

# ENVIRONMENTAL THOUGHT



*A Short History*

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# 2

## Early Modern Reflections

### The Sixteenth, Seventeenth and Eighteenth Centuries

This chapter is concerned with the whole of the modern period from the Reformation up to the decades prior to the publication of Darwin's *Origin of Species*. This first section considers theologians, poets, scientists and philosophers from 1500 onwards; the next section looks at the Romantic movement in Germany, Britain and America.

It may help readers if some of the concepts employed below are clarified. Some of the figures mentioned below (including Jean Calvin and John Evelyn) were (what we would now call) anthropocentrists, holding that what matters is limited to the interests or welfare of human beings. Some environmentalists continue to ground their beliefs and campaigns on this idea, but many find it too impoverished, and prefer to hold either a sentientist position (as Jeremy Bentham did), for which the interests or welfare of all sentient beings also matter, or a biocentrist stance (as was held by John Ray), for which the good of all living creatures matters, whether equally or unequally, or an ecocentrist stance, for which what matters further includes the good of species and/or ecosystems. All these classifications derive from the late twentieth century, but serve to convey significant distinctions of attitude and conviction characteristic of earlier centuries.

The concept of theocentrism is also used below. This does not exclude any of the above stances, but recognizes the value of anything held to be loved and cherished by God as creator. Thus Calvin combined

anthropocentrism with theocentrism (though he was, of course, a stranger to both of these concepts), and could oppose on this basis the maltreatment of any of God's creatures not for their own sakes, but because of the will and the good purposes of God. Yet others, such as Alexander Pope (1688–1744), were able to combine theocentrism with sentientism (and others with biocentrism). Another theological concept deployed below is panentheism, the belief that, as well as being the universal creator, God is present in all creatures; as will be seen, this was the stance of Martin Luther and some of his followers (see the passages of Luther quoted in the next section). It should be emphasized that there is no contradiction between belief in God as transcendent creator and belief in God's indwelling in the created world. (For a review of different shades of meaning of panentheism currently in use, see Attfield 2019.) Panentheism contrasts with pantheism, the belief that God and the universe are one and the same, a stance upheld in the seventeenth century by Baruch Spinoza (1632–77), and revived in the nineteenth by Schelling (see the section later in this chapter, 'The Romantic Movement').

It may also help to explain the concept of mechanism, introduced by René Descartes (1596–1650), for bodies (human and nonhuman) as opposed to minds. For mechanists, living bodies are basically machines, operating on principles similar to clockwork. The material universe can also be regarded as a machine, movements in which are produced by contiguous forces. This belief was held by Descartes, but not strictly by Isaac Newton, who believed in action at a distance, as in the case of gravity. Mechanists were opposed by vitalists, such as the Cambridge Platonists, who held that living creatures behave as they do because of the presence of animating spirits, and also by Aristotelians, who held (and continue to hold) that the behaviour of animate organisms is to be understood by their inbuilt purposes. The philosopher Gottfried Wilhelm Leibniz (1646–1716), for example, revived belief in such 'final causes' or inbuilt purposes. (These classifications too, with the exception of 'Aristotelians', come from a later period, when there was an explicit debate in the decades prior to the First World War between mechanists and vitalists.)

However, one of the distinguishing features of the modern period was a widespread desire to break with the Aristotelianism of the late Middle Ages, and to resort to new explanations. These included atomism (belief that the fundamental components of physical objects were indivisible particles or atoms), a belief adopted by Pierre Gassendi (1592–1655), Robert Boyle (1627–91) and John Locke, and belief in laws of nature, observable regularities uniform across space and time (a stance championed by most of the members of the Royal Society, which was given a royal charter by Charles II in 1662).

There were also artists of the Renaissance period who broke new ground, such as Albrecht Durer (1471–1528), with his drawings of landscape and of clumps of turf (see Egerton 2012: 33), which challenged people to look at the world around them anew, and such as the Italian masters who reintroduced perspective into their painting, similarly challenging their clientele. Limits of space prevent any detailed treatment of these particular innovations here.

While these concepts and distinctions will shortly be brought into play, this chapter inevitably opens with the attitudes to nature and the environment of the two principal founders of the Reformation, Martin Luther and Jean Calvin. Although their followers and successors were often (but not always) politically aligned, their own stances (theological and otherwise) were both influential and mutually distinctive. Since they each changed the way large numbers of people came to understand their own relation both to God and to nature, it is important to consider them briefly in turn.

