a glinting prophecy of the Earth's poles, bullied these mysterious life forms into nothingness?



Every great change of climate must be fatal, said the nineteenth-century geologist Charles Lyell, to those that can neither escape elsewhere nor survive in their transformed reality. For Lyell, it was as if some kind of force majeure acted through the passage of time. During his day, there were several competing theories to explain the physical environments of the Earth. Some believed that observable ongoing processes shaped the world, such as the hourly assault of tidal sea waters on coastlines. Others credited sudden and catastrophic events for the appearance of different landscapes. The undoubting religious believed in the role of a supernatural intelligence. Throughout this period, miners, geologists, enthusiasts and prospectors cracked deeper and deeper into the rocks, increasing understanding of the world's history. Beneath the Earth's swarming countenance were dozens of graveyards, dark undercrofts of generations of life.

On 27 January 1796, the young naturalist George Cuvier laid the tusks of mammoths before an audience at the Institut National de France as proof of extinction. Cuvier used the bones of these elephantine mammals, rescued from the oblivion of Siberian ice, to shatter convictions of the achieved world of a supernatural creator. 'Life on earth has been frequently interrupted by frightful events,' he told them, soberly. 'Innumerable organisms have become the victims of such catastrophes. Invading waters have swallowed up the inhabitants of dry land; the sudden rise of the sea bottom has deposited aquatic animals on land. Their species have vanished for ever.' His audience sat aghast. While Cuvier insisted that the mammoth was a distinct and long-lost species of giant mammal that wandered across the land masses of North America and Eurasia thousands of years earlier, his contemporaries believed their tusks were those of living elephants. Cuvier regarded these blunders as the consequence of deficient and unresolved scientific thinking. The studies of elephant bones published by his contemporaries, he explained, were so insubstantial that one could not decide

