Animal pleasures: Popular zoology in eighteenth- and nineteenth-century England

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AT THE BEGINNING of the seventeenth century, knowledge about animals was organized on more or less the same basis as it had been in the middle ages. The most authoritative zoological text available in English, Edward Topsell's *The Historie of Four-Footed Beasts*, was a compendium of material from medieval bestiaries.[1] Like them, it did not distinguish between recent and traditional "information," valuing the testimony of ancient philosophers as much as that of modern observers, so that unicorns and manticores were scattered among the cows and pigs. And like earlier bestiarists, Topsell made no attempt to categorize the animals he described. The random arrangement of his entries implicitly defined the bestiarist's passive relation to his material. Nature was perceived as an unfathomable bag of wonders, and human investigators had no way of predicting what might turn up.[2]

During the seventeenth century, however, this approach to the natural world was gradually superseded by one that stressed observation and experimentation. As early as 1629, the Society of Apothecaries in London sponsored botanical field surveys in southern England and Wales, and subsequently this kind of attention was extended to other regions and to insects, birds, and other animals.[3]

[1] (London: William Iaggard, 1607). Topsell's massive, densely printed work was based on the five-volume *Historia Animalium* of the Swiss naturalist Konrad Gesner, which had been published a half-century earlier.

[2] On the medieval bestiary, see Montague Rhodes James, *The Bestiary, being a Reproduction in Full of the Manuscript Ii.4.26 in the University Library, Cambridge . . . and a Preliminary Study of the Latin Bestiary as Current in England* (Oxford: The Roxburghe Club, 1928) and T. J. Elliot, foreword, *A Medieval Bestiary* (Boston: David R. Godine, 1971).

[3] David Elliston Allen, *The Naturalist In Britain: A Social History* (Harmondsworth, Middlesex: Penguin, 1978), pp. 6-11.

Accumulating information in this way implied a new aggressiveness on the part of naturalists, which was enhanced by an emerging tendency not only to collect knowledge but to classify it. For example, the writings of John Ray, the most distinguished English naturalist of the seventeenth century, laid the foundation for a system of classification based on structural affinities.[4] The act of organization was an assertion of human understanding and control. Not only did such taxonomies interpret and analyze existing information, they were also designed to accommodate new discoveries. Thus the many new species brought back by the heroic explorer-naturalists of the eighteenth century, as well as those identified by sharp-eyed stay-at-homes who scrutinized the local flora and fauna, could be situated within established taxonomics.

By the middle of the eighteenth century, the efforts of these naturalists were appreciated not only by colleagues with specifically scientific concerns but by a larger audience as interested in entertainment as in enlightenment. Natural history became part of the increasingly commercialized, predominantly middle-class culture of leisure.[5] Those who wished to admire the advance of knowledge could view extensive botanical or zoological collections, such as that of Sir Hans Sloane (which became the nucleus of the British Museum); they could pay to admire exotic wild animals or natural aberrations like a five-legged cow.[6] Or they could read popular distillations of scientific works, like Oliver Goldsmith's successful and heavily derivative *History of the Earth and Animated Nature* (1774). And if these amateur naturalists were not motivated solely by scientific curiosity, their desire for entertainment was not simply frivolous. To hardworking

[4] On early English naturalists, see Charles E. Raven, *English Naturalists from Neckam to Ray* (Cambridge: Cambridge University Press, 1947); Allen, *Naturalist in Britain* (note 3), pp. 5-25; Keith Thomas, *Man and the Natural World: A History of the Modern Sensibility* (New York: Pantheon, 1983), pp. 51-91.

[5] For an overview of this emerging culture, see J. H. Plumb, "The Commercialization of Leisure in Eighteenth-Century England," in Neil McKendrick, John Brewer, and J. H. Plumb, *The Birth of a Consumer Society: The Commercialization of Eighteenth-Century England* (Bloomington: Indiana University Press, 1982). For the development of natural history as a fashionable pursuit, see Allen, *Naturalist in Britain* (note 3), pp. 26-51. The present essay is concerned with popular zoology as an aspect of middle-class culture in the eighteenth and nineteenth centuries, not as a component of the history of biological science.

[6] G. R. de Beer, *Sir Hans Sloane and the British Museum* (London: Oxford University Press, 1953), pp. 111, 121; Richard D. Altick, *The Shows of London* (Cambridge, Mass.: Harvard University Press, 1978), pp. 25-30, 35-49.

members of the bourgeoisie, who shared the recreational traditions of neither the rural elite nor the common people, mere leisure might seem suspect, alien to deeply ingrained values of industry and thrift.[7] The wide appeal of the study of natural history, especially of zoology, suggests that it was no idle pastime, although the rewards it offered were generally intangible.

The Popular Study of Animals

Widespread interest in the natural world, which lasted well into the nineteenth century, was fueled in part by the desire to participate, actually or vicariously, in an exciting exercise of human prowess — the reduction of the chaotic and unfathomable variety of nature to an orderly, comprehensible system. Pioneering naturalists were adventurers, challenging the unknown dangers of uncharted territories. According to one resident at the Cape of Good Hope, "the majority of the travelers who penetrated the interior . . . were . . . enthusiastically . . . devoted to scientific pursuits."[8] The rhetoric of challenge could also appeal to those whose encounters with nature were less risky. In 1862 the Literary and Philosophical Society of Liverpool, by way of persuading merchant marine officers to contribute to the "furtherance of Zoology" on their voyages, described zoological collecting and observation as a contest. The society stressed the excitement of matching one's wits against nature — "the field . . . naturalist . . . revels in the contemplation of the habits, manners, and instincts of created beings" — and the gratification of "captures," which might produce useful observations or even whole new species.[9]

Natural history, and especially zoology, offered compelling attractions for the contemplative as well. Indeed, for some naturalists, the religious significance of their work outweighed its scientific value. To

[7] In *Leisure and Class in Victorian England: Rational Recreation and the Contest for Control, 1830-1885* (London: Routledge and Kegan Paul, 1978), Peter Bailey elaborates this point for a slightly later period.

[8] George Thompson, *Travels and Adventures in Southern Africa, Comprising a View of the Present State of the Cape Colony with Observations on the Progress and Prospects of British Emigrants* (London: Henry Colburn, 1827), I, v.

[9] "Suggestions offered on the part of the Literary and Philosophical Society of Liverpool, to Members of the Mercantile Marine, Who may be desirous of using the advantages they enjoy for the promotion of Science, in furtherance of Zoology," *Proceedings of the Literary and Philosophical Society of Liverpool during the Fifty-First Session, 1861-62* (Liverpool: Thomas Brakell, 1862), appendix II, 1, 2, 46.

William Swainson, a prolific popularizer, the "great characteristic" of natural history was "its tendency to impress the mind with the truths of religion"; to the compilers of a children's zoology book, no other subject "excites such proper sentiments of the being and attributes of God."[10] These religious insights were always connected with human preeminence and mastery. Natural history elaborated a hierarchical vision of creation, with people at the apex. The more naturalists discovered about exotic animals in distant places, the less they doubted that human dominance was divinely ordained. According to William Burchell, who traveled extensively in southern Africa during the early 1800s, this point was best appreciated in "a country in a state of nature, where men and multitudes of wild beasts of every class, roam unrestrained. . . . Can we view animals of immense bulk and strength, either flying from man, or submitting to his domination, without acknowledging at once that their timidity or submission forms a part of that wise plan, predetermined by the deity, for giving supreme power to him who is physically the weakest of all?"[11]

The creatures closest to humanity in the scale of nature made these points most satisfactorily. Quadrupeds (as they were often called in the eighteenth and nineteenth centuries by those who found the term *mammals* alarmingly technical) were relatively easy to observe and to interact with.[12] Unlike birds, fish, reptiles, and insects, they occupied more or less the same space as humans and, as one pragmatic author pointed out, "cannot easily avoid us."[13] In addition, their similarity to people made them both more interesting than and intrinsically superior to other animals.[14] This closeness could, however, be disturbing. As Charles Hamilton Smith, president of the Devon and Cornwall Natural History Society, put it, "We find some startling us by forms and actions so much resembling our own, as to excite

[10] William Swainson, *A Preliminary Discourse on the Study of Natural History* (London: Longman, Rees, Orme, Brown, Green, and Longman, 1834), p. 108; William Holloway and John Branch, *The British Museum; or, Elegant Repository of Natural History* (London: John Badcock, 1803), I, iii.

[11] William Burchell, *Travels in the Interior of Southern Africa* (London: Longman, Hurst, Rees, Orme, and Brown, 1822-1824), II, 207.

[12] James Rennie, *Alphabet of Zoology, for the Use of Beginners* (London: Orr, 1833), pp. 5-6.

[13] Mary Trimmer, *A Natural History of the Most Remarkable Quadrupeds, Birds, Fishes, Serpents, Reptiles, and Insects* (1825; rpt. and abridged Boston: S. G. Goodrich, 1829), p. 4.

[14] [Stephen Jones], *The Natural History of Beasts, Compiled from the Best Authorities* (London: E. Newbery, 1793), p. iiii.

unpleasant comparisons; others, causing just apprehensions, from their evident powers of mischief."[15] William Swainson worried "that man . . . should . . . be exposed to innumerable injuries, and even certain death, from those beings which he was appointed to govern, would appear, at first sight, anomalous, and inconsistent with the fitness of things."[16] But its power to resolve such apparent anomalies gave zoology much of its appeal. One attribute guaranteed the human being's ascendancy. As Smith explained, "endowed with the prerogative of reason, he is enabled to render all subservient to his wants, and is distinguished as a being intended for higher duties, and a more exalted destiny."[17]

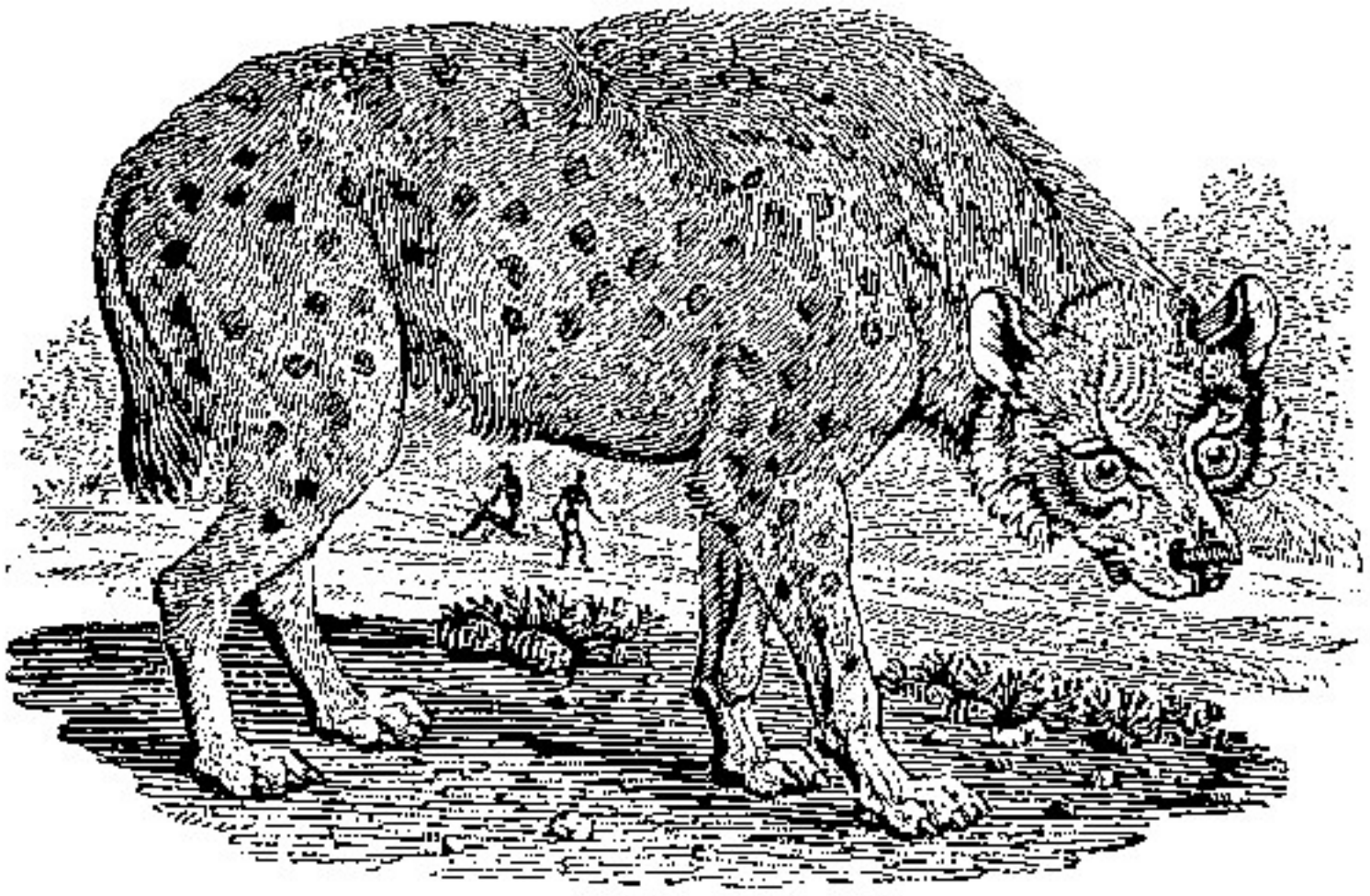
Authors and publishers did not wait long to take advantage of this appeal. Works of popular zoology began to appear in significant numbers in the last part of the eighteenth century.[18] Most of them followed a standard pattern, echoing Goldsmith's. Thomas Bewick's *General History of Quadrupeds* (1790) is a typical example. An octavo volume of approximately five hundred pages, it served as an encyclopedia or guidebook to the entire furred creation. Each type of animal got an entry, which was, in most cases, illustrated by one of Bewick's appealing woodcuts. The entries varied in length from less than a page to many pages and included any of the following information, depending on what had been discovered and deemed noteworthy: appearance, geographical range, habitat, diet, tastiness of flesh, history of contact with man, and temperament. The organization, as well as the substance, reflected the advances of Enlightenment explorers and scientists. The animals were not arranged at random, as in the bestiaries of earlier centuries, or according to such superficial criteria as alphabetical order, geographic distribution, or the ways people used them. Although Bewick, like most zoological popularizers of his time, did not go so far as to use technical Linnaean taxonomy, he followed the influential French naturalist Buffon in arranging the animals by

[15] Charles Hamilton Smith, *Introduction to the Mammalia* (Edinburgh: Lizars, 1842), p. 74.

