

Homo Religiosus: Linnaeus and Beyond

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LINNAEUS AS A SECOND ADAM? TAXONOMY AND THE RELIGIOUS VOCATION

by Peter Harrison

Abstract. Swedish naturalist Carl von Linné (1707–1778) became known during his lifetime as a "second Adam" because of his taxonomic endeavors. The significance of this epithet was that in Genesis Adam was reported to have named the beasts—an episode that was usually interpreted to mean that Adam possessed a scientific knowledge of nature and a perfect taxonomy. Linnaeus's soubriquet exemplifies the way in which the Genesis narratives of creation were used in the early modern period to give religious legitimacy to scientific activities and to taxonomy in particular. Allusions to Adam's work in the Garden of Eden thus became a way of investing the vocation of the naturalist with religious significance.

Keywords: Genesis; history of taxonomy; Carl Linnaeus; religious vocation

In a letter of 8 April 1746, the Swiss polymath Albrecht von Haller (1708–1777) famously accused Carl Linnaeus of imagining himself to be a "second Adam": "the unbounded dominion which Linnaeus has assumed in the animal reign, must upon the whole appear disgusting to many persons. He considered himself as a second Adam, and gave names to all the animals after their distinctive marks, without ever caring for his predecessors. He can hardly forbear to make *man a monkey, or the monkey a man*" (Stöver

Peter Harrison is Andreas Idreos Professor of Science and Religion and Director of the Ian Ramsey Centre at the University of Oxford, Harris Manchester College, Mansfield Road, Oxford OX1 4PJ, U.K.

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1794, 117–18). The occasion for these indignant remarks was the publication in the previous year of a work in which Linnaeus had demoted some of von Haller's species into mere varieties. His erstwhile friend responded bitterly that Linnaeus obviously considered himself to be on a par with the first man, who had named all the animals (Genesis 2: 19). Adam, according to a longstanding tradition, had been inspired with a perfect knowledge of nature and had chosen names for the creatures that exactly expressed their natures and their mutual relations. Moreover, this naming was thought to reflect Adam's capacity to exercise dominion over the whole created order.

Von Haller's epithet was a fitting one, for, although as far as I know Linnaeus nowhere proclaimed himself to be the second Adam, there is every indication in his writings that he imagined himself to be uniquely, indeed divinely, inspired with taxonomic gifts. And although Linnaeus seemed conscious of the fact that even his system was somewhat arbitrary and fell short of the perfection of the original Adamic nomenclature, the ideal of a natural taxonomy nonetheless motivated him, as it did many others in the seventeenth and eighteenth centuries.

I examine here the theological background of the Linnaean project, exploring the connections between naming and knowing. I show that early modern taxonomic projects, of which the Linnaean system was in a sense the culmination, were related to a new conception of religious vocation—one aligned with what we might now call scientific values. This new attitude, I suggest, was of vital importance because it invested the taxonomic endeavors of this period with religious legitimacy. More generally, this essay deals with the history of early modern taxonomy and its connection with theological considerations.

WORDS AND THINGS: THE BIRTH OF MODERN TAXONOMY

In his short story "The Analytical Language of John Wilkins" Jorge Luis Borges refers to "a certain Chinese encyclopaedia" that offers the following classification of animals: "(a) belonging to the emperor, (b) embalmed, (c) tame, (d) sucking pigs, (e) sirens, (f) fabulous, (g) stray dogs, (h) included in the present classification, (i) frenzied, (j) innumerable, (k) drawn with a very fine camelhair brush, (l) et cetera, (m) having just broken the water pitcher, (n) that from a long way off look like flies" (Borges 1981, 142). Whether there actually existed such an encyclopaedia is doubtful. More likely it was the product of Borges's fertile imagination. But this fantastic taxonomy makes a serious point. It is best known, perhaps, through its appearance in Michel Foucault's *Order of Things* (1974, xv), where it is used as a model to demonstrate how difficult it is to imagine ourselves into the mentalities of those from other cultures or periods of history. It is fitting that it should appear in this volume, because Foucault makes an interesting case about the changes that took place in early modernity in the way people ordered things. According to him, the seventeenth and eighteenth

