OF MAMMOTHS, MASTODONS, MEGALONYXES, AND THE NATION: JEFFERSON AND THE QUESTION OF AMERICAN DEGENERACY, 1780-1812

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ABSTRACT

Thomas Jefferson ranks among the most famous and most studied presidents, but few historical studies have focused on his scientific endeavors, particularly his work in natural history. By analyzing several of his writings, including the *Notes on the State of Virginia* and letters that pertained to mammoths and megalonyxes, this thesis explores the interrelationship between science and politics, especially in the context of nationalism. The emphasis Jefferson placed on the American *incognitum*—what would eventually be identified as the mastodon—reflected the emerging national consciousness of the future United States of America

INDEX WORDS: Thomas Jefferson, Mammoth, American *incognitum*, Mastodon, Megalonyx, American Revolution, Nationalism, Lewis and Clark Expedition, Georges Buffon, Degeneracy, *Notes on the State of Virginia*, Enlightenment, André Michaux, Leviathan

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Introduction

Thomas Jefferson features prominently among the list of presidents that have captured the public's attention. This is for good reason: he wrote the Declaration of Independence, played an active role in the early constitutional government, served as the third president of the United States, and arranged the Louisiana Purchase. Much literature has been published on Jefferson's political and philosophic beliefs, his actions while president, and his life. One less-known aspect, and one much less examined by historians, though, is his passion for science. Encyclopedia Britannica, for example, barely mentions Jefferson's scientific endeavors in its coverage of him. And while it is commonly agreed that Jefferson had a strong interest in science, historians have devoted little attention to the extent and impact of this interest.

To be sure, historians have written about Jefferson as a scientist. Some, in fact, have emphasized that he was a talented scientist himself. In *Jefferson and Science*, Silvio Bedini described in detail both the complex interests and nature of Jefferson's scientific work, which ranged from horticulture, to architecture, to paleontology.[1] In *Scientific Jefferson Revealed*, Martin Clagett also praised Jefferson's scientific contributions.[2] Like Bedini, Clagett highlighted Jefferson's patronage and interest in promoting science, most notably by founding the University of Virginia. Yet other scholars have instead been critical of Jefferson's fame, and stressed how some of his contemporaries, such as Benjamin Franklin, were much more heavily involved in making scientific discoveries. For instance, Bernard Cohen in *Science and the Founding Fathers* noted that because

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[1] Silvio Bedini, *Jefferson and Science* (Chapel Hill: University of North Carolina Press, 2002), 15-16.

[2] Martin Clagett, *Scientific Jefferson Revealed* (Charlottesville: University of Virginia Press, 2009), 99-101.

Jefferson did not make "substantive contributions to science," he could not be "considered to have been a [member] of the scientific community."[3] John C. Greene, author of *American Science in the Age of Jefferson*, shared the same view. It would be better, Greene suggested, to appreciate Jefferson as a patron who fostered the growth of science rather than as a scientist himself.[4]

This thesis, however, does not address the issue of whether or not Jefferson was an effective scientist. Its focus instead lies in the interplay between his scientific endeavors and his politics. In particular, this study explores the interrelated nature of politics and science in Jefferson's political commentary as expressed through his scientific works dealing with natural history. The broader theme has already been broached by a few scholars, including Cohen, Greene, and Paul Semonin, but there is no full historical study on this topic. Cohen argued that "science in general and the Newtonian philosophy in particular served to provide acceptable metaphors for discussion or argument," and discussed how the "self-evident truths" in the Declaration of Independence echoed Newton's description of his laws of motion as self-evident.[5] Greene painted the backdrop in which Jefferson lived and discussed both the European influence on - and scientific research unique to –America.[6] Semonin explored the scientific context in which Jefferson and his contemporaries operated. His work *American Monster: How the Nation's First Prehistoric Creature Became a Symbol of*

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[3] I. Bernard Cohen, *Science and the Founding Fathers: Science in the Political Thought of Jefferson, Franklin, Adams, and Madison* (New York City: W. W. Norton & Company, 1997), 61.

[4] Greene, *American Science in the Age of Jefferson* (1984; repr. Claremont: Regina Books, 2004), xiv.

[5] Cohen, 20; Ibid., 257.

[6] Greene, *American Science*, 3-36.

National Identity focused more broadly on the developing role of the mastodon as a symbol of American nationalism, with Jefferson only analyzed in this context.[7]

Semonin's work shed light on a theme that would preoccupy Jefferson during the late 1700s: the idea of American degeneracy. Developed by the French naturalist Georges-Louis Leclerc, Comte de Buffon in his famous thirty-two volume work *Histoire Naturelle, Générale et Particulière*, this idea held that the cooler, damp climate of America had caused its native wildlife and peoples to become smaller, inferior forms to those in Europe. Even domesticated European animals brought to America, Buffon held, experienced this degeneracy.[8] Though neither the concept of degeneracy nor the linkage of climate with cultures was new, Buffon's theory gained popularity on the Continent, much to the dissatisfaction of the American colonists, including Jefferson.

Jefferson carefully constructed a rebuttal to Buffon in one of the chapters of the former's *Notes on the State of Virginia*, a response to a questionnaire regarding general information of each colony sent out by the French delegation to America during the Revolutionary War.[9] In it, Jefferson used his knowledge of science and America's natural features to counter the theory of American degeneracy through multiple angles, including a chart comparing the sizes of animals in both the Old and New Worlds, the identification of contradictions in some of Buffon's own reasoning, and the questioning of the validity of Buffon's sources. Taken together, his numerous points made a strong counterargument.

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[7] Paul Semonin, *American Monster: How the Nation's First Prehistoric Creature Became a Symbol of National Identity* (New York: New York University Press, 2000), 7.

[8] Semonin, *American Monster*, 112.

[9] Cohen, *Science and the Founding Fathers*, 73.

In both the *Notes of the State of Virginia* and several letters following its publication, Jefferson also discussed the fossils of the American mastodon, known then as the American *incognitum*. This, too, served as another venue in which to address Buffon's theory, as the sheer size of the creature dwarfed that of any living land animal. In this way, America's native animals were just as good as—if not better—than those of Europe and the Old World. Jefferson also supported the popular, though contested, interpretation of the mastodon as a lethal carnivore, as it lent a greater sense of strength and power that living species in the Old World could not match.

