

Jefferson, Buffon and the Moose

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In 1781, in the midst of the American Revolutionary War, the British army roused Thomas Jefferson from his home in Monticello. Politically unpopular, he retired from the governorship of Virginia and threw himself into writing. The result was his only book, *Notes on the State of Virginia* (1785), in which, among other topics, he famously defended his country against those Europeans who said that the Americas (North, South and Central) were unhealthy places populated by lesser animals and plants, compared with those of the Old World, and inhabited by peoples who were similarly weak and degenerate.

The immediate source of these libels was *Histoire naturelle, générale et particulière*, written in 44 quarto volumes between 1749 and 1809 by Georges-Louis Leclerc, Comte de Buffon, and his associates. A product of the age of French encyclopedists, *Histoire naturelle* pulled together a vast array of facts about natural history around the world. It was also the vehicle for Buffon's many ideas about the history of the Earth and the organisms that inhabit it. Buffon had never been to the New World, but that did not prevent him from damning it. His critique carried an importance far greater than its questionable scientific value. Anything that lessened the public opinion of America—awash in foreign debt, at war with a global superpower, supplicant to the thrones of France and Spain—had political significance. Buffon had to be answered.



The Secretary to the French delegation in Philadelphia was Francois, Marquis de Barbé-Marbois. (Later, as minister of the treasury for Napoleon I, he negotiated the Louisiana Purchase.) The French government had instructed Barbé-Marbois to assemble data on the 13 colonies, and he responded by preparing a 22-point questionnaire. A copy of this survey was given to Joseph Jones, a delegate from Virginia to the Continental Congress in Philadelphia, in late 1780. Jones realized that Jefferson would be the best person to respond. Whereas other states sent in replies of a few pages, Jefferson's response became a book in which he distilled all his knowledge of Virginia's political and constitutional history, geography and ethnography, and of the whole country's natural history. He also rebutted specific points from *Histoire naturelle* (although the pagination in Jefferson's octavo edition differed from the original). Using all his rhetorical skills, Jefferson destroyed Buffon's case for American inferiority.

Buffon's Libels

Buffon was not the first to assert American degeneracy, and this idea was not based on natural history alone: Politics also played a part. Buffon's immediate source was a book by a Spanish naval officer, Don Antonio d'Ulloa (*Relación histórica del viaje hecho de orden de su Majestad a la América Meridional*, 1748). d'Ulloa's thesis was that the human condition in the Americas was degenerate as a result of a long history of colonialism, slavery, exploitation of natural resources and subjugation of the native peoples. To d'Ulloa, it was natural that America lacked the large mammals of the Old World and was rife with noxious insects and poisonous reptiles.

Buffon, focusing on North America, developed d'Ulloa's observations into a complex theory in which climate played a central role. In his ninth volume, published in 1761, Buffon compared mammalian species and noted examples in which the same species lived on both sides of the Atlantic Ocean. He claimed the New-World versions were always smaller and weaker. European livestock exported to America were always stunted. Species indigenous to the New World were always smaller than comparable species in the Old World (the largest American mammal was the tapir, nowhere near the size of an elephant). Of American Indians, he wrote, "the organs of generation (of the savage) are small and feeble. He has no hair, no beard, no ardour for the female. Though nimbler than the European, his strength is not so great. His sensations are less acute; and yet he is more timid and cowardly." And so on.

Jefferson refuted Buffon's claims, citing for example the American (black) bear at 412 pounds and the European bear at 153, the American beaver at 45 pounds and the European at 18. Jefferson's data do not bear close scrutiny (he listed the cow in America at 2,500 pounds and at 763 in Europe), but he had two trumps. The first was the North American moose, under the belly of which, he claimed (quite erroneously), a European reindeer could walk. The moose should have been familiar to Buffon from French travelers in Canada (where they called it the *original*). Live moose had been imported to Britain in the 1770s and a drawing of one of these was later used in a Dutch edition of *Histoire naturelle*.

Jefferson also thought he had the advantage with the example of the mastodon, which he claimed to be bigger by half than either the living elephants or the extinct Siberian mammoth. This might seem something of a cheat, but he genuinely believed that it was not extinct.