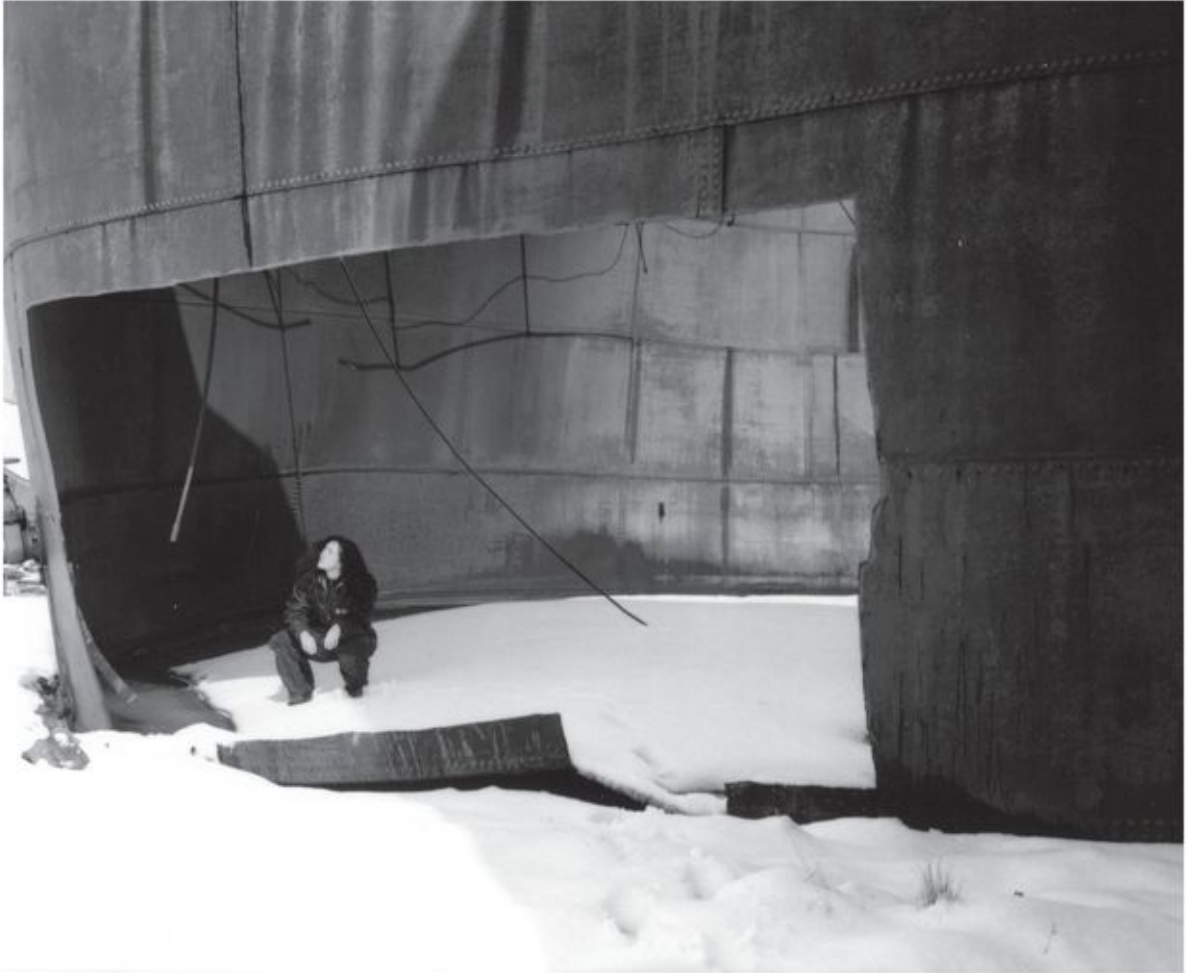
whether they belonged to a living species or not. For Cuvier, the disappearance of the mammoth argued for catastrophic natural events in the past that irrevocably altered life on the planet. People were appalled, and so they doubted. As Thomas Jefferson exclaimed in 1799, puffed up with such belief in the bounteousness of America that he could not countenance the idea of these losses in its history, 'if this animal once existed, it is probable on this general view of the movements of nature that he still exists.' But the ancient rocks gave up dark imprints of bones after bone that eventually made extinctions, if not the catastrophes that might cause them, an inescapable conclusion. Layers of rock had captured the ghostly outlines of many species that no longer walked the Earth, including what appeared to be primitive forms of man and the remains of his early arsenal.

In a letter written to John Stephens Henslow while on the Beagle voyage, Charles Darwin described his discovery of a mastodon, an enormous and extinct relative of the mammoth. He also happened on the teeth and lower jaw of a huge ground sloth alongside the remains of numerous giant creatures. Darwin did not directly propose the human hunter as the culprit in the disappearance of these lumbering creatures, but others writing in the decades before and after the publication of his theories were more explicit in their claims. Contemporaries like Scottish zoologist John Fleming recognized that the visible effects of humanity on the world's species demonstrated our potential to be the primary cause of extinctions. Whether a savage or a nobleman, Fleming claimed, man was powerfully motivated to pursue a destructive campaign against his fellow residents on the globe. In 1825, Professor Joel Allen published *The History of the American Bison*, which mourned man's ruthless extermination of the bison throughout vast stretches of the continent. Contemporaries like Miller Christy, whose census of the species found only a thousand remained, backed up his work especially as it emerged that in the years following the construction of the transcontinental railways, hunters slaughtered huge numbers to meet the increasing opportunities to trade skins. In 1848, the dodo bird of Mauritius, the first icon of extinction by humans, became widely known through the publication of *The Dodo and its Kindred* by the English naturalist Hugh Strickland and his colleague Alexander Melville. And then, in the latter half of the nineteenth century, George Perkins Marsh published his account of the effects of man on the natural world, which gave further grounds for a new way of considering extinction. 'Man is everywhere a disturbing agent . . .' he wrote. 'Wherever he plants his foot, the harmonies of nature are turned to discords.'