The mastodon was not the only prehistoric creature to capture Jefferson's attention in his quest to debunk Buffon. The discovery of a giant claw and leg bone in a cave led Jefferson to dub this new species *Megalonyx*, or "great claw," which he believed to be a form of giant lion. Though the fossil was subsequently determined to be that of a giant ground sloth, Jefferson's desire to identify another terrifyingly large predator in the Americas reflected the same mindset with which he had taken an interest in mastodons.[10]

The broader scientific context in which Jefferson operated was that of the Enlightenment. This period stressed logic and reason in understanding the world, yet at this point, there still existed strong bonds between science and religion. Continuing the medieval scholar Thomas Aquinas' tradition of using reason to study God's world and thus better glorify him, most Enlightenment scientists sought to identify the laws of nature while remaining true to the story of Genesis.[11] The great flood which Noah, his family, and their arc full of animals survived, for example, was the interpretive lens in which early geologists explained the terrain and natural history of the earth.

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[10] Bedini, *Jefferson and Science*, 62.

[11] Paul A Erickson and Liam D. Murphy, *A History of Anthropological Theory*, 4th ed. (North York, Ontario: Univeristy of Toronto Press, 2013), 6; Semonin, *American Monster*, 11-12.

Extinction, however, proved to be a much more difficult concept to reconcile with Christianity. The very idea that some species no longer existed challenged the idea of the perfection of both God and his creation.[12] Enlightenment naturalists had a variety of responses to deal with this controversial issue. Some maintained that fossils were actually natural formations that grew to resemble living organisms. Others viewed fossils as a testament to the destructive force of the Flood. Many, however, believed that fossils were remains of still-living species.[13] Jefferson ascribed to this theory and believed that it was entirely possible for both the American *incognitum* and *Megalonyx* to be alive in the territories of western North America, and when Lewis and Clark set out for their exploration, Jefferson requested them to keep an eye out for such animals.

This thesis, then, seeks to explore the complex nature of the relationships between science and politics during the Enlightenment, especially the role of science in providing commentary on nations. It will focus on Jefferson's repudiation of Buffon's theory of American degeneracy as a case study. The thesis will examine the historical context which shaped Buffon and Jefferson's views, but will especially focus on Jefferson's counterarguments found in his famous work *Notes on the State of Virginia*, his paper to the American Philosophical Society on his discovery of the *Megalonyx*, and his continuing interest in the American *incognitum*, or mastodon, expressed from his work on the *Notes* through the Lewis and Clark expedition. It will also examine several letters written by Jefferson in connection with these topics. The primary sources will thus remain limited to these periods, spanning from 1780 to 1812.

[12] Ibid., 115.
[13] Ibid., 304.

Early Years and the *Notes on the State of Virginia*

Thomas Jefferson was a man of an impressively complex and paradoxical character. He held many strong ideological views, yet in different circumstances could overlook them without a sense of conflict.[14] One such example was his views on slavery: he did not support the institution, especially in his earlier years, but continued to keep slaves at his estate Monticello, as he had grown dependent on them. Part of this stemmed from his strong sensitivity to criticism and desire to maintain courtesy in his public and private life. He also had a passion for knowledge: while at the College of William and Mary, he "gained a reputation for learning among his classmates as an obsessive student, sometimes spending fifteen hours with his books, three hours practicing his violin and the remaining six hours eating and sleeping."[15] Indeed, throughout his life, Jefferson preferred seclusion to the public sphere, especially as he gifts lay in writing but not oratorical skills. He spent his early years as a lawyer before becoming a member of the Virginia House of Burgesses in 1769 and part of the Virginia delegation to the Continental Congress in 1775. A firm supporter of the American revolutionary cause, his 1774 pamphlet *A Summary View on the Rights of British America* made a positive impression on his peers. The Continental Congress later tasked him with writing the address *Declaration of the Causes of Necessity for Taking Up Arms*, along with what would become the much more famous Declaration of Independence.[16]

Jefferson's only book, *Notes on the State of Virginia* served both the interests of the American Revolution and Jefferson's disagreement with Buffon's theory of American

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[14] Gordon S. Wood, *Revolutionary Characters: What Made the Founders Different* (New York: The Penguin Press, 2006), 100.

[15] Joseph J. Ellis, *American Sphynx: The Character of Thomas Jefferson* (New York: Alfred A. Knopf, 1997), 27.

[16] Ibid., 26-53.

degeneracy.[17] Originally written as a response to a questionnaire about the colonies sent out by French diplomats in America, the *Notes* provided information on Virginia ranging from its geographic features and natural resources to its population, government, and customs. Many of the questions reflected the interest of France in her new ally, yet the lengthiest chapter moved beyond the diplomats' questions to focus on the degeneracy theory.

Jefferson produced more than one version of the *Notes*. The first draft reached completion towards the end of 1781. The diplomat's questionnaire had initially been set out about a year before, but two significant events slowed Jefferson's progress, who was serving as the governor of the Virginia at the time. The first was the death of his two-year-old daughter in April of 1781; the second occurred in June, when the British seized Charlottesville and nearly captured Jefferson, who had been living in his nearby estate, Monticello. Despite these setbacks, he completed the manuscript in December. He continued, however, to collect new material from some of his associates and revise his work. By 1784, when he was appointed American minister to France, he had significantly extended the *Notes*. He initially planned to have a few copies of his revisions printed, but when he learned that a French printer intended to produce some unofficial translations, he decided to formally publish his work. The French version came out in 1785 and the English two years later.[18]

The Revolutionary War greatly influenced Jefferson's initial writing of *Notes of the State of Virginia*. France had allied herself with America in 1778, following the American victory at Saratoga. At the time of the initial request for information on the

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[17] Greene, *American Science*, 29.

[18] Thomas Perkins Abernathy, introduction to *Notes on the State of Virginia*, by Thomas Jefferson (New York: Harper Torchbooks, 1964), vii-xi.

colonies in 1780, however, the Americans had lost several battles as the British began to focus their efforts on taking the southern colonies. While the questionnaire sent by the French diplomats stationed in the colonies did not explicitly reveal any concerns about the war, it did play a role in some of the questions, especially "A notice of the rivers, rivulets, and how far they are navigable." This knowledge, along with a general sense of the major land features, could aid the French in future battles, especially those more inland. Other questions, such as "A notice of the commercial productions particular to the State, and of those objects which the inhabitants are obliged to get from Europe and from other parts of the world," suggested an interest in future trade with their ally. For Jefferson, providing accurate information to the French was important, but so was the preservation of America's image. The work of Buffon, a widely respected French naturalist, implied American inferiority to the continent and consequently risked weakening the support America had received from the French. So, too, did the idea that America had not "produced…one man of genius."[19] The need to disprove these theories, then, was crucial.

The layout of the *Notes on the State of Virginia* reflected that of the questionnaire. The book was divided into twenty-three sections and four appendices, each of which corresponded to a query from the questionnaire. The first seven sections dealt with the physical characteristics of Virginia, while the remaining sixteen addressed the people and government of the state. Despite the greater proportion of sections dealing with the running of the state, the sixth chapter, "A notice of the mines and other subterraneous riches; its trees, plants, fruits, &c.," comprised the longest section of the entire book at

[19] Thomas Jefferson, *Notes on the State of Virginia*, 1787 (New York: Harper Torchbooks, 1964), 64.

fifty pages. It was in this chapter that Jefferson discussed and refuted Buffon's opinion of American climate and native species.

