The way into the underland is through the riven trunk of an old ash tree.

Late-summer heatwave, heavy air. Bees browsing drowsy over meadow grass. Gold of standing corn, green of fresh hay-rows, black of rooks on stubble fields. Somewhere down on lower ground an unseen fire is burning, its smoke a column. A child drops stones one by one into a metal bucket, *ting*, *ting*, *ting*.

Follow a path through fields, past a hill to the east that is marked by a line of nine round burial barrows, nubbing the land like the bones of a spine. Three horses in a glinting cloud of flies, stock-still but for the swish of a tail, the twitch of a head.

Over a stile in a limestone wall and along a stream to a thicketed dip from which grows the ancient ash. Its crown flourishes skywards into weather. Its long boughs lean low around. Its roots reach far underground.

Swallows curve and dart, feathers flashing. Martins criss-cross the middle air. A swan flies high and south on creaking wings. This upper world is very beautiful.

Near the ash's base its trunk splits into a rough rift, just wide enough that a person might slip into the tree's hollow heart – and there drop into the dark space that opens below. The rift's edges are smoothed to a shine by those who have gone this way before, passing through the old ash to enter the underland.

Beneath the ash tree, a labyrinth unfurls.

Down between roots to a passage of stone that deepens steeply into the earth. Colour depletes to greys, browns, black. Cold air pushes past. Above is solid rock, utter matter. The surface is scarcely thinkable.

The passage is taken; the maze builds. Side-rifts curl off. Direction is difficult to keep. Space is behaving strangely – and so too is time. Time moves differently here in the underland. It thickens, pools, flows, rushes, slows.

The passage turns, turns again, narrows – and leads into surprising space. A chamber is entered. Sound now booms, resonates. The walls of the chamber appear bare at first, but then something extraordinary happens. Scenes from the underland start to show themselves on the stone, distant from one another in history, but joined by echoes.

In a cave within a scarp of karst, a figure inhales a mouthful of red ochre dust, places its left hand against the cave wall – fingers spread, thumb out, palm cold on the rock – and then blows the ochre hard against the hand's back. There is an explosion of dust – and when the hand is lifted its ghostly print remains, the stone around having taken the red of the ochre. The hand is shifted, more dust is blown and another pale outline is left. Calcite will run over these prints, sealing them in. The prints will survive for more than 35,000 years. Signs of what? Of joy? Of warning? Of art? Of life in the darkness?

In the shallow sandy soil of northern Europe, some 6,000 years ago, the body of a young woman – dead in childbirth along with her son – is lowered gently into a grave. Next to her is laid the white wing of a swan. Then onto the wing is placed the body of her son, so that the baby is doubly cradled in death – by the swan's feathers

and his mother's arms. A round mound of earth is raised to mark their burial place: the woman, the child and the white swan's wing.

On an island in the Mediterranean 300 years before the founding of the Roman Empire, a metalworker completes the design of a silver coin. The coin's face shows a square labyrinth with a single entrance on its upper edge and a complex path to its centre. The walls of the labyrinth – like the rim of the coin – are slightly raised and polished to a sheen. Tooled into the labyrinth's centre is the figure of a creature with the head of a bull and the legs of a man: the Minotaur, waiting in darkness for whatever comes next.

Six hundred years later, a young woman sits for a portrait painter in Egypt. She has dressed most handsomely for the sitting. She has strong dark eyebrows and wide dark eyes, almost black. Her hair is pulled back from her forehead by a metal band topped with a gold bead, and she wears a golden scarf and brooch. The painter works with hot beeswax, gold leaf and coloured pigments, layering them onto wood. He is creating the young woman's death image. When she dies it will be wrapped into the bands of cloth used to mummify her corpse such that it takes the place of her real face. As her body decays beneath its swaddling, the portrait will remain un-aged. It is well to do such things early, when one looks most glowing. Her body will be placed in a necropolis – a city of the dead built at the entrance to a sunken depression of desert, in a buried chamber lined with limestone and covered with quartzite slabs to deter grave robbers, close to vaults that hold the mummified corpses of more than a million ibises.

Beneath a plateau in southern Africa, late in the nineteenth century, miners crawl through miles of narrow tunnel – cut deeper underground here than anywhere else on Earth at this time – lugging ore from a sunken reef of gold. Some of these men, who have

migrated to the area in their thousands to work, will die soon in rockfalls and accidents. More will die slowly of silicosis from breathing the rock dust down there in the killing dark, year after year. Here the human body is largely disposable in the view of the corporations that own the mine and the markets that drive it: a small, unskilled tool of extraction to be replaced when it fails or wears out. The ore the men bring up is crushed and smelted, and the wealth it yields lines the pockets of shareholders in distant countries.

In a cave in the foothills of the Indian Himalayas not long after Partition, a young woman meditates sixteen hours a day, for seventy-five days. She sits stone-still while meditating, save for her mouth, which moves as she murmurs mantras. She emerges most often at night; when it is cloudless the Milky Way can be seen spilling across the sky above the peaks. She lives on water drunk with cupped hands from a sacred river, and on foraged wild berries and fruits. The mantras, the solitude and the darkness bring perceptions that are new to her, and she experiences a profound change in her vision. When at last she completes her retreat she feels vast as the skies, old as the mountains, formless as starlight.

Thirty years ago a boy and his father use the claw of a hammer to prise up a floorboard in a house they are soon to leave. They have made a jam-jar time capsule. Into the jar the boy has placed objects and messages. The die-cast metal model of a bomber aeroplane. The outline of his left hand traced in red ink on plain paper. A self-description for whoever finds the jar – *Quite tall for my age, very blonde hair, almost white. Biggest fear, nuclear war* – written in pencil on a notebook page. A stopped watch with luminous hands and dial, around which he likes to cup his hands to see the numbers glow. He pours a handful of rice into the jar to absorb moisture, screws the

jar's brass lid tightly shut, puts it in its hiding place and nails the floorboard back down.