#### *Luther, Calvin and Hale*

Martin Luther (1483–1546), the pioneer of the Reformation, stressed in his writings the sovereignty of God over nature, together with his distinctive stance on human salvation. But he also believed in God's hiddenness and in his immanence in nature. He wrote: 'God is substantially present everywhere, in and through all creatures, in all their parts and places, so that the world is full of God and he fills all, but without his being encompassed and surrounded by it' (Santmire 1985: 129). Here we find a remarkable affirmation of the world, including its living creatures, to a degree which harmonizes with what modern theologians call 'panentheism', the belief that God is present in the world as well as being its creator. (As we have seen in Chapter 1, beliefs of this kind are expressed in the Bible in Psalm 139 and in Acts 17:28.)

Luther also wrote: 'You cannot in one glance survey this most vast and beautiful system of the universe in all its wide expanse without being completely overwhelmed by the boundless force of its brightness.' Thus he held that if we truly understood the growth of a grain of wheat, we would die of wonder (Santmire 1985: 129–30). These remarks echo the tradition of German mysticism, founded by the Dominican monk Meister Eckhart (c. 1260–c. 1328).

Santmire comments that Luther's sense of the presence and power of God in nature are far removed from the stress invoked by Thomas Aquinas on the distance between the infinite creator and finite creatures (1985: 129). While Luther's emphasis was on doctrines such as

justification by faith, he also left his followers a legacy of immersion in the wonders of the natural world, which many were to disregard, while others gladly embraced them, as will be seen as this chapter unfolds. Luther's belief in God's immanence in nature was to be most strongly echoed in the writings of the Lutheran mystic Jakob Boehme (1575–1624), who was widely influential on other mystics in later generations. Among later Lutherans, it was, perhaps, the Romantic movement that most fully recaptured this immanentist stance. However, some twentieth-century theologians, conscious of evolution and of ecological processes, have turned more explicitly to panentheism. A good example is Jürgen Moltmann, in particular in his book *God in Creation* (see Chapter 9).

As for the more activist stance of the other principal leader of the Reformation, Jean Calvin (1509–64), his emphasis on people's callings (as well as on their justification and divine election) made him understand the human dominion of nature as 'vocational dominion'. Even more than in the theology of the Benedictines (see Chapter 1), people were to transform the world (Santmire 1985: 126). In this connection, Calvin expressly resuscitated the New Testament metaphor of stewardship, both with regard to a person's own resources and to caring for the Earth as a whole; indeed, he decried the 'plundering of the earth of what God hath given it for the nourishment of man' (Derr 1973: 20).

In Calvin's view, everything in creation has been made for humanity, but people are to use the world around them responsibly, so that no one is deprived of its resources. This, indeed, is the historical point at which the tradition of stewardship becomes explicitly avowed: 'Let everyone regard himself as the steward of God in all things which he possesses,' he taught (Welbourn 1975: 563). This remark, in fact, begins to cast doubt on the influential thesis of Max Weber (1864–1920) that the Protestant Reformation initiated the process that he called 'the disenchantment of the world' (2002 [1905]), which barely fits the teachings of Calvin, and appears to ignore altogether the very different teachings of Luther. In the next century, some of the adherents of the stewardship tradition were to interpret this tradition in a less anthropocentric manner than that of Calvin. Calvin, however, would have disowned the label of 'anthropocentric' (if he had encountered it), and might well have preferred, if offered it, that of 'theocentric'. Besides, another of Calvin's persistent emphases was God's presence in nature, a theme which was to prove influential among his followers (Stoll 2015: 21).

If we now move to the next century, we can find a development of the Reformers' theology in the statement of the Protestant Chief Justice of England and Wales, Sir Matthew Hale (1677), who wrote: 'The end of man's creation was, that he should be the viceroy of the great God

of heaven and earth in this inferior world; his steward, villicus [farm-manager], bailiff or farmer of this goodly farm of the lower world.' Only for this reason, to follow Passmore's paraphrase, was man

invested with power, authority, right, dominion, trust and care, to correct and abridge the excesses and cruelties of the fiercer animals, to give protection and defence of the mansuete [tame] and useful, to preserve the species of diverse vegetables [growing things], to improve them and others, to correct the redundance of unprofitable vegetables, to preserve the face of the earth in beauty, usefulness and fruitfulness. (1974: 30: the phrases in square brackets are Passmore's modern translations)