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A little under twenty years after my first visit to the Natural History Museum, I stood crouched inside a gigantic rusting cast-iron vat, one corroding feature of the global whaling industry that endangered the blue whale - an industry now itself, well-nigh extinct. Grytviken, the first shore whaling station in the Southern

Ocean, lay in ruins before the tattered mountains and mewling glaciers of the subantarctic islands of South Georgia. The colours of the landscape were blunt and decisive. Reds, whites and rich, mineral greys, and a gash of blue as if a strip of cloud had been torn away to reveal the bright sky beneath. Memories of Grytviken's violent past eroded across the glacial scene, steadily breaking down into nonsensical fragments. I felt overwhelmed by the desire to make sense of the decay, to salvage the relevance of the place before the censoring actions of snow and ice buried it.



My old, half-forgotten fascination with the blue whale had led me here, to the slaughtering-grounds of thousands of whales. But now a different poignancy tainted my interest. Many of the life forms on display in the Natural History Museum died out in mass extinctions during ages in which our species didn't even lurk in promise. Huge extinctions like these were terrifying, exceptional events in the ancient past. But in the years after those early visits to the museum, I became aware that I was living through another mass extinction of animals and plants without even knowing it, this one due to human behaviour. I wanted to explore the idea of extinction in the light of this new, sobering reality.

Before the journey that took me to Grytviken, I was living in Cornwall, near Penzance, a town at the south-west extremity of Britain, a stormy place ringing constantly with the sound of boat masts in the wind. Rows of granite buildings and

Georgian merchants' houses peered out on the Atlantic Ocean, lines of profit strung from the sea. The whole landscape expressed the once intimate but now almost entirely broken relationship of the inhabitants to the natural world. Everywhere across the county were relics of this former closeness, visible in crumbling structures and discarded tools, in crooked patterns imposed on the landscape. I began to think about what these ruins signified, the losses inherent in the deft sufficiency of modern life. It was here that I was confronted by my own fragmented connection to nature. I began compiling notes on the subject of extinction, from the philosophers who grappled with the purpose of life and concluded that humans lay at its heart, to the poets of the eighteenth and nineteenth centuries who, faced with the lightning appearance of industrialization, saw nature as the antidote to the corrupt forces of civilization. From Aristotle to Ralph Waldo Emerson, Cicero to Percy Bysshe Shelley, the way people viewed their relationship to nature affected how they lived with it: destructively, admirably, thoughtlessly. I began to question whether my own ignorance of nature was associated with the damage societies wrought on it.

My chief interest was in gathering a history of how we had become so destructive to the natural world and its diversity. But this curiosity, in its turn, sowed the seeds of other questions. What were our emotional responses to disappearances? And what did such responses mean for the kind of animal we had been in the past or might become in the future? My search for answers took me from Cornwall to the freezing regions of Antarctica and the Arctic, and from a small, extraordinary, uninhabited island in the archipelago of the Falkland Islands to the lively assemblies of New York. Although separated by thousands of miles, the unique histories of these places kept company through the ages, each touching on and deepening the matter of extinction.

The First Peregrination

West Penwith, Cornwall

Wild flowers

Although archaeologists uncovered evidence of early man's potential to exterminate vulnerable wildlife, the endangerment or extinction of species began to accelerate in the later stages of human history, around the time of the voyage of Captain Cook in the eighteenth century. As industrialization progressed, Europe lost a staggering proportion of its natural habitat, which restricted and in some cases eradicated many species that relied on such wetlands and grasslands, forests and waterways. The pattern of destruction spread elsewhere. During my childhood, I came across a book in my father's study, a large burgundy hardback with its leather spine gilded with the title, Longman Illustrated Animal Encyclopedia. Its pages infused me with the fever of creation. I spent years absorbed by it, tantalized by the extraordinary, dangerous and beautiful kinds of life that existed at the same time as me. The Linophryne ar-borifera, a small blue fish dwelling in the depths of oceans with a seaweedy beard and a ghostly false eye hovering above its head. The legless skink of Madagascar, with visor eyes shielding it from dust as it burrowed. The two-legged worm lizard of Mexico, with its long, corpulent tail. Beside some of the descriptions were the letters E, V and R, which stood for Endangered, Vulnerable or Rare. The book's introduction explained that these symbols derived from the findings of the International Union for the Conservation of Nature (IUCN), founded in 1948. 'Many of the world's animal species are in danger of extinction,' the author stated.