Deep in an extinct volcano a tunnel network has been bored above a crustal fault known as Ghost Dance. Access drifts incline through tilted strata to level out in a repository zone, organized into emplacement corridors. The intent is to inter high-level nuclear waste in these corridors: radioactive uranium pellets encased in iron, then encased in copper, then buried above the Ghost Dance fault to pulse out their half-lives for millions of years to come. The timescale of the hazard is such that those responsible for entombing this waste must now face the question of how to communicate its danger to the distant future. This is a risk that will outlast not only the life of its makers but perhaps also the species of its makers. How to mark this site? How to tell whatever beings will come to this desert place that what is kept in this rock sarcophagus is desperately harmful, is *not* of value, *must never be disturbed*?

And on a muddy ledge, two and a half miles into the cave system of a mountain in which they have become trapped by flood waters, twelve boys and their football coach sit in utter blackness, conserving the batteries of their phones, waiting day after day to see if the waters will rise or fall – or if by miracle someone will come to rescue them. With each passing hour the oxygen in their chamber is reduced by their breathing, and carbon dioxide levels increase. Above the mountain the monsoon clouds build, threatening more rain. Outside the mountain thousands of rescuers from six countries gather. At first they do not know if the boys are alive. Then they find handprints in mud on the walls of a chamber two miles into the system. Hope is given. Divers push further and further along the flooded passageways. Nine days after entering the mountain, the boys hear sounds coming from the river that flows past their ledge. Then they

see lights glowing in the water. Bubbles seethe up. The lights rise. A man breaks the surface. The boys and their coach blink in the beam of his head-torch. One of the boys raises a hand in greeting, and the diver raises his in reply. 'How many of you?' asks the diver. 'Thirteen,' one replies. 'Many people are coming,' says the diver.

So these scenes from the underland unfold along the walls of this impossible chamber, down in the labyrinth beneath the riven ash. The same three tasks recur across cultures and epochs: to shelter what is precious, to yield what is valuable, and to dispose of what is harmful.

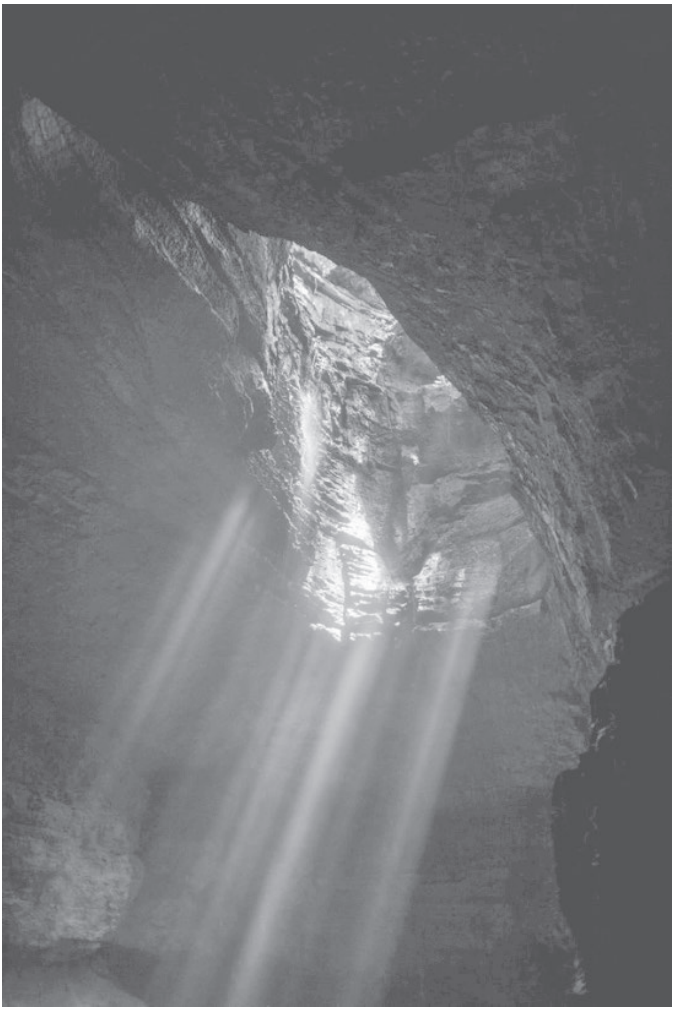
Shelter (memories, precious matter, messages, fragile lives).

Yield (information, wealth, metaphors, minerals, visions).

Dispose (waste, trauma, poison, secrets).

Into the underland we have long placed that which we fear and wish to lose, and that which we love and wish to save.

1
Descending



We know so little of the worlds beneath our feet. Look up on a cloudless night and you might see the light from a star thousands of trillions of miles away, or pick out the craters left by asteroid strikes on the moon's face. Look down and your sight stops at topsoil, tarmac, toe. I have rarely felt as far from the human realm as when only ten yards below it, caught in the shining jaws of a limestone bedding plane first formed on the floor of an ancient sea.

The underland keeps its secrets well. Only in the last twenty years have ecologists succeeded in tracing the fungal networks that lace woodland soil, joining individual trees into intercommunicating forests – as fungi have been doing for hundreds of millions of years. In China's Chongqing municipality, a cave network explored in 2013 was found to possess its own weather system: ladders of stacked mist that build in a huge central hall, cold fog that drifts in giant cloud chambers far from the reach of the sun. A thousand feet underground in northern Italy, I abseiled into an immense rotunda of stone, cut by a buried river and filled with dunes of black sand. Traversing those dunes on foot was like trudging through a windless desert on a lightless planet.

Why go low? It is a counter-intuitive action, running against the grain of sense and the gradient of the spirit. Deliberately to place something in the underland is almost always a strategy to shield it

from easy view. Actively to retrieve something from the underland almost always requires effortful work. The underland's difficulty of access has long made it a means of symbolizing what cannot openly be said or seen: loss, grief, the mind's obscured depths, and what Elaine Scarry calls the 'deep subterranean fact' of physical pain.

