

Jefferson, Buffon, and the European View of America

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The debate between Jefferson-Buffon over the relative superiority of the faunas and peoples of the Old and New Worlds has long been a famous intellectual milestone in American history. Buffon's thesis was included in his great classic of natural science: Histoire Naturelle, Générale et Particulier.¹ Jefferson's response is enshrined in his Notes on the State of Virginia, and Buffon perhaps deserves some credit for having triggered Jefferson into writing his only book.² Daniel Webster popularized the story – not hesitating to embroider and confuse it.

The dispute involved matters of fact, matters of scientific theory, American national pride, and European attitudes towards the Americas. It showcased Buffon's creativity, Jefferson's logic and empiricism, and the breadth of knowledge of both. In the United States, it has often been presented as an example of Jefferson's fighting patriotic spirit and Europe's arrogance towards the new country. The affair has been discussed and re-discussed many times.³

What I hope to add to the subject is the viewpoint of the scientist and historian of science. I will correct some errors and explore a chronology of the influences on the two protagonists. First it is necessary to start with a base: What did Buffon say, and why? How did Jefferson respond? Then I will attempt to discover the sources of Buffon's ideas and the reasons that Jefferson was so exercised about them, in the context the larger scheme of European attitudes towards with the New World.

Georges Louis Leclerc, Comte de Buffon (1707-1788) was a brilliant scholar and observational and experimental scientist. For his Histoire Naturelle, he necessarily adopted the approach of the encyclopedists, working in large part as a compiler and analyst of other people's information. His theories of the origin of the earth were original

and supported by data he developed himself.⁴ In natural history, he had both detailed experience and genuine insight. For our purposes, his critical observation was that the faunas of the Old and New Worlds – although often given the same names – robin, lion, etc – were really quite different. He was also a brilliant writer and Jefferson was only one among many who thought that this was often a liability. “I must doubt whether in this instance he has not cherished error also, by lending her for the moment his vivid imagination and bewitching language.”⁵ Apart from showing a rather nice turn of phrase himself, Jefferson was here coming as close as he dared to calling Buffon a polished liar. Under a veneer of gentility, feelings were evidently extremely raw.

Included in the ninth volume (1761) of Buffon’s great work, are three major conclusions: that the animals of the New World were lesser in size and numbers of species than those of the Old World; that animals common to both continents were smaller in the New World; and that Old World animals transplanted to the New World fared poorly. At the same time “serpents” and insects abound.

Buffon's data on the natural history of the New World (which he never visited personally) were assembled from the writings of others scholars and from direct examination of the specimens they brought home. Like so many, perhaps nearly all, scholars before him and since, his presentation was colored by prior ideas about the “why” of American nature.

Buffon’s main points were, in some parts at least, quite valid. Perhaps surprisingly, however, he weakened his conclusions by following earlier commentators in conflating information derived (accurately or not) from North America, Central, and South America, as if they were all one country with similar animal and human inhabitants and a common climate. It is here, surely, that Buffon’s critical intelligence should have caused him to pause. In the Old World, there is a vast difference between the faunas of Sweden and Algiers, or Spain and tropical Africa, the Himalayas and southern India, and so on. Why did not Buffon realize that there had to be similar set of latitudinal differences in the Americas, especially as he was obviously reading (or reading about) different authors

when it came to the tropical miseries of Central America and the bitter cold of northern Canada and southern Patagonia?

Jefferson's Notes on the State of Virginia began as a reply to a questionnaire from Francois, Marquis de Barbé-Marbois, secretary of the French Delegation in Philadelphia, in early 1781 (later, as minister of the treasury for Napoleon I, he negotiated the Louisiana Purchase). Jefferson meticulously recorded details about the geography, geology, and political institutions of the United States, its commerce, and its peoples. The sections on natural history (Chapter 6, Productions mineral, vegetable and animal) are perhaps the most spirited and forceful and are aimed directly at contradicting Buffon.

While Buffon had written about all the Americas, Jefferson only felt qualified to write about North America (not confining himself to Virginia, however). He chose to answer Buffon with tables of data and confined his comparisons to Europe. Unfortunately, his data do not bear close inspection and hardly seem like a knock-out blow. For example, Jefferson noted that the tapir was bigger than anything in Europe. This was disingenuous at best as the tapir lives principally in South America, with one species in Central America. But Buffon had pointed out that the tapir was the largest mammal in all the Americas and was right; there are no species, northern or southern, in the New World to match the elephant, rhinoceros, giraffe and hippopotamus.⁶

Jefferson counted more mammal species in "America" than in Europe, but in order to do so he had to include many from Central America. He listed 109 species of native birds, mostly taken from Catesby's lists, with additions presumably of his own observation.⁷ Of these, 72 had been listed by Buffon. Pennant's British Zoology of 1776, however, listed 65 species of birds in Britain alone.⁸ Jefferson cited the American black bear at 412 pounds against the European bear at 153 and the American beaver at 45 pounds and the European at 18 (a gross underestimate). His data on imported mammals showed a maximum for North American cattle of 2500 pounds, but 763 for Europe yet, as an agriculturalist, Jefferson had plenty of access to data that would shown him that cattle in Europe reached higher than that. In 1692, an ox in Lincolnshire reached 3564 pounds.

The weight of cattle sent to market in England doubled in the eighteenth century.⁹ Jefferson did not give comparative data for horses.

The Swedish-Finnish botanist Peter Kalm had noted in 1748 that at Philadelphia “The cattle degenerate by degrees here, and become smaller.”¹⁰ But Jefferson replied that American cattle were smaller because they were left out all winter to forage. The same point had been made earlier by William Byrd.¹¹

If Jefferson had known the faunas of the whole North America continent he might more easily have carried the day in terms of numbers of species of birds and mammals. However, the fact that vast regions of North American had not yet been explored gave him the excuse to include as a prime example of North American superiority the mastodon, known to be almost one-third larger than the (extinct) Old World mammoths and the living elephants. We, like most of Jefferson’s contemporaries, know the mastodon to be extinct but Jefferson was philosophically opposed to the principle of extinction and clung to the belief that the mastodon existed somewhere in the great western wilderness.¹²

Notoriously, Buffon did not confine himself to dismiss the wildlife of the Americas; he reached out to condemn the native peoples, as cowardly, weak, lazy, and asocial. “For, though the American savage be nearly of the same stature with men in polished societies, yet this is not a sufficient exception to the general contraction of animated Nature throughout the whole continent. In the savage, the organs of generation are small and feeble. He has no hair, no beard, no ardour for the female. Though nimbler than the European, because more accustomed to running, his strength is not so great. His sensations are less acute; and yet he is more timid and cowardly. He has no vivacity, no activity of mind.”¹³

In fact, descriptions of Native Americans as feeble and unintelligent were as old as the first accounts of Columbian-era explorers such as Oviedo’s Historia general y natural de las Indias (1535) and Sommario de la natural historia de las Indias (1526); Antonio de

Herrera's Descripcion de las Indias Occidentales (1601), Batholemew de las Casas' Brevísima Relacion de la Destruycion de las Indias (1552) and Antonio de Solís y Rivadeneyra: Historia de la conquista de México (1684).¹⁴ They were as old as the Europeans' attempts to make them their slaves.