Those bizarre and magnificent animals threatened with extinction began to intrigue me the most. The pink-fairy armadillo of Argentina, a tiny, stubby creature, mantled in shell-pink armour. The peculiar aye-aye, one of a kind, with long, searching fingers adapted for life in trees. The axolotl, with scarlet eyes and flimsy pale pink legs and feet, feathery gills and a blue blade of tail. As I looked at the illustrations, I felt a simple indignation that such odd and unrepeatably beautiful creatures would cease to exist.

During the latter half of the twentieth century, the IUCN began gathering information about the world's species of plants and animals. The researchers discovered that over-fishing, pollution and coastal development were forcing numerous sea creatures into a critically reduced state. The destruction or alteration of habitat through agricultural intensification, construction for tourism and industrial expansion was endangering a third of amphibians, more than one in eight birds and nearly a quarter of all mammals investigated. Water extraction and pollution threatened freshwater fish around the world, especially in places like southern Africa. The deliberate or accidental introduction by humans of alien

species overpowered huge numbers of native species. Industrial logging in tropical regions put species of dragonfly and damselfly at the risk of extinction. In the oceans, more than a quarter of the world's reef-building corals were on the brink of disappearing. These gnarled underworlds of many species of invertebrates and fish were foundering due to bleaching and disease as coastal development and pollution escalated. The world's forests, especially stands of conifers, and cycads, those living, flowerless fossils that millions of years later untouched, endured significant threats from agriculture and logging.

While I began to despair at our species' ruinous potential, I also experienced hope as our expanding moral concerns included a willingness to protect the life forms living alongside us. Some animals such as *Equus ferus*, the wild horse, had come back from the brink following the efforts of conservationists. The fates of those creatures that had mesmerized me as a child were now monitored attentively. The pink-fairy armadillo was protected under regional and national legislation in Argentina, guarded inside the Lihué Calel National Park. The habitat of the axolotl was being rejuvenated through the Parco Ecologico Xochimilco. I was puzzled by what prompted such acts of salvation in an otherwise lethal world of species.

Extinctions appeared to fascinate us, and I was interested in exploring that fascination and its relationship to our capacity to limit our destructive potential. For me, these were clues to our character as a species and our affinity with nature. I began to consider the haunting or arresting signs of mutability in the landscape and wondered why they aroused people's curiosity and filled them with tender feelings. I became convinced that the nostalgic sensation many people experience for things both disappearing and eternally lost might prove essential to fostering a more favourable approach to nature.

I was then living about four miles from Penzance, working in a cabin on Ding Dong Moor, a small strid of tumbledown farms, mining cottages and Neolithic ruins. The cabin was at the bottom of an unbroken strip of ground, the once clipped order of an old garden still detectable through its wildness. By the roadside stood the striking remains of a tower-like building, its glassless window framing the distant and fitful sea. Feuding elements of wind and rain had reduced the stone to rubble and slime. A signpost in the lay-by identified the structure as the ruins of Ding Dong mine, one of the oldest tin mines in Cornwall. Years had obscured the origins of the mine's name. Through the long winter months, gales unleashed the sea waters from their confinement, demolishing any sense of ocean and sky. Mists steeped each day, hushing up the Earth. This old building and its history were becoming naturalized to the soils. In time, there would be nothing left but the eye's uncluttered view of the moors and a nonsensical name on a map.