A long cultural history of abhorrence exists around underground spaces, associating them with 'the awful darkness inside the world', in Cormac McCarthy's phrase. Fear and disgust are the usual responses to such environments; dirt, mortality and brutal labour the dominant connotations. Claustrophobia is surely the sharpest of all common phobias. I have often noticed how claustrophobia – much more so than vertigo – retains its disturbing power even when being experienced indirectly as narrative or description. Hearing stories of confinement below ground, people shift uneasily, step away, look to the light – as if words alone could wall them in.

I still remember as a ten-year-old reading the account, in Alan Garner's novel *The Weirdstone of Brisingamen*, of two children escaping danger by descending the mining tunnels that riddle the sandstone outcrop of Alderley Edge in Cheshire. Deep inside the Edge, the embrace of the stone becomes so tight that it threatens to trap them:

> They lay full length, walls, floor and roof fitting them like a second skin. Their heads were turned to one side, for in any other position the roof pressed their mouths into the sand and they could not breathe. The only way to advance was to pull with the fingertips and to push with the toes, since it was impossible to flex their legs at all, and any bending of the elbows threatened to jam the arms helplessly under the body. [Then Colin's] heels jammed against the roof: he could move neither up nor down and the rock lip dug into his shins until he cried out with the pain. But he could not move . . .

Those passages took cold grip of my heart, emptied my lungs of air. Rereading them now, I feel the same sensations. But the situation also exerted a powerful narrative traction upon me – and still does. Colin could not move and I could not stop reading.

An aversion to the underland is buried in language. In many of the metaphors we live by, height is celebrated but depth is despised. To be 'uplifted' is preferable to being 'depressed' or 'pulled down'. 'Catastrophe' literally means a 'downwards turn', 'cataclysm' a 'downwards violence'. A bias against depth also runs through mainstream conventions of observation and representation. In his book *Vertical*, Stephen Graham describes the dominance of what he calls the 'flat tradition' of geography and cartography, and the 'largely horizontal worldview' that has resulted. We find it hard to escape the 'resolutely flat perspectives' to which we have become habituated, Graham argues – and he finds this to be a political failure as well as a perceptual one, for it disinclines us to attend to the sunken networks of extraction, exploitation and disposal that support the surface world.

Yes, for many reasons we tend to turn away from what lies beneath. But now more than ever we need to understand the underland. 'Force yourself to see more flatly,' orders Georges Perec in *Species of Spaces*. 'Force yourself to see more deeply,' I would counter. The underland is vital to the material structures of contemporary existence, as well as to our memories, myths and metaphors. It is a terrain with which we daily reckon and by which we are daily shaped. Yet we are disinclined to recognize the underland's presence in our lives, or to admit its disturbing forms to our imaginations. Our 'flat perspectives' feel increasingly inadequate to the deep worlds we inhabit, and to the deep time legacies we are leaving.

We are presently living through the Anthropocene, an epoch of

immense and often frightening change at a planetary scale, in which 'crisis' exists not as an ever-deferred future apocalypse but rather as an ongoing occurrence experienced most severely by the most vulnerable. Time is profoundly out of joint – and so is place. Things that should have stayed buried are rising up unbidden. When confronted by such surfacings it can be hard to look away, seized by the obscenity of the intrusion.

In the Arctic, ancient methane deposits are leaking through 'windows' in the earth opened by melting permafrost. Anthrax spores are being released from reindeer corpses buried in once-frozen soil, now exposed by erosion and warmth. In the forests of Eastern Siberia a crater is yawning in the softening ground, swallowing tens of thousands of trees and revealing 200,000-year-old strata: local Yakutian people refer to it as a 'doorway to the underworld'. Retreating Alpine and Himalayan glaciers are yielding the bodies of those engulfed by their ice decades before. Across Britain, recent heatwaves have caused the imprints of ancient structures – Roman watchtowers, Neolithic enclosures – to shimmer into view as crop-marks visible from above: aridity as X-ray, the land's submerged past rising up in parched visitation. Where the River Elbe flows through the Czech Republic, summer water levels have recently dropped so far that 'hunger stones' have been uncovered – carved boulders used for centuries to commemorate droughts and warn of their consequences. One of the hunger stones bears the inscription '*Wenn du mich siehst, dann weine*': 'If you see me, weep.' In north-west Greenland an American Cold War missile base, sealed under the ice cap fifty years ago and containing hundreds of thousands of gallons of chemical contaminants, has begun to move towards the light. 'The problem,' writes the archaeologist Þóra Pétursdóttir, 'is not that things become buried deep in strata – but that they endure, outlive us, and come back at us with a

force we didn't realise they had . . . a dark force of "sleeping giants"', roused from their deep time slumber.

'Deep time' is the chronology of the underland. Deep time is the dizzying expanses of Earth history that stretch away from the present moment. Deep time is measured in units that humble the human instant: epochs and aeons, instead of minutes and years. Deep time is kept by stone, ice, stalactites, seabed sediments and the drift of tectonic plates. Deep time opens into the future as well as the past. The Earth will fall dark when the sun exhausts its fuel in around 5 billion years. We stand with our toes, as well as our heels, on a brink.

There is dangerous comfort to be drawn from deep time. An ethical lotus-eating beckons. What does our behaviour matter, when *Homo sapiens* will have disappeared from the Earth in the blink of a geological eye? Viewed from the perspective of a desert or an ocean, human morality looks absurd – crushed to irrelevance. Assertions of value seem futile. A flat ontology entices: all life is equally insignificant in the face of eventual ruin. The extinction of a species or an ecosystem scarcely matters in the context of the planet's cycles of erosion and repair.

We should resist such inertial thinking; indeed, we should urge its opposite – deep time as a radical perspective, provoking us to action not apathy. For to think in deep time can be a means not of escaping our troubled present, but rather of re-imagining it; countermanding its quick greeds and furies with older, slower stories of making and unmaking. At its best, a deep time awareness might help us see ourselves as part of a web of gift, inheritance and legacy stretching over millions of years past and millions to come, bringing us to consider what we are leaving behind for the epochs and beings that will follow us.

When viewed in deep time, things come alive that seemed inert.