Passmore comments that this passage would have the sympathy of modern conservationists, though not preservationists, even if they did not agree about humanity being God's deputy. He also considers that it is an expression of seventeenth-century humanism, and has a (heretical) Pelagian emphasis on what the human will can achieve (1974: 30). I suspect that many modern conservationists would have reservations, alongside preservationists, not only about curbing the fiercer animals, but also about correcting the excesses of 'unprofitable vegetables'. Nevertheless, the passage is a fine expression of the stewardship position. As for seventeenth-century humanism, Hale's words fit well into Francis Bacon's aspirations, expressed in his utopian novel *New Atlantis*, to rescue humanity from the fall, as he interpreted it, and to improve fruit-bearing plants, thus 'effecting all things possible'; rather than being Pelagian or otherwise heretical, Hale's remark is also a continuation of Calvin's message about humanity's vocation to stewardship (as just described), with rather more of an emphasis on landscapes and the environment, and less of an anthropocentric outlook. We shall see how similar ideas were soon to be expressed by the naturalist John Ray. Generally, this passage should not be regarded as an isolated one, as Passmore regards it, but as a valuable development of the ancient stewardship tradition (see Chapter 1 on Plato, Ambrose, Theodoret and others), now explicitly revived by Calvin.

#### *The metaphysical poets*

This cluster of seventeenth-century English and Welsh poets often wrote about the relations of humanity, nature and God, to an extent that exceeds their predecessors of the Elizabethan age, profound as Shakespeare and his contemporaries undoubtedly were (Martin 2015), and also their successors of what is often called 'the Age of Reason'. For example, George

Herbert (1593–1633), who has become known as ‘laureate of the Church of England’ (Passmore 1974: 31), composed some anthropocentric lines, as cited by Passmore: ‘For us the winds do blow; / The earth doth rest, heaven move, and fountains flow’; he goes on to speak of the world being our servant, and to pray that both the world and humanity may be God’s servants (Passmore 1974: 31). Yet elsewhere, in a well-known (and still much-loved) hymn, Herbert develops the language of the Psalms, praying for nature’s participation in praising God – ‘Let all the world in every corner sing / “My God and King”’ – in language reminiscent of that of St Francis and his *Canticle*. Thus to represent George Herbert as unqualifiedly anthropocentric seems a distortion; for he captures not only the language of human dominion (Psalms 8) but also that of nature’s adoration of God (as in Psalms 148 and 150).

Thomas Traherne (1637–74) was a clergyman, poet and mystic, who wrote poems such as ‘Wonder’ and also poetic prose, including ‘Centuries of Meditation’, the influence of which has been comparatively recent, after this long-lost work was rediscovered. Traherne presents both an original twist to belief in humanity’s dominion and an identification with the natural world:

You never enjoy the world aright, till the Sea itself floweth in your veins, till you are clothed with the heavens, and crowned with the stars: and perceive yourself to be the sole heir of the whole world, and more than so, because men are in it who are every one sole heirs as well as you. (‘Centuries of Meditation’; see Ridler 1966)

The world, including the sea and the stars, are to be enjoyed and appreciated as the unique inheritance of each of us. This is a figurative uniqueness, but Traherne’s language nevertheless evokes the distinct delight to be found in identification with the world and in a shared awareness of createdness and of creation, comparable with that of the Psalms and of Luther.

Around the same time, Andrew Marvell (1621–78) pretends in ‘The Garden’ that he holds that trees far exceed the beauty of a human mistress, and that life in the ‘happy garden-state’ of Eden was better for Adam when his enjoyment of the garden was unshared. This is a many-layered and nuanced poem, which at one point appears to envisage that gardens (and the world in general) are generated by human minds (as in philosophical idealism), but it pulls back from this view to accept the objective beauty of the original garden, a view at odds with the philosophy of Descartes, which we will shortly encounter. In another poem, ‘Bermudas’, Marvell recounts a hymn of praise to God for the beauty

and fruitfulness of those islands, as sung by the original English colonists (Wilcher 1986), and echoing the tone of the biblical Psalms.

There again, at much the same time, the Welsh poet, Henry Vaughan (1976), wrote of the restoration of all things at the end of the world:

O knowing, glorious spirit! when  
 Thou shalt restore beasts, trees and men,  
 When thou shalt make all new again,  
 Destroying only death and pain,  
 Give him amongst thy works a place,  
 Who in them loved and sought thy face!