[16] William Swainson, *On the Habits and Instincts of Animals* (London: Longman, Orme, Brown, Green and Longmans, 1840), p. 176.

[17] Smith, *Introduction to Mammalia* (note 15), p. 74.

[18] R. B. Freeman, *British Natural History Books 1495-1900: A Handlist* (London: Dawson/Archon, 1980); R. B. Freeman, "Children's Natural History Books Before Queen Victoria" and "A Handlist of Texts," *History of Education Society Bulletin*, 17 (1976), 7-21 and 18 (1976), 6-34.



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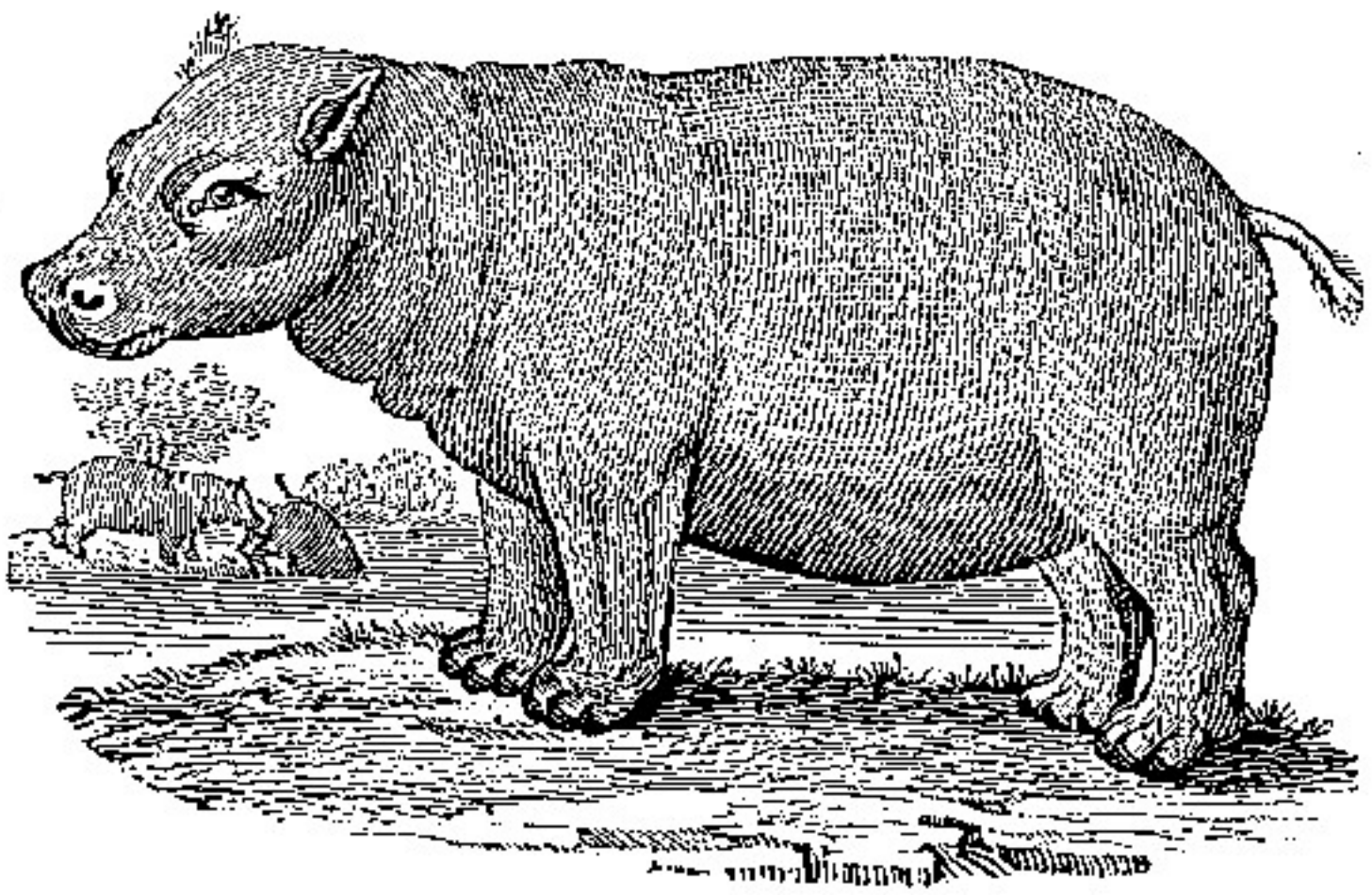
Thomas Bewick, *A General History of Quadrupeds* (1822), p. 301



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Thomas Bewick, *A General History of Quadrupeds* (1822), p. 182

"kinds," or groups united by structural affinity. Thus the "ox kind" included the zebu and the buffalo along with familiar domestic cattle, and the "hog kind" the peccary and the tapir. The ordering of kinds was similarly systematic, with the grazing and hoofed kinds — horses, oxen, sheep, goats, antelopes, deer, camels, pigs, and elephants — first, followed by the carnivores — cats, weasels, bears, hyenas, and dogs — then rabbits and rodents, and finally monkeys and other hard-to-classify creatures like seals, bats, and armadillos. With the exception of these final bits and pieces, Bewick presented the animal kingdom as rationally ordered and easily comprehensible, strong evidence of the power of human intelligence.

Somewhat to Bewick's surprise, *A General History of Quadrupeds* was an enormous success; according to the modest but delighted author, the book received "a glut of praises."[19] The critics liked it, although Bewick had borrowed much of his information from familiar published sources. (Like many writers of popular zoology books, Bewick was not a serious naturalist. He was, however, a serious artist, and had taken advantage of every opportunity to observe exotic animals touring the north of England while he was preparing the illustrations.[20]) The public endorsed the critics' judgment. The first edition, published in 1790, sold out rapidly, as did the second and the third, printed in 1791 and 1792. The demand for new editions did not slacken until well into the next century; an eighth edition was required in 1824.

Bewick did not, of course, have the market to himself during this period. Nor did the falling off of demand for *A General History of Quadrupeds* signal the waning of popular interest in zoology. On the contrary, this interest was strong enough to support the first booksellers specializing in natural history.[21] Several publishers were tempted to float more elaborate and sustained projects. William Jardine launched the forty-volume *Naturalist's Library* in 1833; before the series concluded a decade later the standard edition size had been fixed at an impressive four thousand copies. Particularly popular

[19] Thomas Bewick, *A Memoir of Thomas Bewick Written by Himself*, ed. Iain Bain (Oxford: Oxford University Press, 1975), p. 107.

[20] *The Watercolours and Drawings of Thomas Bewick and his Workshop Apprentices*, intro. and ed. Iain Bain (London: Gordon Fraser, 1981), I, 24-27.

[21] C. Kirke Swann, "Natural History Bookselling," *Journal of the Society for the Bibliography of Natural History*, 6 (1972), 118.

volumes could sell twice as many. (Such figures do not include the share of the market siphoned off by imitators, such as the *Miscellany of Natural History*.[22]) Equally optimistic were the publishers who founded monthly or bimonthly natural history magazines to transmit to an audience of enthusiastic amateurs the discoveries announced in the ponderous technical journals of learned societies. At least seven such periodicals appeared between 1828 and 1834.[23]

The gratifications of taxonomy were not the only reasons people liked to read about animals. The creatures, whether exotic imports or particularly fine specimens of familiar varieties, were fascinating in themselves, and people flocked to see them live in menageries and agricultural shows. Zoological subjects were considered so intrinsically interesting that they could seduce both children and adults away from bad habits and dangerous pursuits.[24] To satisfy readers' literal curiosity about animals, works of popular zoology were crammed with miscellaneous information. Bewick's readers, for example, could learn that the zebra was "the most beautiful, as well as the wildest, most timid and untameable animal" and that the flesh of the "capibara [a large rodent], though fat and tender . . . like that of the otter, has an oily and fishy taste."[25] Sometimes the reports mentioned the specific animals on which observations were based; William Wood knew that hyenas could be tamed because two tame ones had been displayed

[22] Susan Sheets-Pyenson, "War and Peace in Natural History Publishing: *The Naturalist's Library*, 1833–1843," *Isis*, 72 (1981), 60.

[23] In this case the publishers' optimism was less well founded. They had apparently overestimated the demand, and competed too intensely for a relatively small market. Most of these ventures folded after a few years; even the survivors could count on circulations of only about 500. Susan Sheets-Pyenson, "A Measure of Success: The Publication of Natural History Journals in Early Victorian Britain," *Publishing History*, 9 (1981), 21-22, 29-31. For an analysis of the marketing strategy of one of the more successful periodicals, see her "From the North to Red Lion Court: The Creation and Early Years of the *Annals of Natural History*," *Archives of Natural History*, 10 (1981), 221-249.

[24] William Bingley, *Animal Biography; or, Authentic Anecdotes of the Lives, Manners, and Economy of the Animal Creation, Arranged According to the System of Linnaeus* (London: Richard Phillips, 1804), I, v; Philip Henry Gosse, *Natural History, Mammalia* (London: Society for Promoting Christian Knowledge, 1848), p. iii; Edward Turner Bennett, *The Tower Menagerie: Comprising the Natural History of the Animals . . . with Anecdotes of their Characters and History* (London: Robert F. Jennings, 1829), p. xii.

[25] Thomas Bewick, *A General History of Quadrupeds* (Newcastle upon Tyne: Beilby and Bewick, 1822), pp. 20, 348.

at the Tower Menagerie in 1792.[26] Thus by the late eighteenth century popular natural history writers routinely portrayed animals as real, concrete, and external to people, part of the ordered richness of nature, in contrast to traditional bestiary literature, where animals were essentially figments of the human imagination, important primarily as emblems or allegories of human concerns.[27] Natural history writers asked not "what do animals mean?" but "what are they like?".

Hierarchy and Insubordination

This fascination with animals was not entirely disinterested. Zoological information could come in handy. This was made particularly clear in animal books intended for children, which usually outlined the practical benefits they offered in introductions intended for parents.[28] For young readers, taxonomy was a source of instruction. One writer found in the animal world "the most evident appearances of the Divine Wisdom, Power, and Goodness," an example of which was "how wisely and mercifully it is ordained, that those creatures that afford us wholesome nourishment, are disposed to live with us, that we may live on them."[29] Heightened religious awareness might lead to better behavior, in particular to improved treatment of animals (not generally a concern of adult natural history), a course of action that could be recommended on pragmatic grounds as well as on principle. According to the shrewd but anonymous author of a children's book called *The Animal Museum*, "all the animals domesticated by man or that come within the sphere of his operations are sensible of kindness, and but few are incapable of some return."[30]

[26] William Wood, *Zography; or the Beauties of Nature Displayed* (London: Cadell and Davies, 1807), 1, 195.

[27] Beryl Rowlandson has described this aspect of the bestiary tradition in *Animals with Human Faces: A Guide to Animal Symbolism* (Knoxville, Tenn.: University of Tennessee Press, 1973); see also, G. Evelyn Hutchinson, "Zoological Iconography in the West after A.D. 1200," *The American Scientist*, 66 (1978), 675-684.

[28] For an extended discussion of zoological works intended specifically for children, see Harriet Ritvo, "Learning from Animals: Natural History for Children in the Eighteenth and Nineteenth Centuries," *Children's Literature*, 13 (1985), 72-93.

[29] [Eleanor Frere Fenn], *The Rational Dame: or, Hints Towards Supplying Prattle for Children* (London: John Marshall, ca. 1800), pp. 19, 22.