New responsibilities declare themselves. A conviviality of being leaps to mind and eye. The world becomes eerily various and vibrant again. Ice breathes. Rock has tides. Mountains ebb and flow. Stone pulses. We live on a restless Earth.

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The oldest of underland stories concerns a hazardous descent into darkness in order to reach someone or something consigned to the realm of the dead. A variant to the *Epic of Gilgamesh* – written around 2100 BC in Sumeria – tells of such a descent, made by Gilgamesh's servant Enki to the 'netherworld' on behalf of his master to retrieve a lost object. Enki sails through storms of hailstones that strike him like 'hammers', his boat trembles from the impact of waves that attack it like 'butting turtles' and 'lions', but still he reaches the netherworld. There, however, he is promptly imprisoned – only to be freed when the young warrior Utu opens a hole to the surface and carries Enki back out on a lofting breeze. Up in the sunlight Enki and Gilgamesh embrace, kiss, and talk for hours. Enki has not retrieved the lost object, but he has brought back precious news of vanished people. 'Did you see my little stillborn children who never knew existence?' asks Gilgamesh desperately. 'I saw them,' answers Enki.

Similar stories recur throughout world myth. Classical literature records numerous instances of what in Greek were known as the *katabasis* (a descent to the underland) and the *nekyia* (a questioning of ghosts, gods or the dead about the earthly future), among them Orpheus' attempt to retrieve his beloved Eurydice from Hades, and Aeneas' voyage – led by the Sibyl, protected by the Golden Bough – to seek counsel with the shade of his father. The recent rescue of the

Thai footballers from their lonely chamber far inside a mountain was a modern *katabasis*: the story seized global attention in part because it possessed the power of myth.

What these narratives all suggest is something seemingly paradoxical: that darkness might be a medium of vision, and that descent may be a movement towards revelation rather than deprivation. Our common verb 'to understand' itself bears an old sense of passing beneath something in order fully to comprehend it. 'To discover' is 'to reveal by excavation', 'to descend and bring to the light', 'to fetch up from depth'. These are ancient associations. The earliest-known works of cave art in Europe – taking the form of painted ladders, dots and hand stencils on the walls of Spanish caves – have been dated to around 65,000 years ago, some 20,000 years before *Homo sapiens* are believed to have first arrived in Europe from Africa. Neanderthal artists left these images. Long before anatomically modern humans reached what is now Spain, writes one of the archaeologists responsible for the dating of this art, 'People were making journeys into the darkness.'

Underland is a story of journeys into darkness, and of descents made in search of knowledge. It moves over its course from the dark matter formed at the universe's birth to the nuclear futures of an Anthropocene-to-come. During the deep time voyage undertaken between those two remote points, the line about which the telling folds is the ever-moving present. Across its chapters, in keeping with its subject, extends a subsurface network of echoes, patterns and connections.

For more than fifteen years now I have been writing about the relationships between landscape and the human heart. What began as a wish to solve a personal mystery – why I was so drawn to mountains as a young man that I was, at times, ready to die for love of them – has unfolded into a project of deep-mapping carried out over

five books and around 2,000 pages. From the icy summits of the world's highest peaks, I have followed a downwards trajectory to what must surely be a terminus, exploring the storeys of place that lie beneath the surface. 'The descent beckons / as the ascent beckoned,' wrote William Carlos Williams in a late poem. It has taken me until the second half of my life to understand something of what Williams meant. In the underland I have seen things I hope I will never forget – and things I wish I had never witnessed. What I thought would be my least human book has become, to my surprise, my most communal. If the image at the centre of much that I have written before is that of the walker's placed and lifted foot, the image at the heart of these pages is that of the opened hand, extended in greeting, compassion or the making of a mark.

I have for some time now been haunted by the Saami vision of the underland as a perfect inversion of the human realm, with the ground always the mirror-line, such that 'the feet of the dead, who must walk upside down, touch those of the living, who stand upright'. The intimacy of that posture is moving to me – the dead and the living standing sole to sole. Seeing photographs of the early hand-marks left on the cave walls of Maltravieso, Lascaux or Sulawesi, I imagine laying my own palm precisely against the outline left by those unknown makers. I imagine, too, feeling a warm hand pressing through from within the cold rock, meeting mine fingertip to fingertip in open-handed encounter across time.

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Shortly before beginning the journeys recounted here, I was given two objects. Each came with a request, and it was a condition of the gift of these objects that I agreed to fulfil those requests.

The first of the objects is a double-cast bronze casket the size of a swan's egg, which sits heavy in the hand. It is a kist and what it contains is toxic. Its maker wrote his demons down on a sheet of paper: his hatreds, fears and losses, the pain he had inflicted on others and the pain others had inflicted on him – all that was worst in his mind. Then he burned the paper and sealed the ashes inside the casket. Then he double-cast the casket, giving it a second layer of bronze to increase the strength of the containment. That outer layer of bronze became pitted and encrusted in the process of its casting, such that it seemed to resemble either the surface of a planet or the weather above it. Then he drove four iron nails through the casket's centre, cutting off their ends and filing them flush. It is an exceptionally powerful object, which possesses a ritual intensity of creation. It could have been fashioned at any point in the past 2,500 years, but it was made only recently.

I was given the casket on the condition that I disposed of it in the deepest or most secure underland site that I reached – a place from which it could never return.

The second of the objects is an owl cut from a slice of whalebone. It is a talisman and what it connotes is magic. The minke whale from which the owl was taken had washed up dead on the shoreline of a Hebridean island. One of its rib bones was smoothed into cross-sections, each less than half an inch thick and six inches high. One of those cross-sections was then cut into the form of an owl with four bold strokes of a blade: two strokes for the eyes, and two for the wing lines. It is an exceptionally beautiful object, which possesses an Ice Age simplicity of making. It could have been fashioned at any point in the past 20,000 years, but it was made only recently.

I was given the owl on the condition that I carried it with me at all times in the underland, to help me see in the dark.