Here the poet, besides including all living beings in God's new creation (Revelation 21), shows how in his own understanding God was present in them all already, as Luther had likewise taught. The metaphysical poets, then, adopted a mixture of (what would later be called) anthropocentric, theocentric and panentheistic stances, which modern environmentalists who share their theistic beliefs are free to follow, and from which those who do not are free to select, not least these poets' characteristic sense of the wonder of the world (best expressed in Traherne's 'Wonder', as long before in Psalm 139).

*The scientific revolution: Bacon, Descartes and the Royal Society*

In *New Atlantis* (posthumously published in 1627), Francis Bacon portrayed a research community of scientists (Salomon's House), on the mythical island of Bensalem, whose research was to cover the accessible parts of the entire natural world, to provide for human needs and improve the fruits of nature for the sake of the kingdom of humanity. In *New Organon* (1620), Bacon depicted a new methodology for the conduct of such scientific research. Later, the Royal Society (1662) was founded in London for the sake of collaborative research employing this same methodology. Bacon's anthropocentrism was combined with advocacy of humility, but has been widely accused – particularly by Carolyn Merchant (1990 [1980]) – of being arrogant, of transforming nature from an organism to a machine and of having an aggressive attitude to both nature and women.

It is doubtful whether we can ascribe the mechanistic view of nature to Bacon, as much as to his contemporaries René Descartes and the reviver of atomism, Pierre Gassendi; indeed, Bacon's metaphor of putting nature to the test probably reflects enthusiasm for experimentation rather than support for torture or sexual violence. His essay on gardens (1625) even



advocates the inclusion of an area set aside for wild flowers (Coates 1998: 116). Nor did his thought spell the end of the model of nature as an organism, which remained the view of the Cambridge Platonists of later in the seventeenth century. Yet Bacon certainly initiated a major shift in attitudes to nature, away from Aristotelianism and from varying forms of belief in the intrinsic value of natural beings, and towards an experimental and inductive approach, which the Royal Society was later to carry forward, decades after his death.

In the philosophy of Descartes, qualities such as scent, colour and taste are understood as secondary, and as generated by ourselves, and the primary qualities of nature are limited to mass, motion and position. This would mean, as Santmire says, that the beauty and wonder of nature belong to the realm of human subjectivity (Santmire 1985: 133), rather than having the objectivity ascribed to them in Andrew Marvell's 'The Garden' (see above). More fundamentally, Descartes proposed an analytic and reductive method of investigation, which he employed fruitfully in devising coordinate geometry. Descartes held that human beings are essentially minds ('*sum res cogitans*', or 'I am a thinking thing', was one of his conclusions), albeit closely connected to material bodies, whereas animals and other living creatures are essentially machines, incapable of reflection and self-consciousness. Many have also ascribed to him a denial of feelings in animals, but John Cottingham (1978) has supplied convincing evidence that Descartes (somewhat inconsistently) did not deny animal sensations, but recognized that animals feel emotions, pleasure and pain. Some of his followers, sadly, were more consistent.

Descartes's dualism of mind and matter was widely influential for the following three centuries, although it was contested in his own century, both by the materialist Thomas Hobbes (1588–1679), and by the Cambridge Platonists, for whom nature was suffused with spirit. Meanwhile, Leibniz maintained that the physical universe consisted of units of perception or monads, each perceiving the others from its own perspective. Leibniz also revived Aristotle's belief in final causes (purposeful explanations), which Bacon had regarded as unknowable and Descartes as no part of science.

Bacon and Descartes, together with Isaac Newton (1642–1727), have been widely pilloried 'as supreme bogeymen in many environmentalist accounts' (Coates 1998: 71), not least by Merchant, having been made spokesmen of the scientific revolution. They certainly either advocated this revolution (Bacon and Descartes) or developed it (Descartes and Newton), with far-reaching consequences. Yet Bacon was hardly a mechanist; nor strictly speaking was Newton, who believed in action at a distance. And while they presented new methods for the conduct of

‘natural philosophy’ (science, that is), they can hardly be held responsible for its later more extreme developments or applications. Nor can their predecessors be regarded as having formed a golden age of sustainability or of belief in nature as a nurturing mother (think of the Spanish *conquistadors* and their extraction of the mineral wealth of the Americas.) Besides, as Coates maintains, the new belief in mechanism presupposed belief in God as the creator of the mechanism of creation (1998: 81); historically, for many decades to come, most scientists shared in the theism of Bacon, Descartes and Newton. So even those whose attitudes were anthropocentric held standardly (as had Calvin) that natural organisms were creatures of God, and should be treated accordingly in a stewardly manner, although some of the members of the Royal Society nevertheless resorted to vivisection, as will shortly be seen.