Interestingly, Buffon evidently relied more upon the opinions of Spanish and Portuguese authors rather than French. La Salle and Champlain in North America had told a different story and Buffon seems to have completely ignored the fact that in the so-called French and Indian Wars, France eagerly recruited native North Americans to fight on their side. While the Indians might have switched sides when expedient, no-one doubted their skill as fighters. All this suggests, as Jefferson stated, that Buffon had not read much of the literature but had principally taken his views from the writings of Don Antonio d'Ulloa (1716-1795), who traveled in Ecuador, Peru, and Louisiana.

In the account of their travels in Ecuador, d'Ulloa and Jorge Juan (1748), admit that "It is no easy task to exhibit a true picture of the customs and inclinations of the Indians, and precisely display their genius and real turn of mind." They found them to be "in general ... robust, and of a good constitution" with "remarkable longevity." Against which they also said that "Nature ... begins to decay at the age of thirty, whereas the females rather enjoying a more confirmed state of health and vigour ... (due to) climate ... food." The weakness of the males was due to the "early intemperance and voluptuousness." But they were lazy, submissive, "slow but very persevering," drunken and with little imagination. D'Ulloa concluded that they were basically "little above brutes."¹⁵

Even so, d'Ulloa reported that las Casas who "in 1504 ... began the war against the Indian inhabitants [of Cartagena, Colombia] ... met with greater resistance than they expected; those Indians being a martial people, and valour so natural to them, that even the women voluntarily shared in the fatigues and dangers of war."¹⁶ And, like all travelers to South and Central America, d'Ulloa had to admit the contradictory evidence of the architectural monuments of the people, describing the "still superb ruins... of the ancient inhabitants of Peru," together with their copper axes, gold utensils, and exquisitely

worked emeralds. At the “palace of the yncas at Quito ... the dignity of the prince will be absolutely conspicuous, in the prodigious magnitude of the materials, and the magnificence of the structure,”¹⁷

A popular device to weaken this evidence of native architecture and craftwork, with its implications of sophisticated engineering, complex religious beliefs, and well-developed intellect, was for commentators to claim that travelers’ accounts had been deliberately exaggerated so as to make the conquerors appear more heroic. Mark Catesby, for example, commented that the reports of authors such as “Herrera, Solis, and other Spanish Authors ... were... enough to excite in us a high Opinion of the Knowledge and Politeness of the Mexicans even in the more abstruse Arts of Sculpture and architecture, those darling branches of the Ancients.” But, he suspected, these reports had been exaggerated so as to “aggrandize their Achievements in conquering so formidable People, who in reality were only a numerous herd of defenceless Indians, and not still continue as perfect Barbarians as any of their Neighbours.”¹⁸ D’Ulloa echoed Catesby, referring to the Peruvians as “barbarians” who “live in debasement of human nature; without law or religion; in the most infamous brutality; strangers to moderation; and without the least control or restraint in their excesses.”¹⁹

Buffon’s claims about Native Americans were easily and firmly dismissed by Jefferson who actually knew Indians. “I am able to say, in contradiction to this representation ... that he is brave, when an enterprize depends on bravery; education with him making the point of honor consist in the destruction of an enemy by stratagem, and in the preservation of his own person free from injury; or perhaps this is nature; while it is education which teaches us to honor force more than finesse: that he will defend himself against an host of enemies, always chusing to be killed, rather than to surrender, though it be to the whites, who he knows will treat him well: that in other situations also he meets death with more deliberation, and endures tortures with a firmness unknown almost to religious enthusiasm with us: that he is affectionate to his children, careful of them, and indulgent in the extreme: that his affections comprehend his other connections, weakening, as with us, from circle to circle, as they recede from the center: that his

friendships are strong and faithful to the uttermost extremity: that his sensibility is keen, even the warriors weeping most bitterly on the loss of their children, though in general they endeavour to appear superior to human events: that his vivacity and activity of mind is equal to ours in the same situation; hence his eagerness for hunting, and for games of chance.²⁰

Although Jefferson assumed that Buffon's source concerning the supposed inferiority of native Americans was d'Ulloa, he had considerable respect for the latter. "Don Ulloa's testimony is the most respectable. He wrote of what he saw. But he saw the Indian of South America only, and that after he had passed through ten generations of slavery."²¹ And in Notes, Jefferson said, "In so judicious an author as Don Ulloa, and one to whom we are indebted for the most precise information we have of South America, I did not expect to find such assertions ... (he) admits, that the authors who have described the Indians of South America, before they were enslaved, had represented them as a brave people, and therefore seems to have suspected that the cowardice which he had observed in those of the present race might be the effect of subjugation. But, supposing the Indians of North America to be cowards also, he concludes the ancestors of those of South America to have been so too, and therefore that those authors have given fictions for truths. He was probably not acquainted himself with the Indians of North America, and had formed his opinion of them from hear-say."²²

"The women are submitted to unjust drudgery. This I believe is the case with every barbarous people. With such, force is law. The stronger sex therefore imposes on the weaker. It is civilization alone which replaces women in the enjoyment of their natural equality. That first teaches us to subdue the selfish passions, and to respect those rights in others which we value in ourselves. Were we in equal barbarism, our females would be equal drudges. The man with them is less strong than with us, but their woman stronger than ours; and both for the same obvious reason; because our man and their woman is habituated to labour, and formed by it."²³

Buffon, who admitted that “Americans” could run more swiftly than Europeans, had read Catesby and obviously must therefore have seen his carefully qualified observation that, in Virginia: “There are few amongst these Americans so robust and of so athletic a Form as in amongst Europeans, nor are they capable of lifting great Burthens, and enduring so hard Labour; but in hunting they are indefatigable, and will travel further, and endure more Fatigue, than a European is capable of ...Running and Leaping these Savages perform with surpassing Agility.”²⁴

To demonstrate the intelligence, sensibility, and civility of Native Americans, Jefferson drew upon the example of the famous, eloquent speech of Chief Logan. This speech caught the imagination of Europeans and eventually helped mold attitudes.²⁵ In fact, there were also several examples of equal eloquence among the South American peoples who treated with or entreated against their early European “masters.”²⁶

