# THE FIRST US PRESIDENT WHO COLLECTED VERTEBRATED FOSSILS

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Left: *Mastodon americanum* – Center: Washington signature – Right: Portrait of George Washington

It is generally accepted that Thomas Jefferson (1743-1826), the third president of the United States, was the first president to engage in the collection of fossils. His collecting activities extended throughout North America and included the recovery of skeletal remains from mastodons, mammoths, and sloths. A particularly noteworthy specimen, a mastodon skeleton, was received during his presidency in Washington, DC, and is currently exhibited at his Monticello home in Virginia.

***Reverend Mr. Robert Annan***

Our history begins with Reverend Robert Annan, who was born in 1741, in Hilton of Carslogie, Cupar, Scotland, as the son of Robert Annan and Jean Landales. His theological education was completed at the University of Saint Andrew, where he was licensed by the Associate Presbytery of Perth in 1761. Moving to the colonies that year he joined the Associate Presbytery of Pennsylvania. In 1768, he was assigned to the Associate Reformed Church of Neelytown, New York, serving two congregations, Little Britain and Neelytown, both in New York.

During the struggle for independence, Mr. Annan advocate the American cause, working both publicly and privately to that end. In 1776, he led the congregation in sending aid to the patriots in Boston. For a time, Annan served as a chaplain in the Continental Army. In 1782, he had the privilege of meeting General Henry Knox ((1750-1806), General Marie-Joseph Lafayette (1757-1834), and General George Washington (1732-1799), who visited Annan's farm to see the mastodon bones found there.

***The Publication***

The Reverend Annan wrote what might be called a paleontological manuscript in 1785, and this was published in the Memoirs of the American Academy of Arts and Sciences in 1793 (Vol. 2, No. 1, 160-164). He perceptively guessed that his fossils, found at Walkill River (north of New York City) in 1780, might be similar to some supposed elephant bones found in England.

The title of his publication was "Accounts of a Skeleton of a large Animal, found near Hudson's River". Annan wrote his manuscript soon after a fossil discovery, but he had to abandon New York, and his papers were misplaced for a long time, until they finally appeared again and were published.

His narration was a follows: *"In the fall of the year 1780, while I resided in the state of New York, on the banks of a small river, named the Walkill, about seventy miles from the city of New York, and fifteen miles in a perpendicular line on the west side of Hudson's river, a young man, whom I had employed to drain a deep and wet swamp on my farm, digged up the remains of a very surprising animal, without taking notice of anything except the grinders* (a molar tooth) *….. After breaking one of the grinders, he threw them on the side of the ditch …… I heard nothing of the affair at that time: but within a day or two after, went out to see the work, and discovered the grinders".*

Reverend Annan continues: *"I brought them home, ordered them to be washed; and, placing them in the order in which I fancied them to have stood in the animal's jaw ……. That same day I sent for a gentleman in the neighbourhood, a native of this country, and who had travelled much through it, to know whether ever he had seen any similar to them. He was as much astonished as myself. We went to the spot, and fell eagerly to digging. We found a large number of bones, but mutilated, rotten, and broken. It was impossible to handle many of them, without breaking them. We found the vertebrae or joints of the back, lying in a row, as they had been when the animal was alive …….. On putting the pieces together, it measured twelve inches in diameter. A part of the tibia of this remained; from the cavity of which I extracted some thick matter, resembling tar mixed with blood. …… The grinders were four in number. All belonged, it is probable, to one jaw; two to one side of the mouth, and two to the other".*

***The Fossil Description***

Annan described the fossils in superb detail for someone with scarce scientific background. The description follows: *"Two of these grinders had lost the core, and nothing remained but the hard hollow ivory case. The other two retained each so much of the core as was above the gums, in which were apertures for the insertion of the nerves; the largest of these apertures with difficulty admitted the point of my little finger. These grinders are exceedingly indented. …….. One deep furrow runs the whole length of them; and, when placed two and two, as they must have stood in the jaw, there were four indentures, or furrows across that long line, which divided the surface of each pair into ten protuberances, rising in a pyramidical form, the perpendicular height of the highest of which was about an inch and one tenth".*

