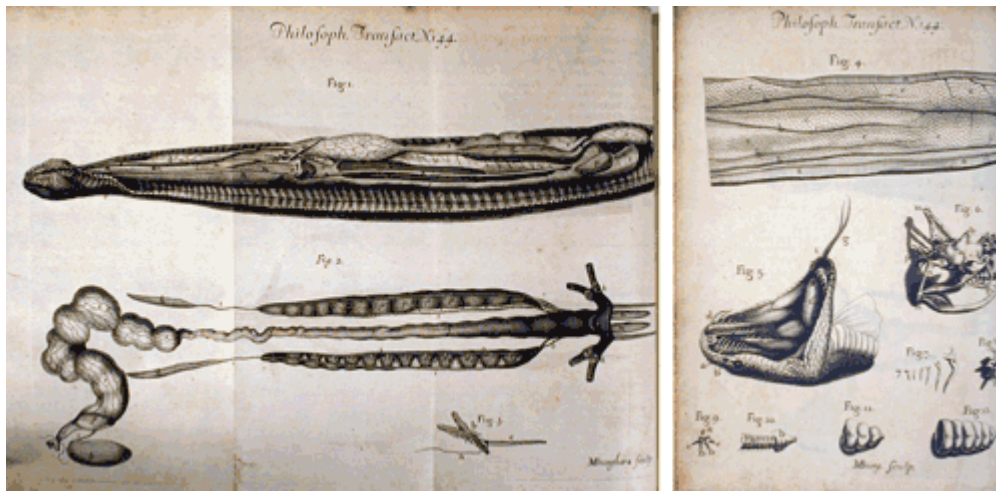


Natural Curiosity: Curious Nature in Early America



Early reports from America told of boundless fecundity in the natural world; bounteous nature seemed to promise that all the commodities Europeans gathered from around the world would grow there. But experience appeared to indicate to some that American nature could be deceptive, that plants and animals had different properties in that environment than they had in the world previously known to Europeans. Thus hopes for New World products were mixed with deep curiosity about their essential natures and fears for the instability of categories. Samuel Purchas, who succeeded Richard Hakluyt as the great compiler of travel accounts, wrote that the cartographer Gerard Mercator actually believed America had escaped Noah's flood because the species were so different in the New World, "(which I dare not thinke with him)."

It was an absolute article of faith that the American environment, particularly in southerly regions, would produce all the rich commodities of the "best parts of Europe." Promoters extrapolated from global positioning and assumed that the products in each strip of latitude around the world would be the same. Thomas Harriot was a young Oxford graduate when Raleigh sent him with the painter John White to create a natural history of Raleigh's Virginia in 1585. Harriot, who would go on to become a distinguished scientist, wrote that England could expect to grow in North America's southeast everything that grew in Persia, Turkey, Japan, China, Cyprus, Greece, Italy, southern Spain, and North Africa because these were all in similar latitudes. Failure to find rich commodities in the early plantations was explained by analogy to a tree whose rough bark concealed and protected its valuable interior; it was an article of faith that inland America would make good all the disappointments experienced on the coast. Virginia's rough exterior was just maidenly modesty, according to Samuel Purchas, a way of repelling the Spaniards' lust.

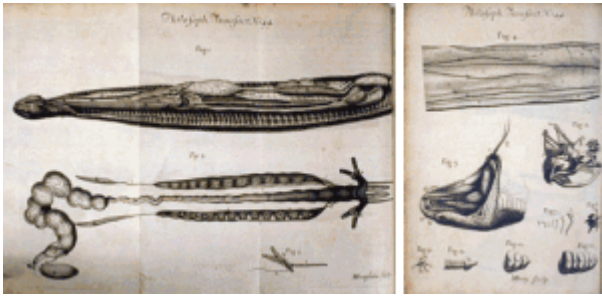


Fig 1: Diagram of dissected rattlesnake with key in Philosophical Transaction 13 (1683), Courtesy of the Brown University Library, John Hay Library, Philosophical Transactions, Hay-Hist-Sci 1-Size, Q41. R65 Vol. 13. Two plates preceding p. 25, figs. 1-12.

American riches did prove elusive in the regions open to English settlement; and even when they were found, they could also deceive and prove hollow within. Travelers to southern climes often claimed that, because of its very fecundity, nature produced foods that looked wonderful but provided little or no nourishment; they just grew too fast to accrue the nutritional value of more humble European plants. Thomas Gage, who was in Mexico with the Spanish in the 1620s and 1630s as a Dominican before he turned Protestant and became a principal advisor to Oliver Cromwell, wrote that he had always been hungry again a couple of hours after eating while he was in New Spain. He recounted a story that Queen Elizabeth, upon being shown some delicious-looking fruit from America, remarked “[S]urely where those fruits grew, the women were light, and all the people hollow and false hearted.” According to Sir Henry Colt, the proportion of seed to flesh was also deceptive in the Indies: “All your fruit carryes to great stones to the proportions of their bignesse.” Richard Ligon, writing of Barbados, affirmed that meat was not “so well relisht as in England; but flat and insipid, the hogs flesh onely excepted, which is indeed the best of that kinde that I thinke is in the world.” Moreover, gorgeous flowers had no scent or, worse yet, a putrid smell and the “Pastills” he brought with him “lost both smell and taste.” Everything looked luscious, but appearances were deceptive.