A further libel (in Jefferson’s eyes) by Buffon was his assertion that “America has not yet produced one good poet, an able mathematician, any man of genius in a single art or science.” Jefferson retorted that “When we shall have existed as a people as long as the Greeks did before they produced a Homer, the Romans a Virgil, the French a Racine and Voltaire, the English a Shakespeare and Milton, should this reproach be still true, we will enquire from what unfriendly causes it has proceeded.” And then he produced his famous statement: “In war we have produced a Washington, whose memory will be adored while liberty shall have votaries, whose name will triumph over time, and will in future ages assume its just station among the most celebrated worthies of the world, when that wretched philosophy shall be forgotten which would have arranged him among the degeneracies of nature. In physics we have produced a Franklin, than whom no one of the present age has made more important discoveries, nor has enriched philosophy with more, or more ingenious solutions of the phaenomena of nature. We have supposed Mr. Rittenhouse second to no astronomer living: that in genius he must be the first, because he is self-taught.”²⁷

This entirely patriotic statement did not please every American. Some thirty years later John Adams was still smarting. He wrote to Jefferson (February, 1814), “Rittenhouse was a virtuous and amiable man an exquisite mechanic, master of the astronomy known in his time ... But we have had a Winthrop, an Andrew Oliver, a Willard, a Webber, his equals, and have a Bowditch his superior in all these particulars.” To rub it in, he continued “But you know Philadelphia is the heart, the censorium, the pineal gland of the United States.”

It has to be pointed out that John Adams was never persuaded that Jefferson’s debate with Buffon, and his preoccupation with fossils like the mastodon, had any value at all. The following three quotes give a flavour of Adam’s disdain for such “idle” speculation.

“I take a pleasure in reading Buffon ... but I place no confidence in his Judgment or Veracity and I care not a farthing about all the Big Bones in Europe or America.”

“I delight in Buffon’s facts and his manner of relating them, when he is correct: but his Theories I cannot Admire.”

“Speculations about Mammoths ... These are all pitiful Bagatells, when the Morals and Liberties of the nation are at hazard as in my Confusion I believe them to be at this moment. And the atheism of your Buffon and the despicable Philosophy of Mammoths ... have made them so.²⁸

Finally, nothing that Buffon wrote about Native Americans caught the public imagination more than his titillating announcement of their lack of hair, small “organs of generation,” and a correlated lack of sexuality. “Le sauvage est foible & petit par les organes de la génération; it n’a ni poil, ni barbe, & nulle ardeur pour se femelle ... ils manquent d’ardeur pour leur femelle .. leur couer es glacé, leur société froide .. ils ne regardent leur femmes que comme des servants de peine ou des betes” and so on.²⁹

In Virginia, at least, there was abundant evidence that the Indians had plenty of hair. In 1724, Hugh Jones, who despised the Indians, had written that “Their hair is very black, coarse and long.”³⁰ Catesby had solved the problem of their apparent beardlessness. He noted that the :”Indians of Carolina are generally tall, and well shap’d ... their Hair is black, lank, and very coarse ... The Women before Marriage are generally finely shaped, and many of them have pretty features .” The beards [of the men] are naturally very thin of hair, which they are continually plucking away by the Roots ...” On the other hand, the generalization that all male Americans were hairless was also based partly on fact. Some peoples (north and south) had little hair; Prévost had stated that this was restricted to the “Eskimaux” and one or two Nations of North America.”³¹

The idea that “Americans” were sexually incompetent with small genitals does not appear in any of the writings of the early travelers to the New World. Many of their accounts described the people of the North and South flatteringly; they admired their physical beauty and their familial devotion. These explorer-priests also tended to dwell lovingly on the unabashed nudity of the native people and their physical attributes, especially the women. Prévost, for example, noted that, among the women of Virginia, “on leur voit presque jamais les mamelles pendantes.”³²

Buffon’s main source, d’Ulloa, had stated that the Ecuadorian Indians had hair “but no beard; and the greatest alteration occurring by their arriving at the years of maturity is only a few struggling hairs on the chin, but so short and thin, as neither to require the assistance of the razor.” The closest he got to hints about sexual virility was to note: “nor have either males or females any indication of the age of puberty.”³³ It may have been this statement that Buffon seized upon to exaggerate into a claim of sexual incompetence and coldness.

Jefferson dismissed all these claims: “[the Indian] is neither more defective in ardor, nor more impotent with his female, than the white reduced to the same diet and exercise.” He quoted his friend Charles Thomson; “(Buffon) says their organs of generation are smaller and weaker than those of Europeans. Is this a fact? I believe not; at last it is an

observation I never heard before ...they do not indulge in (excesses of ardour for their female) which is customary in Europe ... (T)heir soul is wholly bent on war ... (T)he seeming frigidity of the men, therefore, is the effect of manners, and not a defect of nature.³⁴

Jefferson's Notes on the State of Virginia was not the only reaction to Buffon's claims. By the time Jefferson came to take up a pen, the Dutch scholar Corneille de Pauw had greatly amplified these ideas of Buffon and, from an American point of view, made things much worse.³⁵ "At the time of discovery of America, its climate was very unpropitious for quadrupeds ... it was also pernicious to the natives, who were brutalized, enervated and vitiated ... Immense areas of the land were covered with putrid and death-dealing waters on which the heat of the sun caused a sort of fermentation and fogs of poisonous salts. These horrible swamps produced poisonous trees ... the earth was overrun with serpents, lizards, reptiles, and monstrous insects, all of which, filled with the poison they drank from the earth itself, grew to prodigious size."³⁶ De Pauw was joined by the French Jesuit scholar the Abbé Raynal, who continued in the same derivative vein. Both claimed that not only were imported cattle feeble and degenerate in America, so were the European settlers.³⁷ De Pauw stated as fact that "members of the fourth and fifth generation have less genius, less capacity for knowledge."³⁸

Jefferson had nothing but contempt for de Pauw and Raynal. Of the former, he wrote to his friend the Marquis de Chastellux "It is really remarkable that in three volumes 12mo of small print it is scarcely possible to find one truth."³⁹ Of Raynal, Jefferson wrote in a footnote to Notes: "We have not yet sufficient evidence that there are more *lakes* and *fogs* in South America than in other parts of the earth. As little do we know what would be their operation on the mind of man. That country has been visited by Spaniards and Portuguese chiefly, and almost exclusively. These, going from a country of the old world remarkably dry in its soil and climate, fancied there were more lakes and fogs in South America than in Europe. An inhabitant of Ireland, Sweden, or Finland, would have formed the contrary opinion. Had South America then been discovered and seated by a people from a fenny country, it would probably have been represented as much drier than

the old world. A patient pursuit of facts, and cautious combination and comparison of them, is the drudgery to which man is subjected by his Maker, if he wishes to attain sure knowledge.”⁴⁰

Science and Politics

“Let us now examine why the reptiles and insects are so large, the quadrupeds so small, and the men so cold, in the New World.”⁴¹ Buffon’s main explanatory thesis (taken up by De Pauw, Raynal and others) was that these differences were explained by climate and geographical and geological conditions. America, he thought, was universally cold and wet. He copied de Pauw in stating that everywhere, just below the surface, the soil was always frozen. Jefferson had a little fun with this cold-wet thesis, pointing out that Buffon himself had argued that the cold, damp regions of northern Europe were the best for cattle. But Buffon did have some evidence on his side, pointing out that cities on the same latitude – Quebec and Paris or Boston and Seville, for example, had very different climates, the North American ones being colder.

