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The Representation of the American Territory and the Controversy between Jefferson and Buffon

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In his compelling book *Wilderness and the American Mind*, initially published in 1967, historian Roderick Frazier Nash wrote that, in its very early stages, “*The discovery of the New World rekindled the traditional European notion that an earthly paradise lay somewhere to the west,*”¹ thus showing the prevalence of the European mindset in the conception of the American territory, which lasted well into the 18th century and was even influential among American intellectuals in the colonial period. However, the influence of the Enlightenment, combined with political independence, also led the same intellectuals to try to bring their own contribution to the advancement of knowledge and progress, with one outstanding figure: Thomas Jefferson (1743-1826), who, in addition to being a political thinker and a politician, was also an architect, an inventor and... a naturalist, with a keen interest in the fauna, the flora and the territory of the New World. However, the inventories he drew up, particularly in the *Notes on the State of Virginia* (1785) – the only work he published during his lifetime, let us remind it – and his wish to improve the lore on the North American continent, which remained largely unexplored at the time, owed much to a controversy with famous French naturalist George-Louis Leclerc, Comte de Buffon (1707-1788), who had formulated a theory according to which the American territory, its fauna, its flora and its inhabitants were characterized by degeneracy, as smaller and fewer species were to be found in the New World. Jefferson would not rest until he had responded to that statement and invalidated Buffon’s theoretical views with actual results and accounts, striving to reveal the richness of the fauna and the flora and prove that they were not a “degenerated” form of the species to be found in Europe – even though he still felt admiration for the French scientist. A few years passed between Buffon’s theories and Jefferson’s answers, but the latter still had the opportunity to write to the former, who was notorious for not answering the advice and objections addressed to him. The notions of transpositions and confrontations, as well as the gap between theoretical expectations and the reality of the American territory, are capital in understanding the controversy, as Jefferson’s goal was to bring his own contribution to the knowledge of the American territory through observations and scientific explorations, while still sticking to the European models of classification. This paper will be divided into three parts: after shedding light on Buffon’s theories about degeneracy and, more generally, on the scientific background of the time, the two major attempts by Jefferson to refute those theories will be analyzed – first, the *Notes on the State of Virginia*; then, the Lewis and Clark Expedition, whose scientific purpose should not be overlooked. Lastly, the third part will focus on the Native Americans, who were also considered by Buffon as a degenerated form of human life, but about whom Jefferson’s judgement was a rather balanced one, not devoid of ambiguity.

I. Conflicting theories about the American continent

An overview of the state of the art in naturalism in the late 18th century gives evidence of the overwhelming influence of European science at the time. The system of collecting and classifying animals, plants and minerals perfected by Carl Linnaeus in *Systema Naturae* (first published in 1735) was known to Jefferson and he shared with European scientists the widespread belief of the time in zoology: creationism, whereby no species could evolve – and, as a consequence, could become extinct, except by the hand of man. In this realm, the capital contribution of Buffon to natural history is not to be debated and, after the official alliance between France and the Patriots, in 1778, several copies of his *magnum opus*, the *Histoire naturelle* – the first volume of which had been published in 1749 –, were sent to North America and Jefferson himself owned one in his library at his estate, in Monticello, Virginia. However, in the ninth and sixteenth volumes, Buffon had formulated a theory regarding the American territory: focusing on

¹ Roderick Frazier Nash, *Wilderness and the American Mind*. Yale University Press, New Haven and London, Fourth Edition, 2001 [1967], p. 25.

quadrupeds, he expressed an opinion summed up by Jefferson as follows in the Sixth Query of the *Notes on the State of Virginia*:

The opinion advanced by the Count de Buffon, is 1. That the animals common both to the old and new world, are smaller in the latter. 2. That those peculiar to the new, are on a smaller scale. 3. That those which have been domesticated in both, have degenerated in America: and 4. That on the whole it exhibits fewer species. And the reason he thinks is, that the heats of America are less; that more waters are spread over its surface by nature, and fewer of these drained off by the hand of man. In other words, that *heat* is friendly, and *moisture* adverse to the production and development of large quadrupeds.²