[30] *The Animal Museum; or, Picture Gallery of Quadrupeds* (London: J. Harris, 1825), pp. iii-iv.

Even those animals generally considered to be outside the human sphere might be utilized. Thomas Varty's *Graphic Illustrations of Animals*, a series of enormous colored cartoons, made this point concerning "The Bear and Fur Animals." Flanking a central illustration of bears, beaver, lynx, and mink in a northern pine forest were smaller pictures of the animals transformed into such useful objects as winter coats, soldiers' hats, royal regalia, perfume, paintbrushes, and food (bears' tongues and hams were considered delicacies).[31] Accurate information combined with enterprise might expand the list of wild animals' contributions to human welfare and possibly result in the domestication of previously untamed creatures. The zebra was frequently identified as an animal "formed to satisfy the pride of man, and render him service"; that it had not been tamed by the indigenous people of southern Africa was considered evidence of their indolence and lack of imagination.[32]

But the most powerful practical function of popular zoological literature, whether its primary audience was adult or juvenile, was less explicit. Underlying the descriptions of individual animals was a metaphor as compelling as the taxonomy that determined the works' overall structure: the animal kingdom, with humans in the divinely ordained position at its apex, represented, explained, and justified the hierarchical human social order. Because of the gap that separated people from animals, the metaphorical hierarchy remained incomplete; animals never exemplified the best human types. But although animals were precluded from realizing, even figuratively, the highest human possibilities, they were particularly appropriate representatives of the less admired ranks and propensities. Embodying the lower classes as sheep and cattle validated the authority and responsibility exercised by their social superiors; embodying the lower classes or alien groups as dangerous wild animals emphasized the need for their masters to exercise strict discipline and to defend against depredations. Such identifications informed the language used to describe the various animals, and they were implicit in the system of values that determined the moral judgment pronounced upon each beast.

Sometimes, especially when the comparison involved alien races, these identifications were made explicit. The dichotomy between

[31] Varty, *Graphic Illustrations of Animals, Showing Their Utility to Man, in Their Services During Life, and Uses After Death* (London: Thomas Varty, n. d.), unpaged.

[32] Holloway and Branch, *The British Museum* (note 10), II, 45-48.

domesticated and wild animals was frequently compared to that between civilized and savage human societies. Darwin speculated that the wildness common in hybrids of domestic species had the same cause as the wickedness that characterized human half-breeds.[33] According to Abraham Bartlett, the superintendent of the London Zoo for almost half a century, domestic animals exhibited superior social skills and self-control: "They live, as a rule, in harmony with each other, they can be trusted together, and may be regarded as a happy family."[34] (Although most Victorians would have agreed on the desirability of such qualities, there were a few dissenters, like Darwin's cousin, the eugenicist Francis Galton, who connected the mediocrity of most people with the mindless gregariousness of herd animals.[35])

Such comparisons could be more precise. Darwin cited a report that two Scottish collies who visited Siberia "soon took the same superior standing" with regard to the native dogs "as the European claims for himself in relation to the savage."[36] The statement that "the Old World contains the animals which are distinguished as the most powerful and most perfect in their structure, those of the New having for the most part a character of organization which assigns them a lower rank in the scale of animated beings," could easily be applied to the American Indians.[37] In case the reader were too cautious to make such a leap himself, Bartlett completed a comparison of the bold and vigorous animals of Africa with their less impressive Asian equivalents by claiming that few Asiatic peoples "bear comparison with your restless, wandering determined Arab race."[38]

When animals stood for foreigners, the natural world was apt to be presented in the stark, violent terms of conquest. After his explorations in southern Africa, William Burchell concluded that the

[33] Darwin, *The Variation of Animals and Plants under Domestication* (New York: D. Appleton, 1892), II, 19-21.

[34] *Wild Animals in Captivity*, comp. and ed. Edward Bartlett (London: Chapman and Hall, 1899), p. 23.

[35] Galton, "Gregariousness in Animals," *Macmillan's Magazine*, 23 (1871), 353-357.

[36] "A Preliminary Notice: 'On the Modification of a Race of Syrian Street-Dogs by Means of Sexual Selection,'" in Paul H. Barrett, ed., *The Collected Papers of Charles Darwin* (Chicago: University of Chicago Press, 1977), II, 279.

[37] John Charles Hall, *Interesting Facts Connected with the Animal Kingdom* (London: Whittaker, 1841), p. 51.

[38] Bartlett, *Wild Animals in Captivity* (note 34), p. 61.

hierarchy of nature was "a succession of destruction" with "each animated object submitting to its superior, and all to man. In him terminates this graduated tyranny."[39] But the standard metaphor underlying popular zoology was more restricted. Neither the authors nor their audience understood contemporary English society as a tyranny. It was, on the contrary, a carefully modulated and delicately balanced hierarchy, which might be threatened with social chaos and economic collapse if its members, especially its subordinate members, failed to recognize their places and do their jobs. The animal kingdom (that standard phrase was itself part of the metaphor) was generally compared to the lesser ranks of a domestic commonwealth, and descriptions of individual animals expressed subordination in terms of service. The best animals displayed the qualities of an industrious, docile, and willing human servant; the worst not only declined to serve but dared to challenge human supremacy.

The divine justification of domestication made it particularly attractive as a representation of human social relationships. It was generally agreed that animals had been created for human use, whether or not any function had been discovered for them. As one sporting writer put it, "There are certainly an immense number of animals upon the face of the globe, whose uses are at present unknown to us; and to presume that they are useless would be a kind of blasphemy."[40] In addition, subordination to human purposes transfigured and elevated the animal itself; domestic animals could be considered as "reclaimed from wildness."[41] Animals could serve people as sources of hides, horns, and other commercial products, or as pets, but fully domesticated animals were the most useful and expressed most clearly an acceptance of the hierarchy of nature. Therefore, putting animals to work was at once doing God's will and demonstrating the highest human capacities.

For this reason, popular zoology books devoted a great deal of attention to familiar domestic beasts, even though it might have been assumed that those who chose to read about natural history, rather

[39] Burchell, *Travels in the Interior of Southern Africa* (note 11), II, 328-329.

[40] Richard Badham Thornhill, *The Shooting Directory* (London: Longman, Hurst, Rees, and Orme, 1804), p. ix.

[41] *The Natural History of Domestic Animals, Containing an Account of Their Habits and Instincts, and of the Services They Render to Man* (Dublin: J. Jones, 1821), p. v.

than agricultural improvement or dog breeding, were interested in more exotic creatures. In crude, quantitative terms, Bewick allotted thirteen pages to the horse, fourteen to the ox, seventeen to the sheep, eleven to the goat, eleven to the hog, and thirty-nine to the dog. The only other animals to receive equivalent attention were the elephant, a domestic animal in India, and the squirrel, which, although not exactly domesticated, was often tamed and kept as a pet.[42] A generation later, *The Naturalist's Library* made a similar allotment of space in the thirteen volumes it devoted to quadrupeds. Only the synoptic volume attempted to give equal attention to each branch of the mammalian class. The remaining twelve volumes included two on dogs, one on horses, one on goats, sheep, and cattle, and one on British quadrupeds, which summarized much of the material covered by the other four. Additional volumes were devoted to monkeys, felines, deer and antelopes, elephants, whales, seals, and marsupials. Popular natural history also slighted British wild animals — a relatively meager group by the late eighteenth century, including only the deer, the fox, the weasel and its relatives, the wild cat, the badger, the hedgehog, the bat, and a variety of rodents; wolves, bears, beavers, and boars had been exterminated long since.

Writers concentrated on the creatures that most persuasively represented an orderly social hierarchy. Domestic animals, described in terms that suggested human domestics, provided the standard by which other animals were judged. But some domestic animals offered better models of the relations between human superiors and inferiors than did others. For this reason, the most appreciated domestic animals were not the sheep, or even the ox (the word used generically for cattle), although the sheep was "the most useful of the smaller quadrupeds," and the ox offered "services to mankind . . . greater than those of sheep, for they are employed as beasts of draught and burden."[43] Occasionally these creatures might show some understanding of their special bond with mankind — for example, a sheep that sought human help when her lamb was in trouble or a bull that

[42] Squirrels were frequently peddled in the streets of London by countrymen who had caught them. S. O. Beeton, *Beeton's Book of Home Pets* (London: Ward, Lock and Tyler, n.d.), pp. 673-678; Henry Mayhew, *London Labour and the London Poor* (New York: Dover, 1968), II, 77.

[43] *The Natural History of Domestic Animals* (note 41), pp. 84, 106.

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Frontispiece of Charles Hamilton Smith, *Introduction to the Mammalia* (1842)

showed gratitude to a man who saved him from lightning.[44] And it was pleasant (especially in contrast to "the savage monsters of the desert") "to contemplate an animal designed by providence for the peculiar benefit and advantage of mankind."[45] But sheep, even at best, were "inoffensive and harmless" (if not practically inanimate, as Buffon had contended), and a professor of zoology at the University of London felt compelled to defend the ox from "the common charge of stupidity."[46]

Spirited animals who nonetheless acknowledged human superiority provided better models for human subordinates. Britons of all ranks were known for their love of horses. Those who could afford to kept high-spirited thoroughbreds; those who followed the plow preferred horses to other draft animals, no matter how strong or cheap to maintain.[47] Popular natural history writers routinely characterized the horse as "noble," and sometimes as nobler than the class of humans generally charged with its care. This epithet, embodied in a flood of paintings and prints beginning in the early eighteenth century, reflected in part the traditional association of horseflesh with aristocratic sport.[48] It also reflected admiration for the horse's appearance; Bewick celebrated "the grandeur of his stature, the elegance and proportion of his parts, the beautiful smoothness of his skin, the variety and gracefulness of his motions."[49] And it reflected the horse's spirit. "In his carriage," according to another naturalist, "he seems desirous of raising himself above the humble station assigned him in the creation."[50]

It was, therefore, particularly gratifying to find that this splendid animal was made for servitude. "If there is any thing in the world of

[44] Edward Jesse, *Gleanings in Natural History. Third and Last Series* (London: John Murray, 1835), p. 175; *Animal Sagacity, exemplified by facts showing the force of instinct in beasts, birds, &c.* (Dublin: W. Espy, 1824), pp. 130-132.

[45] Holloway and Branch, *The British Museum* (note 10), II, 181.

[46] Bewick, *General History of Quadrupeds* (note 25), p. 46; Thomas Bell, *A History of British Quadrupeds, Including the Cetacea* (London: John Van Voorst, 1837), p. 416.

[47] Charles John Cornish, *Wild Animals in Captivity; or Orpheus at the Zoo and Other Papers* (New York: Macmillan, 1894), p. 293.

[48] The development of this genre has been documented in Judy Egerton, *British Sporting and Animal Paintings 1655–1867: A Catalogue* (London: Tate Gallery, 1978) and Judy Egerton and Dudley Snelgrove, *British Sporting and Animal Drawings c. 1500–1850: A Catalogue* (London: Tate Gallery, 1978).

[49] Bewick, *General History of Quadrupeds* (note 25), p. 3.

[50] Holloway and Branch, *The British Museum* (note 10), I, 145.

nature that seems clear, morally," asserted Philip Hamerton in 1874 (and he was a cautious thinker who knew that it was "foolish to carry speculation about Divine intentions far"), "it is that man has an authentic right to require reasonable service from the horse."[51] The zoologist Thomas Pennant explained that the horse was "endowed with every quality that can make it subservient to the uses of mankind," including courage, docility, patience, perseverance, strength, benevolent disposition, and "a certain consciousness of the services we can render them."[52] Its obedience was the more valuable for being ungrudgingly offered by a proud, powerful creature capable not only of "strong attachment" but of righteous "resentment of injuries."[53]

Even more eager and aware in accepting the bonds of servitude was the dog, the favorite species of most naturalists as well as of their popular audience. The relation between the human and the dog was special — "as much foreseen and intended," in the view of one writer, "as that between sun and planet."[54] It also was a model of the appropriate relationship between masters and subordinates. So natural was the dog's servitude to humankind that, unlike other long-domesticated animals, dogs did not need to be trained or broken to their primary allegiance. Each puppy instinctively repeated the choice made by its remote ancestors and attached itself to a human master by "spontaneous impulse."[55] This subordination defined the master as well as the dog. As an inferior should know its station, so a superior should forthrightly exercise mastery. Peoples that had not yet domesticated the dog might not be fully human; the extent of domestication was an index of the advance of civilization. Bewick claimed that in "nations not yet emerged from a state of barbarism the uses of the dog are but little known," and William Broderip, who was distinguished as a judge as well as a naturalist, noted that "their lot seems to be the worst, if it is cast among savage or imperfectly-civilized