As for Buffon's evidence of the degeneracy of American Indians, Jefferson refuted it in two ways. First, he used an eloquent speech by the "Shawanee" Chief Logan as an example of their civilization. This speech was later reproduced widely in Europe and very much admired. With respect to hair and sexual ardour (a subject that Europeans found titillating), Jefferson coolly pointed out that ". . . with them it is disgraceful to be hairy on the body. They therefore pluck the hair as fast as it appears." If Indians had smaller families than Europeans, it was through economic necessity. When Indian women married white men and were treated well, they produced large families, although it was true that women had a low place in Indian society. They were subjected to ". . . unjust drudgery. This I believe is the case in every barbarous people."

On the subject of climate, Buffon had conflated several different reports and places. He believed that America was cold and damp, conditions that he disparaged but that, he had to admit, were by no means inimical to healthy life. He even repeated the claim that anywhere in North America, if one dug down a foot or so, the ground would be frozen. All of these statements were easy to counter: Not only was the average climate drier and warmer than that of Europe, Buffon himself had observed that the cold, damp regions of northern Europe were good for cattle. Despite these absurdities, not all of Buffon's ideas were bad. He noted, for example, that cities on the same latitude, such as Quebec and Paris, or Boston and Seville, had remarkably different climates.

Motives

In his *En resa til Norra America* (1753–1761; English translation *Travels into North America*, 1770), the Swedish-Finnish naturalist Peter Kalm had noted that cattle in Philadelphia were stunted. But Robert Byrd (*The Natural History of Virginia, or the Newly Discovered Eden*, 1737) had seen a reason: The natural pasture was so lush that farmers left their livestock outdoors through the winter, where they became thin, "which does not happen if they are given hay, and kept in stables."

Byrd also extolled the American Indians as a strong and cultured people. This opinion wasn't new;

Robert Beverley had recorded similar observations decades earlier. If Buffon had read contemporary descriptions of North America, he would have known that the lack of hair in American Indians was cosmetic. As early as 1702, Beverley (*History and Present State of Virginia*) wrote, "The Men wear their Hair cut after several fanciful Fashions, sometimes greas'd, and sometimes painted. The Great Men, or better sort, preserve a long Lock behind for distinction. They pull their Beards up by the roots with a Muscleshell; and both Men and Women do the same by the other parts of their Body for Cleanliness sake."

Given these contrary reports, why was the leading natural scientist of Europe so zealous in arguing for American degeneracy? One answer was that Buffon believed the anecdotal evidence more than the written records. He was also blinkered by preconceived notions, thinking that America was cold because of winds blowing off the Atlantic Ocean. Other possible explanations of the cold and damp were that the biblical Great Flood had retreated later from the New World than the Old, or that the New World had more recently emerged from the ocean. Buffon also developed the more sophisticated idea that the low population density of humans in the Americas meant that they had had less opportunity to improve the ecology and thereby ameliorate the climate.

Yet another answer was philosophical. Buffon opposed Jean-Jacques Rousseau's notion of the "noble savage" and argued that the indigenous American people did not represent humans in a state of primeval grace. Instead, like the animals and plants, they had migrated from the Old World and deteriorated.

There was also a political reason to denigrate the Americas. Although much of the New World had been founded on colonialism and slavery, North America threatened to throw off these fetters. With huge natural resources, strong population growth and increasing affluence, the former colonies were rapidly evolving to become a beacon of new democracy. This egalitarianism was anathema to European aristocrats—a group that included most natural scientists of the time. The new United States was a populist place that neither needed nor tolerated aristocracy. The zeal with which Buffon's opinions were repeated may be a sign of how serious a threat the European oligarchy perceived the Americans to be. Among the authors who spread Buffon's tripe was the British historian William Robertson, whose *History of America* (1777) was reprinted, edition after popular edition, for another 40 years—an interval in which thousands of his countrymen cheerfully departed for America.

Shifting Ground

Before Jefferson began writing *Notes*, the Abbé Raynal in France (*Histoire philosophique et politique*, 1770) and the Dutch geographer Corneille de Pauw (*Récherches philosophiques sur les Américains*, 1768)—neither of whom ever visited the New World—had published books rehearsing and extending Buffon's ideas. De Pauw wrote that in the former Dutch Guiana (now Suriname) in South America, "caterpillars, butterflies, centipedes, scarabs, spiders, frogs and toads were found in gigantic size for their species, and multiplied beyond imagining. . . . Even today, the oldest European colonies in America are not yet cleansed of filthy or poisonous animals whose propagation is encouraged by the atmosphere."