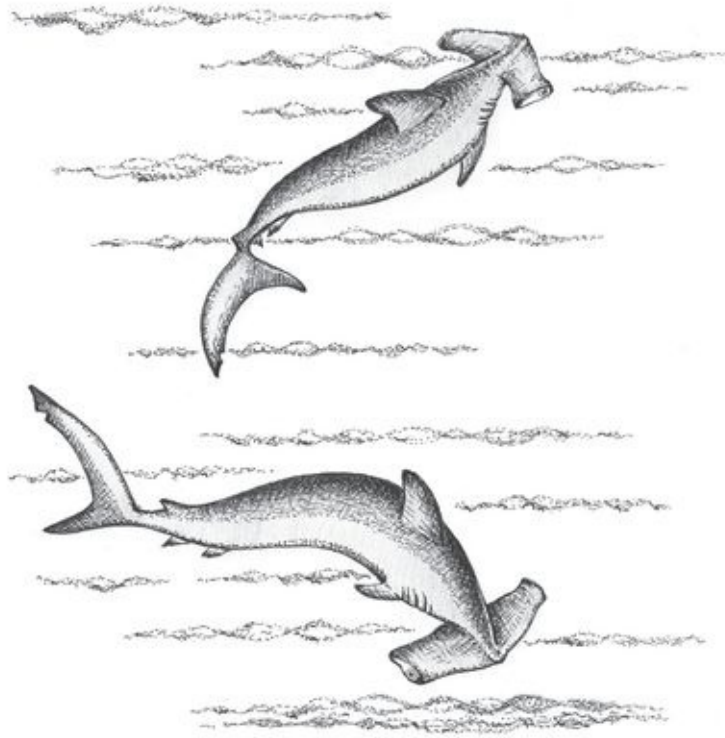
Ding-dong! Merry, merry, go the bells, ding-dong!
Ding-dong! Over the heath, over the moor . . .

The wrecked mine came to focus my first ideas about extinction because it represented both the forces involved in our shattering effect on nature and the regret inspired by loss. Inside the cabin, there was a makeshift kitchen, a faded

floral sofa bed and a desk. Rainwater had soaked through the window frames and crept down the panes, spreading into little deltas on the wooden sill. On the far side of the desk, I balanced a mound of books to read during my stay, including two claret-coloured leather volumes of English poetry. My view from the desk was of the defeated garden, the moorland snarled by bracken and gripping mists, the faint unrest of the sea. For the first few weeks, the weather was relentlessly grim. The rain, dense and sooty, struck down the view, sealing me inside the cabin and my thoughts. During this confinement, my eyes would leave my page and stare absent-mindedly at the landscape before me. When thoughts resurfaced, they were usually concerned with what I'd been reading moments before. The ancient granites that propped up the moorland, the tough thrust of Cornwall in which the minerals of the region's former prosperity had lain. Three hundred million years ago, these rocks boiled up to domicile in this landscape. Three hundred million years ago! A world in which early forms of insects still dreamed of flight and the boomerang skull of the newt-like *Diplocaulus salamandroides* was not yet a ghost in the grit.

Time bound meshes of natural history into the thickness of these ancient rocks. Curiosity or enterprise led people to rupture them, unsealing ancient realities that revolutionized their minds. These rocks had pushed up through the border of the Permian and Triassic eras, when the unstoppable progress of mass extinction eradicated nearly all of the era's species, disappearances that were then succeeded by the erratic inventiveness of living cells. Their ceaseless innovation led to new forms – those strange anatomical conclusions of nature that captivate children's imaginations. For example, the small amphibian *Diplocaulus salamandroides*, whose pronged skull seemed to want to split into two minds, faintly echoed in the hammerhead shark, a beast that fascinated me so thoroughly as a child that I implored my mother to draw it over and over again, as if each trace of its silhouette might vindicate its freakish proportions.