centuries witness “an immense reorganization of culture” (1974, 48) that involves a reconceptualizing of the ordering principles of knowledge. The episteme of the Renaissance, he suggests, was founded upon similitudes and the interplay of analogies and affinities. For the seventeenth and eighteenth centuries that followed, however, the rational order of nature is represented verbally or mathematically. The basic impulse in this new episteme, Foucault argues, is toward taxonomy and *mathesis*, and perhaps no one better exemplifies the spirit of the age in the former respect than Linnaeus. This impulse, moreover, is identified with the seventeenth-century quests to rationalize language, to bring order to our naming impulses.

My original interest in the questions raised by Foucault—and I should concede at the outset that many of the contentions in *The Order of Things* are unsupported, overgeneralized, or simply mistaken—was sparked by the possibility that there are insights here that if further developed might shed some light on the connections between the apparently disparate fields of natural history and early modern biblical interpretation. One link between these two fields is the traditional idea, dating back at least as far as Augustine, that there are “two books,” the book of scripture and the book of nature. My general thesis (and this is the argument set out in Harrison 1989) is that changing approaches to the interpretation of one of these “books” will be linked to changes in approach to the interpretation of the other.¹

In order to see how this might work, it is important to grasp what was entailed in the earlier (that is, patristic and medieval) conceptions of the “book of nature.”² Take, for example, this medieval use of the metaphor as articulated by Hugh of St. Victor (1096–1141): “For the whole sensible world is like a kind of book written by the finger of God—that is, created by divine power—and each particular creature is somewhat like a figure, not invented by human decision, but instituted by the divine will to manifest the invisible things of God’s wisdom” (Migne 1857–1912, 122:176.814 B-C).

On this understanding, the visible world is a vast network of created objects that bear profound theological meanings. Those meanings are made manifest through a contemplative consideration of how they analogously resemble moral and theological truths. The key to those meanings was provided by scripture, a work of the early Christian era known as the *Physiologus*, and the medieval bestiaries. Animals, plants, and stones were made to be bearers of theological and moral meaning. The lion, for example, is described in the Aberdeen Bestiary thus:

Those who study nature say that the lion has three main characteristics. The first is that it loves to roam amid mountain peaks. If it happens that the lion is pursued by hunters, it picks up their scent and obliterates the traces behind it with its tail. As a result, they cannot track it. Thus our Saviour, a spiritual lion, of the tribe of Judah, the root of Jesse, the son of David, concealed the traces of his love in heaven until, sent by his father, he descended into the womb of the Virgin Mary and redeemed mankind, which was lost. (*The Aberdeen Bestiary* [c. 1200])

Emblematic readings of nature such as these were premised on the assumption that the purpose of natural things was not merely to serve human physical needs—indeed it was difficult to see how such creatures as the lion could serve such purposes—but to act as symbols of eternal spiritual truths (Ashworth 1990; Harrison 1998).

By the seventeenth century this symbolic world had been rendered almost completely unintelligible. One important factor was the Protestant Reformation. The reformers attacked allegorical readings of scripture, and the Protestant principle of *sola scriptura* (scripture alone) denied the possibility of theological truths being represented in nature, an iconoclasm that privileged word over image. Other factors also played a role, including the vast additions to the catalogues of creatures that resulted from the discovery of the New World. For these new creatures there were no traditional symbolic associations. Another relevant consideration was the advent of printing and the growth in literacy that accompanied it. These developments promoted the elevation of written word over visual symbol.

Whatever the reasons for it, the evacuation of meaning from the natural world precipitated a crisis relating to the natural ordering of things. If natural objects were not bearers of religious and moral meanings, if they could not be ordered according to their symbolic theological significance, how were they to be arranged and managed? (That there was an intelligible order to nature was, incidentally, premised on the idea of nature as the work of a Creator.)