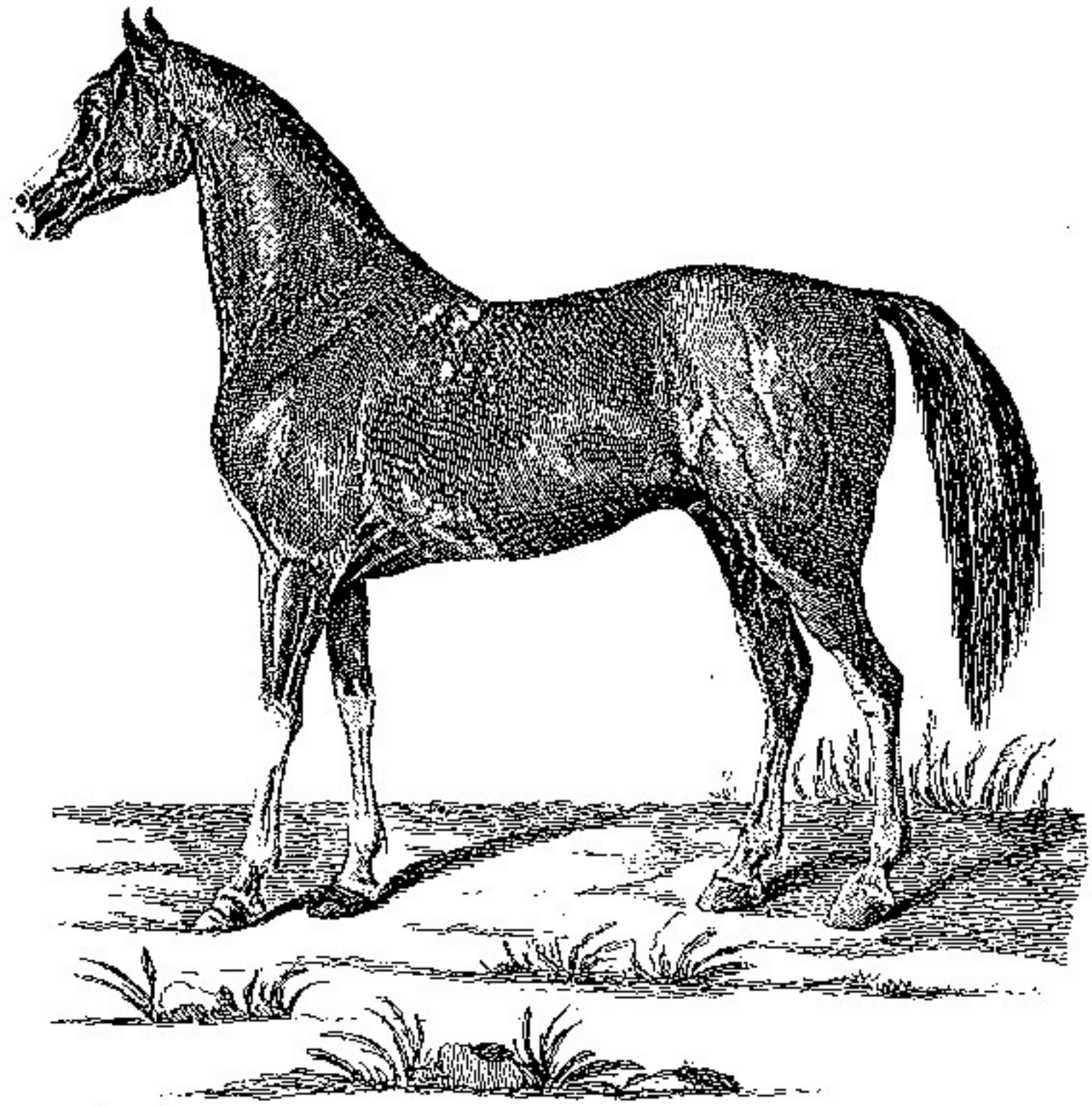
[51] Hamerton, *Chapters on Animals* (Boston: Roberts Brothers, 1874), p. 74.

[52] Pennant, *British Zoology: A New Edition* (London: Wilkie and Robinson, 1812), I, 11.

[53] Gosse, *Natural History* (note 24,), p. 170; Edward Jesse, *Gleanings in Natural History; with Local Recollections* (London: John Murray, 1832), p. 244.

[54] Hamerton, *Chapters on Animals* (note 51), p. 20.

[55] William Swainson, *On the Natural History and Classification of Quadrupeds* (London: Longman, Rees, Orme, Brown, Green, and Longman, 1835), p. 137.



Museum of Comparative Zoology Library

Thomas Pennant, *British Zoology: A New Edition*, (1812), vol. 1 plate 1

nations."[56] Dogs were often raised for food in such societies, which might account for the fact, recorded by Darwin, that English dogs were intelligent and lively, whereas those of Polynesia and China were "extremely stupid."[57]

Like horses, dogs were frequently characterized as "noble." Unlike horses, however, they lacked the standard external attributes of nobility: they were neither physically majestic nor particularly aristocratic in their associations.[58] So the epithet implicitly offered an alternative definition of "nobility," one appropriate to animals and other inferiors. It was the dog's "ungrudging love" for man that made it "delight to serve" him.[59] Again and again naturalists expressed their admiration for this "humble and laborious servant," whose single-minded devotion inspired its "conqueror" with feelings close to the "esteem" normally reserved for human beings.[60] Its "power of loving" was so great that "to kill a dog was always felt to be a sort of murder."[61] The dog understood and accepted its position so thoroughly that it did not resist punishment if it failed in its duty; it might even lick its master's hand as he delivered the corrective blows.[62] Even the dog's body proclaimed its profound subservience to human will. It was the most physically malleable of animals, the one whose shape and size changed most readily in response to breeders' whims.

Some domestic animals had trouble meeting even the minimal standards of obedience set by sheep and cattle, let alone the high

[56] Bewick, *General History of Quadrupeds* (note 25), p. 296; William Broderip, *Zoological Recreations* (London: Henry Colburn, 1847), p. 175.

[57] Darwin, *Variation of Animals* (note 33), II, 226.

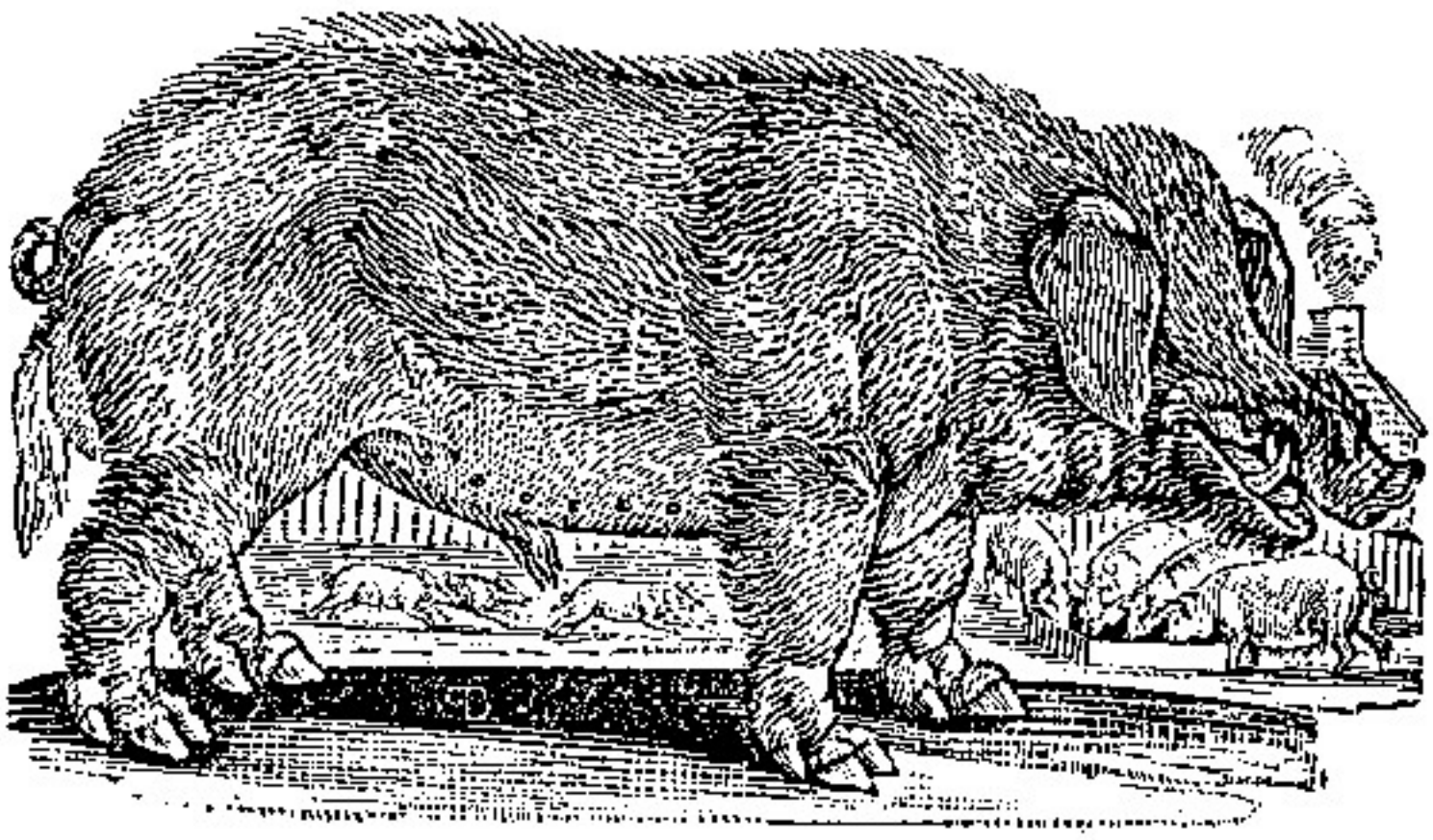
[58] The admiring view of canine character espoused by nineteenth-century naturalists was of relatively recent origin. For discussions of the less flattering opinions held in earlier periods, see William Empson, "The English Dog," in *The Structure of Complex Words* (London: Chatto and Windus, 1952), and Ronald Paulson, "The English Dog," in *Popular and Polite Art in the Age of Hogarth and Fielding* (Notre Dame, Ind.: University of Notre Dame Press, 1979). In his autobiography (note 19), Bewick echoed this view, noting that although dogs were loyal and servile to their masters, "to his own species he is ill-behaved, selfish, cruel, and unjust; he only associates with his fellows for the purpose of packing together to destroy other animals" (pp. 120-121).

[59] Gosse, *Natural History* (note 24), p. 81.

[60] Bell, *British Quadrupeds* (note 46), p. 195; John Timbs, *Strange Stories of the Animal World, A Book of Curious Contributions to Natural History* (London: Griffith and Farran, 1866), p. 19.

[61] Hamerton, *Chapters on Animals* (note 51), p. 34.

[62] Bingley, *Animal Biography* (note 24), I, 202.



Museum of Comparative Zoology Library

Thomas Bewick, *A General History of Quadrupeds* (1822), p. 162

standards of cooperation set by the dog and the horse. Like disrespectful underlings, they did not adequately acknowledge the dominion of their superiors. The pig, for example, despite its incontestable value as a food animal, was routinely castigated as "selfish," "sordid," "brutal," and "gluttonous."[63] Sows were accused of devouring their own young, which in turn scarcely recognized their mothers; naturally, they did not recognize their human caretakers.[64] The torpid guinea pig, often kept as a fancy animal in the nineteenth century, not least because it was a prolific breeder and not particularly attentive to its surroundings, was for those reasons accused of being "disgusting," "devoid of sense," and "incapable of good."[65]

[63] John Church, *A Cabinet of Quadrupeds with Historical and Scientific Descriptions* (London: Darton and Harvey, 1805), I, n.p.; Swainson, *Habits and Instincts* (note 16), p. 71; Bewick, *General History of Quadrupeds* (note 25), pp. 146-147.

[64] [Fenn], *The Rational Dame* (note 29), p. 36.

[65] Bewick, *General History of Quadrupeds* (note 25), pp. 345, 354-355.

The most frequently and energetically vilified domestic animal was the cat. It did not seem disposed to acknowledge human dominion and could hardly be said to have subordinated its will to humankind. It served its owners by hunting mice and other vermin, and thus did not depend on people for sustenance. It might not even acknowledge that it had a master. Country cats frequently ran away and became half wild; they were rumored to mate in the woods with genuine wild cats. Often they did not distinguish between animals people desired them to kill and those they were not to touch on any account. Cats figured prominently in gamekeepers' museums — collections of the remains of hawks, owls, weasels, stoats, and other predators that gamekeepers nailed to barn walls and doors. One Victorian display was reported to include the heads of fifty-three cats.[66] There was no less drastic way to break a poaching cat of its bad habit; cats were considered both deceitful and difficult to train.[67] And as the dog's plastic body symbolized its desire to serve, so the cat's body symbolized its stubborn refusal. Unnervingly similar, in miniature, to its most ferocious wild relatives, the cat resisted breeders' attempts to change its appearance.