Transplanted Europeans had to figure out how to penetrate to the reality behind the possibly misleading appearance of American species. An innocent facade might hide a sinister interior, as when Thomas Harriot wrote that the Roanoke colonists had discovered “a kinde of berries almost like unto capres but somewhat greater.” If they were boiled eight or nine hours, they were “very good meat and holesome,” but if eaten before long boiling “they will make a man for the time franticke or extremely sicke.” Moreover, some believed plants that were wholesome when grown in one environment became poisonous if gathered from another context. Curiosity was essential for health, and native informants were necessarily its prime satisfiers. The essential natures of Old World plants brought to America did not necessarily remain fixed either. John Josselyn wrote that summer wheat in New England “many times changeth into Rye.”

Even the heavens were different. Many reports claimed, according to Purchas, that there were fewer stars in the New World night sky and constellations were

strange. Richard Ligon, writing of his experience in Barbados in the mid-seventeenth century, explained the relative paucity of stars; he believed that, because lands near the equator were closer to the sky, the sun and moon were brighter and outshone the light of some small stars seen in England. More disturbing was the absence of familiar constellations and the presence of strange ones, especially the Southern Cross; nothing was familiar. Henry Colt, one of the earliest English visitors to write about Barbados, described the Southern Cross, but he was particularly struck by the absence of twilight. Describing the setting sun he wrote, "In his descent it goeth not slooping downe as with us, butt strikes right downe & it is a wonder how this great bodye becomes so soone covered with the sea."

Other bizarre American phenomena seemed to be associated with these strange skies. John Winthrop recorded an invasion of caterpillars that did "Great harme . . . in Corne (especially wheat & barley)" in the summer of 1646. "It was beleaved by diverse good observations, that they fell in a great thunder showre, for diverse yardes & other bare places, where not one of them was to be seen an howre before, were presently after the showre almost Covered with them besides grasse places where they were not so easely discerned." William Pynchon in Western Massachusetts and John Endecott in the east both wrote to Winthrop about the terrible plague; they, like the missionary John Eliot, interpreted the "suddaine, innumerable armys of Catterpillers" as, in Eliot's words, "a very strang hand of God upon us." Pynchon prayed that "the Lord affect our harts and humble us kindly in the sight of our sines and provocations." Winthrop testified that prayer was indeed the pathway out of this strange meteorological phenomenon. Not only had they appeared mysteriously, but the caterpillars vanished equally suddenly. As Eliot wrote, "[M]uch prayer there was made to God about it, with fasting in divers places: & the Lord heard, & on a suddaine tooke them all away againe in all parts of the country, to the wonderment of all men; it was of the Lord for it was done suddainely."

American modes of eliminating harmful insects also broke down normal categories of experience. John Josselyn wrote, for example, of a "somewhat strange" method of ridding fields of predators "which the English have learnt of the Indians": if one gathered a quantity of caterpillars in a dish made of birch bark and set it afloat on an ebb tide, all the worms in a field or garden would disappear.

Not only did it seem possible that species were radically different in the New World, but some early observers reported evidence that the boundaries between the plant and animal kingdoms were crossed in some cases. One voyager to Barbados about 1650, whose account survives in the library of Trinity College, Dublin, wrote of

a wonderfull plant or litle tree . . . known here by the name of the Sensible tree, because it is thought to have the Sence of feeling. Touch but a Leafe of the tree with your finger, that leafe will presently Shrinke, and close upp itselife, and hang downe as if it were

dead. Cut of a leafe with a paire of Sissors, then all the other leaves groweing on the same tree will instantly shrinke, and close upp themselves, as if they were withered, and within halfe a quarter of an hour, will by degrees open themselves againe, and flourish as aforesaid. And as oft as you touch or cutt any they will doe the like, which whether it bee an invincible argument of Sence, I leave to the Philosophers to determine.

Richard Ligon saw and remarked on this plant that seemed to shrink away from contact at about the same time: "One other Plant we have, and that is the Sensible plant, which closes the leaves upon any touch with your hand, or that end of your staff by which you hold, and in a little time will open again." We continue the notion that this plant has feelings in its botanical name, *Mimosa pudica*, which implies that the plant experiences shame when it is violated.