“These effects must be referred to the quality of the earth and atmosphere, to the degree of heat and moisture, to the situation and height of mountains, to the quantity of running and stagnant waters, to the extent of forests, and, above all, to the insert condition of Nature in that country. In this part of the globe, the heat in general is much less, and the humidity much greater ... The east wind, which blows perpetually between the Tropics, arrives not in America, till it has traversed a vast ocean, by which it is cooled. Hence this wind is much cooler in Brasil, Cayenne, &c, than at Senegal, Guinea, &c, where it arrives impregnated with the accumulated heat from all the lands and brining sands on its passage through Asia and Africa.... This first cause renders all the east coats of America much more temperate than Africa or Asia” The wind then got hotter as it goes over land until it reaches the Andes, where it is “stopped and cooled ... Besides, as the earth is every where covered with trees, shrubs, and gross herbage, it never dries ... In these melancholy regions, Nature remains concealed under her old garments .. being neither

cherished nor cultivated by man. ... The scarcity of men, therefore, in America, and most of them living like brutes, is the chief cause why the earth remains in a frigid state.”⁴²

From this, Buffon concluded that the New World, except for its obviously ancient western mountains, was actually “more recent, and has continued longer than the rest of the globe under the waters of the ocean.” The evidence for this was partly geological. In “[the] new lands, elevated and formed by the sediments of waters ... in many places, immediately under the vegetable stratum, we find large masses of limestone, but which are softer than our free-stone.” Indeed, “if this continent is really as ancient as the other, why was it so thinly peopled? ... Why are they still ignorant of the art of transmitting facts to posterity by permanent signs? Their arts, like their society, were in embryo; their talents were imperfect, their ideas locked up, their organs rude, and their languages barbarous.”⁴³ He then sarcastically noted how awkward indigenous names for animals are, *inter alia* citing, rather implausibly, “Tatu-ete in Brasil” was so obviously inferior to “eight banded armadillo.”

De Pauw’s and Raynals’ writings are more frankly politically biased than Buffon’s; they are a polemic against colonialism, slavery, and exploitation. But were Buffon’s views purely a matter of science, or were they also politically and philosophically motivated? Certainly, when it came to the status of “American” Indians he had strong views. They were not the noble savages envisaged by Rousseau. They were either of Eurasian stock and degenerated because of the awful climate or they were genuinely in a primitive brutish state. For Buffon they were classically them (“les petites nations sauvage de l’amérique”) versus us (“nos grand peuples civilizes.”)⁴⁴

Obviously we cannot argue that Buffon’s own writings were directed against the United States. North America, east of the Mississippi, was still British when Buffon wrote in 1761, and the frontier lands west of the Mississippi stood in stark contrast to the farms, plantations, cities and fledgling industries of the British part. But a strong case can be made for European resentment of British North America with its limitless lands, great natural resources, and strong confident people – a continent that, moreover, was daily

attracting more and more European immigrants. North America had grown stronger and stronger during the middle of the Eighteenth century.⁴⁵

Hannah Adams wrote in her history of New England (1799) that after the French-Indian Wars, “At this period the arms of Great Britain had recently been successful in every part of the globe. Power, however, like all things human, had its limits; and there is an elevated point of grandeur which seems to indicate a descent. The kingdoms of Europe looked with a jealous eye upon Britain, after the acquisition of such immense power and territory ... while the ideas of liberty and independence ... were increased.”⁴⁶

Central and South America presented a somewhat different kind of threat –colonial decadence rather than Yankee independence and power.

De Pauw was perhaps right to condemn those colonial regimes but, as Pernety pointed out (again presumably reflecting a point of view that was not unknown to Europeans) , he was wrong to state that there were few people in South America before 1492 and that they had no culture. The opposite was already apparent. After all, the conquistadors had not looted Central and South America in search of stone tools and beads made of wood.

De Pauw, Raynal and Pernety had all written a decade before Jefferson began to work on Notes on the State of Virginia so he was reacting against them as well as Buffon. And just as damaging (and at least as threatening) to Jefferson was the fact that William Robertson, in his influential The History of America (177-1778), had rehearsed Buffon’s, Raynal’s and de Pauw’s conclusions for the English-speaking world. And the Scot was soon followed by the Englishman Oliver Goldsmith. No doubt both were alarmed at the numbers of Britons who were cheerfully departing home to live in supposedly cold benighted British America, an America that had then rejected and actually fought the mother country.

Robertson’s work is instructive here because he appears to be writing as a result of a good deal of research and first hand acquaintance with the Spanish sources, while weakly

disguising his prejudice. “As all those circumstances that concur in rendering an inquiry into the state of the rude nations in America are intricate and obscure, it is necessary to carry it on with caution.” But without offering counterevidence he then plunged headlong into de Pauw-like denigrations. For Robertson the peoples of the Americas were essentially savages, unredeemed by arts, agriculture or (in most cases) religion. What could commentators then do but to catalogue all the weaknesses and inefficiencies that they read about and conveniently neglect the rest?