*"From the appearance of its monstrous grinders, it would seem as if it had been of the carnivorous kind. A gentleman who came to see the remains of it, told me, he had seen the skeleton of an elephant; but the biggest joint in it was much inferiour to what 1have described as the loin joint; though it is probable, it had lost much of its magnitude. Doctor Michaelis* (Cristian F. Michaelis), *physician general of the Hessian troops* (the term "Hessians" refers to the approximately 30,000 German troops hired by the British to help fight during the American Revolution*), who, with some other gentlemen, came to my house, after the peace, and before New York was evacuated* (the British evacuated New York City on November 25, 1783, after the American Revolutionary War ended*), in order to make further search (in which however, he was frustrated, by heavy rains having fallen) said he could not think it had been an elephant, as being in his opinion, much larger. He carried some of the bones to Germany with him. And others were sent to the museum in Philadelphia".*

***The Religious idea of Extinctions***

Another interesting idea to highlight, contradicting the religious ideas of that time, is found in Annan's publication. The concept of a total extinction of some species and the creation of others was an idea incompatible with the Bible. At the time, most naturalists interpreted the natural world through the Biblical story of creation, so there was no conception of "prehistory". Also, the thought of God creating animals that became extinct was considered impious. These religious beliefs were challenged by Annan when he wrote: *"Some gentlemen, with whom I have conversed, have supposed that their extinction (as it is probable, they are extinct) is owing to some amazing convulsion, concussion, or catastrophe, endured by the globe. But I know of none that could produce such an effect, except the flood. Earthquakes might destroy some of them, but not all. And the remains of them have been discovered in different parts of the world…….. In the American Magazine of December 1746, there is an account of a tooth and bones, of what the author calls an elephant, discovered in England, which, I am persuaded, must have been of the same species".*

***The Reference to George Washington***

In 1780, General George Washington and the Continental Army were in winter quarters near Annan's farm, and a word of the discovery reached Washington. His curiosity aroused, so he gathered some officers (Knox and Lafayette) and took a sleigh ride to see the bones for himself.

At the end of his publication, Robert Annan wrote: *"His Excellency, General Washington, came to my house to see these relicts. He told me, he had in his house a grinder* (molar) *which was found on the Ohio, much resembling these".*

Annan's short paragraph written in 1785 is enough evidence that George Washington kept fossils in his house at Mount Vernon (located on the banks of the Potomac River), becoming the first president (1789-1797) of the new US who collected fossils. Washington

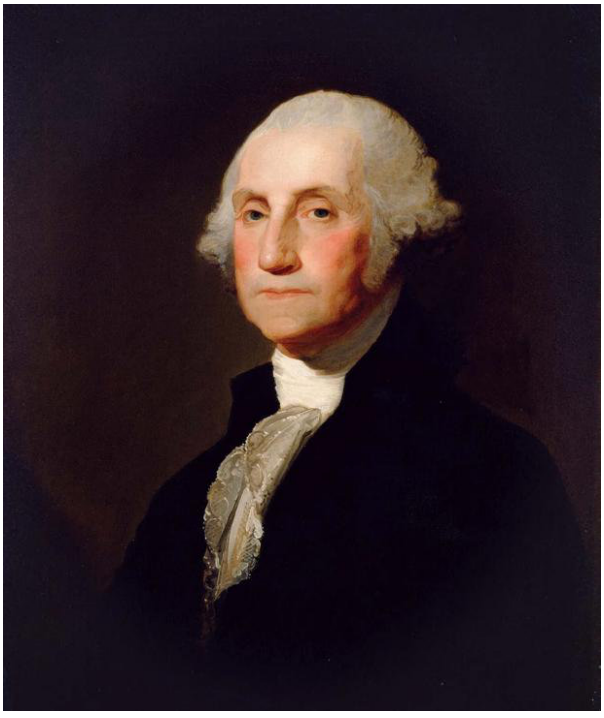
valued his Mastodon tooth throughout his lifetime, and likely displayed in the entryway to the Mount Vernon mansion, suggesting the value placed on his unusual curiosity. Those fossils described by Reverend Robert Annan, and the reference to the molar held by General Washington in his house, belonged to *Mastodon americanun*.