There were essentially three early modern responses to the problem of natural order. One, the mathematization of nature, looks to the mathematical ordering of physical objects. Hence we find in Galileo a new book metaphor:

Philosophy is written in this grand book, the universe, which stands continually open to our gaze. But the book cannot be understood unless one first learns to comprehend the language and read the letters in which it is composed. It is written in the language of mathematics, and its characters are triangles, circles, and other geometrical figures without which it is humanly impossible to understand a single word of it. (1957, 237–38)

Here Galileo reshapes a traditional metaphor. Yes, there is a book of nature, but it is not written in such a way that individual creatures symbolize theological truths. Instead we look to the operations of nature and discover there a mathematical regularity.

As was the case for each of the new conceptions of order, theological considerations continued to play an important role in the process of mathematization. The theological significance of this new mathematical order was obviously no longer to do with meaning but rather with the wisdom of God. Now God is imagined to have imposed mathematical laws on the world—and this is a distinctive feature of early modern physics—and from that mathematical order we can infer certain truths about God's wisdom.

Astronomer Johannes Kepler claimed that God had stamped geometrical patterns on the cosmos. Minds trained in mathematics can intuit the divine order in the natural world. René Descartes would similarly observe that “mathematical truths, which you call eternal, were established by God and totally depend on him just like all the other creatures” (Descartes 1984–91, 3:23). In writing the book of nature God instantiated these mathematical truths: “God imparted various motions to the parts of matter when he first created them, and he now preserves all this matter in the same way, and by the same process by which he originally created it” (Descartes 1984–91, 1:240). All the motion in the world, then, is sustained by God. For Kepler, the regularities tell us of God’s wisdom; for Descartes they manifest something of God’s power. (Descartes thus differs from Kepler in holding that mathematical laws convey nothing about God’s nature, because according to Descartes they were chosen arbitrarily. This is why Descartes is skeptical about final causes in this sense, but not about God’s involvement in the world.)

Second is the move to a new biological taxonomy. If God is the Creator, it was assumed that behind the remarkable diversity of living things there must be some order, comparable in a way to the mathematical order that governs the motions of physical bodies. Taxonomy is the quest to uncover that order, now assumed to be nonsymbolic. So it was that when John Ray, who pioneered biological taxonomy in the seventeenth century, came to speak about the classification of birds, he made a point of telling his readers that they would not find in the book anything to do with “*Hieroglyphics, Emblems, Morals, Fables, Presages* or ought else appertaining to *Divinity, Ethics, Grammar*” (Ray and Willoughby 1678, Preface). In a similar vein, Nehemiah Grew (1641–1712), another important figure in the history of taxonomy who is charged with cataloguing the Royal Society’s natural history collection, informs us at the beginning of his catalogue that “*Mystick, Mythologick, or Hieroglyphick matter*” will play no role in his ordering (1681, Preface). The new attempts to order natural things focus on anatomical structure rather than symbolic similitudes. Moreover, it is this anatomical structure that will provide the basis for the division of living things into their various classes. To a degree this confirms Foucault’s contention that the ordering systems of the seventeenth and eighteenth centuries move away from similitude and toward taxonomy.

Again, this rejection of the symbolic power of natural objects did not entail the exclusion of all theological considerations, for the ordering of the creatures and the design of their remarkable “contrivances” was interpreted as evidence of the wisdom of God. Ray was thus not only a pioneering taxonomist but also a key early figure in the so-called physicotheological literature that emerges in the seventeenth and eighteenth centuries, stressing the ways in which the designs of the creatures point to the wisdom of the Creator. The reduction of the creatures to a particular order is also

assumed to be a necessary prerequisite to a determination of their proper uses—where *use* is now understood largely in terms of material utility. The moral and emblematic uses of the creatures that once had been integral to their symbolic ordering was increasingly superseded.³ Moreover, a right ordering of the creatures is regarded both as a reenactment of the original act in which Adam first named the creatures and as a means of partially restoring the human dominion over nature that was lost to the human race as a consequence of the Fall. In the seventeenth century, these theological considerations were to figure prominently in justifications for the pursuit of natural philosophy, or, as we would call it, science.