In Robertson’s view no-one could seriously describe Americans as civilized in the European sense, even among the “tribe of Natchez, and the people of Bogota (who had advanced beyond the other uncultivated nations of America in their ideas of religion, as well as in their political institutions ... their temples... were constructed with some magnificence.” But their religion was “the most refined species of superstition known in America, and, perhaps, one of the most natural as well as most seducing.”⁴⁷

Robertson eagerly repeated the notion that “The beardless countenance and smooth skin of the American seems to indicate a defect of vigour, occasioned by some vice in his frame. He is destitute of one sign of manhood and of strength. Even in climates where this passion usually acquires its greatest vigour, the savage of America views his female with disdain, as an animal of a less noble species ... Nor is this reserve to be ascribed to any opinion they entertain with respect to the merit of female chastity. That is an idea too refined for a savage, and suggested by a delicacy of sentiment and affection to which he is a stranger.”⁴⁸

Change of mind

Many contemporary readers of Buffon complained of his slick changes of position. Nowhere is Buffon’s sanctimoniousness more apparent than in his change of heart concerning the “American” peoples. In Supplementary Volume 4 of his Histoire Naturelle, published in 1777 (in a section entitled “Sur les Américains”) apparently

without any sense of irony, he now blandly criticized de Pauw's 1770 Récherches for having said that "en général tous les Américains, quoique légers & agiles a la course, 'étoient destitués de force, qu'ils succomboient sous le moindre sardeau, que l'humidité de leur constitution est cause qu'ile n'ont point de barbe, & qu'ils ne sont chauves que parce qu'ils ont le temperament froid." But de Pauw had taken these ideas and many of the identical words from none other than Buffon himself.

On the contrary, Buffon now smugly proclaimed, one cannot ignore the fact that "les Caribes, les Iroquois, les Hurons, les Floridiens, Les Mexicains, les Tlascalteques, les Peruviens, &c, étoient des homes nerveus, robustes & meme plus courageux que l'"inferiorite de leurs armes a cells des Européens ne sembloit le permettre."⁴⁹ Buffon also criticized Peter Kalm for having said that "les Européens y dégènerent sensiblement.'

Finally, Buffon cited the authority of none other than Benjamin Franklin -- "le célèbre Franklin." Franklin had showed him that in twenty-eight years the population of Philadelphia (apart from immigration) had doubled. In that case, "Dans un pays ou des Européens multiplient si promptement ... il n'est guère possible que les hommes dégènerent." This is interesting because it is an acknowledgement of what could be considered a politically important threat to Europe -- as Franklin pointed out, with such population growth, coupled to its natural resources, America (he meant North America) would soon surpass Europe. Even Raynal had also changed his mind. Of the speech of Chief Logan, for example, he wrote "Que cela est beau! Comme cela est simple, énergetique et touchant."⁵⁰

Daniel Webster is the source of a famous story about a dinner party in Paris at which Raynal was supposedly present. Franklin is said to have asked the Americans present to stand and they towered over the French, especially Raynal who (like Franklin, incidentally) was short. This seems to be a much embroidered version of what William Carmichael; reported to Jefferson in October 1785. October 15, 1787. Raynal had not been present. "I think the Company consisted of 14 or 15 persons. At Table some one of the Company asked the Doctor [Benjamin Franklin] what were his sentiments on the

remarks made by the Author of *Recherches sur L'Amérique*. We were five Americans at Table. The Venerable Doctor regarded the Company and then desired the Gentleman who put the question to remark and to judge whether the human race had degenerated by being transplanted to another section of the Globe. In fact there was no one American present who could not have tost out of the Windows any one or perhaps two of the rest of the Company, if this effect depended merely on muscular force. We heard nothing of Mr. P's work and after yours I think we shall hear nothing more of the opinions of Monsr. Buffon or the Abbé Raynal on this subject.⁵¹

In the following year, in Supplementary Volume 5, Buffon produced, in his celebrated essay *Époques de la Nature*, an enlarged version of his thesis about the cooling of the earth. He had argued that the earth had once been a molten ball spun off from the sun. From experiments on the rate of cooling of heated iron cannon balls, he calculated the age of the earth to be some 75,000 years. And with that, he elaborated his explanation of the faunas of the New World. He argued that, because the earth is wider in radius at the equator than the poles, the latter would have cooled more quickly. As the proto-earth first cooled, it was therefore at the poles that life could first arise by spontaneous generation. The new life forms gradually spread southwards with the cooling of the earth. "The first ages produced giants of every kind. Dwarfs and pygmies succeeded ... (Many) fossil fishes and shells, which no longer have any representatives, existed only in those primitive times when the earth and seal were still warm .. and exist not at present, because they have probably perished by cold."⁵²

This would explain the existence in prior times of mammoths and mastodons, lions, rhinoceros etc in what are now current cooler North Temperate zones. In the New World, as life spread southwards, it was blocked by mountains from reaching South America, where life forms remained primitive. This, coupled with the newness of much of the New World lands, accounted for their apparently depauperate living fauna. And the fact that in Central and South America there were no carnivores as big as the African lion and no herbivores as big as the elephant and rhinoceros.

Buffon also modified his theories concerning the causes of the climate of “America.” He emphasized the conclusion that a paucity of people meant that there had not been sufficient agriculture to ameliorate the climate as had happened in Europe. The primitive state of Americans’ culture, their agriculture, and use of tools and so on, meant that they had not cleared the forests, drained the swamps, or planting crops, and had thus not caused the climate to be ameliorated.⁵³

By the time Jefferson went to press with Notes, he already knew that de Pauw had toned down his original charges about the inferiority of Native Americans. And in an edition of 1787 he was able to add: “In a later edition of the Abbé Raynal's work, he has withdrawn his censure from that part of the new world inhabited by the Federo-Americans; but has left it still on the other parts. North America has always been more accessible to strangers than South. If he was mistaken then as to the former, he may be so as to the latter. The glimmerings which reach us from South America enable us only to see that its inhabitants are held under the accumulated pressure of slavery, superstition, and ignorance. Whenever they shall be able to rise under this weight, and to shew themselves to the rest of the world, they will probably shew they are like the rest of the world.”⁵⁴

Jefferson did not add such a footnote for Buffon. That leaves an unresolved question: did Jefferson know that Buffon had also changed his position?

Jefferson had completed an early draft of Notes in 1781 and sent it to Marbois. However, he continued to solicit and receive information about North American wildlife and sent a revised manuscript to friends in September, 1783.⁵⁵ He wrote to Chastellux in January 1784, for example, that “I have lately had a little leisure to revise [the MS]. I found some things should be omitted, many corrected, and more supplied and enlarged. They are swelled to nearly triple bulk.”⁵⁶ Notes was first sent to press in May 1784.

We know that Jefferson read Buffon’s Supplementary Volume 5 (1778) by this date because he discussed Buffon’s Époques de la Nature with James Madison in September

and December 1783.⁵⁷ It seems reasonable to assume that he had also read the previous year's supplementary volume by then. I am inclined therefore to think that he was well aware of Buffon's retraction but was disinclined to acknowledge it. After all, Buffon had not changed his view on American wildlife. His differences with Buffon were profound and he wasn't going to let him off the hook. Nor, as the previous quotations show, was he willing to accept the inferiority of South American peoples. He had become committed to a literary battle of wits with Buffon when he sent the first version of Notes to Marbois and neither could nor would withdraw.