160 ANNAN'S *Account of a Skeleton.*

XXII. *Account of a Skeleton of a Large Animal, found near Hudſon's River. By the Rev. Mr.* ROBERT ANNAN.

His Excellency, General Waſhington, came to my houſe to ſee theſe relicts. He told me, he had in his houſe a grinder which was found on the Ohio, much reſembling theſe.

Reverend Annan's text published in the Memoirs of the American Academy of Arts and Sciences in 1793 (Vol. 2, No. 1, page 160).



Portrait of George Washington (c. 1797). Sterling and Francine Clark Art Institute, Williamstown, Massachusetts. Source: Public domain dedication (CC0) https://pap.wikipedia.org/wiki/George_Washington#/media/File:Gilbert_Stuart_Williamstown_Portrait_of_George_Washington.jpg

Mount Vernon mansion, east front, Virginia (Photograph between 1861 and 1865). Retrieved from the Library of Congress, www.loc.gov/item/2021651346/

How did Washington get his fossil? At the end of 1770, Washington made a trip to the frontier. Staying in Pittsburg on November 22nd, he invited officers and other gentlemen to dinner, among whom was a well-known trader named Dr. John Connolly, nephew of Col. G. Croghan. Two years later, on September 18th, 1772, Connolly wrote a letter to Washington describing a visit to Big Bone Lick (near the Ohio River in Kentucky). At the beginning of the letter, Connelly wrote "In my return from the Illinois I could not refrain from accompanying Majr Hamilton (acting commandant of the Illinois country) & the other Gentn on a Visit to the great Licks, where the Elephant's Bones render them more particularly remarkable; & as they were all employed in collecting Curiosities agreeable to their respective inclinations, I just stumbled upon the Tooth I now present you with, begging your Acceptance thereof, as a Testimonial of my regard for your Person". Connolly continued the letter *"These Licks (so much frequented by Buffaloe at present) are an assemblage of a Variety of Springs … The Lick particularly where the large Bones are now found, is the most Westerly One … in the sides of which you may perceive a number of Bones, of different sizes, variously projecting …. I discovered an under Jaw very little affected by Time with all the Teeth perfectly secure".*

The Big Bone Lick, recognized today as the site where American fossil collecting began, is located at what is now Boone County, Kentucky, where amid sulfur springs and salt formations, mastodons and other large prehistoric animals were trapped by the soft soil. While there is no account of George Washington visiting Big Bone Lick, his diary entry for Monday, November 19th,

1770, included a list of places along the Ohio River with distances from place to place, referred to Fort Pitt at the head of the river in Pennsylvania. During the American Revolutionary War, Fort Pitt served as the American headquarters for the western theater of the war. On page 320, Washington wrote, *"Where the Elephants Bones were found E 560¼ miles"*, so he was undoubtedly aware of the site, at least two years before receiving the tooth from Dr. John Connolly in 1772.