A particularly delicate issue in the discussion of "degeneracy" concerned Europeans emigrating to North America. Buffon stopped short of saying that they also became inferior on American soil, but Abbé Raynal had no reservation claiming exactly that. Buffon did, however, denigrate the intellectual achievements of Americans. This dismissal incensed Jefferson, who quite reasonably noted that in two hundred years, "in war we have produced a Washington . . . in physics we have produced a Franklin, than whom no one of the present age has made more important discoveries . . . [and] we have supposed

Mr. Rittenhouse second to no astronomer living." (David Rittenhouse was a Philadelphia astronomer, instrument craftsman and patriot.)

Benjamin Franklin's own response to the issue of American degeneracy was typically pragmatic. At a dinner party in Paris where a number of Americans were present (and who, he noted, were quite tall) he asked them to rise, followed by the French, over whom they towered. Adding spice to the occasion, Abbé Raynal was one of those vertically challenged French guests; Franklin graciously noted that he himself was not so very tall.

In the 1770s, Buffon used new volumes of *Histoire naturelle* to expand on the effects of climate on agriculture (Supplementary Volume Five, 1778) and to recant his views on American Indians (Supplementary Volume Four, 1777). In Paris, Franklin had held many scientific discussions with Buffon and was the partial cause of the latter's change of mind. The conversation that had so profound an effect had been about population growth. In this area, Franklin's insights preceded those of Thomas Robert Malthus by 30 years. Buffon wrote, "because we know from the celebrated Franklin, that in twenty-eight years the population of Philadelphia (without immigration) doubled . . . in a country where the Europeans multiply so promptly, where the life of the natives is longer than previously, it is not possible that humans degenerate." Raynal also changed his mind and was one of the French admirers of Chief Logan's speech, writing "*Que celà est beau*" (how fine it is) and "*comme celà est simple, énergétique et touchant.*"

Interestingly, Jefferson knew about Buffon's change of mind when he composed the final version of his *Notes*, having read the new volumes of *Histoire naturelle*. But he went ahead with his refutations anyway. Jefferson's style in these arguments was complex, a mixture of simple fact and biting rhetoric. Where possible he turned Buffon's own writings against him. Buffon had written that he loved best someone who corrected him in an error, because an error corrected became a fact. In this case, Jefferson wrote, "one sentence of his book must do him immortal honour."

The Moose

Around the time *Notes* was published, Jefferson was living in Paris as the new nation's ambassador to France. When he arrived, Jefferson sent Buffon a copy of *Notes* and the skin of a large panther, and was subsequently invited to dine with Buffon at the Jardin du Roi, Paris's magnificent botanical garden. Of that meeting Jefferson later wrote, "in my conversations with the Count de Buffon . . . I find him absolutely unacquainted with our Elk and our deer. He has hitherto believed that our deer never had horns more than a foot long." So Jefferson decided to show him a full-grown American moose. He wrote to General John Sullivan, president (governor) of New Hampshire, for help in getting a large specimen, instructing him that the bones of the head and legs should be left in the skin so that it could be mounted in a life-like manner. Eventually a "seven-foot tall" moose was collected in Vermont and shipped to Paris.

Many years later, Daniel Webster told the story that Jefferson had had the moose set up in the hall of his apartment and invited Buffon to see it. Confronted with that stark refutation of his earlier thesis, Buffon was said to have exclaimed, "I should have consulted you, Monsieur, before I published my book on natural history, and then I should have been sure of my facts." It would be nice if this story were true. In fact, Buffon, by this time old and sick, was away from Paris when the moose arrived in October 1787. Jefferson sent it to Buffon's long time associate, zoologist Louis-Jean-Marie D'Aubenton, for the great man to see when he returned. Although most of the hair had fallen off the hide, the antlers sent by Sullivan were from a smaller animal and the whole carcass was probably rancid, Jefferson was "in hopes that Monsieur de Buffon will be able to have it stuffed, and placed on

his legs in the King's Cabinet."

Jefferson later told Webster that Buffon had "promised in his next volume, to set these things right . . . but he died directly afterwards." Nonetheless, Jefferson had made his case and *Notes on the State of Virginia* went on to become an American classic. Buffon's *Histoire naturelle*, which encompassed so much more than just the denigration of American wildlife, continued to be one of the most influential books of 18th- and early 19th-century natural science.



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