After a few weeks of confinement, jitteriness got the better of me. I abandoned my books and stepped outside, ignoring the blustery weather. Bundled in waterproofs, I left the cabin and took the path across the heath that bordered the ruined engine house. It was an early morning in March. Mists swung between the hedgerows, homesick for the seas. The wintering birds sang through a dawn still struggling free of the cold months. The tiny shadow of a solitary buff-brown bumblebee fled across a bed of nettles. The moor wheezed and snapped with haphazard actions of survival and a recent fall of rain weighing on the tangle of plants and undergrowth.



I was acutely aware of being a stranger to the moorland. I had no words for the sounds that I heard. In my ignorance, each birdsong entered my consciousness as a sweet but secret music. All clues as to the type of bird were beaten into the background. Each bee was just a bee, small and sombre, directionless. I wished I could muster the words for the things I saw and heard in an hour or so's brief ramble - the creatures that showed themselves and the telltale signs of other shyer of my footfall. The plants that flowered and thorned, the tiny green promises of the coming season. But I couldn't, without falsifying the memory. I was bereft of speech for this landscape, suffering from a kind of amnesia shared with others of my generation. There was so much we didn't know about the natural world around us. What were the tiny birds that pinged out of the bracken as if my step triggered them against their will? Did these little chirring creatures live inside the moor's prickly clutch all year long? Or was their indignant flight a harbinger of spring? I could see acres of nameless, incoherent greenery. When would the pluckiest wild flowers appear in defiance of late frosts? And what seasonal eruptions of colour would alter the complexion of the moors throughout the year? My perception confined me to the present.

I recognized gorse and bracken but in the careless, almost indifferent way that I could put a name to daisies or buttercups. I didn't know their influence on the other species or the plants most likely to flower beside them. Why should I? Somewhere in my childhood, I'd learned from the constitution of my environment that the natural world and human nature somehow warranted separation and that each existed, perhaps even existed to advantage, without the other. But the more it struck me just how little I knew about this landscape, the less my ignorance seemed obligatory or reasonable.

Extinctions were visible across the moor, the shabby outlines of ways of life now

long forgotten. If I'd had insight into the landscape, I might have been sensitive to other extinctions that had left no trace – quiet once filled by particular birdsong, the deadened hum of an insect, the stripped earth of a familiar flower. All I could grasp were signs of human activities that were now obsolete. Old pathways blurred by mud through which farmers once chivvied their grazing animals, scruffy hedges fouled with rusting wire. There was a stone feeding trough purloined now by birds, their brown heads bowing to the water like worshippers. A gauze of bushes and moss stretched over ancient field systems, greying into the distance. There, the dark back of the sea slowly heaved. The soft scars of previous generations' farming hinted at losses far greater than I could understand. Memories and skills that had vanished, the discrimination of seasons and assessments of the land's potential that crushed or occasionally assisted the abundance of nature. I paused outside an old ruined farmhouse, the rain knocking futilely on its entrance. Ivy had spread across the face of the house and on to the roof, a slow green wave of interment. Staring at the cracked windows battered into blank holes by the wind, I wondered who had once worked the land here. And how the place would have appeared when still a working farm. Why had the farmers abandoned it? Did anything remain of their knowledge in the lives and experience of their descendants?

Even within my own family, there once existed a greater recognition of the natural landscape. Somehow, it was not passed on to my generation. My grandmother seemed to have an inborn sense of what had been forsaken in the decades between us. For as long as I knew her, she experienced a powerful nostalgia for the rural surroundings of her childhood, the source of her greater sensitivity to nature. She recorded her feelings in a large, pale green notebook with the title, *Book of Memories*, softly smudged in blue and red crayon. On the first page, she listed the births of her family members, siblings whom I had heard about but never met: Dorothy, Marjorie, George. By each of these was the name Kingsclere, the village in Hampshire where they were all born. She spoke of it as an unspoiled, peaceful place, a rustic landscape whose faults and misfortunes had been softened by time.