Only the first third of the sixth chapter responded to a question from the French delegation; the remainder focused on Buffon's ideas. Jefferson provided a summary of the key points in the American degeneracy theory before beginning his counterarguments: "1. That the animals common both to the old and new world [were] smaller in the latter. 2. That those peculiar to the new [were] on a smaller scale. 3. That those which have been domesticated in both have degenerated in America; and 4. That on the whole it [exhibited] fewer species."[20] Jefferson added that Buffon attributed these observations to the cool, damp nature of America's climate. Yet, as Jefferson noted, there existed several contradictions with the linkage of cool, wet climate and smaller sizes. He highlighted the role of moisture in the growth of plants, as "the more humid climates produce the greater quantity of food," and followed this with another quote by Buffon himself that supported the role of coldness in generating larger animals.[21] Jefferson then transitioned his critique to a series of charts comparing the weight of animals in Europe and America that directly correlated to Buffon's first three points. Jefferson explained that some of the data came from the "actual weights of particular subjects, deemed the largest of their species," others were "furnished by judicious persons, well acquainted with the species, and saying, from conjecture only, what the largest individual they have seen would have probably weighed," and the rest, in this case the majority, were from Buffon and another naturalist's own measurements.[22] Most of the weights on the charts favored the American animals. Jefferson then discussed each table and utilized more

[20] Jefferson, *Notes*, 42.
[21] Ibid., 43.
[22] Ibid., 44.

quotes from Buffon that contradicted the naturalist's hypothesis, such as "…Monsieur Buffon himself informs us,…that the beaver, the otter, and shrew mouse, though of the same species, are larger in America than Europe."[23] He continued to question various aspects of Buffon's points in a similar vein, including the subject authority of some unnamed travelers who considered American animals to be smaller.

Buffon's idea of degeneration, especially as linked to climate, was not new. The Greek physician Hippocrates in his work *On Airs, Waters, and Places* had used climate to explain the variety of peoples he encountered in his travels.[24] With the discovery of the Americas centuries later, Europeans learned of an even greater assortment of peoples and were challenged to explain such diversity. They developed numerous theories. Some tried to identify linkages between the Europeans and non-Europeans; in one case, "Native peoples were descendants of survivors of the sunken city of Atlantis, a relationship purportedly demonstrated by cultural similarities between Europeans and the Incans and Aztecs."[25] There was also a growing question of human origin: were all humans descendants of one species (monogenesis), or were they from multiple species, with each "race" having "physical differences that [were] unalterable and racially innate" (polygenesis)?[26]

The Enlightenment, however, offered little resolution. The impact of Newton's *Principles of Mathematics* inspired many Europeans to "discover 'laws' of human history," and this often resulted in a progressive series of stages. [27] The famous French

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[23] Ibid., 47.

[24] Hippocrates, "Airs, Waters, Places," in *The Anthropology of Climate Change: A Historical Reader*, ed. Michael R. Dove (West Sussex, Wiley Blackwell, 2014), 42-46.

[25] Erickson and Murphy, *History of Anthropological Theory*, 11.

[26] Ibid.

[27] Ibid., 17; Ibid.

philosopher Jean-Jacques Rousseau held a different perspective to the growing progressivism yet was still influenced by the idea of climate. He "speculated on how and why human differences had developed over time," attributing this to the degenerative effects of the arts and science.[28] The role of climate could be seen in his *Discourse on the Origin of Inequality among Men*. Rousseau wrote that "there are two kinds of inequality among the human species; one, which I call natural or physical, because it is established by nature, and consists in a difference of age, health, bodily strength, and the qualities of the mind or of the soul…," which demonstrated the linkage between nature, physiology, and culture.[29] These "natural inequalities" also related to climate, as in the case of "… the Caribbeans, who have as yet least of all deviated from the state of nature, being in fact the most peaceable of people in their amours, and the least subject to jealousy, though they live in a hot climate which seems always to inflame the passions."[30] This linkage of heat with passion reflected many of the prevailing attitudes of the period, while the popularity of Rousseau's work brought the concept of degeneracy—and its linkage to morality—even more into the public's conscience.

Jefferson's refutation of American degeneracy also extended to a discussion of the humans living in America and further counterpoints to Buffon and the French philosopher Abbé Raynal's hypotheses. He began with the Native Americans and countered, adjective by adjective, the description that had been given to them by Buffon and attributing any difference in their behaviors and Europeans' to cultural rather than climatic factors. For example, he argued that the natives had less offspring because they

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[28] Ibid., 16.

[29] Jean-Jacques Rousseau, *Discourse on the Origin of Inequality among Men*, trans. G. D. H. Cole (1754; Constitution Society 1998), http://www.constitution.org/jjr/ineq.htm.

[30] Ibid.

took in less food and that, because they spent much of their time "in their parties of war and in hunting, child-bearing [became] extremely inconvenient to them" and added that Native American women who married whites "[produced] and [raised] as many children as the white women."[31] He also provided an example of "their eminence of oratory" to address their intellectual side, although it was clear in his descriptions that he believed they were less advanced than Europeans: "Before we condemn the Indians of this continent as wanting genius, we must consider that letters have not yet been introduced among them," and "The women are submitted to unjust drudgery. This I believe is the case with every barbarous people."[32] He then moved on to the accusation of Abbé Raynal, who also supported Buffon's theory of degeneracy, that "'America has not yet produced one good poet…one able mathematician, one man of genius in a single art or a single science,'" and countered this with examples of Washington and Franklin before adding that America had existed for a shorter period of time than the countries of the Continent, which had housed the Greeks and Romans.[33]

[31] Jefferson, *Notes*, 58.
[32] Ibid., 61; Ibid., 57.
[33] Ibid., 64.