PART ONE

Seeing (Britain)

2
Burial
(*Mendips, Somerset*)

The bones of a child lie in darkness on a ledge of limestone. Sunlight has not seen this child for over 10,000 years. In that time, calcite has flowed like silver varnish from the rock around, chrysalizing the body.

A January day in 1797 and two young men are out rabbit-catching in the Mendip Hills of Somerset. They flush out a rabbit on the slope of a ravine. The rabbit runs and finds refuge in a jumble of boulders. The men are hungry; they want the rabbit. So they pull away some of the rocks – and are 'surprised with the appearance of a subterraneous passage'. They enter the passage, which leads them steeply into the limestone of the scarp and then opens into a 'large and lofty cavern, the roof and sides of which are most curiously fretted and embossed'.

Winter sun follows them down the passage and lights up the chamber. It is, they see, a charnel house. On the floor and ledges to their left are scattered bones and complete skeletons, 'lying promiscuously, almost converted into stone'. The relics shine with calcite, and dusting some of the bones is red ochre powder. A single large stalactite hangs from the chamber's ceiling which, when struck, rings like a bell, its peal echoing in the cave-space. The stalactite has reached down and begun to absorb one of the skeletons; embedded in it are a skull, a thigh bone and two teeth with the enamel still intact.

Also present in the cave are animal remains: the teeth of a brown bear, a barbed spear-point made from a red deer antler, and the bones of lynx, fox, wildcat and wolf. Votive objects have been interred here, too: sixteen periwinkle shells pierced so that they will hang spiral-outwards when worn against the body as a necklace; and a nest of seven pieces of fossil ammonite, the ends of their arcs rubbed smooth.

The human bodies, it will later be established, are more than ten millennia old, and among them are children and infants as well as adults. All show signs of chronic malnutrition. The adults stood little more than five feet tall. The children's molars were scarcely worn. Slowly, it becomes clear to those who study this mysterious place – now known as Aveline's Hole – that, far back in the Mesolithic, the cave was used as a cemetery over a period of around a century. Much of the world's water was then still locked up by glaciation. Sea levels were much lower. What we now call the Bristol Channel and much of the North Sea did not exist; one could walk north from the Mendips to Wales on dry land, or eastwards over Doggerland to France and the Netherlands.

The evidence from Aveline's suggests a shifting group of hunter-gatherers taking that area of the Mendips as their home range over two or three generations, and using the chamber as their mausoleum. These people – whose lives were short and unthinkably hard, who suffered from paucities of food and energy – made the effort and took the care to carry the bodies of their dead to this difficult hillside site, to place them within the chamber, to leave significant objects and the bones of creatures with them, and to open and then reseal the entrance with each new burial.

These wandering, hungry people wished for a secure location in which to entomb their dead – a place to which they could return over

time. No comparable cemetery is known to have been established in Britain for another 4,000 years.

We are often more tender to the dead than to the living, though it is the living who need our tenderness most.

~

'Mendip is mining country,' says Sean. 'It's also caving country. But above all it's burial country. There are hundreds of Bronze Age funeral barrows spread across this landscape, some joined with monuments and henges into large-scale ritual complexes. In one of the barrows an antiquarian called Skinner found an amber bead with a bee trapped inside it, preserved right down to the hairs on its legs.'

Late afternoon, early autumn, unseasonable heat. Air shimmering in the sun, car doors scalding to touch. But it is cool as a pantry in Sean and Jane Borodale's house, set down in the shadows of a quiet side-arm of Nettlebridge Valley. Board games are piled in teetering stacks in the porch. Mint, thyme and rosemary flourish in pots by the porch. A large ammonite is embedded in the front doorstep, polished by decades of footfall. And in the garden, hanging from the outstretched wings of a towering wooden totem pole, are the flayed skins of two men.

'Those are our caving suits,' says Sean, waving towards the skins. 'Strictly speaking, they're chemical hazmat suits. I sourced them from eastern Europe. They're ideal for our needs. You'll see.'

Sean, Jane and their two boys have lived in this fairy-tale cottage for several years. The former owner held seances here, believing she could speak through the veil to the dead. To the west of the house a wrinkled field rises up the scarp before disappearing into ash woods on the ridge line. A stream gurgles off the scarp and past the house.

I have come to the Mendips to learn how to see in the dark. Sean knows the Mendips profoundly well, above ground and below. He is a bee-keeper, a caver, a walker and a remarkable poet. He has curling black hair and is very gentle. For several years he has been working on a long series of poems or voicings that emerge from – and in some cases are written within – the underland of the Mendips: their lead mines, iron workings and limestone quarries, their many burial sites, their Cold War bunkers and the countless miles of natural cave and tunnel that honeycomb their bedrock. Sean is compelled by the great descent stories of underworld mythology – Dante and Virgil, Persephone and Demeter, Eurydice, Orpheus and Aristaeus (the keeper of bees) – and by the associated visionary powers of darkness and blindness. The poems he writes about the underland feel to me both unearthed and unearthly. In them deep time is given utterance, earth is stirred, stone speaks. In them, too, the dead are quickened briefly back to life by the poet's attention.

The Mendips rise south of Bristol and west of Bath. From their southern edge on a clear day, Glastonbury Tor can be seen across the water-bearing flatlands of the Somerset Levels. From west to east they stretch almost thirty miles, tapering down towards the sea at the Bristol Channel. Their geology is elaborate, but predominantly they are a limestone range – and limestone land, wrote Arthur Conan Doyle, 'is hollow . . . land; could you strike it with some gigantic hammer, it would boom like a drum, or possibly cave in altogether and expose some huge subterranean sea.'

The first fact of limestone is its solubility in water. Rain absorbs carbon dioxide from the air, creating a mild carbonic acid – just sharp enough to etch and fret limestone, given time. This fretwork deepens into limestone's surface perforations of gryke and clint, and also its hidden labyrinths of rift and chamber. Streams shape stone

with their energy. Thermal waters rise from within the earth, biting rock into form. Limestone landscapes are rich with clandestine places. They have the unexpected volumes of a lung's interior. Portals give access to their extensive underland: pots and sinkholes, swallets where streams vanish into their own beds. The great writer and cartographer of the west of Ireland, Tim Robinson, knows the deceptions of limestone better than almost anyone. After living on and mapping limestone for more than forty years, he concludes: 'I do not trust space an inch.'