In France, Buffon's theory was taken up by another naturalist, abbé Raynal, whom Jefferson actually despised, along with English scientists Robertson and Paw, as he described the former, in a letter to the Marquis de Chastellux, as "*a compiler only of the relations of others, and a mere translator of the opinions of Monsieur de Buffon.*"³ On the contrary, Jefferson felt admiration for Buffon and, in a letter he wrote to him in October, 1787 about the skeletons of a moose and an elk he had sent to the French naturalist, he carefully stated that the size of the animals living on the North American continent – the main evidence of degeneracy, according to Buffon – should be the object of an open discussion and that thorough analyses should be led about the real size of the animals, while emphasizing the specificity of the American fauna:

The horns of the elk are remarkably small. I have certainly seen of them which would have weighed five or six times as much. [...] This individual has been of age, according to our method of judging. I have taken measures particularly to be furnished with large horns of our elk & deer, & therefore beg of you not to consider those now sent as furnishing a specimen of their ordinary size.⁴

In other domains, like the calculation of the annual mortality rate, Jefferson stuck to Buffon's tables, as showed two letters he respectively wrote to James Madison and John Wayles Eppes:

Take, for instance, the table of M. De Buffon wherein he states that 23,994 deaths, and the ages at which they happened.⁵ I turn, for instance, to Buffon's tables, of twenty-three thousand nine hundred and ninety-four deaths, and the ages at which they happened, and I find that of the numbers of all ages living at one moment, half will be dead in twenty-four years and eight months.⁶

He actually wished to confront Buffon's theories on the American continent for the sake of scientific progress and objectivity. His main hope – as he thought that no species was extinct – lay in the discovery of mammoths in North America, something he repeated several times in his letters and his writings, as will be seen shortly.

² Thomas Jefferson, *Notes on the State of Virginia*, Query VI, in Merrill D. Peterson (ed.), *Thomas Jefferson: Writings*. The Library of America, New York, 1984, pp. 169-170.

³ A letter from Thomas Jefferson to the Marquis de Chastellux, dated June 7th, 1785, in Merrill D. Peterson (ed.), *op. cit.*, p. 800.

⁴ A letter from Thomas Jefferson to the Comte de Buffon, dated October 1st, 1787, in Merrill D. Peterson (ed.), *op. cit.*, pp. 909-910.

⁵ A letter from Thomas Jefferson to James Madison, dated September 6th, 1789, in Merrill D. Peterson (ed.), *op. cit.*, p. 961.

⁶ A letter from Thomas Jefferson, letter to John Waynes Eppes, dated June 24th, 1813, in Merrill D. Peterson (ed.), *op. cit.*, p. 1281.

II. Two major attempts at refuting Buffon's theory

Jefferson's "defence and illustration" of the American wildlife, so to speak, could be considered as twofold. First, with the *Notes on the State of Virginia*, published in 1785, an extensive response, in twenty-three queries, to questions asked by Frenchman François Barbé-Marbois about the fledgling State, which did not only concern every field of social life, but also a detailed account of the territory, its fauna, its flora and its minerals. One query, the sixth one, directly referred to Buffon and his theory about degeneracy, and was entitled "*A notice of the mines and other subterraneous riches; its trees, plants, fruits, etc.*" and he had even presented a copy of the work to the French naturalist, as he recalled it in the afore-mentioned letter: "*This is the animal which we call elk in the Southern parts of America, and of which I have given some description in the Notes on Virginia, of which I had the honour of presenting you a copy.*"⁷ One could actually wonder whether the Sixth Query was not a pretext for Jefferson to discuss the very nature of the fauna and the flora, not only of Virginia, but of North America as a whole, and thus give his opinion on the theory. He first summarized Buffon's views, before quoting them in French and formulating a few objections, based on strictly scientific arguments:

Let us take two portions of the earth, Europe and America for instance, sufficiently extensive to give operation to general causes; let us consider the circumstances peculiar to each, and observe their effect on animal nature. America, running through the torrid as well as temperate zone, has more *heat*, collectively taken, than Europe. But Europe, according to our hypothesis, is the *driest* [sic]. They are equally adapted then to animal productions; each being endowed with one of those causes which befriend animal growth, and with one which opposes it.⁸

A comparison between various animals followed, in which he first strove to refute Buffon's theory by relying on facts, thus revealing the latter's contradictions:

Of the animals in the 1st table Mons. de Buffon himself informs us, [XXVII. 130. XXX. 213.] that the beaver, the otter, and shrew mouse, though of the same species, are larger in America than Europe. This should therefore have corrected the generality of his expressions XVIII. 145. and elsewhere, that the animals common to the two countries are considerably less in America than in Europe, '*& cela sans aucune exception.*' He tells us too, [Quadrup. VIII. 134. edit. Paris, 1777] that on examining a bear from America, he remarked no difference, '*dans la forme de cet ours d'Amerique comparé à celui d'Europe.*' But adds from Bartram's journal, that an American bear weighed 400 lb. English, equal to 367 lb. French: whereas we find the European bear examined by Mons. D'Aubenton, [XVII. 82.] weighed but 141 lb. French.⁹

Jefferson's wish to classify the American species remained obvious in the various tables of the quadrupeds or the birds he inserted in the *Notes* and in which he stuck to the system of Linnaeus. He was aware, though, that the study of American wildlife could not be confined to the sole State of Virginia, that the vastness of the American continent and the various species that inhabited the unexplored regions could help draw up an exhaustive picture of wildlife on the continent and further refute Buffon's theory. In the *Notes*, Jefferson remained careful and recalled the need to formulate hypotheses, given the incomplete explorations that had been undertaken so far. This argument, actually, was the most logical one to oppose to Buffon's opinion about the fewer species to be found in America:

⁷ A letter from Thomas Jefferson to the Comte de Buffon, dated October 1st, 1787, in Merrill D. Peterson (ed.), *op. cit.*, p. 909.

⁸ Thomas Jefferson, *Notes on the State of Virginia*, Query VI, in Merrill D. Peterson (ed.), *op. cit.*, pp. 170-171.

⁹ *Ibid.*, p. 175.

I will not meet this hypothesis on its first doubtful ground, whether the climate of America be comparatively more humid? Because we are not furnished with observations sufficient to decide this question. [...] Besides, the purpose of the comparison is to try an [sic] hypothesis, which makes the size of animals depend on the *heat* and *moisture* of climate.¹⁰

His hope to find mammoths, however, was not dampened in the least, as proved the following passages:

Our quadrupeds have been mostly described by Linnaeus and Mons. de Buffon. Of these the Mammoth, or big buffalo, as called by the Indians, must certainly have been the largest. Their tradition is, that he was carnivorous, and still exists in the northern parts of America.¹¹

The bones of the Mammoth which have been found in America, are as large as those found in the old world. [...] To add to this, the traditional testimony of the Indians, that this animal still exists in the northern and western parts of America. Those parts still remain in their aboriginal state, unexplored and undisturbed by us, or by others for us. He may as well exist there now, as he did formerly where we find his bones.¹²

However, in the same query, Jefferson also deplored that the testimonies of the explorers who allegedly saw or captured smaller animals in North America could, in fact, be questioned, as they were not real specialists or had carried out incomplete research:

It is said of some of them, by some travellers, that they are smaller than the European. But who were these travellers? Have they not been men of a very different description from those who had laid open to us the other three quarters of the world? Was natural history the object of their travels? Did they measure or weigh the animals they speak of? Or did they not judge of them by sight, or perhaps even from report only? [...] How unripe we yet are, for an accurate comparison of the animals of the two countries, will appear from the work of Mons. de Buffon.¹³

The lines above lead us directly to a project that was dear to Jefferson's heart: a thorough exploration of the North American continent up to the shores of the Pacific Ocean, which British explorer Alexander MacKenzie had reached in 1793 – not only to discover the fabled “Northwest Passage”, but to draw up an inventory of the animals, the plants and the minerals to be found in these unexplored areas. This overview of Jefferson's intentions shows that, at the time, the limit between science and myth was a porous one. Two previous attempts had failed – one was to have been undertaken by American adventurer John Ledyard, in 1786, the other one by French naturalist André Michaux, in 1793 –, but the third one came off and was the “Lewis and Clark Expedition”, between 1804 and 1806 – which has to be put back in its context and be considered as a scientific exploration, a “transposition” on the North American continent of the voyages of Bougainville and Cook, for instance, not as a direct consequence of the Louisiana Purchase and a herald of the “March to the West”.

In his instructions to Captain Meriwether Lewis, Jefferson, then President of the United States, wrote that the purpose of the expedition was not only to “*explore the Missouri river, & such principal stream of it, as, by its course & communication with the water of the Pacific Ocean may offer the most direct & practicable water communication across the continent, for the purposes of commerce.*” There were other “*objects worthy of notice*” as well:

¹⁰ *Ibid.*, pp. 170-171.

¹¹ *Ibid.*, p. 165.

¹² *Ibid.*, p. 167.