Notes on the Mammoth

Jefferson's discussion of mammoths prior to his direct treatment of the theory of American degeneracy in the sixth chapter, meanwhile, not only related to Buffon's ideas but also reflected a larger debate among naturalists regarding the American *incognitum*. Although the *incognitum* would eventually be recognized as its own species, the mastodon, it baffled naturalists for several decades. It had first been discovered in the early 1700s with the find of a massive tooth.[34] This led to speculation that it was the remains of one of the races of human giants from the Bible, such as Goliath.[35] As more bones were uncovered over the next several years and the discussion of the *incognitum*'s identity spread throughout America and Europe, its status as the remains of human giants diminished. Instead, the *incognitum* was viewed as either the remains of an elephant or mammoth, the latter having been discovered in Russia.[36]

Both the giant and elephant interpretations of the American *incognitum* demonstrated the influence of the Bible. The Flood was thought to have moved the bones to their final resting places in the New World. Yet the story of Genesis, as Enlightenment naturalists were increasingly discovering, did not offer perfect explanations for the natural world. In the case of the American *incognitum*, the key issue was that the bones were significantly larger than those of extant elephants and the teeth were noticeably different. This made it difficult to dismiss the *incognitum* as simply an elephant. Yet if this constituted a separate species from the elephant, a new conundrum emerged: was the *incognitum* still living or extinct? Though conversations within scientific circles were slowly beginning to shift towards an acceptance of extinction, or at least the

[34] Semonin, *American Monster*, 15.
[35] Ibid., 15, 21-22.
[36] Ibid., 62-63.

consideration of it, the prevailing attitude opposed extinction.[37] Not only did the complete dying out of a species from earth suggest imperfection in God's work, but it also challenged the long-standing notion of the Great Chain of Being, which held that there existed a clean line of progression between species, with man at the top.[38] It was far simpler to maintain that the mysterious species like the American *incognitum* still lived in an area not yet discovered.

Buffon and his anatomist Louis Daubenton ultimately supported the elephant interpretation, while Jefferson held that the American *incognitum* represented the mammoth and that it constituted a distinct species.[39] Daubenton had proposed that the limbs of the *incognitum* were that elephants, but that the teeth found with them instead belonged to hippopotamuses.[40] Although this provided an answer to the difference between the *incognitum* and elephants' teeth, Jefferson found their positions weak. In the *Notes on the State of Virginia*, he pointed out the size discrepancy in the limbs and teeth of the American *incognitum* compared to both the elephant and the hippopotamus and that there had never been a hippopotamus skeleton found in any of the *incognitum* sites. Jefferson added that elephants neither were native species of America nor lived in the same climate as mammoths, so it made no sense for cold-adapted and heat-adapted species to be considered the same.

Jefferson's criticisms with the degeneracy theory best explained his consideration of the mammoth question in the *Notes on the State of Virginia.* The existence of the American *incognitum* as its own distinct species meant that organisms on a massive scale

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[37] Ibid., 45; Greene, *American Science*, 32.
[38] Semonin, *American Monster*, 115.
[39] Ibid., 127-130.
[40] Ibid., 129.

were indeed possible in the New World. As "the largest of all terrestrial beings," it should "have stifled… the opinion of a writer, the most learned, too, of all others in the science of animal history, that in the new world…nature is less active, less energetic on one side of the globe that she is on the other."[41] Jefferson also included the interpretation of the *incognitum* as a carnivore early on in his discussion of it, as an immense carnivore better conveyed a sense of power and ferocity with which to counter the theory of degeneracy.

[41] Jefferson, *Notes*, 41.

The *Notes* Go to France

Part of the new material Jefferson collected for his revisions of the *Notes on the State of Virginia* directly dealt with his intentions to refute Buffon. In a letter to Thomas Walker in 1783, he requested the "heaviest weights" of the animals he intended to use in his charts because the "part particularly which relates to the positions of Monsr. de Buffon I would wish to have very correct in matters of fact."[42] Jefferson drew on a wide range of sources for his evidence, including direct measurements, information from those with more direct experience in the field, explorers' accounts, and Native American folklore. A letter to James Madison in 1784 illustrated this, as Jefferson discussed the validity of an anatomist's account of having discovered mammoth teeth in Brazil and Lima. Though he respected the anatomist, Jefferson had no other evidence to corroborate it and thus judged it "would be unsafe to deny the fact; but I think it may well be doubted."[43] To Ezra Stiles, meanwhile, he wrote a request for "getting every additional information on the [American *incognitum*] which may serve either to confirm or to correct the conclusion I had formed."[44] Given Buffon's eminence in natural history, Jefferson wanted accurate information with which to counter the degeneracy theory.

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[42] Thomas Jefferson to Thomas Walker, September 25, 1783, Monticello, Virginia, Correspondence and Other Writings of Six Major Shapers of the United States, Founders Online, National Archives and Records Administration, http://founders.archives.gov/?q=%20Author%3A%22Jefferson%2C%20Thomas%22%20mammoth&s=1511311112&r=3 (accessed Spring 2015).

[43] Thomas Jefferson to James Madison, February 20, 1784, Annapolis, Virginia, Correspondence and Other Writings of Six Major Shapers of the United States, Founders Online, National Archives and Records Administration, http://founders.archives.gov/?q=%20Author%3A%22Jefferson%2C%20Thomas%22%20incognitum&s=1511311112& (accessed Spring 2015).

[44] Thomas Jefferson to Ezra Stiles, June 10, 1784, Hartford, Conneticut, Correspondence and Other Writings of Six Major Shapers of the United States, Founders Online, National Archives and Records Administration, http://founders.archives.gov/?q=%20Author%3A%22Jefferson%2C%20Thomas%22%20incognitum&s=1511311112& (accessed Spring 2015).

Jefferson also wrote the *Notes on the State of Virginia* with a particular audience in mind. While the information being gathered was primarily to provide basic information on the colonies to France, it was also intended for diplomatic representatives who were likely familiar with Buffon's work or knew influential individuals who were familiar with it. Jefferson intended for his counterarguments to reach Buffon. He also had in mind his close contemporaries, as he had initially only wanted to print copies of his revisions for them. The majority of these people, along with the French delegation, would have been well-educated, upper-class individuals, as Jefferson wrote primarily in English, but included sometimes lengthy quotations in their original French or Spanish.

While serving as American minister to France and seeking a limited publication of his revised *Notes on the State of Virginia*, Jefferson finally gained the opportunity to meet with Buffon in person. The meeting went well, with Buffon amenable to seeing evidence of specimens that disproved his theory. Consequently, Jefferson dispatched requests to his contacts in America for the "skin, skeletons, and horns of a moose, caribou, and elk," which were sent to Buffon. Although Buffon was willing to back away from his position on American degeneracy, he died about six months later.[45]

[45] Semonin, *American Monster*, 222-225; Greene, *American Science*, 30.

The Megalonyx

Despite the publication of *Notes on the State of Virginia* and the chance to address Buffon in person, the theory of American degeneracy still bothered Jefferson. He retained an active interest in finding the *incognitum*'s bones and, eventually, constructing a complete skeleton, although his growing role in the newborn American government consumed much of his time. While vice president under John Adams, Jefferson received word of another fossil find. This included a large claw and leg bone. Upon receiving the fossils, he named the new creature *Megalonyx*, or "great claw," and identified it as a species of giant lion.[46] A year later, He presented his findings to the American Philosophical Society, of which he was president of at that time. In *A Memoir on the Discovery of certain* [sic] *Bones of a Quadruped of the Clawed Kind in the Western Parts of Virginia*, Jefferson described how the megalonyx had been discovered, what bones were found, and introduced his theory that it was a species of lion. He also suggested that it still may be living in the interior of the continent, using analogies with extant lions in Africa in conjunction with anecdotes from various explorers to support his claims. He then ended with a brief negation of the degeneracy theory.