The attitude of domestic cats provoked even more criticism than did their behavior. It was not even clear that cats liked people, although they often lived with them more intimately than dogs. The cat was suspected of having "only the appearance of attachment to its master," and really either "dreading" him or "distrusting his kindness"; people feared that "their affection is more to the house, than to the persons who inhabit it."[68] Those who valued the eager obedience and camaraderie of the dog considered the cat a strikingly inferior domestic, "refined and very voluptuous . . . so wanting in the nobler qualities as to fail in winning the sympathies of noble and generous-hearted men." This explained why distinguished artists seldom used cats as subjects; they only appealed to "artists of a very low grade indeed." Derogated by men, who were responsible for maintaining household order and public discipline, cats might be

[66] Francis T. Buckland, *Curiosities of Natural History, Second Series* (London: Macmillan, 1900), pp. 69, 72-73.

[67] H. Sample, *Art of Training Animals: A Practical Guide for Amateur or Professional Trainers* (New York: Jesse Haney, 1869), p. 147; Pennant, *British Zoology* (note 52), I, 97.

[68] Trimmer, *A Natural History of Quadrupeds* (note 13), pp. 25-26; [Fenn], *The Rational Dame* (note 29), p. 38.

favored by those who sneakingly sympathized with their desire for independence: they were sometimes considered "the chosen allies of womankind."[69]

If domestic animals symbolized appropriate and inappropriate relations between human masters and servants, the lessons to be drawn from wild animals were much more limited. Natural history writers dutifully recorded the many useful products that wild animals supplied to commerce but were unable to muster much enthusiasm about the fact that many of them, from kangaroos to hippopotami, could be eaten. (Occasionally they recorded the taste of various animals with the discrimination of gourmets. From the Cape came the report that the vaal rhebok "has the fault common to much South African game, of being somewhat dry." The lard of the great seal, on the contrary, was deemed "most delicious." Lion meat was variously considered to "taste like veal" — a high compliment — and to "have a strong disagreeable flavor."[70]) Some speculations showed a degree of sympathy for strange creatures: for example, the remark that, though the sloth was "one of the most unsightly of animals, it is, perhaps, far from being miserable."[71]

When they were willing to acknowledge human dominion, wild animals became more interesting. English audiences were fascinated by the imposition of human will on the instincts of animals, whether within a "happy family" (these were homely exhibitions of cats, dogs, rabbits, birds and mice that had been taught to coexist peacefully) or a lion-tamer's cage. Many individuals made their own attempts at extending the range of human mastery by taming wild pets. The otherwise neglected English fauna provided the most obvious opportunities. Ferrets and otters could be taught to hunt and fish for people, but not to love them. Hedgehogs could learn to eat from the same

[69] Louis Robinson, *Wild Traits in Tame Animals, Being Some Familiar Studies in Evolution* (Edinburgh: Blackwood, 1897), p. 277; Hamerton, *Chapters on Animals* (note 51), p. 52; Broderip, *Zoological Recreations* (note 56), p. 191.

[70] Henry Anderson Bryden, *Kloof and Karroo: Sport, Legend and Natural History in Cape Colony* (London: Longmans, Green, 1889), p. 134; Robert Hamilton, *Amphibious Carnivora, Including the Walrus and Seals, Also of the Herbivorous Cetacea* (Edinburgh: Lizars, 1839), p. 153; Thomas Rowlandson, *Foreign and Domestic Animals Drawn from Nature* (London: Thomas Rowlandson, 1787); Bewick, *A General History of Quadrupeds* (note 25), p. 185.

[71] *The Natural History of Animals: Beasts, Birds, Fishes, and Insects* (Dublin: Smith and Son, 1822), p. 53.

dish as the family dog and cat. Moles could be kept happy in boxes, if they were regularly supplied with hay. The badger, which had a reputation for sluggishness and stupidity, could also be tamed if taken young; the zoologist Thomas Bell had one that followed him around like a dog.[72]

To many, taming foreign animals seemed even more attractive. Powerful people might have lordly pets; Sir Stamford Raffles, the founder of both Singapore and the Zoological Society of London, kept two clouded tigers (smaller and less terrifying than the real thing) at home.[73] But there were also opportunities for more modest naturalists. The North American beaver, which, unlike most quadrupeds, was cooperative by nature, was an obvious prospect. Everyone familiar with Australian wildlife recommended the plump and charming wombat, which was also good to eat if it became a nuisance. Based on his observation of the animals at the Regent's Park Zoo, Charles Cornish suggested hares, chinchillas, meerkats (a kind of African mongoose), coatimundis (related to the raccoon), pumas, and capuchin monkeys as promising pets.[74]

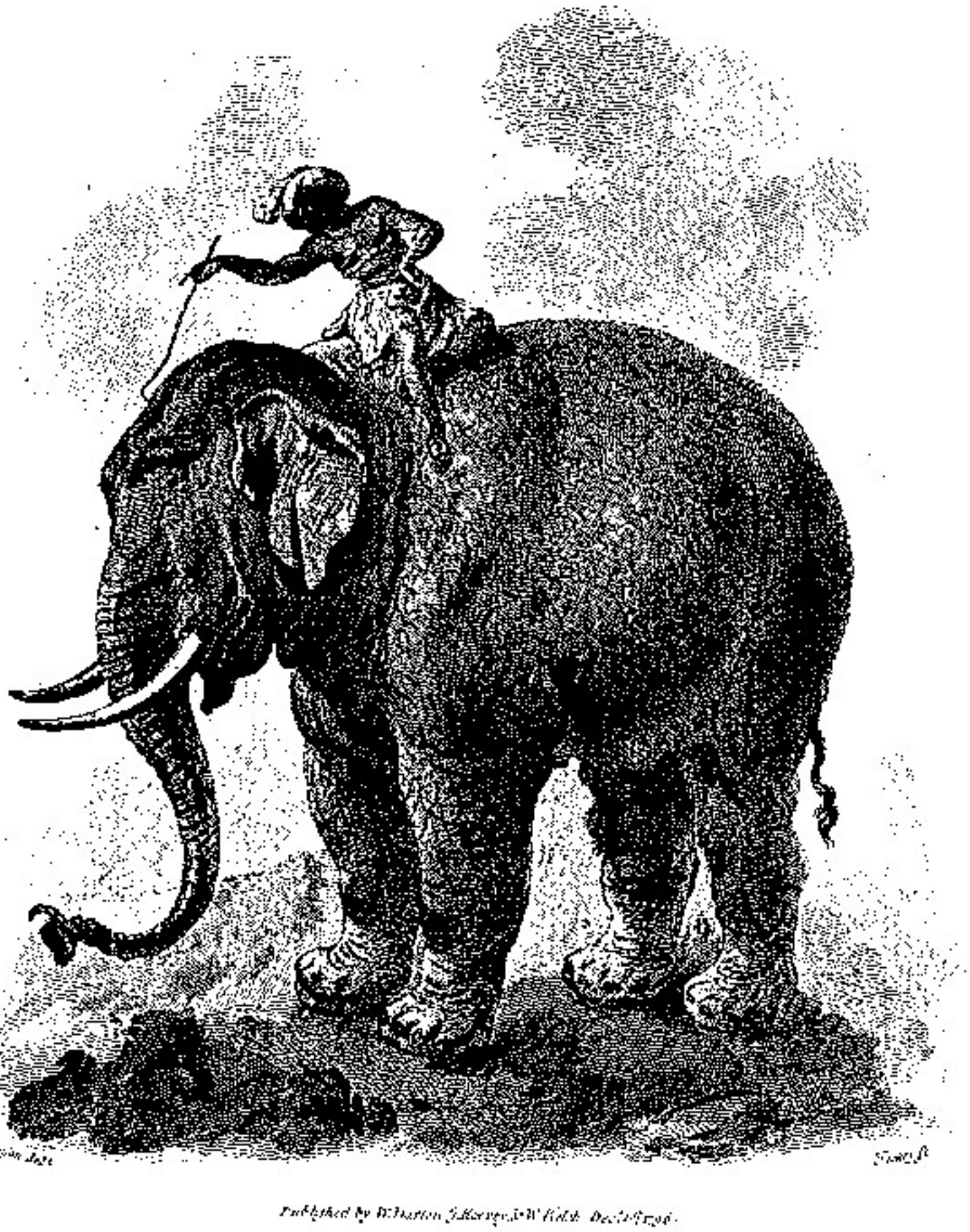
Wild pets, of course, were not servants but indulged captives. The case of the elephant, which was appreciated at length in most works of popular zoology, offered hope that such taming might be the prelude to more complete subordination. Elephants could not be considered domestic animals. Only Indian elephants were routinely tamed, and even they did not breed in captivity. Nevertheless they could be trained to be useful as beasts of burden and as mounts for hunters (unlike horses, they were not afraid of tigers). Although an enraged wild elephant was a terrifying adversary, the temper of tamed animals was consistently praised as "docile" and "mild," even "magnanimous."[75] Anecdotal evidence, the mainstay of eighteenth- and nineteenth-century natural history, emphasized the extent to which the elephant had acknowledged human mastery and even grown to love it. There were occasional reports of once-tame elephants who

[72] Jesse, *Gleanings, Third Series* (note 44), p. 167; Bell, *British Quadrupeds* (note 46), pp. 163, 134-135, 123-126.

[73] William Swainson, *Animals in Menageries* (London: Longman, Orme, Brown, Green, and Longmans, 1830), pp. 122-123.

[74] Timbs, *Strange Stories* (note 60), p. 239; Gosse, *Natural History* (note 24), pp. 216, 286; Cornish, *Wild Animals in Captivity; or Orpheus at the Zoo* (note 47), pp. 278-284.

[75] Bingley, *Animal Biography* (note 24), I, 122; Church, *Cabinet of Quadrupeds* (note 63), I, n.p.



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John Church, *A Cabinet of Quadrupeds*, (1805), vol. 1

had escaped submitting immediately to their former yoke if they chanced to encounter their old keepers. One elephant in an English menagerie refused to sleep unless its keeper were nearby. Another, in Indian service, became unhappy when deprived of the company of a certain child, who had to be placed, in his cradle, between the elephant's feet.[76]

The only blot on the elephant's character was its reputation for vindictiveness and holding grudges. But naturalists insisted that elephants only avenged genuine injuries.[77] In any case, these small reminders of its formidable wrath emphasized the impressiveness of the animal's submission; as one writer put it, "we cannot help being surprised that he, who is so well able to remain his own master, should so readily become the servant of another."[78] The "perfect subjugation" of the elephant by "a creature so inferior in bodily strength as man" was a powerful confirmation of the natural hierarchy, in which man's "head and hand subdue all living things, however enormous, to his will."[79] Such observations were made with relief as well as complacency, for wild animals, like unruly human subordinates, could be threatening. As Bewick noted, "What ravages might we not expect from the prodigious strength of the elephant combined with the fierceness and rapacity of the tiger!"[80]

Beasts of prey were as disturbing to contemplate as the elephant, the horse, and the dog were gratifying. Their carnivorous way of life disposed them to challenge humans rather than to serve or flee them; they were rebels who refused to accept the divinely ordained dominance of humankind. Popular zoology books therefore tended to present them as both dangerous and depraved, like alien or socially excluded human groups who would not acknowledge the authority of their superiors. (Sometimes this analogy was made explicit, as in the statement that "in all countries where men are most barbarous,

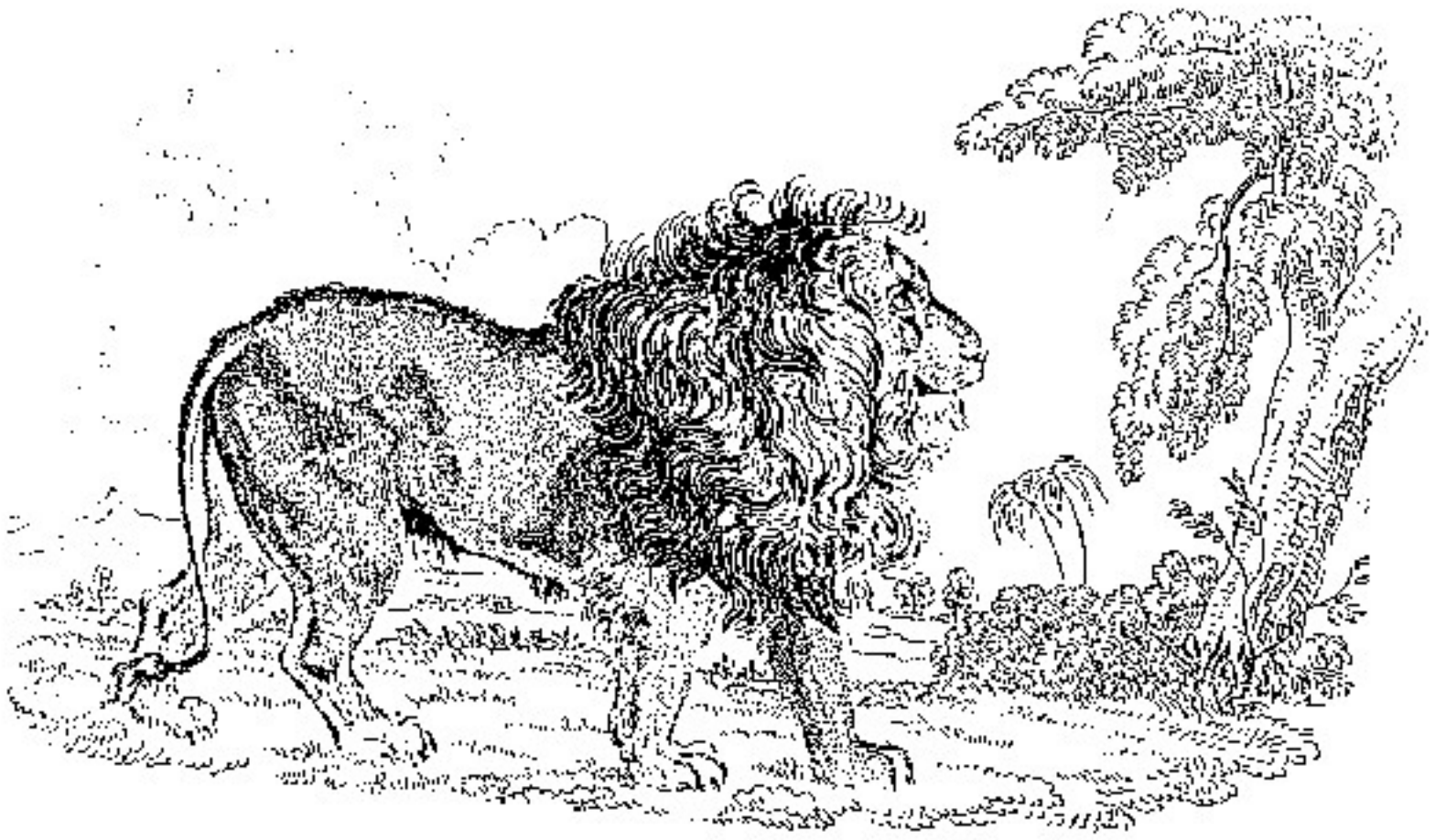
[76] Charles Knight, *Knight's Pictorial Museum of Animated Nature* (London: London Printing and Publishing Company, 1856–1858), I, 83; Broderip, *Zoological Recreations* (note 56), p. 312; William Hone, *The Every-Day Book and Table Book* (London: T. Tegg, 1835), II, 360.