The Royal Society received its charter from Charles II in 1662, and began a process of collaborative research along Baconian lines, in an attempt to discover the creator’s laws from his workmanship in the observable world. The Fellows held varied views, from the sceptical empiricism of Joseph Glanvill (1636–80) to the confident atomism of Robert Boyle, and later of Isaac Newton. It was indeed at this stage that the atomism of the ancients, after its revival by Descartes’s contemporary Pierre Gassendi, returned to the mainstream of science, and was adopted by Boyle and by John Locke. Yet Boyle, it must be acknowledged, took part in the vivisection of live animals, a practice at which Alexander Pope was to protest on the basis of his (far from anthropocentric) belief in human stewardship of ‘the inferior creation’ (Turner 1964: 48).

One of the members of the Royal Society, its secretary John Evelyn (1620–1706), composed two works that mark him out as a proto-environmentalist, aware of some of the adverse side-effects of human activities. In *Fumifugium* (1661), he exposed and complained about the air pollution of London; while in *Silva, or, A Discourse of Forest Trees* (1664), he drew attention to deforestation, as another unintended side-effect of the human modification of nature. Certainly, one of his motives was concern for the availability of timber for the construction of ships for the English navy, but he was also concerned for the conservation of forests: he quoted freely from Theophrastus, Virgil, Pliny and Columella, and advocated a large scheme of tree-planting to make good the damage that had already taken place (Glacken 1967: 485–91). Here was a further example of an anthropocentric approach being allied to belief in stewardship, and to a dawning (and virtually unprecedented) realization of the vulnerability of the natural world.

Evelyn also wrote a tract defending vegetarianism on grounds of human health. In this, he was following the ideas of Thomas Tryon

(1634–1703), who in 1657 gave up meat and fish and refused to wear leather, partly on grounds of animal welfare (Thomas 1983: 291–2). Others adopted both Tryon’s theory and his practice, not least through the influence of translations of Ovid’s *Metamorphoses* (see Chapter 1); in 1700, John Dryden (1634–1700) interpolated into his own translation the striking couplet: ‘Take not away the life you cannot give: / For all things have an equal right to live’ (Dryden 1958; Thomas 1983: 292). Thus were the ancient seeds of vegetarianism (sown by Empedocles, Plutarch and Porphyry) revived by a significant minority in early modern England.

Another writer influenced by Evelyn was Hans Carl von Carlowitz of Saxony (1645–1714). In 1713, Carlowitz wrote *Sylvicultura oeconomica*, appealing to Genesis 1 about dressing and keeping the original garden (see Chapter 1), warning of excessive deforestation, and using the term ‘nachhaltend’ about timber-usage, thus employing ‘sustained’ in its modern sense for the first time (Grober 2007: 19). (Two centuries after Evelyn, George Perkins Marsh was given the accolade of ‘Our American Evelyn: see Chapter 4.)

Another member of the Royal Society was John Ray, a plant biologist, who rejected the view that everything had been made for the sake of humanity, as opposed to human beings and animals alike (Thomas 1983: 167). Ray was mentioned above in Chapter 1 as having been influenced by Basil the Great. In his book *The Wisdom of God Manifested in the Works of the Creation* (1691) he echoes some of Basil’s words in writing:

I persuade myself that the bounteous and gracious Author of Man’s Being and Faculties, and of all Things else, delights in the Beauty of his Creation, and is well-pleas’d with the Industry of Man, in adorning the Earth with beautiful Cities and Castles . . . with regular Gardens and Orchards, and Plantations of all Sorts of Shrubs and Herbs . . . with Shady Woods and Groves, and walks set with Rows of elegant Trees, with Pastures cloath’d with Flocks, and Valleys cover’d with Corn, and Meadows burthened with Grass, and whatever differenceth a civil and well-cultivated Region, from a barren and desolate Wilderness. (Glacken 1967: 484)