While Jefferson did not attack the Buffon's theory for most of the *Megalonyx* presentation, it still expressed the lingering concerns he had. Jefferson used a chart to compare the measurements of the megalonyx's bones to that of the current data on lions in a manner reminiscent of the *Notes on the State of Virginia*. He also devoted several paragraphs to stressing the size of the megalonyx, extrapolating from the difference in the measurements of the fossils and that of living lions: "Let us only say then…that he was *more* than three times as large as the lion: that he stood as pre-eminently at the head of

[46] Bedini, *Jefferson and Science*, 61-62.

the column of clawed animals as the mammoth stood at that of the elephant, rhinoceros, and hippopotamus."[47] By comparing the megalonyx to the mammoth, Jefferson linked his new find to the *incognitum* and its role in negating American degeneracy. Indeed, in several letters Jefferson wrote prior to his formal presentation on the megalonyx to the American Philosophical Society, he stressed this aspect. To Archibald Stuart in 1796, he wrote that the megalonyx was "too victorious an evidence against the pretended degeneracy of animal nature in our continent."[48] In a similar vein, he informed John Stuart the same day that "[the bones] furnish a victorious fact against the idle dreams of some European philosophers who pretend that animal nature in the new world is a degeneracy from that of the old" because should the theory's proponents "consider the animal now discovered as a lion, they must admit it is a lion improved and not degenerated."[49] Another letter written to David Rittenhouse a few months later expressed similar ideas as well.[50]

Jefferson's letter to Louis of Parma the following year included some of the same sentiments as the previous letters relating to the megalonyx, but held greater significance. Louis was the prince of the duchy of Parma in northern Italy, and thus had greater

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[47] Thomas Jefferson, "A Memoir on the Discovery of certain Bones of a Quadruped of the Clawed Kind in the Western Parts of Virginia," *Transactions of the American Philosophical Society* 4 (1799), 251.

[48] Thomas Jefferson to Archibald Stuart, May 26, 1796, Monticello, Virginia, Correspondence and Other Writings of Six Major Shapers of the United States, Founders Online, National Archives and Records Administration, http://founders.archives.gov/?q=%20Author%3A%22Jefferson%2C%20Thomas%22%20mammoth&s=1511311112&r=10 (accessed Spring 2015).

[49] Thomas Jefferson to John Stuart, May 26, 1796, Monticello, Virginia, Correspondence and Other Writings of Six Major Shapers of the United States, Founders Online, National Archives and Records Administration, http://founders.archives.gov/?q=%20Author%3A%22Jefferson%2C%20Thomas%22%20mammoth&s=1511311112&r=11 (accessed Spring 2015).

[50] Thomas Jefferson to David Rittenhouse, July 3, 1796, Monticello, Virginia, Correspondence and Other Writings of Six Major Shapers of the United States, Founders Online, National Archives and Records Administration, http://founders.archives.gov/?q=%20Author%3A%22Jefferson%2C%20Thomas%22%20mammoth&s=1511311112&r=12 (accessed Spring 2015).

political influence.[51] Louis had contacted Jefferson beforehand and Jefferson's letter consequently focused on replying to the prince's request for an American contact with knowledge of natural history. Towards the end of the letter, though, Jefferson mentioned the "discovery of the remains of a carnivorous animal 4 or 5 times as large as the lion."[52] This line thus provided evidence against the theory of degeneracy to an individual of royal power on the Continent who also held an interest in natural history.

Another concern which Jefferson devoted a large portion of the memoir to was that of extinction. Using both knowledge of the habits of living elephants and lions along with reports from Native Americans and adventurers, he argued that the megalonyx was still alive, though likely not plentiful, and that the evidence all seemed to indicate it was a lion. In addition, he brought in descriptions of lions recorded by Buffon to corroborate the anecdotes.[53] This lent a greater air of authenticity to his arguments, as Buffon was a highly respected naturalist, and supported Jefferson's rejection of extinction.

Jefferson did make several explicit references to Buffon and Daubenton in his work, however. He used their measurements of lions from the *Histoire Naturelle* volume covering them as the basis of which to compare with the fossil remains of the megalonyx. He also focused on another theory of Buffon's that held the earth had once been warmer and gradually cooled from the poles inward. Though outwardly unrelated, it, too, supported the idea of degeneracy by maintaining the linkage of warmer climates and

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[51] National Archives, "To Thomas Jefferson from Louis of Parma, 2 November 1795," National Historical Publications & Records Commissions. http://founders.archives.gov/documents/Jefferson/01-28-02-0400 (accessed Spring 2015)

[52] Thomas Jefferson to Louis of Parma, May 23, 1797, Philadelphia, Pennsylvania, Correspondence and Other Writings of Six Major Shapers of the United States, Founders Online, National Archives and Records Administration, http://founders.archives.gov/?q=%20Author%3A%22Jefferson%2C%20Thomas%22%20mammoth&s=1511311112&r=16 (accessed Spring 2015).

[53] Jefferson, "Quadruped of the Clawed Kind," 253-255.

large body size. Jefferson also anticipated that these same arguments which had been used to label the American *incognitum* as an elephant would be applied to the megalonyx to declare it a lion.

Jefferson's only direct reference to the theory of American degeneracy came in the second-to-last paragraph, after observing that Buffon acknowledged that some American animals were larger than that of the Old World:

> Are we then from all this to draw a conclusion, the reverse of that of M. de Buffon. That nature, has formed the larger animals of America, like its lakes, its rivers, and mountains, on a greater and prouder scale than in the other hemisphere? Not at all, we are to conclude that she has formed some things large and some things small, on both sides of the earth for reasons which she has not enabled us to penetrate…[54]

Despite ending with the idea that both America and Europe were equal, Jefferson's inclusion of the size of America's physical features suggested the opposite and that the United States of America held the same legitimacy as a nation as those of Europe.