The third response to this crisis of representation, and one that in a sense encompasses the first two, was the early modern quest for a transparent and unambiguous natural language. If neither objects nor visual symbols were thought to represent unmediated transcendental truths, it was now thought possible that words might perform this function. This aspiration was consistent with the shift in Western Europe away from images toward a print culture and the written word. Perhaps the best-known figure in the early modern quest to discover a natural language was John Wilkins (1614–1672), one of the founders of the Royal Society—and the same figure who appears in the title of Borges’s “The Analytical Language of John Wilkins.” The manifest imperfections of existing languages—to which were attributed a variety of ills ranging from religious disputation and conflict to the impoverishment of the sciences—were addressed by attempts either to discover the original Adamic language or to invent an artificial language that would unambiguously represent the essences of things. Given the evils identified as having arisen out of the imperfections of languages, the ideal language was imagined to offer solutions not only to “scientific” problems but also to more pressing issues such as religious pluralism and the attendant wars of religion.

Although these three approaches—mathematics, taxonomy, and a natural language—offer distinct solutions to the problem of order in the early modern world, they are connected in important ways. As I have suggested, a key biblical narrative that informs each of these efforts, and particularly the last two, is the account in Genesis of Adam’s dominion over living creatures, his naming of the beasts, his fall from grace and the ensuing loss of dominion over nature, and, in the final chapter of the tragedy, the loss of the original language by the builders of Babel (Genesis 1:26; 2:19–20; 3:14–19; 11:1–9).

TAXONOMY AND THE FIRST VOCATION

Before looking at some of the specific ways in which the Genesis narrative influenced these early modern developments, it is worth inquiring why these stories motivated “scientific” inquiries only now. After all, the Bible

was the text par excellence during the medieval period. Why did not conceptions of Adamic naming and dominion have a similar impact then? One reason was that from the patristic period onward, texts about Adamic dominion over living things had been allegorized and spiritualized. For example, the “beasts” over which Adam exercised control were read as the base passions and desires that needed to be kept in check by reason; they were the “beasts within.” The fruits Adam tended in the garden were understood to be the “fruits of the spirit.” Thus it was the virtues that Adam cultivated, and his dominion was an internally directed control over his own fractious passions. The Fall, on this account, was a moral catastrophe that had led to a loss of self-control. Such an interpretation was in keeping with the classical and medieval view that the contemplative life was superior to the active life, and the Christian life was to be understood in terms of the cultivation and infusion of virtues.

The fifteenth and sixteenth centuries, however, marked the beginnings of a reversal of these tendencies. Renaissance humanists and Protestant reformers stressed the primacy of the literal sense of the biblical text and also asserted the value of the active worldly life. Martin Luther and John Calvin pointed to the apparently mundane occupations of the prelapsarian Adam—represented in Genesis 2:15 as that of tending and keeping a garden—as vindicating a new conception of the worldly vocation. These same texts could be applied more specifically to the vocation of the naturalist, no longer regarded as one who provides accounts of natural things that can be accommodated to some symbolic theological truth or moral application but rather one who gives accounts of living things that enable them to be used in practical ways. These new approaches promote the reestablishment of a literal dominion over nature and the active exploitation of living things in order to promote general human welfare.

English thinker Francis Bacon (1561–1626) epitomized these tendencies. In a number of his writings he alludes to the Genesis narrative to support his program for the reformation of natural history and natural philosophy. Bacon points out that “the first acts which man performed in Paradise consisted of the two summary parts of knowledge; the view of the creatures, and the imposition of names” (1974, 36). Adam’s work in the Garden of Eden, on this account, was practical and “scientific.” His capacity to name the creatures betrayed his perfect knowledge of the natural order. Following the Fall, however, that knowledge was lost, just as the original Adamic language with which he had imposed names became confused at Babel. For Bacon, the new natural philosophy was a means of partially restoring the lost knowledge and dominion of the first man (Harrison 2007a). In a famous passage in *Novum organum* Bacon wrote:

For man by the fall fell at the same time from his state of innocence and from his dominion over creation. Both of these losses however can even in this life be in some part repaired; the former by religion and faith, the latter by arts and sciences.