Jefferson and Buffon in Paris

In August of 1784, Jefferson arrived in Paris. Evidently he did not meet Buffon until more than a year had passed. Buffon was both ill and frequently away from the city, preferring to write at his country home at Montbard. But perhaps also Jefferson had been waiting for Notes to be published. As they had not met, etiquette required that he ask a friend to deliver a copy of the book. This was done by Chastellux around the first of June, 1785. A copy was similarly presented to Buffon's aide Louis-Jean-Marie Daubenton. By October, Jefferson had had some feedback from Buffon, probably again through Chastellux. He wrote to Count von Hogendorp: "I have never yet seen Monsr. de Buffon. He has been in the country all the summer. I sent him a copy of the book, & have only heard his sentiments on one particular of it, that of the identity of the Mammoth & Elephant. As to this he retains his opinion that they are the same."⁵⁸

We know that Jefferson did eventually call on Buffon. Nearly forty years later, Daniel Webster, an unreliable source at best, visited Monticello where Jefferson recalled his first meeting with Buffon as follows. "I was introduced to him as Mr. Jefferson, who, in some notes on Virginia, had combated some of his opinions. Instead of entering into an argument, he took down his last work, presented it to me, and said, 'When Mr. Jefferson shall have read this, he will be perfectly satisfied that I am right.'⁵⁹

The meeting must have occurred very late in 1785.⁶⁰ At that time or soon after, Jefferson gave Buffon the skin of an American panther, wanting to persuade him that the American “panther” and “cougar” were different species, whereas Buffon considered them the same and at first had also thought them identical to the European lynx.⁶¹ Some writers have said that Buffon was impressed with this panther, probably because Jefferson himself claimed in a letter to Francis Hopkinson (a year after the fact) that “Buffon) did not know our panther. I gave him the stuffed skin of one I bought in Philadelphia and it presents him with a new species, which will appear in his next volumes.”⁶² This is curiously at odds with the reply that Buffon sent to Jefferson immediately after receiving the panther.⁶³ He wrote a rather chilly note of thanks, carefully reinforcing his own authority. He stated that the animal was not different from the species he had already described although the body and tail were slightly less long. It appeared to stand between the “Cougar de Pensilvanie” and “celui de l’Amérique méridionale.”⁶⁴

It is not clear how much Jefferson saw of Buffon in Paris. However, in January, 1786 Jefferson wrote to Archibald Stewart that he had “made a particular acquaintance with Monsieur de Buffon.”⁶⁵ Two years later he recalled to James Madison a long conversation he had had with Buffon about chemistry. The letter shows a certain disdain for Buffon who “affected to consider chemistry but as cookery, and to place the toils of the laboratory on a footing with those of the kitchen.”⁶⁶ On March 27, 1787 Buffon wrote to Jefferson stating that, while he was not at liberty to come to Jefferson (because of his health) he would “quote with pleasure entertain Jefferson to dinner at the Jardin du Roi “at any time that would be agreeable to you.”

Long before this, Jefferson seems to have decided that he was not going to convince Buffon of anything by means of numbers and tables of species. So began the famous episode of the moose: “Monsr. De Buffon had well known it by name; but he supposed it to be the same as the Renne-deer of Lapland in his history.” Jefferson determined to show Buffon that not only was the moose a distinct species, and not found in Europe, but that it was larger than any comparable European species. He is said to have assured Buffon that

the moose was so tall that a European reindeer could run under its belly (that was not true and, in fact, Jefferson had never seen a moose or a reindeer).

Jefferson had long been interested in the moose because of its great size, which made it an obvious example to counter Buffon. While working on Notes early on he had requested General Sullivan of New Hampshire to get answers to a suite of questions, starting with its dimensions and the distinctions among the moose, elk, and caribou.⁶⁷ From Paris, Jefferson wrote to Sullivan and others in early 1786 asking them to obtain a specimen, giving typically precise instructions on how to prepare the skin and skeleton for future mounting in the museum.⁶⁸ A year later, one had been shot and the remains were dispatched to Jefferson along with other specimens.⁶⁹

When Jefferson opened the box, the moose was found to be missing much of its hair and with the wrong, smaller, antlers. Various authors, including recently Joseph Ellis, have accepted the fond notion that Jefferson had the skeleton and skin mounted on display at his rooms and invited Buffon to dinner to see it. The ineffable Webster claimed that Buffon then exclaimed with pleasure “I should have consulted you, Monsieur, before I published my book on natural history, and then I should have been sure of my facts.”⁷⁰ Unfortunately this is a fabrication.⁷¹

In fact, Buffon was once again out of town then. So, within days of receiving the specimens, Jefferson sent the shipment to him at the Jardin du Roi, again via Daubenton, together with a long letter. “Sir, I had the honour of informing you some time ago that I had written to some of my friends in America, desiring they would send me such of the spoils of the Moose, Caribou, Elk & deer as might throw light on that class of animals; but more particularly to send me the complete skeleton, skin, & horns of the Moose, in such condition as that the skin might be sewed up & stuffed on it’s arrival here. I am happy to be able to present to you at this moment the bones & skin of a Moose, the horns of the Caribou, the elk, the deer, the spiked horned buck, and the Roebuck of America ... I really suspect you will find that the Moose, the Round horned elk, & the American deer are species not existing in Europe. The Moose is perhaps of a new class. I wish these

spoils, Sir, may have the merit of adding anything new to the treasures of nature which have so fortunately come under your observation, & of which she seems to have given you the key: they will in that case be some gratification to you, which it will always be pleasing to me to have procured, having the honor to be with sentiments of the most perfect esteem & respect, Sir, your most obedient, & most humble servant.”⁷² (It was true, however, that when Jefferson opened the box from Sullivan the moose skin was laid out in his rooms for at least a day or so. John Rutledge of South Carolina visited Jefferson and saw it there.)^{73 74 75}

Three weeks later, , Jefferson received a letter from another of Buffon’s scientific associates, the Comte de Lacépède, thanking him for the specimens and ending with the non-committal statement that they obliged the French “to see the domain of natural history extended and several of its parts clarified.”⁷⁶

In the end, we have to conclude that Jefferson won the debate even though Buffon was largely correct in his comparison of the mammals native to the New and Old Worlds. 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 science.”⁷⁷

Post-script

A footnote to all of this is that the rancour caused by Buffon’s views of “America” showed up in the form of the claim by some nineteenth century geologists that the New World continents were geologically older than the Old World.