The final portion of the *Memoir* was an addendum reporting the discovery of similar bones that had been found in South America, dubbed the megatherium. As with the megalonyx, Jefferson described the measurements of the bones found, though in much less detail. He noted that the megatherium specimen had smaller claws, and while it appeared similar to the megalonyx, it did not seem to be "of the cat form."[55] In order to make a better judgement, he wanted to wait until some teeth had been found and recommended keeping separate names for each find. Though the addendum acknowledged similarities between the two creatures, Jefferson still kept his theory of megalonyx as a lion. It would later be learned that while the megalonyx and the

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[54] Ibid., 258.
[55] Ibid., 259.

megatherium were not the same species, they were both giant ground sloths—and, like the mammoth and mastodon, not carnivores.[56]

As in the *Notes on the State of Virginia,* Jefferson was well aware that his audience extended beyond those he was immediately addressing. His fellow members in the American Philosophical Society were interested in the pursuit of science and thus aware of the contemporary scientific theories. More than this, however, he also had an international audience to consider, some of which would have been supporters of the degeneracy theory. Jefferson indicated this reality in his letter to John Stuart a year prior to his formal presentation of the megalonyx, as he would "make a point of communicating the discovery and description of [the bones] to the learned on both sides of the Atlantic."[57] As in the case of the *Notes on the State of Virginia*, Jefferson had an agenda to counter Buffon's theory. Despite the presentation being nearly ten years after Buffon's death, the legacy and popularity of the degeneracy theory evidently still remained.

[56] Semonin, *American Monster*, 311-312.
[57] Jefferson to John Stuart.

Presidency and Looking West

Jefferson's assumption of the Vice Presidency under Adams, followed by the Presidency in 1801, occurred at a pivotal time in his life. Having returned to America from diplomatic role in France, Jefferson sought retirement and isolation from the political world. He instead turned to agricultural pursuits. For Jefferson, agriculture represented more than a common way of life in Virginia; rather, it represented strong moral virtues as opposed to the "final commercial state of manufacturing, luxury, and urban decadence that was affecting the European states."[58] Yet Jefferson's personal agricultural endeavors at Monticello proved largely to be failures, especially in the face of his growing debt. With calculated prodding from his friend James Madison, Jefferson eventually returned to politics.[59]

Jefferson represented the head of the developing Anti-Federalist party, which favored limited government. When Adams' first term as president ended, Jefferson was the logical choice as Adams' opponent, as both Washington and Adams were Federalists. Yet Jefferson faced criticism for opposing the political ideas of the first two presidents because the modern concept of political parties was only beginning to emerge: "To call someone a member of a political party was to accuse him of systematic selfishness and perhaps even outright treason."[60] In any event, the election between Jefferson and Adams proved to be close, with Jefferson gaining the lead. However, this was not without complications. Aaron Burr had helped Jefferson gain the votes for New York with the understanding that he would become vice president. Yet when the votes were counted,

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[58] Wood, *Revolutionary Characters*, 108-109.
[59] Ellis, *American Sphynx*, 134-144, 152-164.
[60] Ibid, 122.

Jefferson and Burr had received equal numbers, and it would be another six days before Jefferson could be officially announced as the next president.[61]

Jefferson's main interest as president lay in returning America to its original founding principles.[62] While many Federalists feared an attempt to revert to the decentralized Articles of Confederation, Jefferson chose to work within the existing Constitution to reduce the size of the federal government. His main focus lay in eliminating the national debt, partly because a high debt necessitated a centralized government and the infrastructure needed to manage it and partly because of Jefferson's own personal experience with debt and his difficulties in redressing it. He also reduced the size of the navy and internal taxes.[63]

Yet Jefferson took several actions that contradicted his beliefs while president. In the case of the Barbary pirates, who demanded tribute from American ships traveling North African waters, he refused to acquiesce. When they declared war on the United States, he sent part of the navy in response, which demonstrated stronger central power. His most blatant contradiction, however, lay in the purchase of the Louisiana Territory. Napoleon's rise to power in France and efforts to expand France's territory had resulted in the Napoleonic Wars. Needing to raise more money, Napoleon offered much of France's territorial claims in North America to Jefferson at a remarkably low price, which Jefferson was more than willing to agree to. Yet Jefferson's action went beyond his duties in the Constitution and, when the deal became finalized, he instituted in the territory a "nonrepublican territorial government…consisted of a governor appointed by the president and a nonelected council or senate….that was also precisely the kind of

[61] Ibid., 174-175.
[62] Ibid., 171.
[63] Ibid., 194-197.

government Jefferson had condemned the Federalists for preferring."[64] Although his actions could be attributed to the need to act quickly in order to take advantage of the opportunity, the main factor rested in his fascination with the West: "The West was the place where his agrarian idyll could be regularly rediscovered, thereby postponing into the future the crowded conditions and political congestions of European society."[65]

Jefferson had been interested in western exploration for some time, and had attempted to organize multiple expeditions prior to the presidency. The first had been in 1783, when he attempted to recruit George Rogers Clark, brother of William Clark. Both that and subsequent attempts had failed.[66] Yet in 1792, Jefferson came close to fulfilling his goal when French botanist André Michaux expressed interest in an expedition being considered by the American Philosophical Society. As Michaux negotiated the terms of the trip with the society, Jefferson was tasked with composing a list of instructions for Michaux.[67] The instructions were straight-forward, stating that Michaux's chief objective was to find passage to the Pacific ocean, the recommended route to take, and the need to keep notes on the overall geography, natural wildlife and resources, and the native peoples. He also provided suggestions for how Michaux could preserve his notes. Of particular interest, though was Jefferson's guidance that "Under the head of Animal history, that of the Mammoth is particularly recommended to your enquiries," indicating Jefferson's continuing interest in information on the American *incognitum* and desire to

[64] Ibid., 210.
[65] Ibid., 212.
[66] National Archives, "Editorial Note: Jefferson and André Michaux's Proposed Western Expedition," National Historical Publications & Records Commissions. http://founders.archives.gov/documents/Jefferson/01-25-02-0087-0001 (accessed Spring 2015)
[67] Ibid.

find extant organisms.[68] Although Michaux never set out on the journey, it helped to set the stage for that of Lewis and Clark's.[69]

Jefferson also wrote instructions to Lewis before he and Clark's exploration. As with Michaux's proposed expedition, their main objective was to find waterways connecting the Missouri river with the Pacific Ocean. They were also to take note of the geography, climate, natural resources, wildlife, and native peoples. Additionally, all of their notes were to be recorded in multiple copies, with at least one recommended to be written on "the cuticular membranes of the paper-birch, as [it was] less liable to injury from damp than common paper," reflecting Jefferson's dedication to gathering and preserving scientific data.[70]

In his letter to Lewis, Jefferson devoted great attention to the Native Americans. He outlined specific aspects of their cultures for Lewis and Clark to pay attention to, such as "the diseases prevalent among them, and the remedies they use," along with an evaluation of what the natives could offer and their relationships to surrounding tribes.[71] He also provided general guidance on how to interact with native tribes. Although America's indigenous peoples had been of interest to Jefferson in the *Notes on the State of Virginia*, he letter to Lewis did not request any information on the natives that appeared to relate to the degeneracy debate. There were several possible explanations for this. The sheer size of the mammoth served as a much more dramatic refutation of the

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[68] American Philosophical Society's Instructions to André Michaux, April 30, 1793, Correspondence and Other Writings of Six Major Shapers of the United States, Founders Online, National Archives and Records Administration, http://founders.archives.gov/?q=%20Author%3A%22Jefferson%2C%20Thomas%22%20mammoth&s=1511311112&r=9 (accessed Spring 2015)

[69] National Archives, "Editorial Note."