[77] George J. Romanes, *Animal Intelligence* (New York: D. Appleton, 1896), p. 387.

[78] Wood, *Zoography* (note 26), I, 103.

[79] Broderip, *Zoological Recreations* (note 56), p. 269; Swainson, *Habits and Instincts* (note 16), p. 76.

[80] Bewick, *General History of Quadrupeds* (note 25), pp. 175-176.



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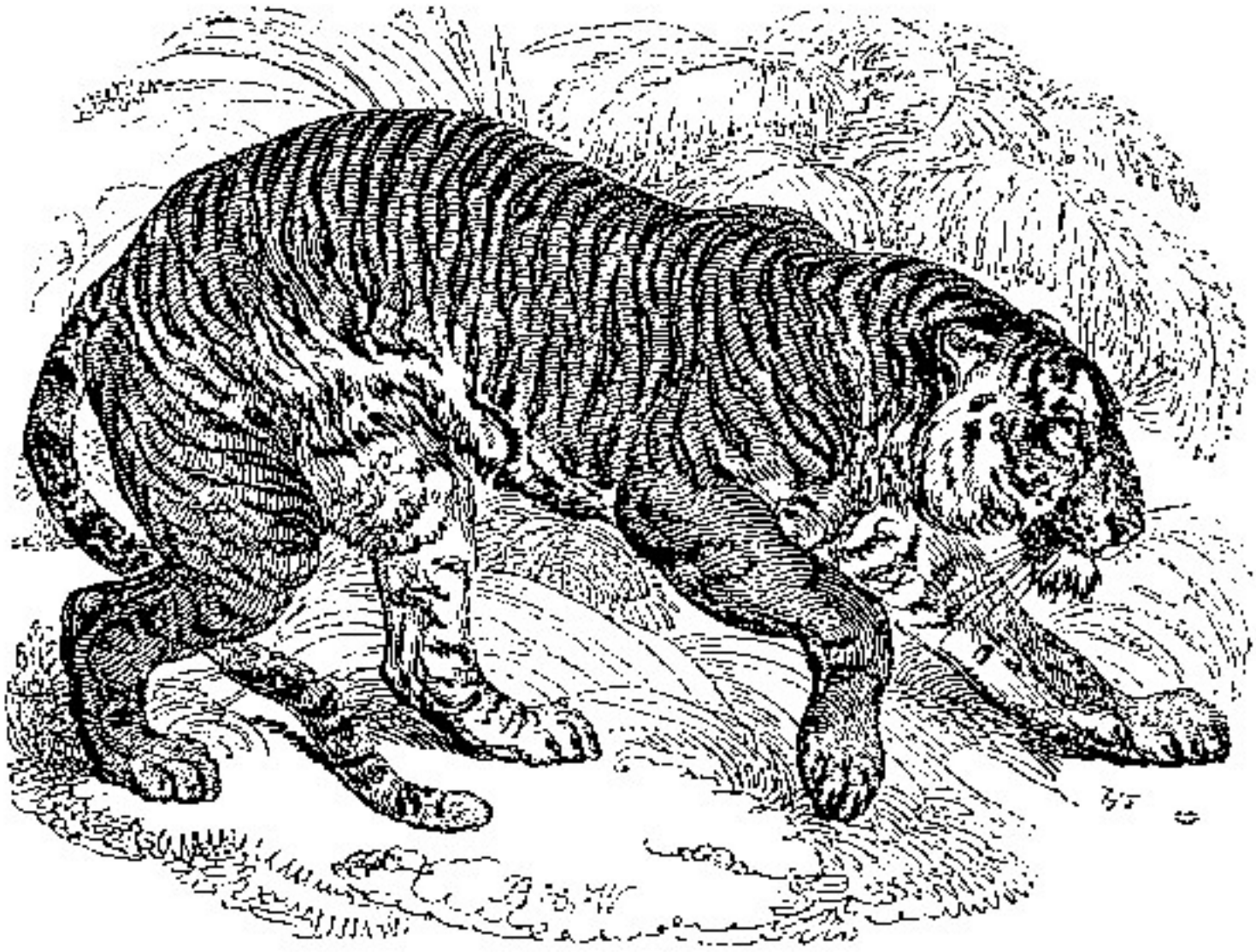
William Rhind, *The Feline Species* (1834), vol. II, plate 2

the animals are most cruel and fierce," meaning Africa.[81]) Because any tendency to disobedience was troublesome, even small creatures that could not directly defy human authority were castigated for their predatory propensities. The weasel, for example, was "wild and untractable," dedicated to "rapine and cruelty," and had "a natural attachment to every thing that is corrupt."[82] If such animals could not be controlled, they might have to be exterminated. "However much we detest all cruelty to the brute creation," intoned the author of *The Animal Museum*, the fox "is so destructive to the property of the farmer . . . that his destruction is absolutely necessary."[83]

Large, powerful animals were even more threatening and, with one exception, described as unmitigatedly wicked. The exception was the lion, whose prestige as the king of beasts lingered from medieval bestiaries and was enhanced by its contemporary function as the

[81] [Jones], *Natural History* (note 14), p. 117.
[82] Bewick, *General History of Quadrupeds* (note 25), pp. 218, 221.
[83] *Animal Museum* (note 30), p. 93.



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Edward Bennett, *The Tower Menagerie* (1829), p. 25

emblem of British might. Although acknowledged to be dangerous and powerful, the lion was admired for its stately bearing and imposing mane, as well as for a relatively generous temper. Popular wisdom held that, unlike other cats, the lion did not kill more than it needed to eat and did not torture its prey for amusement. It might ignore "weak and contemptible enemies" rather than destroy them.[84] And it might be susceptible to humankind's "moral dominion." In the wild, lions tended to avoid people once they observed the power of firearms, and lion-tamers like Isaac Van Amburgh proved that the king of beasts was "by no means destitute of intelligent docility." Well-treated menagerie lions were prone to complaisance; one was observed to retreat before an aggressive goat.[85]

[84] Church, *Cabinet of Quadrupeds* (note 63), II, n.p.; Bewick, *General History of Quadrupeds* (note 25), p. 181.

[85] Francis T. Buckland, *Curiosities of Natural History, Third Series* (London: Macmillan, 1900), p. 320; Bingley, *Animal Biography* (note 24), I, 269; Charles H. Ross, *The Book of Cats* (London: Griffith and Farran, 1868), p. 232; Bartlett, *Wild Animals in Captivity* (note 34), pp. 31-32.

Nevertheless, many naturalists offered a less flattering image of these creatures whose interests were so inimical to those of humankind. Edward Turner Bennett placed the lion at the beginning of his elaborate guide to the animals in London's Tower Menageric in deference to its popular reputation. But he advised his readers to guard against "the general prejudice" in the lion's favor by remembering that "physically and morally, he is neither more nor less than a cat . . . with all the guileful and vindictive passions of that faithless tribe."[86] Its magnanimity — that is, its reluctance to kill unnecessarily — was reinterpreted as "an insidious and cowardly disposition, mixed with a certain degree of pride."[87] Travelers who had been in Africa went so far as to debunk the lion's majestic and commanding presence. Encountered in the daytime, according to Dr. Livingstone, they appeared much like enormous dogs.[88]

About the tiger there were no two ways of thinking. It epitomized what people had to fear from the animal kingdom. The tiger's beauty thoroughly misrepresented its character; some naturalists claimed it had been bestowed by providence "upon so despicable an animal to prove, that when it is not attached to merit, it neither deserves to be estimated or prized."[89] It was an "emblem of savageness and butchery," undoubtedly "the most cruel, rapacious, and destructive animal in creation."[90] It was greedy, interrupting a meal off one carcass to kill another animal, or slaughtering an entire flock and leaving them dead in the field.[91] A working model of a tiger eating an Englishman graced the London offices of the East India Company. Like the wolf, the hyena, and some other big cats, the tiger was often called "cowardly," which apparently meant unwilling to face men with guns.[92] The authors of *The British Museum* used the language of redemption to lament that "no discipline can correct the savage nature of the tiger, nor any degree of kind treatment reclaim him."[93]

[86] Bennett, *The Tower Menagerie* (note 24), pp. 4-5.
[87] Church, *Cabinet of Quadrupeds* (note 63), II, n.p.
[88] Timbs, *Strange Stories* (note 60), p. 334.
[89] Holloway and Branch, *The British Museum* (note 10), I, p. 29.
[90] Swainson, *Animals in Menageries* (note 73), p. 104; Church, *Cabinet of Quadrupeds* (note 63), II, n.p.
[91] *Animal Museum* (note 30), p. 173.
[92] Swainson, *Habits and Instincts* (note 16), pp. 78-79; Rowlandson, *Foreign and Domestic Animals* (note 70), n.p.
[93] Holloway and Branch, *The British Museum* (note 10), I, 22.

The ultimate proof of the tiger's unregeneracy was its fondness for human flesh. Tigers living in the populated parts of India and Ceylon routinely preyed on domestic animals and became man-eaters with some frequency. Some turned to human prey because they were sick or had lost their teeth and could no longer catch faster and less dangerous prey. Most, however, were thought to be "cattle-lifting tigers" who had once "summoned up courage to attack the herdsman," and thereby added a tasty new item to their diet.[94] The tiger was not alone in this predilection. All the major predators — other big cats, wolves, and bears — were thought to share it. The half-tamed ferrets that farmers kept to destroy rodents might be tempted by blood-lust to attack their masters' infants, and even renegade pigs were occasionally attracted by the same bait.[95]

Eating human flesh symbolized the ultimate rebellion, the radical reversal of roles between master and servant. The animals themselves seemed to appreciate this symbolism, for "it is said, that when a lion has once tasted human flesh he thenceforth entirely loses his awe of human superiority."[96] Natural history writers emphasized how attractive rebellion was to these despicable animals. Human-eating lions were reported to relish torturing such victims; they "immediately dispatched" most animals, but in the case of people, they would "merely wound," then wait before delivering the final blow.[97] According to Swainson, it was "universally remarked, that when a carnivorous animal is acquainted with the taste of human blood, it shows a decided preference for that food."[98] Corrupt human flesh was as attractive as fresh meat. Hyenas were said to frequent cemeteries in order to dig up corpses, and jackals, "real cowards," shared this ghastly taste.[99] Such scavengers might become predators, like the wolves of Caunpore in India, which had been first attracted by the plentiful bodies of "poor wretches" who had died in a famine, but

[94] Richard Lydekker, *The Great and Small Game of India, Burma and Tibet* (London: Rowland Ward, 1900), p. 289.

[95] Bell, *British Quadrupeds* (note 46), p. 163; E. P. Evans, *The Criminal Prosecution and Capital Punishment of Animals* (New York: E. P. Dutton, 1906), pp. 160-165; Clifford Morsley, *News from the English Countryside 1750–1850* (London: Harrap, 1979), p. 119.

[96] "The Lion of South Africa," *The Farrier and Naturalist*, I (1828), 417.

[97] Charles Catton, *Animals Drawn from Nature, and Engraved in Aquatinta, with a Description of Each Animal* (London: I. and J. Taylor, 1788), n.p.