William Wood, who came to New England in the vanguard of the Puritan migration of the 1630s, speculated that beavers were truly social animals with virtually human understanding of the principles of social organization. He described their cooperative labors in hauling heavy logs and argued that they were capable of foresight and therefore built their three-storied houses to withstand floods from heavy rains. Like human beings they made dams with "Art and Industry." Wood wrote that beavers were clannish; if one happened into another family's area, "he is made a drudge for as long as he lives there, to carry at the greater end of the logge, unlesse he creepe away by stealth."

Anthony Parkhurst, who wrote to Richard Hakluyt about his experience in Newfoundland in the 1570s, was one of the few who played with American anomalies and the apparent breakdown of the separation between animals and plants. In his accounts of earlier travels in Africa and America, he had reported "trees that bare Oisters;" now he reminded Hakluyt of that claim and explained that the trees' branches hung down into the water and oysters and mussels stuck to them. Another of his "merie tales" offered his claim that shellfish and squids washed upon shore in Newfoundland actually came in response to his verbal command.

But for most commentators, breakdown of established categories was real and disturbing. Wood, for example, wrote that New England wolves "had no joynts from the head to the tayle, which prevents them from leaping, or suddaine turning," and he told a story to illustrate his claim that this animal differed fundamentally from European norms. Samuel Purchas's earliest work, first published in 1613, described the American marsupial, the opossum, as a monster composed of parts of several animals: "They have a monstrous deformed beast whose fore part resembleth a Fox, the hinder part an Ape, excepting the feet which are like a mans; beneath her belly she hath a receptacle like a purse wherein shee bestowes her young untill they can shift for themselves." In the same year, the Reverend Alexander Whitaker, the Puritan son of a distinguished Cambridge University professor, wrote more sympathetically on the subject from

Virginia. He said there were two "most strange" animals; "one of them is the female Possown, which will let forth her young out of her bellie, and take them up into her bellie againe at her pleasure without hurt to herselfe." He warned readers not to think this a "Travellers tale." Rather, it was the "very truth, for nature hath framed her to that purpose." Moreover, not only had Whitaker himself seen this phenomenon with his own eyes, but several opossums and their babies had been sent to England. The other "strange conditioned creature" in Whitaker's account was the flying squirrel, which could glide from tree to tree "if she have the benefit of a small breath of winde."

Rattlesnakes were a subject of great interest; the problem was how they conveyed their poison. Although Wood had said firmly early in New England's history that the danger lay in the snake's teeth "for she has no sting," some, like Josselyn in the 1670s, continued to believe that they had a sting in their tail like a scorpion; he described the snake's rattle as "nothing but a hollow shelly bussiness joynted." Wood wrote that their poison could kill a man in an hour unless he treated the bite with snakeroot, moreover if the victim lived, the snake died. He also sought to calm reports in England about extreme danger from the rattlesnake: "For whereas he is sayd to kill a man with his breath, and that he can flye, there is no such matter, for he is naturally the most sleepe and unnimble creature that lives." Thomas Morton, the Puritans' nemesis in early New England, also downplayed the danger from rattlesnakes. His discussion of this "creeping beast or longe creeple (as the name is in Devonshire,)" argued that they were no more or less "hurtfull" than adders in England, and affirmed that he had cured his dog of a snakebite using a traditional English mode, "with one Saucer of Salet oyle powred downe his throat." A boy had similarly been cured with oil.

The Royal Society sought to put all speculation to rest with a truly scientific approach. "Mr. Henry Loades, a Merchant in London," who had been sent a rattlesnake from Virginia, "was pleased not only to gratify the curiosity of the R. Society in shewing it them alive, but likewise gave it them when dead," whereupon Dr. Edward Tyson conducted and recorded minutely his dissection of the snake before the society in January 1683. Although he described it as "so *Curious an Animal*," he saw many similarities to European vipers and therefore "I have taken the liberty of placing it in that Classe" by giving it the name "*Vipera Caudi-Sona Americana*." Tyson described the fangs on the upper jaw that carried the poison into the snake's victims; they were controlled by muscles so that the snake could "raise them to do execution with; not unlike as a Lyon or a Cat does it's claws." They were great hollow teeth and "towards the point there was a plain visible and large Slitt." By manipulating the side of the gum, Tyson was able to see the fang fill with poison.

Tyson determined that the rattle was attached to the last vertebra of the tail; he thought some of the bones that made up the rattle had been broken off in the specimen he examined. He quoted from Willem Piso's *Historia Naturalis Brasiliae* (Amsterdam, 1648) on the function of the rattle, but sharply rejected the claim that it was so dangerous "if thrust into a man's fundament (which how

it can I don't well see) as to be more fatal than the poison of his Teeth." He also doubted the theory that each segment of the rattle represented one year of the snake's life.