For creation was not by the curse made altogether and for ever a rebel, but in virtue of that charter, "In the sweat of thy face shalt thou eat bread," it is now by various labours (not certainly by disputations or idle magical ceremonies, but by various labours) at length and in some measure subdued to the supplying of man with bread; that is, to the uses of human life. (1857-74, 4:247-48)

Bacon explicitly sought to effect a reformation in the sphere of learning so that natural philosophy would be reoriented toward the practical matters relating to human welfare. In effect, this was an advocacy of science not only as the first vocation but also as a partial means of redemption.

The Baconian program was eagerly taken up in England and various parts of Europe. Many of the "scientific" activities that flourished during the Interregnum in England were inspired by Baconian principles. Following the Restoration in 1660, the newly founded Royal Society also proclaimed itself to be an institution founded on Baconian principles. In words that echoed Bacon's own, one of the Society's most prominent apologists, Thomas Sprat, wrote that the experimental philosopher

will be led to admire the wonderful contrivance of the *Creation*; and so to apply, and direct his praises aright: which no doubt, when they are offer'd up to *heaven* from the mouth of one, who has well studied what he commends, will be more sutable to the *Divine Nature*, than the blind applauses of the ignorant. This was the first service, that *Adam* perform'd to his *Creator*, when he obey'd him in mustring, and naming, and looking into the *Nature* of all the *Creatures*. This had bin the only *religion*, if men had continued innocent in *Paradise*, and had not wanted a *redemption*. (1667, 349-50)

The study of nature and the naming and classifying of the creatures was thus portrayed as not only the first vocation but the first genuinely religious vocation. The study of nature was the first religion.

This notion of Adam as the first scientist was remarkably widespread during the early modern period. A typical view of Adam's abilities was set out by the English divine and sometime Oxford orator, Robert South:

He came into the World a Philosopher, which sufficiently appeared by his writing the Nature of things upon their Names: he could view Essences in themselves, and read Forms with the comment of their respective Properties; he could see Consequents yet dormant in their principles, and effects yet unborn in the Womb of their Causes; his understanding could almost pierce into future contingents, his conjectures improving even to Prophesy, or the certainties of Prediction; till his fall it was ignorant of nothing but of Sin, or at least rested in the notion without the smart of Experiment. . . . I confess 'tis difficult for us who date our ignorance from our first Being, & were still bred up with the same infirmities about us, with which we were born, to raise our thoughts, and imaginations to those intellectual perfections that attended our nature in its time of Innocence. . . . (1697, 127-28)

Such was the common view of Adamic knowledge in the seventeenth century, a view that was premised largely on a single text: the episode in Genesis 2 when Adam names the beasts.

THE LANGUAGE OF NATURE

Integral to the goal of the reformation of natural philosophy was the reformation of language itself. In their fallen condition, words were mere tokens of things. Moreover, there was no universal system even of arbitrary tokens. This was the consequence of what Bacon termed “the second general curse”—the confusion of tongues at Babel (Genesis 11). One desideratum in the general reformation of science was the deployment of an ideal language that would recapture at least some of the elements of the original Adamic tongue (Lewis 2007). Bacon thus suggested that we relearn the language of “the book of creation . . . that speech and language which has gone out to all the ends of the earth, and has not suffered the confusion of Babel; this men must learn again, and, resuming their youth, they must become again as little children and deign to take its alphabet into their hands” (1857–74, 2:14–15). More specifically, this would be a language based on “real characters,” by which he meant symbols, which “express neither letters nor words in gross, but Things or Notions” (1857–74, 3:399–400). Bacon pointed to the examples of Chinese ideographs and Egyptian hieroglyphics. These ideas were intimately related to Baconian notions of reasserting dominion over nature, for, as Bacon put it, “whenever he shall be able to call the creatures by their true names he shall again command them” (1974, 38).⁴