***Mastodon americanum***

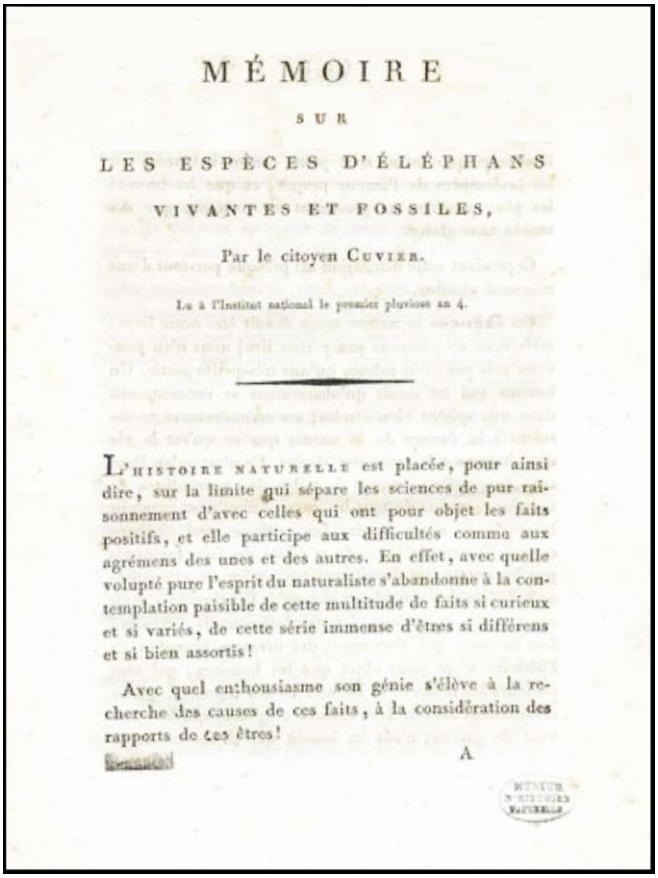
The mastodon is a member of the order Proboscidea, which also includes the mammoths, modern elephants, and a wide variety of extinct elephant-like species that evolved over the last 60 Ma. Mastodons are only distant cousins of mammoths and elephants. Mastodon americanum, known as an "American mastodon" or simply "mastodon," had a long and complex paleontological history spanning all the way back to 1705, when the first fossils were uncovered in the American colonies, in a town named Claverack (close to the Hudson River), New York.

Because of the uniquely shaped molars with no modern analogues, the species caught the attention of European researchers and influential Americans before and after the American Revolution. Taxonomically, it was first recognized as a distinct species (Elephas americanus) in 1792 by the Scottish scientist Robert Kerr (1757-1813), and then classified to its own genus, Mammut by the German naturalist Johann Friedrich Blumenbach (1752-1840) in 1799. The genus name "Mammut" refers to the German translation for "mammoth."

As early as 1783, the mentioned German physician Christian Friedrich Michaelis (1754-1814) commissioned the American painter Charles Willson Peale (1741-1827) to draw "mammutid fossils" from a collection. Peale opened his own museum in Philadelphia, and in 1786 opened the natural history collection, housing a diverse collection of botanical, biological, and archaeological specimens.

The Peale Museum was the first to display a mastodon skeleton found in New York (which in Peale's time was referred to as mammoth bones). These common names were amended in 1798 by Georges Cuvier (1769-1832) in his publication "Mémoires sur les espèces d'éléphants vivants et fossils" and are still employed today.

Mastodon tooth from Mattapoisett River, Massachusetts. Robbins Museum, Middleborough, Massachusetts. Scale bar 8 cm. Source: Public Domain Dedication (CC0). https://timelessmoon.getarchive.net/amp/media/mastodon-tooth-from-mattapoisett-river-robbins-museum-middleborough-massachusetts-a12f75



MÉMOIRE

SUR

LES ESPÈCES D'ÉLÉPHANS

VIVANTES ET FOSSILES,

Par le citoyen CUVIER.

Lu à l'Institut national le premier pluviose an 4.

L'HISTOIRE NATURELLE est placée, pour ainsi dire, sur la limite qui sépare les sciences de pur raisonnement d'avec celles qui ont pour objet les faits positifs, et elle participe aux difficultés comme aux agrémens des unes et des autres. En effet, avec quelle volupté pure l'esprit du naturaliste s'abandonne à la contemplation paisible de cette multitude de faits si curieux et si variés, de cette série immense d'êtres si différens et si bien assortis!

Avec quel enthousiasme son génie s'élève à la recherche des causes de ces faits, à la considération des rapports de ces êtres!

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First page of "Mémoires sur les espèces d'éléphants vivants et fossils" by George Cuvier (1798). Source: https://bibliotheques.mnhn.fr/medias/detailstatic.aspx?INSTANCE=EXPLOITATION&RSC_BASE=IFD&RSC_DOCID=MNHN_HH39A


Mounted *M. americanum* skeleton at the American Museum of Natural History, New York. By R. Somma - CC BY-SA 2.0, https://commons.wikimedia.org/w/index.php?curid=6319303

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