The perceived instability of forms among American plants and animals, and the way that many of them seemed to defy inherited categories from the Old World, made them objects of acute curiosity among early reporters on American experience. Sometimes curiosity was occasioned by perceived or actual danger, but often curiosity about the nature of nature on the western shores of the Atlantic stemmed from or led to speculation about the natural history of the continents. These early discussions are impressive in their scholarship. Some are based on first-hand experience and an experimental outlook, but many are impressively scholarly in the range and depth of the sources they have digested in the quest for complete information. All were united in their fundamental curiosity about this newly revealed world and convey the *frisson* of suspicion that this might be a *new world* indeed.

Further Reading:

On hopes for the ability to grow plants that would free England of reliance on the rest of the world and on the deceptive qualities of American plants see Thomas Harriot, *A Briefe and True Report of the New Found Land of Virginia* (London, 1588) in David Beers Quinn, ed., *The Roanoke Voyages, 1584-1590*, 2 vols. (London, 1955), 1: 325-6, 336, 353, 383; Samuel Purchas, *Purchas His Pilgrimage*, 2nd ed. (London, 1614), 717, 732-3, 754-7 and "Virginia's Verger" in *Hakluytus Posthumus or Purchas His Pilgrimes*, 1625, 20 vols. (Glasgow, 1906), 19: 232, 240-56; Nicolas Monardes, *Joyfull Newes Out of the Newe Founde Worlde*, trans. by John Frampton (1577), ed. by Stephen Gaselee, 2 vols. (London, 1925), 1: 143, 2: 4, 35; Thomas Gage, *The English-American, His Travail by Sea and Land* (London, 1648), 43, 200; "The Voyage of Sir Henrye Colt Knight to the Ilands of the Antilleas," 1631, in V. T. Harlow, ed., *Colonising Expeditions to the West Indies and Guiana, 1623-1667* (London, 1925), 92; and Richard Ligon, *A True and Exact History Of the Island of Barbados* (London, 1657), 27, 99, 106-7. Colt's observations of the night skies is in *Colonising Expeditions*, 72, and Ligon's is in his *History of Barbados*, 19-20. Harlow's *Colonising Expeditions* also contains the discussion of the sensible plant in Anon., "A Breife Discription of the Ilande of Barbados," c. 1650, 47; Ligon's mention of it is in his *History of Barbados*, 99. John Josselyn's claim that European grains were unstable, his description of his mode of ridding fields of harmful insects, and his thoughts on the rattlesnake can be found in Paul J. Lindholdt, ed., *John Josselyn, Colonial Traveler: A Critical Edition of Two Voyages to New England, 1674*, (Hanover, N.H., 1988), 23, 82-3, 131, and further comments are in his *New-Englands Rarities Discovered* (London, 1672), 110. The episodes of the caterpillars are in John Winthrop, *The Journal of John Winthrop, 1630-1649*, ed. by Richard S. Dunn, James Savage, and Laetitia Yeandle (Cambridge, Mass., 1996), 632-3; William Pynchon to John Winthrop, July 7, 1646, and John Endecott to Winthrop, July 9, 1646, *Winthrop Papers*, (Boston, 1947), 5: 90, 92-3; and "Rev. John Eliot's

Records of the First Church in Roxbury, Mass.," *New England Historical and Genealogical Register* 33 (1979), 62-65, quoted at 65. The opossum accounts are in Purchas, *Pilgrimage*, 732-3, and Alexander Whitaker, *Good Newes from Virginia* (London, 1613), 41. William Wood on beavers, wolves, and rattlesnakes is in his *New Englands Prospect* (London, 1634), 24, 44-5, 55-6. Thomas Morton's rattlesnake story is in *New English Canaan*, 1637, in Peter Force, comp., *Tracts and Other Papers, Relating Principally to the Origin, Settlement, and Progress of the Colonies in North America*, 4 vols. (Washington, D.C., 1844), 2: 56, and the illustrated record of the snake's dissection appears as "Vipera Caudi-Sona Americana, Or the Anatomy of a Rattle-Snake, Dissected at the Repository of the Royal Society in January 1682/3 by Edw. Tyson M. D.," *Philosophical Transactions* 13 (1683), 25-61, quoted at 25-6, 45-6, 53-4. Recent scholarship on early modern natural science is very rich, and the field is a growing one. On the species discussed here, see in particular Susan Scott Parrish, "The Female Opossum and the Nature of the New World," *William and Mary Quarterly*, 3rd ser., 54 (1997): 475-514, and David Scofield Wilson, "The Rattlesnake," in Angus K. Gillespie and Jay Mechling, eds., *American Wildlife in Symbol and Story* (Knoxville, 1987). Notes 11 and 12 in Wilson's article list seven communications about rattlesnakes published in the Royal Society's *Philosophical Transactions* during the colonial period in addition to Tyson's account of his dissection.

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