'Let me show you the garden,' says Sean.

The cottage's land drops down to the valley's main stream. We stop at its bank. The water is so clear it can hardly be seen. Small trout fin in the current.

'It's a petrifying stream,' Sean says. 'There's so much calcium carbonate dissolved in it that any twigs or leaves snagged there soon pick up a white crust of stone.'

Green-black damselflies dance on the current. Horseflies cruise for blood.

'Look at this,' Sean says, pointing upwards. Where the lowest bough of an old alder meets its trunk, one end of a curved metal blade protrudes. The rest of the object is lost below the bark.

'It's a scythe. Someone hooked it up on here many decades ago and forgot about it. So the tree absorbed the blade, growing around it while the handle rotted away.'

In the vegetable garden, tucked into the lee of a blackthorn hedge, are two beehives the colour of red ochre. Sloped landing boards lead up to the dark hive mouths. Bees alight on the boards, crawl into the hives, whirr out again.

Everywhere I look there is evidence of burial and excavation. Badger setts, molehills, bee tunnels, the engulfed scythe, the hives,

the entrances to mine adits. Even the house, set back into the dolomite slope, is part cave.

'I didn't understand the Mendips until I began to explore them from below,' Sean says. 'Almost everything here involves the underworld somehow: quarrying, mining, caving. Bronze Age lead mining. Coal mining by the Romans. Quarries for limestone grit, so big they have a spiral ramp cut to a narrow core, in order that the lorries can get up and down, like an industrial version of Dante's descent in *The Inferno*. And basalt quarries to supply hardcore for top-dressing roads.'

A dragonfly rustles past.

'Then there are the burial sites – Bronze Age bowl barrows mostly, but Neolithic long barrows too, and of course, at Aveline's, the Mesolithic chamber. Medieval and early modern graveyards, and then our own still-growing cemeteries. This has been a funerary landscape for over 10,000 years. It's a terrain into which we have long entrusted things, as well as from which we have long extracted things.'

~

'To be human means above all to bury,' declares Robert Pogue Harrison in his study of burial practices, *The Dominion of the Dead*, boldly drawing on Vico's suggestion that *humanitas* in Latin comes first and properly from *humando*, meaning 'burying, burial', itself from *humus*, meaning 'earth' or 'soil'.

We are, certainly, a burying species as well as a building species – and our predecessors were buriers too. In a cave system called Rising Star in the limestone of South Africa a team of palaeoarchaeologists led by six women has discovered fossilized bone fragments thought

to belong to a previously unknown early human relative, a species now named as *Homo naledi*. The disposition of this dark matter in two deep-set chambers suggests, remarkably, that *Homo naledi* was already interring its dead underground some 300,000 years ago.

In burial, the human body becomes a component of the earth, returned as dust to dust – inhumed, restored to humility, rendered humble. Just as the living need places to inhabit, so it is often in the nature of our memory-making to wish to be able to address our dead at particular sites on the Earth's surface. The burial chamber, the gravestone, the hillside on which ashes have been scattered, the cairn: these are places to which the living can return and where loss might be laid to rest. The grief of those who have been unable to locate the bodies of their loved ones can be especially corrosive – acid and unhealing.

We give bodies and their residues to the earth in part as a means of safekeeping. Burial often aspires to preservation – of memory, of matter – for time behaves differently in the underland, where it might be slowed or stayed. Early in his profound meditation on inhumation and history, *Urne-Buriall* (1658), Thomas Browne describes the discovery – in the sandy soil of a field near Walsingham in the 1650s – of 'between fourty and fifty Urnes . . . not a yard deep, nor farre from each other'. Each of the urns contained up to two pounds of human bones and ash, as well as offerings: 'peeces of small boxes, or combes handsomely wrought, handles of small brasse instruments, brazen nippers, and in one some kind of *Opale*'. Browne refers to the dark interiors of these buried urns as 'conservatories' – that is, spaces of conservation, insulated from what he calls 'the piercing Atomes of ayre' that corrupt the upper world. He represents each urn as a bright chamber of memory, secured in the 'nether part of the Earth'.

Limestone, in particular, has long been a geology of burial – in

part because it is so common globally, in part because its erosive tendencies create so many natural crypts into which bodies may be laid, and in part because limestone is itself, geologically speaking, a cemetery. Limestone is usually formed of the compressed bodies of marine organisms – crinoids and coccolithophores, ammonites, belemnites and foraminifera – that died in waters of ancient seas and then settled in their trillions on those seabeds. These creatures once built their skeletons and shells out of calcium carbonate, metabolizing the mineral content of the water in which they lived to create intricate architectures. In this way limestone can be seen as merely one phase in a dynamic earth cycle, whereby mineral becomes animal becomes rock; rock that will in time – in deep time – eventually supply the calcium carbonate out of which new organisms will build their bodies, thereby re-nourishing the same cycle into being again.

This dance of death and life that goes into limestone's creation is what makes it without doubt the liveliest, queerest rock I know – and the human burials it holds have sometimes echoed these vibrancies, and the multi-species makings that have brought limestone into being.

Around 27,000 years ago, on a limestone hillside overlooking what is now the Austrian Danube, two babies, dead at birth, were placed side by side in a freshly dug round hole. Their remains were wrapped in animal hide, and the space around them was packed with red ochre, into which were mixed yellow beads of ivory. A shelter was then constructed to protect them from the crushing embrace of the earth: a scapula from a woolly mammoth, propped up as a bone shroud on pieces of tusk.