[98] Swainson, *Habits and Instincts* (note 16), p. 186.

[99] Bennett, *The Tower Menagerie* (note 24), p. 75; Burchell, *Travels in the Interior of Southern Africa* (note 11), II, 285.

having become "accustomed to human food . . . frequently carried off children" and "actually attacked the sentries on their posts."[100]

Even if scavengers never threatened a living human being, their diet was intolerably presumptuous. Dead or alive, human flesh was forbidden fruit. Animals were supposed to serve human purposes, not appropriate people to theirs. The punishment for animals who dared to challenge the principles of hierarchy and subordination was drastic. Edward Lockwood, a retired official of the Bengal Civil Service, called "the extermination of wild beasts in the great food-producing districts . . . one of the undoubted benefits of British rule." He was proud of the part he had played in that process; although his publisher had warned him not to prose on, he allowed himself to boast, "I have allowed very few of the large wild animals which I have seen in India to escape."[101]

Nor were carnivores the only creatures who might attack men. Explorers reported that baboons and monkeys stole children and attacked women carrying supplies. In his classic monograph on the gorilla the zoologist Richard Owen somewhat skeptically retailed the African belief that gorillas hoisted people into trees in order to strangle them.[102] Such reversals of the prescribed hierarchy could not be allowed to pass without comment. Natural history writers accused the cape buffalo of being "fierce" and "vindictive," although it was a vegetarian that lived in impenetrable bush, because if wounded it was liable to charge and tear apart the hunter responsible.[103] Malice and insubordination were widely suspected among humankind's animal subjects.

A Different Order

One group of animals that received a great deal of attention from natural history writers represented neither useful servants nor threats to established authority. Compared with other animals, monkeys and apes had little to do with people. With a few exceptions, they lived far from human settlements and were not particularly useful,

[100] James Forbes, *Oriental Memoirs* (London: T. Bensley, 1813), IV, 81.

[101] Lockwood, *Natural History, Sport, and Travel* (London: William H. Allen, 1878), pp. 237–238, 127.

[102] Willoughby P. Lowe, *The Trail That Is Always New* (London: Gurney and Jackson, 1932), p. 87; Richard Owen, *Memoir on the Gorilla* (London: Taylor and Francis, 1865), p. 35.

[103] Bryden, *Kloof and Karoo* (note 70), p. 13.

although it was possible to eat some and tame others. (Monkey-eating was a problematic pastime. Many travelers reported that monkeys made excellent roasts, but some found "something extremely disgusting in the idea of eating, what appears, when skinned and dressed, so like a child."[104]) On the scale of values that determined the characterization of most quadrupeds, they should have registered only moderately interesting, yet they fascinated the audience for popular zoology.

The source of this fascination was, of course, the similarity of other primates to human beings. This was most striking in the great apes, who long before Darwin were suspected to link humans and animals. One early eighteenth-century animal book included "a natural history of the Male Pygmy or Chimpanzee."[105] The orangutan was sometimes called "the wild man of the woods," and this name may have been understood literally as well as figuratively in an age when scientists were not sure that all human beings belonged to the same species.[106] (For naturalists, as for taxonomists in the tradition of Linnaeus, the notion of family was not welded to the notion of descent or evolution.) Captive orangutans and chimpanzees, not always clearly distinguished from each other, appeared in England in a steady trickle during the nineteenth century. They were popular attractions before they succumbed to the cold, damp climate. Invariably, they were exhibited in ways that emphasized their likeness to people. They ate with table utensils, sipped tea from cups, and slept under blankets. One orangutan displayed in London's Exeter Change menagerie amused itself by carefully turning the pages of an illustrated book. At the Regent's Park Zoo, a chimpanzee named Jenny regularly wore a flannel nightgown and robe. Apes often boasted Christian names, which heightened the suggestiveness of clothes, forks, and books. Tommy, a chimp who lived at the Regent's Park Zoo in 1835–1836, was pronounced by one admirer to be greatly superior in "shrewdness

[104] Bingley, *Animal Biography* (note 24), I, 74; Thomas Belt, *The Naturalist in Nicaragua* (London: John Murray, 1874), p. 118.

[105] Thomas Boreman (attrib.), *A Description of Some Curious and Uncommon Creatures Omitted in the Description of Three Hundred Animals* (London: Richard Ware and Thomas Boreman, 1739), p. 1.

[106] See, for example, Hone, *Every-Day Book* (note 76), III, 758; Bewick, *General History of Quadrupeds* (note 25), p. 414. For some more erudite proponents of this connection, see Arthur O. Lovejoy, *The Great Chain of Being: A Study of the History of an Idea* (Cambridge, Mass.: Harvard University Press, 1936), pp. 233-236.

Museum of Comparative Zoology Library

Charles Knight, *Knight's Pictorial Museum of Animated Nature* (1856-1858), vol. I, p. 29

and sagacity . . . [to the] human infant, and . . . for that matter, many grown individuals."[107]

Reports of apes' behavior in the wild, however implausible and ill-documented, also emphasized their closeness to humankind. They were credited with the ability to use primitive tools. Orangutans, for example, were alleged to attack elephants with clubs and to cover their dead with leaves and branches.[108] And they seemed to feel an emotional connection with human beings. Rumor had it that orangutans were "passionately fond of women" and would carry them off by force. A young African boy abducted by chimps returned safely after a season's captivity; he claimed to have been well treated, especially by the females, who had fed him and protected him from snakes and beasts of prey.[109]

There was also no mistaking the human connection with less advanced primates, or quadrumanes, as members of the order were usually called in the nineteenth century, perhaps so as implicitly to exclude two-handed humans. Although captive monkeys were not as quick as apes to adopt human manners, wild monkeys might claim kin in extreme circumstances. Not only did they look like babies when cooked, they often reproached hunters for their thoughtless predation. According to one sporting officer who shot a monkey in Ceylon — and vowed never to shoot another — "nothing can be more distressing than to see how like human beings these poor creatures apply their handlike paws to the wound, and look at their assailant with so much sorrowful intelligence and great suffering."[110] Another British hunter reported that after one of his companions had shot a female monkey, the entire troop followed them back to their camp, where the leader first threatened, then "by every token of grief and supplication, seemed to beg the body of the deceased . . . it was given to him: with tender sorrow he took it up in his arms, embraced it with conjugal affection, and carried it off. . . . The artless behavior

[107] Bingley, *Animal Biography* (note 24), I, 45-50; Edward Jesse, *Gleanings in Natural History, Second Series* (London: John Murray, 1834), p. 40; Broderip, *Zoological Recreations* (note 56), p. 250; William Ogilby, *The Natural History of Monkeys, Opossums, and Lemurs* (London: Charles Knight, 1838), pp. 70-71.

[108] *Animal Museum* (note 30), p. 205.

[109] Robert Jameson, et al., *Narrative of Discovery and Adventure in Africa* (Edinburgh: Oliver and Boyd, 1830), pp. 400-401.

[110] James Campbell, *Excursions, Adventures, and Field Sports in Ceylon* (London: T. and W. Boone, 1843), I, 333.

of this poor animal wrought so powerfully on the sportsmen, that they resolved never more to level a gun at one of the monkey race."[111] The only monkeys that did not inspire this kind of sympathy and interest were those perceived to be least like people in appearance and behavior. The doglike baboons were repeatedly described as disgusting and stupid, "simply hideous and repulsive."[112] Not only were they a travesty of humanity — they were compared to "the most God-forsaken of the human race" — but some naturalists speculated that they represented not "a primitive form of monkey life" but one that had degenerated.[113]

These resemblances did not raise monkeys and apes to the level of humans, who stood majestically above the animal creation. As William Jardine pointed out in the introduction to *Monkeys*, the first volume to appear in *The Naturalist's Library*, "a strict comparison between the monkey and human organization" was "quite unnecessary"; indeed, the human being, "infinitely preeminent" and "stamped with a bearing lofty and dignified," should not even be included within the same "system" as the other primates.[114] But primates challenged the conventional nineteenth-century animal hierarchy, headed by either the dog or the horse, people's best servants.[115] (Besides that of the bestiary tradition, which elevated the lion and other emblems of desirable human qualities, there were other possible hierarchies, such as that suggested by St. George Mivart, who wished to rank animals according to how well they were adapted to their function. That criterion prompted Mivart to celebrate the efficient carnivores of the cat family as "the very flower and culmination of the mammalian tree."[116]) The apes' claims to preeminence rested on quite a different basis. One of their resemblances to human beings was their intelligence. If reason elevated man above the beasts, argued some zoologists, then its closest equivalent should place chimpanzees and orangutans at the head of the animal kingdom.

[111] Forbes, *Oriental Memoirs* (note 100), I, 27-28.

[112] Richard Lydekker, *Animal Portraiture* (London: Frederick Warne, 1912), p. 24.

[113] "Monkeys," *Quarterly Review*, 186 (1897), 419-420; Jameson, et al., *Adventure in Africa* (note 109), p. 405.

[114] William Jardine, *Monkeys* (Edinburgh: Lizars, 1833), p. 39.

[115] Bell, *British Quadrupeds* (note 46), p. 195; Wood, *Zoography* (note 26), I, 1.

[116] St. George Mivart, *The Cat: An Introduction to the Study of Backboned Animals, Especially Mammals* (New York: Charles Scribner's Sons, 1881), p. 491.

Throughout the nineteenth century naturalists debated the rival claims of dogs and apes to be top animal in terms that made it clear that the issue was not simply taxonomical. In question was the more fundamental principle of ranking animals according to their utility, as literal servants or as instructive analogues, to mankind. Intelligence, at least of the imitative and problem-solving kind displayed by apes, was of use only to the creature that possessed it. The intensity and duration of the debate showed that once it had been suggested, mental ability seemed a compelling criterion for ranking animals. But, in the view of many combatants, intelligence did not mean that the apes were inevitably superior to other beasts. Naturalists who wished to promote the rival claims of domestic animals could emphasize what they considered to be the equally impressive mental qualities that such creatures possessed in greater measure than primates.

Although almost everyone who wrote about animals took a stand on this issue, it was hard to predict who would turn up on which side. There was no clear trend for ape-advocates to outnumber dog-advocates as time passed and zoological progress accelerated, nor were scientific naturalists more likely than amateurs and popularizers to make the case for primates. For example, by the beginning of the nineteenth century, Bewick, an engraver, and William Bingley, a writer whose most frequent subjects were travel and biography, had acknowledged the ascendancy of orangutans.[117] On the other hand, as late as 1881, George J. Romanes, a close friend of Darwin's and a professional zoologist with a special interest in animal behavior, celebrated the "high intelligence" and "gregarious instincts" of the dog, which gave it a more "massive as well as more complex" psychology than the monkey family. Two years later Romanes revised his ranking slightly, including both anthropoid apes and the dog on level twenty-eight of a fifty-step ladder of intellectual development. Level twenty-eight was characterized by "indefinite morality" along with the capacity to experience shame, remorse, deceit, and the ludicrous. (Steps twenty-nine through fifty were reserved for humanity; worms and insect larvae occupied step eighteen because they possessed primary instincts and could feel the emotions of surprise and fear.) Although

[117] Bewick, *General History of Quadrupeds* (note 25), pp. 414-415; Bingley, *Animal Biography* (note 24), I, 44-50.

this schema gave apes and dogs equivalent rank, Romanes was far from thinking that they possessed identical mental attributes. Rather, the ape had achieved its high status through intellect, the dog on account of highly developed emotions.[118]

At issue was how to define animal intelligence — if, indeed, animals could be said to possess intelligence at all. Some naturalists denied that animals possessed any mental qualities besides instincts. A correspondent of the *Zoological Journal* asserted that although dogs and other animals exhibited behavior that closely mimicked such qualities as foresight, industry, and justice, in fact they were merely performing reflex actions, like Descartes's animal machines.[119] William Swainson considered animal intelligence to consist in the ability to work together with others of the same species, which made it more characteristic of insects than of quadrupeds, whose chief glory was their large size.[120] Most naturalists were more generous, however, allowing the higher animals a grab bag of intellectual and emotional qualities. One representative inventory included imagination, memory, homesickness, self-consciousness, joy, rage, terror, compassion, envy, cruelty, fidelity, and attachment.[121] Some naturalists adapted the complex methods of phrenologists, who divined qualities of human mind and character from the external conformation of the skull, to animal heads. According to one elaborate version, the qualities of amativeness, philoprogenitiveness, inhabitiveness, adhesiveness, combativeness, destructiveness, secretiveness, acquisitiveness, and constructiveness, as well as the external senses, were as common in animals as in people. Animals had a lesser share of such sentiments as self-esteem, love of approbation, cautiousness, benevolence, veneration, firmness, conscientiousness, hope, marvellousness, ideality, gaiety, and imitation, and of the ability to perceive individuality, configuration, size, weight, coloring, locality, calculation, order, eventuality, time, melody, and artificial language. The "reflective

[118] Romanes, *Animal Intelligence* (note 77), p. 439; George J. Romanes, *Mental Evolution in Animals* (London: Kegan, Paul, Trench, 1883), inset, 352.