¹³ *Ibid.*, p. 177.

Other objects worthy of notice will be the soil & face of the country,
 its growth & vegetable productions; especially those not of the U.S.
 the animals of the country generally, & especially those not known in the U.S.
 the remains and accounts of any which may be deemed rare or extinct;
 the mineral productions of every kind; [...] Volcanic appearances.¹⁴

Revealing the richness of these areas and of its fauna were among the main goals assigned to the “Corps of Discovery”, as it was called, and, as historian James P. Ronda wrote, Jefferson and the explorers could only imagine what they would find in those unknown regions: “*Jefferson was persuaded that the West was nature’s wonderland, holding all sorts of marvels including volcanos, llamas, and the fabled mammoth.*”¹⁵ In the journals written by Lewis and Clark, the descriptions of the animals encountered are often fraught with details about their size – particularly, the grizzly bear – and their large numbers.

It was a male not fully grown, we estimated his weight at 300 lbs. not having the means of ascertaining it precisely. The legs of this bear are somewhat longer than those of the black, as are it’s [sic] tallons and tusks incomparably larger and longer, [...] these are all the particulars in which this animal [sic] appeared to me to differ from the black bear; it is a much more furious and formidable animal, and will frequently pursue the hunter when wounded.¹⁶
 Game is still very abundant we can scarcely cast our eyes in any direction without percieving deer Elk Buffaloe or Antelopes.¹⁷
 From the top of this Mound we beheld a most butifull [sic] landscape; Numerous herds of buffalow were Seen feeding in various directions; the Plain to North N. W. & N. E. extends without interruption as far as Can be seen.¹⁸

Such descriptions tended to prove that the two leaders of the expedition followed Jefferson’s instructions to the letter, in keeping with his wish to prove that large animals could be found in those unexplored regions. For scientific observations, some specimens were even sent by raft down the Missouri, so that they be retrieved by governmental agents and sent to Monticello. The multiple species observed or discovered by the expedition did contribute to prove that Buffon was wrong and that the animals, the plants and the minerals of North America were not characterised by degeneracy – on the contrary. This feature, however, was to be overshadowed by the character of the territory that was revealed by the expedition: there was no “Northwest Passage” in the way it had formerly been imagined by the Europeans – i.e., a large river flowing to the Pacific in the middle of fertile plains –, but arid lands from the headwaters of the Missouri to the Columbia River, hemmed in by steep banks. This sentiment of failure made the expedition – and its discoveries – fall into relative oblivion for numerous decades, but illustrators like John James Audubon were still able to take inspiration from the drawings by

¹⁴ President Thomas Jefferson’s official instructions to Captain Meriwether Lewis, dated June 20th, 1803, in Merrill D. Peterson (ed.), *op. cit.*, p. 1128.

¹⁵ James P. Ronda, *Jefferson’s West: A Journey with Lewis and Clark*. Thomas Jefferson Foundation, Monticello Monograph Series, 2000, p. 25.

¹⁶ Captain Meriwether Lewis’s journal entry, dated April 29th, 1805, in Bernard DeVoto (ed.), *The Journals of Lewis and Clark*. Mariner Books, The Houghton-Mifflin Company, Boston and New York, 1997 [1953], pp. 102-103.

¹⁷ *Ibid.*, p. 103.

¹⁸ Captain William Clark’s journal entry, dated August 25th, 1804, in Bernard DeVoto (ed.), *op. cit.*, p. 24.

Lewis and Clark and reveal the richness of America's fauna – not only the birds, but the prairie dog as well.

III. The debate on Native Americans

In his instructions, President Jefferson had also entrusted Lewis and Clark with the following task:

You will endeavour to make yourself acquainted
with the names of the [Native] nations & their numbers;
the extent & limits of their possessions;
their relations with other tribes or nations;
their language, traditions, monuments;
their ordinary occupations in agriculture, fishing, hunting, war, &
the implements for these.¹⁹

This need to carry out a thorough examination of the lives of Natives could be defined as indispensable, as the representation of the territory could not be dissociated from that of its original inhabitants. In this domain, Jefferson had expressed a different view from Buffon's pre-established conceptions, still founded on the notion of degeneracy. Indeed, he had written that, owing to the character of the territory, the Natives of North America lacked strength and ardour in their bodies and felt less love for their kin. As a consequence, there were hardly any family ties and it was impossible for them to gather in political organisations.