Bacon himself did not develop these ideas in any detail, but they were taken up by others. During the middle decades of the seventeenth century there was considerable speculation about the possibility of uncovering a quasi-magical linguistic key to all knowledge. John Webster (1611–1682), a critic of the universities and a man of diverse philosophical interests, described the Adamic act of naming in this way: “the imposition of their names was adaequately agreeing with their [the creatures’] natures; otherwise it could not univocally and truly be said to be their names whereby he distinguished them.” It followed that Adam knew “the internal natures, virtues, effects, operations, and qualities of the creatures,” indeed Adam’s encyclopaedic knowledge was nothing other than facility in the very language of nature. After the entry of sin into the world, this language of things was “defaced and forgotten” (1654, 27, 29, 30). Webster was encouraged by the possibility that this primitive language might be recovered, and with it Adamic learning. Indeed, it was often thought that the knowledge of the primitive tongue, if reacquired, would bring with it knowledge of the natures of things. As noted earlier, even Bacon himself had asserted that the imposition of names was one of the summary parts of knowledge and that knowledge of the true names of creatures would bring with it power over them.

Not all language schemes of this period were so ambitious. Wilkins was highly skeptical about the kind of project in which Webster and the

Cabbalists were engaged. Yet, Wilkins is perhaps best known for his *Essay towards a Real Character and a Philosophical Language* (1668). Wilkins described his project as an attempt at “a regular *enumeration* and *description* of all those things and notions, to which marks or names ought to be assigned according to their respective natures.” Although Wilkins conceded that his was a first attempt at this—literally an essay—the stunningly ambitious goal was “to reduce all things and notions into such a frame as may express their natural order, dependence, and relations” (p. 1). Because this included *all* things to which names might be attached, biological taxonomy was an integral part of the project. Although he was a competent enough natural philosopher, Wilkins drew upon the taxonomic expertise of John Ray and Francis Willoughby to complete the section of the work devoted to the ordering of animals and plants.

Although the biblical narratives relating to the naming of the beasts and the confusion of languages served as a source of inspiration for the many and varied artificial language schemes, one of the fundamental assumptions shared by Wilkins and a number of others came from a quite different source: Aristotle. The Greek philosopher had taught that human beings agreed in their mental conceptions of things but attached different linguistic labels to their mental concepts (Lewis 2007, 10–11; Maat 2004, 13–15). Aristotle had opened his *De Interpretatione* with this statement: “Now spoken sounds are symbols of affections in the soul, and written marks symbols of spoken sounds. And just as written marks are not the same for all men, neither are spoken sounds. But what these are in the first place signs of—affections of the soul—are the same for all; and what these affections are likenesses of—actual things—are also the same” (16a4–16a9). Granted this assumption, what the natural-language proponents sought to do was align our common mental concepts with a common set of symbols. Thus Wilkins:

As men do generally agree in the same Principle of Reason, so do they likewise agree in the same *Internal Notion* or *Apprehension of things*. . . . The *Names* given to these in several Languages, are such arbitrary *sounds* or *words*, as Nations of men have agreed upon, either casually or designedly, to express their Mental notions of them. The *Written word* is the figure or picture of that sound. So that if men should generally consent upon the same way or manner of *Expression* as they do agree in the same *Notion*, we should then be freed from that Curse in the Confusion of Tongues, with all the unhappy consequences of it. (1668, 20)

The logic of this position was persuasive. But the next step was highly problematic, for it entailed, to use Wilkins’s own words, “a just *Enumeration* and *description* of such things or notions as are to have *Marks* or *Names* assigned to them’ (1668, 20).