[119] John Oliver French, "An Inquiry Respecting the True Nature of Instinct, and of the Mental Distinction between Brute Animals and Man . . . ," *Zoological Journal*, 1 (March 1824) 2, 9. For a survey of changing human ideas about the intelligence of animals, see Stephen Walker, *Animal Thought* (London: Routledge and Kegan Paul, 1983).

[120] Swainson, *Habits and Instincts* (note 16), pp. 288-289.

[121] These and other feelings were exhaustively explored in Edward Pett Thompson, *The Passions of Animals* (London: Chapman and Hall, 1851).

faculties" of comparison and causality were reserved "principally, if not wholly" to humankind.[122]

Such systems inextricably confounded emotional and intellectual capacities. Phrenological analysis revealed, for example, that large foreheads, which indicated intelligence and tamability, were more common in domestic than in wild animals, although the seal possessed "uncommon intelligence"; it also showed that the organ of adhesiveness was extremely pronounced in the dog, and the organ of amativeness was better developed in the males of all species than in the females.[123] Analyses based on animal observation were equally imprecise. Casual observers might recognize intelligence in the way a dog hid on Sundays to avoid being chained while his master went to church or the way pigs, "if they hear one of their companions in distress . . . endeavor to assist him to the utmost of their power."[124] Even serious and self-conscious investigators were apt to define intelligence as the most impressive and appealing behavior of their pets. Although Romanes was well aware of the pitfalls of anecdotal observation, he used his favorite terrier Mathal to illustrate the "exalted level to which sympathy has attained" and the "intelligent affection from which it springs" in the dog.[125]

An indication of the mix of mental qualities that naturalists valued in animals — and perhaps also of their desire to distinguish clearly between animal and human mental capacities — was the fact that well into the last part of the nineteenth century "sagacity" was the standard term for intelligence demonstrated by animals. An individual animal or species might be described as "intelligent," but the word "intelligence" was reserved for human capacities. Conversely, if "sagacity" were attributed to human beings, it often had an ironic or less than flattering undertone. Sagacity could comfortably be stretched to describe a variety of mental phenomena. The phrase "animal sagacity" in the title of a book or article often signalled an abstract discussion of instinct or intellect, the kind of discussion that might conclude by appreciating the intelligence of apes. But in the

[122] "Animal Phrenology," *The Farrier and Naturalist*, 1 (February and March 1828), 71-75 and 106-109.

[123] *Ibid.*, 72, 74-75, 106-107; Rennie, *Alphabet of Zoology* (note 12), p. 105; Hamilton, *Amphibious Carnivora* (note 70), p. 81.

[124] Jesse, *Gleanings . . . with Local Recollections* (note 53), pp. 20, 96.

[125] Romanes, *Mental Evolution in Animals* (note 118), pp. 234-235, 240.

common usage of naturalists, "sagacity" indicated not the ability to manipulate mechanical contraptions or solve logical problems but a more diffuse kind of mental power: the ability to adapt to human surroundings and to please man. A somewhat circular calculation made the most intelligent animals the best servants.

If doubt existed about which was the most intelligent animal, the dog was clearly the most sagacious. The literature of natural history (and of dog appreciation) brimmed with evidence of ingenious loyalty. One canine hero barked at an approaching coach until it stopped, thus saving the life of its master, who lay drunk in the road; another awakened its more admirable master, who had fallen asleep over a book, to warn him that the bed curtains had caught fire from the unsnuffed candle. The noble terrier Greyfriars Bobby watched over his master's grave in an Edinburgh churchyard for fourteen years, and other dogs refused food after their masters died until they themselves expired of hunger and grief.[126] It was "the only animal who always knows his master, and the friends of the family."[127] The only possible rival to the dog on these grounds was the horse, whose "understanding," in the view of its most fervent admirers, was "superior to that of any other animal." (The mental aptitudes of the "docile and gentle" horse were particularly well suited to assist people and not to annoy them; though sagacious, the horse was "totally devoid of the cunning" of some troublesome animals.[128]) The elephant, another loyal servant, was also acclaimed for its "almost human wisdom," whereas the unsubmissive cat was pointedly denied "the sagacity, approaching almost to human reason, of the Dog."[129]

Appreciation of animal intelligence, especially as displayed by apes, might have undermined the structure that humanity had imposed on the natural world or challenged the animal hierarchy that valued obedient servants. But the concept of sagacity reinforced human dominion. It could be defined so that the animals that exemplified obedient subordination had the largest measure. In addition, the position of primates in the animal hierarchy could be made to

[126] Jesse, *Gleanings, Third Series* (note 44), pp. 15-16, 34; Forbes Macgregor, *The Story of Greyfriars Bobby* (Edinburgh: The Ampersand, 1981).

[127] [Penn], *The Rational Dame* (note 29), p. 41.

[128] *The Animal Museum* (note 30), p. 1.

[129] Jameson, *Narrative* (note 109), p. 423; William Rhind, *The Feline Species* (Edinburgh: Fraser, 1834), p. 147.

seem less anomalous. Apes too were useful to man, although in a more abstract way than domestic animals. The strongest similarity beween people and apes was in "external appearance"; they resembled humans closely in the face, nostrils, ears, teeth, eyelashes, nipples, arms, hands, fingers and fingernails.[130] But even though "the form and organs . . . so nearly resemble those of mankind," according to one writer, "we are surprised to find them productive of so few advantages."[131] Apes could not talk or think, and it was frequently remarked that young animals seemed the most like humans (perhaps, in phrenological terms, because their foreheads were higher), while "untameable ferocity and brutality . . . have been uniformly the concomitants of age."[132] A few vocal observers were repelled by the physical resemblance between primates and people, but most apparently found it engaging. Not only did they flock to see live apes on display, but the illustrations of apes in natural history books often exaggerated the humanness of their proportions and visages.[133] In a way, apes presented a living gloss on human superiority. As Swainson justified the attention he had devoted to them, "we have been particularly interested in *Quadrumana*, as their arrangement involved a question of much higher importance — the station of *Man* in the scale of being."[134]

A New Foundation

The publication of Charles Darwin's *On the Origin of Species* in 1859 is usually considered to mark the beginning of a new era in the study of life, superseding the static, human-dominated hierarchy elaborated by generations of naturalists. The very terms "naturalist" and "natural history" were soon to acquire an old-fashioned ring, as they were replaced by the more technical-sounding "zoologist" and "biology." Darwin's theory of evolution by natural selection eliminated the deity

[130] *Animal Museum* (note 30), p. 204; "T. Teltruth," *The Natural History of Four-footed Beasts* (London: E. Newbury, 1781), pp. 72-73.

[131] *Animal Museum* (note 30), p. 206.

[132] Jardine, *Monkeys* (note 114), p. 91; Broderip, *Zoological Recreations* (note 56), p. 217.

[133] See, for example, the orangutans in Bewick, *General History of Quadrupeds* (note 25); Edward Donovan *A Naturalist's Repository of Exotic Natural History* (London: W. Simpkin and R. Marshall, 1822–1824), 2 vols.; Church, *Cabinet of Quadrupeds* (note 63); Charles Knight, *Pictorial Museum of Animated Nature* (note 76); and Richard Lydekker, *Animal Portraiture* (note 112).

[134] Swainson, *Natural History and Classification of Quadrupeds* (note 55), p. 98.

who had created the world for human convenience; it also eliminated the unbridgeable gulf that divided the reasoning human from the irrational brute. *On the Origin of Species* dethroned God almost implicitly; and rather than focusing directly on humanity, Darwin outlined an elaborate schema in which people had no especially prominent place. In subsequent works, such as *The Descent of Man* (1871) and *The Expression of the Emotions in Man and Animals* (1872), he argued that the human mind as well as the human body had developed directly from animal forerunners.

Revolutionary though it was from many points of view, however, Darwin's theory of evolution did not prescribe any real break in the tradition of descriptive natural history. Naturalists, after all, had always recognized an analogy between the human and the animal spheres. Even the most outrageous feature of *The Expression of the Emotions* — the illustrations that implicitly compared cats and dogs and apes to people — had Enlightenment roots. Charles LeBrun, a seventeenth-century French artist whose manuals were widely used in eighteenth-century England, had suggested that painters could learn to depict certain human character traits by studying animals. After identifying an animal's temper, they were to "search in their Physiognomy the Parts which, particularly mark certain predominating Affections." For example, since "swine . . . are nasty, lascivious, gluttonous, and lazy," scrutiny of their countenances would help artists represent similar qualities in humans.[135] Nor, in the post-Darwinian era, was there much need to regroup on the systematic level. Although the taxonomy established by Linnaeus and his predecessors had not implied a dynamic of development and progression, it did not insist on stasis.

In some ways, the theory of evolution was a natural extension of the work of mastering the natural world earnestly begun by Enlightenment naturalists and their seventeenth-century predecessors. And it was a still more powerful assertion of human intellectual domination — the power to perceive or impose patterns — than the systems of classification on which it was based. Although it eliminated both the

[135] The main differences between human and animal visages, according to LeBrun, were matters of detail and proportion, such as that animals' eyes were nearer to their noses and that human eyebrows met over the nose, whereas those of animals did not. Charles LeBrun, *Conference . . . upon Expression, General and Particular; and An Abridgement of a Conference . . . upon Physiognomy* (London: John Smith, Edward Cooper and David Mortier, 1701), pp. 44-46.

divine sanction for human domination and the separation between man and beast, it did not diminish human superiority. Indeed, it described the very process by which this superiority had been established. If humans were animals, they were the top animals; and with God out of the picture, the source of human preeminence lay within. Ironically, by becoming animal, humankind appropriated some attributes formerly reserved to the deity. And in "the struggle for life," as the subtitle of *On the Origin of Species* put it, the other animals were still ranked according to their relation to humanity. This ranking was expressed more starkly than in most popular natural histories — the stakes were survival rather than approval or attention. To the extent that people dominated the environments in which animals lived, dogs and horses would multiply, while tigers and wolves dwindled.

This new continuity between animals and people made it even easier to represent human competition and the social hierarchies created by those who prevailed in terms of animals, as the line between metaphor and simple analogy began to fade. On the *Beagle* voyage, the sight of the Tasmanian tribesmen, whose numbers were diminishing as the English population increased, had led Darwin to reflect that "the varieties of man seem to act on each other in the same way as the different species of animals — the stronger always extirpating the weaker."[136] Animals became the types, not just of domestic servants and other laborers, but of the many peoples Europeans subjugated in the course of the nineteenth century.

Nor was it difficult to incorporate evolutionary theory within the conventional format of popular zoology. In 1883 Arabella B. Buckley, a friend of Alfred Russel Wallace, whose convergence on evolutionary theory spurred Darwin to compose *On the Origin of Species*, published an up-to-date children's book entitled *The Winners in Life's Race, or the Great Backboned Family*. Although she announced her intention "rather to follow the tide of life, and sketch in broad outline, how structure and habit have gone hand-in-hand in filling every available space with living beings, than to multiply descriptions of the various species," Thomas Bewick would have recognized most of her major categories. He would not have been surprised to find monkeys and apes described next to insectivores and rodents, the orders they most closely resem-

[136] *The Voyage of the Beagle* (Garden City, N.Y.: Doubleday and the American Museum of Natural History, 1960), p. 433.

bled, rather than "standing at the head of the animal kingdom"; that is where he had placed them himself. Many of Buckley's characterizations of specific animals would also have seemed familiar: for example, the "cowardly" jackal and the "degenerate" gorilla, "equal neither in beauty, strength, discernment, nor in any of the nobler qualities, to the faithful dog, the courageous lion, or the half-reasoning elephant."[137] Darwin may have transformed the relation between humans and the other animals in principle, but the egalitarianism he had suggested by including humankind among the beasts had little practical effect, even on the thinking of naturalists.[138] More influential was his notion of the survival of "the vigorous, the healthy and the happy," which seemed to justify and even celebrate human ascendancy.[139] Animals remained the symbols of various orders within human hierarchies, as well as the victims of human control.

[137] Buckley, *The Winners in Life's Race, or the Great Backboned Family* (New York: D. Appleton, 1883), pp. vi, 240, 285, 255.

[138] For an exploration of the multivalence of Darwin's work, see Gillian Beer, *Darwin's Plots: Evolutionary Narrative in Darwin, George Eliot and Nineteenth-Century Fiction* (London: Routledge and Kegan Paul, 1983), ch. 4.

[139] Charles Darwin, *On the Origin of Species* (1859; Cambridge, Mass.: Harvard University Press, 1964), p. 79.

looking back, he concluded: "if I had devoted my time to writing for the *Harbinger,* in my own private room, where thought & pen could run freely & in unison, instead of frittering away time & strength, & in fact, destroying my Herculean health, in the mechanical details of the office, it would have been no worse for the paper, & greatly better for myself."[85]

[85] 10 April 1849, in Edith Roelker Curtis, *A Season in Utopia: The Story of Brook Farm* (New York: Thomas Nelson, 1961), pp. 323-324.

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