Twelve thousand years ago in a limestone cave above the Hilazon River in what is now northern Israel, a grave was prepared for a woman in her forties. An oval hole was dug in the cave floor, and its

sides were walled with limestone slabs. Her body was placed in the grave, curled against the northern side of the oval. Two stone martens, their brown and cream fur sleek in the low light, were draped over her: one across her upper body, one across her lower. The foreleg of a wild boar was laid on her shoulder. A human foot was placed between her feet. The blackened shells of eighty-six tortoises were scattered over her. The tail of an aurochs was put near the base of her spine. The wing of a golden eagle was opened over her. She had become a wondrous hybrid – a being of many beings. At last, a single large plate of limestone was pulled over the hole, closing this compound creature inside her chamber.

On a limestone outcrop near the Somerset village of Stoney Littleton, around 5,500 years ago, a chambered tomb was constructed. It remains present in the landscape: low-slung and turf-roofed on a slope of the hill, the beckoning mouth of its main entrance marked by a vast lintel stone and two flanking door jambs of single upright slabs. Set into the western jamb is the cast of an ammonite almost a foot in diameter.

And across ten millennia – since those first hunter-gatherer bodies were placed in the chamber discovered by the rabbit-catching boys – humans have buried their dead in the limestone uplands of the Mendips. There are some 400 Bronze Age round barrows in the Mendips, dating from around 2500 BC to around 750 BC. Most are clustered together, and most contained – until they were plundered or ploughed out – a single inhumation and the grave goods that were left with it. The bodies were typically placed in a stone-lined kist or collared urn under the dome of earth. The accompanying grave goods included pottery cups, barbed flint arrowheads, a bronze dagger, amber-headed pins, and beads of jet and shale. Their inclusion in the barrows speaks of a belief, widespread among cultures,

that burial is a form of onwards journey to an afterlife where earthly items will be needed.

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Sean and I walk back up to the cottage, step over the ammonite set into the door sill and enter the white-walled kitchen. It's a relief to be back in the cool of the house after the garden's heat. Jane smiles in welcome.

'You're here on a good day for the cottage,' she says. 'In summer, it's a dream. But in the other three seasons of the year, when the north wind blows straight down that valley, in one gable and out the other, it's impossible to keep warm. We lose the light so fast too. By early afternoon in full winter we're in deep shadow, cold shadow.'

That afternoon we sit, talk, drink tea. On the table is a blue-and-white china plate, Russian in its decorative style, showing a steam train emerging from a tunnel into winter fields. Two peasant figures walk by the trackside, carrying bundles of sticks on their backs, and the train trails a rooster-plume of steam that rises up into the blue dusk sky before bending back into the tunnel mouth.

Jane and Sean's two boys, Louis and Orlando, are playing Minecraft on a computer in a corner of the room. I go over to join them. They are mining hard, pickaxing down towards bedrock in search of precious minerals.

'We don't want redstone, we need obsidian,' says Louis.

'We want to fight the Ender Dragon!' says Orlando.

'We're building a portal to the Nether!' says Louis.

'Let's go caving,' says Sean.

~

Evening light now, thick as amber, pouring east across the land.

Over a stile, through a field thronged with yellow ragwort to where the grass sinks into a collapsed cone, sixty feet or so at its widest point. Horses in halos of flies.

The sinkhole's sloped sides are lush with rosebay willowherb. Its belly is scrubbed with elder. Two wood pigeons clatter away at our approach. In the lowest point of the dip is an entrance to the Mendip underland.

A small blockhouse protects a dark mouth in the limestone. Though I have been into cave systems before, I find swallowing is suddenly difficult, as if I have a pebble in my gullet. My scalp swarms with bees. Sean is calm, eager to get under.

The entry is awkward – a body-bending downwards wriggle before a drop into a pot that feels locked, a closed cylinder of space. Our pupils widen to well-shafts in the darkness, until we pop on our beams. Sean leads and is off, lies down, moves head first into a small gap in shadow at the pot's base. I watch his twitching legs slowly disappear, and when his feet have gone I drop to join him. Face forced into wet gravel, moving along by squirm, a sense of the rock as a hand pressing down first on the skull, then the back, then the whole of the body, a moment spent briefly in its grip – and then I am out and with Sean at the top of a twelve-foot notch where a waterfall has run for thousands of years, cutting this narrow channel to the rift below. We down-climb the notch, facing inwards, feet slipping on the wet rock, me going first then spotting Sean as he descends. The rift turns, turns again – and then opens dramatically out.

We are in an awesome space. We track our beams along its roof and walls, scoring out its dimensions. The portal through which we squeezed has become a gorge, hollowed by the work of water over immensities of time. The sides of the gorge are great curves

of grey limestone, cross-struck with calcite streaks like lightning flashes.

We move on down. Car-sized blocks of stone have fallen from the roof into the torrent bed and must be clambered around. The slope steepens. The ceiling gleams with star points: stalactite blebs, catching and condensing our torchlight. And then suddenly from either side of the gorge fall two avalanches of stone, waves of boulders and rock fragments crashing down upon us – but somehow frozen in mid-sweep, cantilevered out over our heads. I see that the fragments are all glued together by calcite. Time is starting to play tricks. Movements that have been stilled for thousands of years seem as if they might recommence without warning. My nerves tingle as I pass between the hanging waves of stone. The actions of my body feel jerky, triggering.

Up on the surface, horses flick at flies, caterpillars seethe on ragwort, the sun lowers to dusk. People drive home from work, radios on, windows down.

Beneath all of this, Sean and I pass under two further stone arches. The gorge's floor is slicker now. An awareness grows in us of a big drop somewhere ahead. I feel pulled on like water, as if I might flow down that slope and over the unseen edge. The acoustics change; echoes grow. Warned, we stop just short of a brink. At our feet the gorge floor falls away in a cliff, the base of which we cannot see.

'This feels like the Nether to me, Sean,' I say.

'Let's take a few minutes here,' says Sean.

We sit on boulders, flick off our head-torches. Afterlives of light at first, ghost-patterns on the retina: ferns and leaves. Then the darkness settles and trues, so that when I hold my hand an inch from my eyes I know its presence only from the sound and heat of breath on

palm. A heavy black curtain has fallen between Sean and me, then hardened into a wall of stone, such that we are soon in different underlands altogether.