[70] Thomas Jefferson to Meriwether Lewis, June 20, 1805, "Rivers, Edens, Empires: Lewis & Clark and the Revealing of America," on-line exhibit, Library of Congress. http://www.loc.gov/exhibits/lewisandclark/transcript57.html

[71] Ibid.

theory. Also, as Jefferson was president, he had to manage the conflict of interests between the United States and the Native Americans over land. To further an argument that gave the indigenous peoples legitimacy would have made his position more difficult. While Jefferson had an interest in learning about the different tribes, having conducted one of the first American archaeological excavations on a burial site, and languages in general, there also existed a need to know about the peoples who inhabited the land the United States laid claim to.[72]

Jefferson's directives reflected more than the utilitarian benefits of exploring the United States' recently acquired land, though. In addition to a scientific interest, he also took interest in the wildlife, instructing them to look for animals unfamiliar to the United States, as well as "The remains and accounts of any which may be deemed rare or extinct."[73] The desire to find such animals obviously reflected a desire by Jefferson to find animals like the mammoth and megalonyx. Indeed, he had said as much in some of his earlier letters. The existence of a living mammoth would settle with finality the degeneracy dispute. And if it or the megalonyx actually proved to be carnivorous, they would dominate the large animals of the Old World that much more.

Jefferson's interest in the mammoth did not end with the Lewis and Clark expedition. He had tasked both of them with retrieving more bones, which they, especially Clark, did, as indicated by several letters.[74] He also made a practice of sharing

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[72] Bedini, *Jefferson and Science*, 51-56.

[73] Jefferson to Lewis.

[74] Thomas Jefferson to Gideon Fitz, September 17, 1797, Monticello, Virginia, Correspondence and Other Writings of Six Major Shapers of the United States, Founders Online, National Archives and Records Administration, http://founders.archives.gov/?q=%20Author%3A%22Jefferson%2C%20Thomas%22%20mammoth&s=1511311112&r=42 (accessed Spring 2015); Thomas Jefferson to Caspar Wistar, December 19, 1807, Washington, D.C., Correspondence and Other Writings of Six Major Shapers of the United States, Founders Online, National Archives and Records Administration,

some of the extra mammoth bones with the natural history museum in Paris.[75] Though this was to promote scientific study, it also helped to further combat any who still supported the idea of degeneracy, as with more specimens to study in Europe, the greater the likelihood that the American *incognitum*'s mystery would finally be resolved.

The American *incognitum* would finally get a name in 1809, when Georges Cuvier dubbed it the mastodon. Cuvier was a rapidly rising French naturalist and anatomist, who helped begin the field of comparative anatomy.[76] He would also be one of the first to publically push the idea of extinction based on his work studies of fossils. Though he strongly believed in catastrophism, the idea that the geologic features of the earth had been formed by cataclysmic events with the most recent having been the Flood, he played a key role in the development of natural history. Through Cuvier's identification of the American *incognitum* as its own species, Jefferson's arguments were vindicated, though his letter to Charles Wilson Peale in 1809 that mentioned the naming, Jefferson did not dwell on this aspect.[77] This could be attributed to the nature of scientific discourse at the time: Buffon's theories had been very popular for many years, but with Buffon dead and Cuvier the new focus of attention, how long would Cuvier's theories last? Jefferson was also serving at president at the time, and was more likely focused on the Napoleonic Wars and the enforcement of his Embargo Act.

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http://founders.archives.gov/?q=%20Author%3A%22Jefferson%2C%20Thomas%22%20mammoth&s=1511311112&r=50 (accessed Spring 2015).

[75] Greene, *American Science*, 34.

[76] Semonin, *American Monster*, 300-301.

[77] Thomas Jefferson to Charles Wilson Peale, May 5, 1809, Monticello, Virginia, Correspondence and Other Writings of Six Major Shapers of the United States, Founders Online, National Archives and Records Administration, http://founders.archives.gov/?q=%20Author%3A%22Jefferson%2C%20Thomas%22%20mastodon&s=1511311112&r=5 (accessed Spring 2015).

Another letter in which Jefferson discussed the mastodon, this time directed to Clark a few months later, touched on the degeneracy theory a bit more. Jefferson again mentioned that the American *incognitum* had been determined to be its own species but, for what appeared to be the first time, admitted that the mastodon was "arboriverous"—an herbivore, like the elephant.[78] Yet even so, he added that "… the limb of a tree would be no more to him than a bough of Cotton tree to a horse," echoing the strength and destructive power formerly associated with the *incognitum* when it was depicted as a carnivore.[79]

[78] Thomas Jefferson to William Clark, September 10, 1809, Monticello, Virginia, Correspondence and Other Writings of Six Major Shapers of the United States, Founders Online, National Archives and Records Administration, http://founders.archives.gov/?q=%20Author%3A%22Jefferson%2C%20Thomas%22%20mammoth&s=1511311112&r=32 (accessed Spring 2015).

[79] Ibid.

Enter the Leviathan, Exit the Mammoth

Jefferson's career as president came to an end in 1809, but he still retained an active interest in politics. However, the second term of presidency had taken its toll on him. His desire to keep America a neutral party during the increased naval hostilities between England and France in the Napoleonic War resulted in the Embargo Act of 1807. Yet this proved a failure, as it damaged the United States' economy without changing the situation with the European powers and "required the federal government to exercise coercive powers to enforce the embargo, thereby contradicting the Jeffersonian principle of limited government."[80] Earlier, in 1804, his daughter Maria died of childbirth, and her passing caused him to be "less enthusiastic and more fatalistic," while the world around him continued to change: "war with the British and Indians, a severe commercial panic, the rapid growth of democracy and evangelical religion, and the Missouri crisis over the spread of slavery," along with the early beginnings of the Industrial Revolution.[81] Jefferson emerged from the presidency less hopeful about the future of the world he lived in.[82]

Mammoths remained of interest to Jefferson, but this time in a very different context than before: to represent nations. In a letter to Walter Jones in 1810, he wrote "…but happily for us, the Mammoth cannot swim, nor the Leviathan move on dry land: and if we will keep out of their way, they cannot get at us."[83] In another letter to Henry Dearborn in 1811, he wrote "perhaps, if some stroke of fortune were to rid us at the same