Here we find a striking expression of cooperation with nature from a nonanthropocentric perspective. Roderick Nash (the pioneering historian of American and related attitudes to nature) cites a further, even more memorable, passage: ‘It is a generally received opinion that all this visible world was created for Man; that Man is the end of the Creation, as if there were no other end of any creature but some way or other

to be serviceable to man ...yet wise men nowadays think otherwise.' Animals and plants in fact exist to glorify God (Ray 1691: 127–8; Nash 1989: 21). Ray was no lover of wilderness, but preserved into the age of modern biology the ancient tradition of the human role of enhancing the creator's workmanship in pursuance of his original intentions, and also of plants and animals having an independent place in the design of the creator. Glacken hails this work as 'probably the best natural theology ever written' (1967: 379). (For the botanical achievements of Ray and his Dutch collaborator Antoni Van Leeuwenhoek – the discoverer of bacteria – see Egerton 2012: 60–6. For the renewal of zoology on the part of the sixteenth-century anatomist Vesalius, see Egerton 2012: 36, 39. For the influence of the seventeenth-century Oxford microscopist Robert Hooke's *Micrographia* on Leeuwenhoek and others, see Attfield 2016: 142–3.)

#### *The new world*

Despite the rapacity of the *conquistadors*, many of the environmental problems of the new world seem to have been due to the practices of the indigenous people of those lands. At Head-Smashed-In Buffalo Jump in Alberta, for example, local people used to stampede buffaloes to jump off cliffs, not only in the pre-Columbian era but right through the seventeenth century, while in Nevada only 1 per cent of the bodies of buffaloes that similarly jumped to their deaths were put to human use; the rest were left to rot. Several species of large mammals were driven to extinction long before European settlers arrived (Coates 1998: 90). And while the irrigation systems of northern Mexico made possible both double-cropping and an elaborate social organization, the network of canals of the Hokokam people of modern New Mexico proved unsustainable, and collapsed (Coates 1998: 94).

Hence the portrayal of American Indians as ecologically benign appears misguided, despite the works of writers such as J. Baird Callicott (1989a: 207–10; 1989b: 201), J. Donald Hughes (1983) and Kirkpatrick Sale (1990). Yet a whole chain of writers, beginning with Bartholomé de Las Casas (1474–1566), have creditably argued for the virtues of these indigenous people and against their forcible conversion and slaughter (Las Casas 1992 [1552]; see Attfield 2015 [1999]). And although the most famous apparent environmentalist statement attributed to an American Indian (Chief Seattle) turns out to be a forgery (Coates 1998: 92; Attfield 2018a: 104), other evidence, such as the panentheistic words of Black Elk, of the Oglala Lakota (Sioux) (1863–1950), suggests that some of them cherished traditions of a preservationist character:

We should know that He (sc. the Great Spirit) is within all things: the trees, the grasses, the rivers, the mountains, and all the four-legged animals and the winged peoples . . . When we do understand all this deeply in our hearts . . . then we will be and act and live as he intends. (Attfield 2018a: 105)

More tangible benefits for the rest of the world are to be found in the maize and tomatoes of Mesoamerica and the potatoes of Peru. Maize and tomatoes enhanced European and Asian diets, while potatoes became the staple foodstuffs of Ireland and parts of the Balkans. Compared with these exports to the old world, the main import to the new world from the old (sugar cane) was a more dubious benefit, requiring intensive labour either from slaves or, after slavery was abolished, from indentured labour (Ponting 1991: 112–14).

It should be added that, as Ponting relates, the exposure of indigenous people to European and African diseases caused a population decline following the arrival of the first settlers from sixty million to six million within a century (Ponting 1991: 130–4, 230–1). This calamity led to the return of previously cultivated land to wilderness, and hence absorption of more atmospheric carbon dioxide by vegetation, and could well have contributed to the worldwide ‘Little Ice Age’ of the seventeenth century.

Further contributions from Americans to environmentalism (in addition to that of Black Elk) are discussed in the section of this chapter below, ‘The Romantic movement’ (such as William Bartram’s discovery of the sublimity of mountains there), and also in Chapter 4, ‘The American debate’.

#### *The humanitarian movement*

In *Man and the Natural World* (1983), Keith Thomas expounds factors which gradually eroded the widespread attitude that the world was made for humanity and that other species were to be regarded as subordinate. One such factor was the rise of natural history, and we have already remarked the stance of one of its proponents, John Ray. A further key moment in the development of natural history was the introduction by the Swedish botanist Linnaeus of the binomial classification of plants (in Latin) by genus and species, in his *Species Plantarum* of 1753, and its spread to England and other countries in the following decades. Thomas adds the hypothesis that the new nomenclature helped ‘shatter the assumptions of the past’ in which the very names of plants, birds and beasts, with their ‘human analogy and symbolic meaning’ made them seem ‘responsive to human affairs’. Instead, wild creatures began to be regarded as a ‘detached