The practical task of enumerating all things or concepts ultimately proved impossible, because it was not clear that there would be a prior agreement on the nature of things, or of the kinds of things that there were. Critics of

the *Essay* were happy to point this out. In his popular *Reflections upon Learning* (1699) Thomas Baker dismissed the *Essay* as “an impracticable thing.” If we are to have a language based on things rather than words, he pointed out, “we must first be agreed about the nature of things, before we can fix Marks and Characters to represent them, and I very much despair of such an agreement.” Nature “is an inexhaustible mine, where we may always dig and yet never come at the bottom” (1699, 18, 76). And so it proved. In his correspondence, Ray declared himself to be “ashamed” of the botanical taxonomy he had contributed to the *Essay*. The tables he produced did not follow “nature’s lead” and were rather, he wrote, constrained by the Procrustean bed of the author’s method (Lewis 2007, 291). Ray concluded that we cannot predetermine the kinds of things that there will be and so formulate a taxonomic system a priori. Rather we must carefully observe the characteristics of living things and then attempt to classify them.

By the same token, it was not clear that a natural rather than an arbitrary taxonomy was in principle impossible; after all, Adam had given names to the creatures in accordance with their true natures and mutual relations, albeit with divine assistance. Moreover, it was assumed that God had imposed a rational order upon the world, and the goal of natural history and natural philosophy was to discover what it was. But the Genesis narrative provided both the goal of the language projectors and the sobering explanation of our contemporary inability to rearticulate that language: the fallen condition of the world. The human mind itself had been deeply wounded by sin, and the world itself was no longer intelligible to it. Accordingly there could be no perfect realization of the Adamic project of naming. In a fallen world there could be only a rough approximation.

Ray was thus ultimately resigned to the fact that we could never revisit the Edenic state and frame the perfect nomenclature. Nonetheless, he made some progress toward a workable system of classification. In his *Methodus plantarum* (1682) he proposed the species as the basic taxonomic unit. Subsequently, in the three-volume *Historia plantarum* (1686–1704) he described over 18,000 plants, classifying them according to groups of characteristics (rather than relying on their medicinal uses or single characteristics, as previous taxonomies had done). As for a universal language for overcoming the problem of different vernacular names, Ray simply reverted to one that already existed: Latin. So it was Ray who insisted that although no natural, universal basis for classifying creatures could be found, at least the names of living things should be in a language that was in principle accessible to all educated people.

LINNAEUS AS SECOND ADAM

All of these considerations provide us with some of the background to von Haller’s indignant characterization of Linnaeus as a would-be second Adam.

More than this, they also help explain how Linnaeus conceptualized his own activities. Thus, for example, he drew upon the idea of the study of nature as an inherently religious activity by designating his binomial nomenclature as “a psalter for divine worship” and characterizing botany as “the divine science” (2001, 10). He also believed that he was destined to be the reformer of natural science, in much the same way that Luther had reformed a corrupt religion. He was the self-styled “Luther of science.” Elsewhere he cast himself as “Moses on the mountain” bringing the commandments of God to the children of Israel. In many other places in his writings he immodestly drew upon similar biblical references (Koerner 1996, 157).

Did Linnaeus consider himself to be a second Adam? Certainly, he imagined himself, like Adam, to have been divinely inspired. He alluded to 1 Kings 17:8—“and the word of the LORD came to him”—when giving an account of his authorship of binomial nomenclature. Perhaps most telling of all, the frontispiece of the 11th edition of *Systema naturae* (1760) shows him in Paradise surrounded by animals and plants of all kinds. At his feet is his own flower, *Linnea borealis*, while in the center of the piece is depicted Diana polymammae, who represents the fecundity of nature. The iconography is unmistakably that of Adam in Eden. Linnaeus also observed in his *Philosophia botanica*: “That all genera and species are natural is confirmed by things that are revealed, discovered, observed. . . . Every genus is natural, made in the first place such as it is; for this reason it is not to be capriciously split or stuck [to another] for pleasure, or according to each man’s theory” (2005, 114). Yet it was one thing for him to assert the reality of genera and another to claim that his system conformed precisely to those natural genera. Thus, a few paragraphs later in the same work he was to concede that “Artificial classes are substitutes for natural ones, until the discovery is made of all the natural classes which more genera, which have not been discovered, will reveal” (p. 115). (Linnaeus implied that his great predecessor Ray had not done this.) His supporters also realized that this system was artificial and only approached the perfection of the Adamic taxonomy. The Scottish physician and naturalist Alexander Garden (1730–1791), who gave his name to the beautifully scented gardenia flower, consoled Linnaeus for *not* having come up with a natural system of classification, observing: “The man who gives the natural system must be a second *Adam*, seeing intuitively the essential differences of things” (Sterns 1970, 605).