John Porter, the most successful horse-trainer of the Victorian age, wrote an autobiography in which he described the flowers of Kingsclere: harebells, wild hyacinth, wild thyme and saxifrage. He regarded it to be a 'wonderful county for birds', noting the presence of 'warblers and whistlers and twitterers', and particularly the grey plover, the gentle augur of spring. Porter had his stables at Cannon Heath, near Kingsclere, where there was a rookery, and he often saw kestrels and heard the cry of curlews, the 'jug-jug' of nightingales. The 'rustic merriment' of an agricultural fair took place twice annually, and there was a market of fresh, local produce every Tuesday. Porter wrote the book in the early nineteenth century, when Kingsclere was an enclave of cottages with wooden dormer windows and gardens bounded by flint walls. The ancient Norman custom of the curfew bell still tolled from the old church. There were wheelwrights' shops and saddlers, and general stores selling everything from flour and bacon fat to starch and powder blue. In those days, a Kingsclere breakfast was a hearty

confection of trout, steak and strawberries.

My grandmother's family moved to the village just before the First World War. Horses were still the dominant means of transport and she noted in her Book of Memories that 'Aunt Ada could drive a four-in-hand easily.' I tried to imagine the gruff breaths of the horses, the seasoned stench of their ordure. Her father owned a grocery and bakery on Swan Street, one of the chief roads through the village. Fresh produce was supplied by nearby farms, which, along with several watermills, blacksmiths and a tannery on North Street, employed many of the villagers. The farms provided milk and cheese, along with meat and skins from the herds, and timber, which was sawn locally. Butter was churned on the farms and chilled against the dank edges of wells. Specialized workers met the needs of the farmers, such as a Mr Bennet, who fashioned by hand halters for horses, reins for ploughs, and pig nets. I could remember my grandmother's descriptions of the harvests, when rows of brawny horses pulled binders, hugging together the tawny coloured corn. She mourned the loss of the farming land, much of which disappeared under roads and houses in the years after her infancy, although she did recognize that it was a hard life for labourers. Workers often rose long before dawn and walked several miles, the demand for sleep hanging like ballast from their bodies, slowing their gait, before starting the working day on the farms. But despite the hardships, she believed her generation possessed quite effortlessly some things that had disappeared from our lives. My grandmother lived half her childhood outside, where she felt safe and confederate somehow. She understood that everything she and her family possessed relied on the dormant fertility of the Earth, the scramble of light, rainfall, birds, insects, worms, flowers.

What she spoke of most were the days spent in Hawkhurst woods, close to the village, and of the wild flowers that grew there. Her daily excursions through the fields endowed her with her knowledge of natural history. Doubtless, she was less conversant with the natural world than the generation before her, but she passed on what she knew to my mother and her siblings. Her favourite wild flower was the common dog-violet, whose delicate blue flash appeared in the fields that led to Hawkhurst woods in the early summer and again at the summer's end. Doubtless my mother knew less about the flowers and grasses than her mother did and spent fewer hours outside. Yet she still felt certain about her favourite wild flower, the bluebell. I knew little of the wild flowers that grew near my home, whether rare or common, and nothing of their season's rituals. My mother sought to pass on her sensitivity to our native flora to my sister and me on our walks in the woods and across the Berkshire Downs. But she later spoke of a strange struggle, of outward causes and influences that overpowered her own ordinary, motherly energies, a lessening, perhaps, of the public prominence given to this knowledge which somehow sealed off our minds. And so, as I looked out across the moors and asked the question of myself, I realized I didn't have a favourite wild flower. I simply did not know enough of them to make the choice.

In my grandmother's old age, this bucolic early history was so vibrant for her that it was as if the trees and flowers grew again, taking the place of her shadow. Her mind was almost gone, crumbling through dementia each day into the moor.

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