

## *Introduction*

James Lovelock



GILBERT WHITE was born in 1720, a mere eight years after Thomas Newcomen, the village blacksmith of Dartmouth, had composed his seminal invention: the first practical steam engine. It may seem strange to connect the first great English naturalist with the father of the industrial revolution, but as we shall see, the exponential growth of mechanical artefacts that Newcomen originated has changed our world forever and makes the story of Selborne even more significant. It has affected the nature and composition of the Earth and set in motion an entirely new and unexpected epoch of its history, one that we now call the Anthropocene. White graduated from Oriel College of Oxford, but because the living at Selborne was held by Magdalen College he could only be a curate – it is easy to forget how great the influence of the church was in the eighteenth century. His letters provide a natural and human account of a time now irretrievably past. For me and those of us old enough to recall the stunning beauty of southern England before the Second World War – when Selborne had only slightly changed – the subsequent urban automotive invasion of Gilbert White’s world was a devastation.

*The Natural History of Selborne* was written several decades after the Dartmouth blacksmith cast his spell upon our world but, as with the growth of water lilies when one is planted in a pond, nothing much happens in the first few years but all too soon the pond is half filled with lilies. This is how it happened with the industrial revolution; there was little perceptible change until about the early twentieth century. Only now in the early twenty-first century do we clearly see its awesome consequences. This is why White's letters are so timely. They provide an accurate account of the initial conditions of a small part of the world, southern England, before it was interred beneath the turf of John Betjeman's metro-land. To be sure, the village of Selborne is now sensitively but superficially preserved as it was in the eighteenth century; it is more like a well-crafted specimen of the embalmer's art than the live village that was the home of Gilbert White.

He is often taken to be one of the first ecologists, and his observations on earthworms and comments on their role as benign transformers of the soil seem to justify this claim. Before this, farmers and villagers tended to regard the pink wiggling creatures of the soil as malign pests that threatened their food crops. He was elected a Fellow of the Royal Society, and I like to think of him as one of the first to make us aware that we share the stunningly beautiful Earth with a multitude of other species. In a way he inspired what was to become the Green movement of the nineteenth and early twentieth centuries, just as Rachel Carson, about two hundred years later, inspired something wholly different: the modern urban political Green movement. It is crucial to understand that the world Gilbert White observed was almost untouched by the growth of industry, and his letters provide a credible glimpse of the countryside of rural England just before it was about to change for ever. Men like him enjoyed the countryside but also tried to understand it through the open and familiar form of science that was then accepted. There were no disciplined separations, and science included everything from astronomy to zoology inclusively, so that solar and lunar eclipses enthralled them just as much as the appearance of that rare and strangely colourful bird the hoopoe.

Curiosity and delight about the natural world filled the minds of these early naturalists; nevertheless, their observations were properly scientific and of a quality sufficient to provide a record of past ecosystems and

their climate. Using simple home-made instruments they kept what were in their time, scrupulous records of temperature, rainfall and many other properties of the environment, such as that swifts flew south in mid-August but swallows could stay as late as November. Our understanding of the changing climate, so important to us now, owes much to them, and their dedication to accuracy was impressive. By comparison, some of today's urban naturalists are proud to exhibit a touchy-feely ignorance of science and a fear of anything that is not seen to be 'natural'.

From the observations of those intelligent observers, we have an account of the winter and summer of 1783 (*see* Letter 65, p. 258). We now know that the eruption that year of the volcano, Laki, in Iceland, emitted huge quantities of ash and sulphur gases that subsequently reacted in the air to form aerosols of sulphuric acid. White's letters describe the inclement heat, cold and fog of that year and the adverse changes to the natural scene. Climatologists now can test the reliability of their climate predictions by using the Laki eruption as if it were an experimental perturbation and see how well it agreed with the climate change at Selborne. They can even test the claim that failed harvests led to the privation that helped precipitate the French Revolution of 1789. There have been other volcanoes that have unsettled the atmosphere and the weather since Laki; for example, Tamboura in 1815, Krakatoa in 1883, and Pinatubo in the Philippines in 1991. From the comparison of the observed climate change with the extent of atmospheric perturbation we have greater confidence in the forecasts of future climates as they are changed by our own perturbations of the air, the ocean and the land.

Our evolution as an animal species is intimately coupled with the evolution of our environment and it is wrong of me to criticise urban environmentalism from the natural but old-fashioned prejudice of a countryman. City folk are street wise and that is the environment preferred by most of us now. The rapid and unstoppable evolution of the Anthropocene may force us to evolve into animals that live their lives in city nests, just as the ants, bees and wasps became social over one hundred million years ago. I wonder what the countryside will look like in the next century when we all inhabit city nests. Will these nests stand as skyscrapers across the landscape like the termite nests of the Australian desert? Will

there be anyone living in the countryside or at Selborne?