In all of this, the significance of the biblical episode of Adam’s naming of the creatures was that a natural nomenclature was in principle possible. Although Linnaeus did not insist that his nomenclature was identical with the perfect system once delineated by Adam, he did seem to cherish the notion that it was a reasonable approximation. The difficulty with framing a complete system was the discovery of new species, and this practical difficulty—one presumably not faced by Adam—precluded the construction

of a perfect, natural system. As we have seen, this difficulty had long been recognized, following the failure of natural classificatory systems of the seventeenth century.

The advent of the theory of evolution by natural selection, as proposed by Charles Darwin in 1859, is generally thought to have sounded the death knell for any ordering conception of living things that assumes a preordained pattern. The difficulty we are faced with, according to the now standard account, is not merely that of the limits of our knowledge but, rather, given the randomness associated with the processes of natural selection, that there can be in principle no preordained set of natural kinds or essences in the biological realm (Aristotle) or series of finite steps on the ladder of being (Plato). There remains the intriguing possibility—and I take this to be a consequence of the recent work of Simon Conway Morris (2004)—that if we look to examples of convergent evolution it may indeed be possible to specify a priori, and within broad parameters, the kinds of creatures that natural selection will produce. That is, the apparently random processes of natural selection may actually give rise to a very general kind of natural ordering. But such a general system of natural ordering would fall well short of the ideal Adamic taxonomy that was the goal of taxonomists from Ray to Linnaeus.

CONCLUSION

To revert to the theme of this conference—Linnaeus and *Homo religiosus*—we might reflect on Linnaeus's choice of the specific predicament *sapiens* to distinguish human beings from other members of the genus *Homo*. Two other specific names were leading contenders: *Homo religiosus*, man the religious animal, or *Homo scientia*, man the scientific animal. Perhaps the option of *Homo religiosus* might have mollified von Haller, who complained that the human race had been reduced to the status of monkeys. Yet, part of what I have suggested in this essay is that for many in the early modern period, these two alternatives—*scientia* and *religiosus*—amounted to much the same thing. Science had been the original vocation of Adam in the garden, and as such science had been the original religion. *Homo scientia* and *Homo religiosus* were the same species. This identification of taxonomy as the original work performed by Adam in the Garden of Eden played an important part in providing justification for taxonomic pursuits that might otherwise have been regarded as futile. In this sense, not only Linnaeus but all of those involved in the work of ordering, naming, and classifying could legitimately be regarded as following in the footsteps of Adam.

NOTES

A version of this essay was presented at a conference celebrating the 300th anniversary and achievements of Carl Linnaeus, "Linnaeus and *Homo Religiosus*: Religious Awareness and Human Identity," at the University of Uppsala, 30 May–2 June 2007.

1. For revised and more concise statements of the thesis see Harrison 2006; 2007b.
2. The history of the "book of nature" is given in van Berkel and Vanderjagt 2006.
3. That said, significant elements of moral usefulness did remain. One of the objections to Linnaeus's botanical taxonomy was that its assumptions about plant reproduction undermined the idea that nature could offer moral lessons. See Harrison 1998, 463–85. On the objections to Linnaeus's system on these grounds see Jönsson 2002.
4. For similar sentiments see Walker 1641; Boehme 1648; Pettus 1674; Bamfield 1684. Also see discussions in Håkansson 2001; Bono 1995.

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