It seems that the first person to promote this idea was a transplanted Englishman, George Featherstonehaugh who, in 1843, based his claim on the opinion that there were no rocks younger than the (Pennsylvanian) Coal Measures in North America.⁷⁸ In 1866 Louis

Agassiz (an immigrant from Switzerland) published an essay claiming that, contrary to Buffon, “America, so far as her physical history is concerned, has been falsely denominated the New World.” Agassiz was sure that geological evidence showed that “(H)ers was the first dry land lifted out of the waters, hers the first shore washed by the ocean that enveloped all the earth beside; and while Europe was represented only by islands rising here and there above the sea, America already stretched an unbroken line of land from Nova Scotia to the Far West.”⁷⁹

At about the same time, the American geologist Ferdinand Vandiveer Hayden, exploring in the Central Rocky Mountains pronounced, on the basis of fossil evidence, that “America was almost, or not quite, one epoch ahead of Europe ... the fauna and flora of the Cretaceous period in this country were more nearly allied to those of the Tertiary period of Europe ... geologically speaking, America should be the Old World and Europe the New.”⁸⁰ This idea has survived the scrutiny of modern science no better than Buffon’s view that the Americas were literally a new world, and was yet another case of enthusiasm overwhelming the evidence.

References

- ¹ Buffon Histoire Naturelle et Particulière, avec la Description du Cabinet du Roi. Paris, Imprimerie Royale., volume 9, (1761), 101-110. Histoire Naturelle was published in several editions and formats. Citations given here are to the first, quarto, edition. Jefferson had a duodecimo edition at first and therefore his citations in Notes on the State of Virginia give different volume and page numbers.
- ² Jefferson, Notes on the State of Virginia, citations from the Penguin Classics edition, 1999.
- ³ There is, for example a full length book by Antonio Gerbi, The Dispute of the New World, University of Pittsburgh Press, 1973 but it deals largely with the consequences of the debate, rather than its origins..
- ⁴ Jacques Roger, Buffon, A Life in Natural History. Ithaca, Cornell University Press, 1997.
- ⁵ Jefferson, Notes, 69.
- ⁶ Keith Thomson, A Passion for Nature: Thomas Jefferson and Natural History, Charlottesville, Thomas Jefferson Memorial Foundation, and Chapel Hill, University of North Carolina Press, 2008.
- ⁷ Mark Catesby, The Natural History of Carolina, Florida, and the Bahama Islands, London, 1731-1743.
- ⁸ Thomas Pennant, British Zoology, vol. 2, London, 1776.
- ⁹ Robert Trow-Smith, A History of British Livestock Husbandry, 1700-1900, London, Routledge and Paul, 1959.
- ¹⁰ Peter Kalm, Travels into North America, (trans. John Reinhold Foster) The Imprint Society, 1978.
- ¹¹ William Byrd, Natural History of Virginia (Richard Croom Beatty and William Mulloy, eds), Richmond, Dietz, 1940, 18.

¹² Keith Thomson, *The Legacy of the Mastodon*, New Haven, Yale University Press, 2008.

¹³ Buffon, *Histoire Naturelle*, (trans. William Smellie, London, 1812, 253). Original: “(Q)uoique le sauvage du nouveau monde soit à-peu-près de même stature que l'homme de notre monde, cela ne suffit pas pour qu'il puisse faire une exception au fait général du rapetissement de la nature vivante dans tout ce continent: le sauvage est foible & petit par les organes de la génération; il n'a ni poil, ni barbe, & nulle ardeur pour sa femelle; quoique plus léger que l'Européen parce qu'il a plus d'habitude à courir, il est cependant beaucoup moins fort de corps; il est aussi bien moins sensible, & cependant plus craintif & plus lâche; il n'a nulle vivacité, nulle activité dans l'ame; celle du corps est moins un exercice, un mouvement volontaire qu'une nécessité d'action causée par le besoin; otez lui la faim & la soif, vous détruirez en meme temps le principe actif de tous ses mouvemens; il demeurera stupidement en repos sur ses jambes ou couché pendant des jours entiers.” Buffon, Volume 9, 1761, p. 104-105.

¹⁴ Las Casas in his *Brevisima Relación de la Destrucción de las Indias* stated: “They are by nature the most humble, patient, and peaceable, holding no grudges, free from embroilments, neither excitable nor quarrelsome. These people are the most devoid of rancors, hatreds, or desire for vengeance of any people in the world. And because they are so weak and complaisant, they are less able to endure heavy labor and soon die of no matter what malady. The sons of nobles among us, brought up in the enjoyments of life's refinements, are no more delicate than are these Indians, even those among them who are of the lowest rank of laborers.”

¹⁵ Antonio D'Ulloa and Jorge Juan, *Travels to South America*, London, 1772, quotations from pages 420, 269, and 402, respectively.

¹⁶ *Idem*, 21.

¹⁷ *Idem* p. 468

¹⁸ Catesby, *opp.cit.*, 8

¹⁹ D'Ulloa and Juan, 478-479

²⁰ Jefferson, *Notes*, 63-64.

²¹ TJ to Chastellux, June, 7, 1785, Boyd 8, 184-186.

²² Notes, 63-64, footnote.

²³ *Idem.*, 64-65.

²⁴ Catesby (*opp.cit.*, Volume 1) had continued: “The Indians are a very temperate People, not from a Principle of Virtue, but from an ancient savage and indolent Custom, which all the Examples of Industry and Decorum can never eradicate.” (p. 9) The “Indians are very peacable, they never fight with one another, except drunk. The Women particularly are the .. most inoffensive Creatures living ... and to their children they are most kind, and indulgent ... a very happy People but they are only a shadow of their former numbers,” (p. 15) being “four and six times les numerous.” On the other hand, every commentator, including Catesby, noted the barbarity with which the Indians of North and South treated their captives.

²⁵ For questions on the authenticity of the speech, see Boyd in *Papers*, 29, 409.

²⁶ For example, Abbé Prévost, *Histoire générale des Voyages*, Paris, 1746-1792, *Caractère, Moeurs, Usages, &c. des Indiens de l’Amérique Septentrionale: Exemples de l’éloquence des Sauvages*, Volume 15, 1759, 62.

²⁷ Notes, 69-70.

²⁸ Letters to Francis Adrian van der Kemp: January 8, 1806; July 13, 1813; November 5, 1804; respectively.

²⁹ Gerbi (*opp.cit.*) noted that deMaillet in *Telliamed* (1748) gave an account of Indian’s hairlessness and beardlessness that is almost identical with Buffon’s but the editor of the second edition of that work (1755) had already said it was incorrect.

³⁰ Hugh Jones, *The Present State of Virginia*, London, 1724, 11.

³¹ Prévost, Volume 15, 1759, 8.

³² Prévost Volume 14, 1757, 514.

³³ *d’Ulloa Noticias Americanas, Entretenimiento XVIII*, Madrid, 1771, 267-268.