Our correspondent from Selborne was a man with holy orders from the Church of England and we should keep in mind that the greatest of all naturalists, Charles Darwin, was also trained in this way, at Cambridge. It is also easy to forget that in those times more than two hundred years ago, religious instruction was often gentle, so that intelligent thought about almost everything from God, the cosmos, the Earth and the life upon it and all the variations of human behaviour, were widely discussed. Perhaps this is what Disraeli had in mind when he said 'the Church of England ensures the presence of a gentleman in every parish'. It was surely true for Selborne in White's curacy.

Just as the morning mist vanishes when touched by the sunlight of a summer day, so these simple certainties melted in the ever intensifying heat of the industrial revolution. White's natural history was what we now call science. But modern science is now divided and subdivided into an ever growing host of blinkered expertises. Try asking the Professor of Biology at your nearby university to name the strange green plant you found growing at the base of a damp rock in your garden, and he might well reply, 'I would like to help you but botany is not my field. I am an evolutionary geneticist, but you could try Professor Wort, our Cryptogamic Botanist, whose office is on the floor above.' When you made the short walk upstairs you might learn that the plant from your garden was a liverwort and in addition some intriguing details of its somewhat puritanical sex life. I suspect, though, that you would have been more enlightened by a chat with the curate of Selborne, who would have had something to say about the place of liverworts in the natural order. What his account of its place might lack in precision would be balanced by the richness of his thoughts about its place in the natural scene.

I am fortunate to have had a lifespan that began in 1919 well before the industrial roller had begun to flatten the world of Selborne and make it part of the ever extending garden city of modern England. As a schoolboy I made a journey by bicycle to Land's End and back in 1936. As I cycled from my home at Orpington in Kent, I passed along small country roads and tracks, passing lightly stocked green fields and villages, often with small thatched houses built of local stone. Villages like these always had

a church, a pub, a school and the village green. I had the good fortune much later to live a few years in the village of Bowerchalke in southern Wiltshire before it and its hinterland were irreversibly changed as farming was mechanised and became economically efficient.

The pre-Anthropocene world of Bowerchalke and Selborne are now vanishing like the view of a small city seen from the window of a departing train. As I rode my bicycle I saw countryside that had changed only in minor ways during the previous two centuries. The small roads were almost free of power-driven vehicles, except occasionally a steam-driven traction engine puffing its way up hill. Every mile or so I encountered hedgers and ditchers, who with hand scythes and sickles kept the way clear and seemly to the eye and who were glad to tell me about their world.

I recall long conversations with men like these, sometimes at midday when we shared our lunch packs. They were always interested to know what it was like to live in Kent and they would tell me about the animals and birds of the hedges, those linear micro-forests that connected the woodlands of the countryside. Looking back, I have a clear remembrance of a time when we and our environment seemed to exist in happy equilibrium.

I like to think that those hedgers and ditchers led a richer life than do their successors now. One of them I knew was promoted in the 1960s, and given a Land Rover so that he could drive the lanes and inspect the hedges now trimmed by flail mowers mounted on tractors. His promotion moved him and his family from a lovely but decrepit thatched cottage to a modern house in a market town nearby. He gave up his kitchen garden for the supermarket, and grew obese. This was the decade when politics became intensely human-centred and the natural environment was ignored. We were persuaded instead to care about people we had never met who lived in distant places and to ignore the natural world around us. England before the 1960s had little need for a political 'green' movement, as few nations anywhere were as green, despite a population density of about 1,000 per square mile. After this, the sudden abundance of desirable artefacts, televisions, cars and travel by air so changed our perception of the environment that there was no time to understand that we were part of it. No wonder humanism and the joys of city life filled the spaces of our minds.

Writers like Thomas Hardy who were concerned with the nineteenth-century countryside tended to see it as a savagely brutal place where the poor were grievously ill-used. My mother, a feminist and suffragist, was deeply moved by Hardy's words, as were many others of the emerging urban elite. My father, by contrast, was a countryman born in 1872 on the Berkshire downs near Wantage. He was one of thirteen children and raised in poverty by my then widowed grandmother. Indeed, he spent his childhood in the real world near Fawley in Berkshire, which was the scene for the fiction of Hardy's book *Jude the Obscure*. Father could never accept Hardy's dire view of country life; instead, he saw it as hard but tolerable. It was true that there were no entitlements for the impoverished, other than residence in the 'work house'. To survive, the Lovelock family were obliged to live like the hunter gatherers, from whom we are descended. This primeval way of life made my father, untutored though he was, ecologically aware like Gilbert White; he knew well the habitats of the wild animals and how to hunt them because he was one of them. He made our country walks so alluring that soon I was enrolled as an apprentice naturalist. Looking back, I see that his simple teaching gave me a feeling for the Earth, for Gaia, which has sustained me. I was a most privileged child.

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