We tend to imagine stone as inert matter, obdurate in its fixity. But here in the rift it feels instead like a liquid briefly paused in its flow. Seen in deep time, stone folds as strata, gouts as lava, floats as plates, shifts as shingle. Over aeons, rock absorbs, transforms, levitates from seabed to summit. Down here, too, the boundaries between life and not-life are less clear. I think of the discovery of the bones in Aveline's, shining with calcite, *lying promiscuously, almost converted into stone* . . . I slip out the whalebone owl, feel the Braille of its back, the arcs of its wings, thinking of how it had taken flight from a whale's beached ribs. We are part mineral beings too – our teeth are reefs, our bones are stones – and there is a geology of the body as well as of the land. It is mineralization – the ability to convert calcium into bone – that allows us to walk upright, to be vertebrate, to fashion the skulls that shield our brains.

Sean flicks his light back on. Glare and blink. There is the cliff again at our feet, water streaming down its face. It is possible that we will find our way to the base of the waterfall later in the journey, so we decide to fix a rope down it now, in case we need to ascend it from below. We find a boulder and loop the centre of the rope around its back, then Sean hammers a chockstone into place with the heel of his hand to prevent the rope riding up and over the boulder when weight comes onto it. I lap-coil the rest of the rope, tie off the two ends, and after two warm-up swings – one, two, *three!* – hurl the coils over the edge.

Hiss, thrum, shiver of snakes in the torchlight, whip-slap as falling rope cracks tight against stone.

'Now,' Sean says, 'we just need to find the way down and round.

There's a side passage somewhere up to our left, according to the maps I've seen, but it's a case of choosing the right one.'

We climb back up the belly of the gorge, away from the lip, moving upstream through the ghost-torrent, probing the left-hand side of the gorge with our torch-beams. There are three visible side passages. We try each in turn.

One spins us around in its twists before curving back at last to end in a wide window overlooking the waterfall, with an unclimbable drop below. The second is a rift entered by a squeeze that we have to repeat when the passage deads out. The third takes us far from the main chamber, and we have to count the turns in our minds, muttering them to ourselves (*first left, first right, second right*) so that the sequence can be reversed if we have to return – which we do.

There is one possibility left: a small entrance near the roof of the chamber, which can be reached only by the traverse of a cascade of damp flowstone, itself set high above the gorge bed. We clamber up to the cascade's edge, and consider the traverse. It is an intimidating crossing. We can rope up, but there is nothing to secure the belayer: one slip and we'll both go.

The cascade is a baroque structure. Flowstone is the name given to the calcite deposits that precipitate out of minerally saturated water as it runs over the slopes of limestone caves. You might imagine flowstone as a kind of white candle wax, gradually hardening as it runs, though it is built up over spans of time rather than by brief incandescence. Because of the gradual nature of its formation, flowstone sets into elaborate ruches and folds – elephant-skin gathers of texture, wrinkled stockings. Flowstone is very beautiful to look at and very hard to grip.

People don't often die caving, but it can be a hell of a job to get someone with a broken leg back up from deep in a rift. The fall from

the cascade isn't necessarily a death fall, but it is definitely a double-leg-breaker. Twenty-five feet, perhaps. We know it's the right route, though, because Sean's head-torch has picked out a line of marks traversing near its high point, where earlier boots have cracked the calcite to the consistency of mint cake.

Little demons of worry bite at my stomach as we start out over the cascade. Steady steps, testing the take of each foot, like trying to walk across a slope of wet stone ropes, leaning down to touch the bosses with fingertips for balance, *slowly*, *slowly*, *slowly* . . . and then Sean is over and I am over and we are into the entrance near the roof of the chamber, laughing with relief – and a new region of the labyrinth is open to us.

We let gravity lead us through it, taking always the downwards path where the tunnel splits, until the echoes tell us that our passage is approaching broad space – and then there we are at the base of the waterfall, and there is the rope we threw down earlier.

But the rope is stuck. It has jammed behind the belay boulder and won't run through to us evenly, making easy movement up it impossible as we climb. All we can do is tie off to it, climb, release, then tie off again. It offers some protection from a fall; better than nothing. I lead. The rock is wet; the climb has a couple of tricky moments. I am glad we threw the rope down. Sean comes up after me and we rest together at the top of the waterfall, mustering energy for the return. I am cold now, chilled to the bone by the dark, the wet and the stone.

Up the gorge, up the notch, through the squeeze, the smell of green growing in the nose, up into the belly of the elder-filled dip of land, and up to the level of the fields, the horses, the swooping swallows, out of the Carboniferous and into the Anthropocene.

Sundown on the surface. Pupils shuttering to pinpricks. Colour

is preposterous, gorgeous again. Blue is seen utterly as blue, green known fully as green. We are high on hue, high on the wild noise of the wind, high on the last of the sunlight that glosses the streamers of the veering swallows, high on the huge vault of the sky and the boiling clouds it holds.

We walk, still blinking, to the road in our orange hazmat suits. A family drives past in a shiny Land Rover, the children in the back seats swivelling their heads to look at these aliens who seem to have been dropped from high in the sky but who have in fact emerged from deep within the earth.

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The most notorious story in British caving history involves a twenty-year-old Oxford philosophy student called Neil Moss. It is still, in my experience, a story that some people in the Peak District do not like to discuss, nearly sixty years on.

On the morning of Sunday, 22 March 1959, Moss set off as part of an eight-person exploratory trip into the further reaches of Peak Cavern, a system near Castleton in Derbyshire. The first half-mile or so of Peak Cavern is an open show-cave, into which tourists and locals have wandered since the early nineteenth century, not least to hear choral recitals sung from the 'Orchestra', a natural gallery of limestone set high in the 'Great Chamber'.

Half a mile into Peak Cavern, however, the terrain becomes far more serious. The roof of the cave drops to leave only a wet crawl-space known as the Mucky Ducks, which floods in heavy rain. After the Mucky Ducks comes a long, low rift called Pickering's Passage, leading to a right-angled bend guarded by an eyehole of stone just wide enough to admit a human. After the eyehole comes a