³⁴ Notes, Appendix 1 (4), 207-208.

³⁵ De Pauw, *Recherches Philosophiques sur les Américains*. Berlin, 1768-1769.

³⁶ Translation from Henry Ward Church, *Corneille de Pauw, and the controversy over his Recherches Philosophiques Sur les Américains*. *Proceedings of the Modern Language Association*, 51, 1936, 178-206.

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- ³⁷ In 1770 Antoine-Joseph Pernety (*Dissertation sur l'Amérique & les Américains*) wrote the first of two famous rebuttals of de Pauw and, without getting enmeshed in the details of their debate, it is clear that Pernety did not share the view of Buffon and de Pauw, and later Raynal, on the degeneracy and weakness of either American nature or, particularly, the humans.
- ³⁸ Quoted in Henry Steele Commager & Elmo Giordanetti *Was America a mistake?* Harper, New York, 1967, 100. Jefferson thought that Raynal alone had raised this claim.
- ³⁹ Jefferson to Chastellux, June 7, 1785, Boyd, 8, 184-186.
- ⁴⁰ Notes, 71
- ⁴¹ Buffon, *Histoire Naturelle*, Volume 9, 1761 (Smellie, p. 253).
- ⁴² *Idem.*, 254
- ⁴³ *Idem.*, 258.
- ⁴⁴ Buffon, *Histoire Naturelle*, Supplementary Volume V, 1778, 237.
- ⁴⁵ C. Vann Woodward, *The Old World's New World*, Oxford University Press, 1991.
- ⁴⁶ Hannah Adams, *A Summary History of New England*. Dedham, 1799, p. 230
- ⁴⁷ William Robertson, *The History of America*, volume 2, 199.
- ⁴⁸ *Idem.*, 63.
- ⁴⁹ Buffon, Supplementary Volume 4, 1777, 526.
- ⁵⁰ Edward Seeber, Chief Logan's Speech in France. *Modern Language Notes*, 61, 1946, 214-416. Dwight Boehm and Edward Schwartz, Jefferson and the theory of degeneracy, *American Quarterly*, 9, 1957, 448-453.
- ⁵¹ Carmichael to TJ, October 15, 1787. Boyd 12, 241
- ⁵² Buffon, In Smellie translation, *opp. cit.*, vol.2, 250.
- ⁵³ This was a subject of great interest to Jefferson. See, for example, his correspondence with Jean Baptiste le Roy, concerning Chastellux's observations on the effect of deforestation in America on the winds: Le Roy to Jefferson, September 28, 1786, Boyd 10, 410-411; TJ to le Roy, November 13, 1786. Boyd 10, 524-530. Jefferson also purchased hygrometers to test for himself whether the climate of Europe was more or less damp than that of America: *Memorandum Book* (eds) James A. Bear and Lucia C Stanton, Princeton University Press, 1977, Volume 1, 713.

⁵⁴ Notes, 71, footnote 15

⁵⁵ TJ to Thomas Walker, September 23, 1783, Boyd 6, 339. Archibald Cary to TJ, October 12, 1783, Boyd 6, 342-343.

⁵⁶ TJ to Chastellux, January 16, 1784. Boyd 6, 475.

⁵⁷ James Madison to TJ, September 25, 1783, Boyd 6, 339-340; Madison to TJ, December 10, 1783, Boyd 6, 377; TJ to Madison, January 1, 1784. Boyd 6, 436-368.

⁵⁸ TJ to Hogendorp, Oct. 13, 1785. Boyd 8, 631-634.

⁵⁹ (Fletcher Webster, *The Private Correspondence of Daniel Webster*, volume 1, 1875, 371. As this conversation must have happened in 1785 or 1786, it is hard to see what “last work” Buffon might have “taken down.” He did not revisit the question of the supposed inferiority of the American fauna after his 1761 volume and by 1781 had retracted his view on American Indians.

⁶⁰ On January 3, 1786, Jefferson wrote to Francis Hopkinson asking favours on Buffon’s behalf and stating that he had seen the royal natural history collections of which Buffon was superintendent. Boyd 9, 146-149.

⁶¹ Buffon, *Histoire Naturelle*, Volume 8, 100; Supplementary Volume 3, 41. The cougar, panther, mountain lion, and puma of the New World are now considered a single species, *Felis concolor*.

⁶² TJ to Hopkinson December 23, 1786, Boyd 10, 625-626. In the Ford edition of Jefferson’s letters, “stuffed” is rendered as “striped”, but the former seems correct.

⁶³ Buffon to TJ, December 31, 1785. Boyd 9, 130-131.

⁶⁴ TJ to Francis Hopkinson, Dec 23, 1786, Boyd 10: 625

⁶⁵ TJ to Archibald Stuart, January 25, 1786, Boyd 9, 217-219.

⁶⁶ TJ to James Madison, July 19, 1788. Boyd 13, 379-383.

⁶⁷ John Sullivan to TJ, March 12, 1784. Boyd, 7, 21-30, and 317-320.

⁶⁸ TJ to Sullivan, January 7 1786. Boyd 9, 160

⁶⁹ Sullivan to TJ, April 16, 1787. Boyd 11, 295-297.

⁷⁰ “Social Hours of Daniel,” *Harper’s Magazine*, vol. 13, July 1858, 219.

⁷¹ Webster (*Private Correspondence*) also reported from this meeting that Jefferson had recalled that after Buffon had seen the moose, he “promised in his next volume to set

these things right ... but he died directly afterwards.” There is no substantiating evidence for this either.

⁷² TJ to Buffon, October 1, 1787, Boyd 12, 194-195.

⁷³ Rutledge to TJ, September 4, 1788, Boyd 13, 567-569.

⁷⁴ TJ to Rutledge, September 9, 1788, Boyd 13, 593-594.

⁷⁵ Jefferson’s specimens are no longer in the collections of the Museum, possibly having been lost during the upheavals of the Revolution. The odds against the skin having survived for two centuries would in any case be low.

⁷⁶ Lacépède to TJ, October 25, 178x, Boyd 12, 287-288.

⁷⁷ Keith Thomson, Jefferson and the Moose, *American Scientist*, 96, 398-400, 2008.

⁷⁸ George Featherstonehaugh, *Geological Report of an examination made in 1834 of the elevated country between the Missouri and Red rivers*. Washington DC, 1835.

⁷⁹ Agassiz, *America the Old World*, *Atlantic Monthly*, March 1863, reprinted in *Geological Sketches*, Ticknor and Fields, Boston, 1866, 1-28..

⁸⁰ F.V. Hayden, *First Annual Report of the United States Geological Survey of the territories*, Washington DC, 1867, 52.