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[80] Ellis, *American Sphynx*, 237.
[81] Ibid., 228; Wood, *Revolutionary Characters*, 111-112.
[82] Ibid.
[83] Thomas Jefferson to Walter Jones, March 5, 1810, Monticello, Virginia, Correspondence and Other Writings of Six Major Shapers of the United States, Founders Online, National Archives and Records Administration, http://founders.archives.gov/?q=%20Author%3A%22Jefferson%2C%20Thomas%22%20mammoth&s=1511311112&r=33 (accessed Spring 2015).

time from the Mammoth of the land as well as the Leviathan of the ocean."[84] His use of mammoth referred to Napoleonic France, while the leviathan may have referred to Britain.[85] This comparison is striking for a number of reasons. Despite the *incognitum* being determined by this point to be a mastodon, it had been associated with the mammoth for many years. And while the mastodon was generally accepted as an herbivore, the idea of it being a predator still persisted. In fact, when a full skeleton of the *incognitum* finally was assembled, it was displayed on tour with the tusks upside down, like fangs.[86]

Jefferson preserved this sense of massive size and predatory nature in his use of the word "mammoth." His comparison of it with the leviathan, a giant sea creature of the Bible, helped reinforce the idea of size: "I will not fail to speak of his limbs, his strength, and his graceful form."[87] Yet the use of the word "leviathan" also brought with it a powerful negative connotation from the Bible: "Firebrands stream from his mouth; sparks of fire shoot out… Strength resides in his neck; dismay goes before him… When he rises up, the mighty are terrified; they retreat before his thrashing…Nothing on earth is his equal—a creature without fear."[88] This association with a sea monster gives the mammoth a much more dangerous air. Jefferson emphasized this predatory dimension in his 1811 letter to the Marquis de Lafayette: "[God] will never abandon the whole race of

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[84] Thomas Jefferson to Henry Dearborn, August 14, 1811, Poplar Forest, Virginia, Correspondence and Other Writings of Six Major Shapers of the United States, Founders Online, National Archives and Records Administration, http://founders.archives.gov/?q=%20Author%3A%22Jefferson%2C%20Thomas%22%20mammoth&s=1511311112&r=36#R27799518110814100_6REF (accessed Spring 2015).

[85] National Archives, "Thomas Jefferson to Henry Dearborn, 14 August 1811," National Historical Publications & Records Commissions http://founders.archives.gov/?q=%20Author%3A%22Jefferson%2C%20Thomas%22%20mammoth&s=1511311112&r=36#R27799518110814100_6REF (accessed Spring 2015)

[86] Semonin, *American Monster*, 5.

[87] Job 41:42 (New International Version).

[88] Ibid., 41: 19, 22, 25, 33.

man to be *eaten up* [italics added] by the leviathans and Mammoths of a day."[89] Although this strong imagery dealt with the seizure of territory by Napoleonic France, it also spoke to Jefferson's lingering denunciation of American degeneracy.

Although Jefferson dealt with the mammoth in these letters, his change in mindset seemed to reflect his declining interest in the mammoth and American *incognitum* as a whole. The letters were among the last he wrote to even mention the word "mammoth." Two key reasons could explain this. First, the puzzle of the *incognitum* had finally been solved. The need to argue against negative interpretations of the fossil finds was thus rendered irrelevant. Secondly, the stresses of his final term as president figured largely into his final years. Jefferson retired from politics and returned to Monticello, where he spent the remainder of his life, and his attention thus shifted from the political arena to the creation of the University of Virginia.[90]

[89] Thomas Jefferson to Lafayette, January 20, 1811, Monticello, Virginia, Correspondence and Other Writings of Six Major Shapers of the United States, Founders Online, National Archives and Records Administration, http://founders.archives.gov/?q=%20Author%3A%22Jefferson%2C%20Thomas%22%20mammoth&s=1511311112&r=34 (accessed Spring 2015).

[90] Wood, *Revolutionary Characters,* 110-111; Clagett, *Scientific Jefferson Revealed*, 105-108.

Conclusion

Jefferson's fixation with mammoths and Buffon's theory of American degeneracy may seem surprising to a modern audience, given that he continued to refute the theory for several years after Buffon's death. Yet it reveals several aspects of the interaction between science and politics. First, the divisions between different disciplines were less distinct during the Enlightenment. As a result, politicians of that period tended to be more aware on the discourses on the sciences and philosophy as ideas flowed between America and Europe. In the case of Jefferson, his interest in science had stemmed from before his interest in politics, and a lot of his scientific work was done on his own time and at his own expense; he carried his scientific interests into his political work.[91]

Jefferson's work also reflected how scientific ideas were shaped by their time period. The discovery of the New World had created several challenges for traditional European science and the broader worldview that shaped it. In this context, Buffon's theory of degeneracy served as a response to the question of how to explain the world while taking into account the diversity of the plants, animals, and cultures of both the New and Old Worlds.

For Jefferson, however, the question of American degeneracy was one of national consciousness and empowerment. During the Revolutionary War, America needed to prove she could not only resist the British forces but resoundingly break free of them. The unfavorable comparison of the colonies to the Continent threatened the legitimacy of the colonists as a separate entity, for if the native animals of America were inferior to that of Europe, what did it say for the colonial inhabitants? Then, after America gained her independence, it was necessary to assert her ability to be self-sufficient and the equal of

[91] Cohen, *Science and the Founding Fathers*, 52-54.

the European powers. With the weak Articles of Confederation hampering the ability of Congress to be an effective government, America's reputation remained at risk. And when the Constitution was finally adopted, the emerging chaos in France made it even more imperative for America to become its own entity to deal with the competing powers.

Mammoths and mastodons, then, became national symbols. "To American patriots, who saw themselves as heirs to the greatness of classical antiquity, the bones truly represented an ancient nature whose natural laws had justified the founding of a new society."[92] Lacking ancient ruins or philosophers, the fossils of the mastodon, megalonyx, and other species served as "monuments of the new nation's antiquity" to generate a sense of the historical.[93] The turn to a more ancient antiquity enabled Americans to cultivate a sense of progression and purpose, as they lacked the equivalent to the Greek and Roman civilizations of Europe. Instead, "wild nature [served] as a ruin," an aftermath of the Flood.[94] For the American *incognitum*, meanwhile, its "great size and ferocity were gradually coming to symbolize the new nation's own spirit of conquest."[95] With the disappearance of a "ferocious" giant, through extinction or other means, the way was cleared for (white) man's rise to power in the region.[96] The ancient dominance of a violent, carnivorous mammoth, meanwhile, conjured the power that America's government at times lacked. Science in the form of the ideas shaping the debate on the American degeneracy theory, then, served as a larger mode of discourse in which to deal with national political issues, especially nationalism.

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[92] Semonin, *American Monster*, 276.
[93] Ibid., 12.
[94] Ibid., 12-14.
[95] Ibid., 162.
[96] Ibid., 12-14.

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