In the *Notes*, still in the Sixth Query, Jefferson denounced Buffon's theory more firmly than concerning the fauna and the flora, stating that Buffon's picture was "*afflicting*" and standing for the defence of Natives:

The Indian of North America being more within our reach, I can speak of him somewhat from my own knowledge, but more from the information of others better acquainted with him, and on whose truth and judgment I can rely. From these sources I am able to say, in contradiction to this representation, that he is neither more defective in ardour, nor more impotent with his female, [...] that he is brave, when an enterprise depends on bravery; [...] that his sensitivity is keen, though in general they endeavour to appear superior to human events.²⁰

The roots of the debate over the nature of the Natives go very deep and Jefferson even recalled the opinion of Spanish explorer Antonio de Ulloa, according to whom the South American Natives showed no form of courage whatsoever. The idea of the "Noble Savage", inherited from Jean-Jacques Rousseau, was probably reflected in the lines above, but Jefferson's outlook on the Natives of North America only – as he specified it himself – was rather ambiguous, owing to the influence of another ideology from Europe, "Anglo-Saxonism". According to it, the superiority of the "Anglo-Saxon" model of government and society was unquestionable and had to be extended from Europe to America, then to Asia – its supposed cradle –, following the course of the sun. In Jefferson's writings, one finds a hesitation between, on the one hand, the praise of the Natives as a fundamental element of the American nation, who could be assimilated to the American settlers – and, over the long term, form a different nation from the European one, as Peter S. Onuf wrote: "*Jefferson foresaw white Americans and 'red brethren' forming a single great family, connected by the most intimate ties of consanguinity. For the Indians this merging of the races would be at once the moment of their restoration [...] and their rebirth as Americans.*"²¹ On the other hand, the recalling of the prevalence of Anglo-Saxonism and the need for the American settlers to extend over the

¹⁹ President Thomas Jefferson's official instructions to Captain Meriwether Lewis, dated June 20th, 1803, in Merrill D. Peterson (ed.), *op. cit.*, p. 1128.

²⁰ Thomas Jefferson, *Notes on the State of Virginia*, Query VI, in Merrill D. Peterson (ed.), *op. cit.*, pp. 184-185.

²¹ Peter S. Onuf, *Jefferson's Empire: The Language of American Nationhood*. University of Virginia Press, Charlottesville and London, 2000, p. 51.

continent, in a letter dated January 25th, 1786, for instance: *“Our confederacy must be viewed as the nest from which all America, North & South is to be peopled.”*²²

With hindsight, the latter idea prevailed and it would be interesting to point out that, a few decades later, in 1829, President Andrew Jackson used the argument of decline, even degeneracy, to legitimate the removal of Natives west of the Mississippi:

It will separate the Indians from immediate contact with settlements of whites; free them from the power of the States; enable them to pursue happiness in their own way and under their own rude institutions; will retard the progress of decay, which is lessening their numbers, and perhaps cause them gradually, under the protection of the Government and through the influence of good counsels, to cast off their savage habits and become an interesting, civilized, and Christian community. [...] The tribes which occupied the countries now constituting the Eastern States were annihilated or have melted away to make room for the whites.²³

Establishing a direct link with Buffon would not be appropriate in this case, but the President’s address undeniably revolved around the same theme.

To conclude, the controversy between Jefferson and Buffon was a far-reaching one and, even if books and articles often allude to it – insisting on Jefferson’s wish to invalidate Buffon’s theory –, a thorough examination of the issue shows that, if you pull the thread, the controversy does not only lead to the nature of the American territory, but to the affirmation of the American nation and its wish to expand on a territory that abounds in natural resources and whose wildlife stood on an equal footing to that of Europe. Natural history thus led to the building of a nation that, while taking inspiration from the huge strides made by science in Europe, did not hesitate to confront the views of the Old Continent. In the realm of natural history, however, the revelation of the richness of the American fauna and flora was another step in the discovery and the classification of various species or sub-species, but did not change the scientific approach itself. This came a few years later, with Jean-Baptiste Lamarck’s theory on the transmutation of species, then followed by Darwinism, showing that the ground-breaking theories still came, in this field, from French and British scientists.

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²² A letter from Thomas Jefferson to Archibald Stuart, dated January 25th, 1786, in Merrill D. Peterson (ed.), *op. cit.*, p. 844.

²³ President Andrew Jackson’s Message to Congress on Indian Removal (1830).
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