

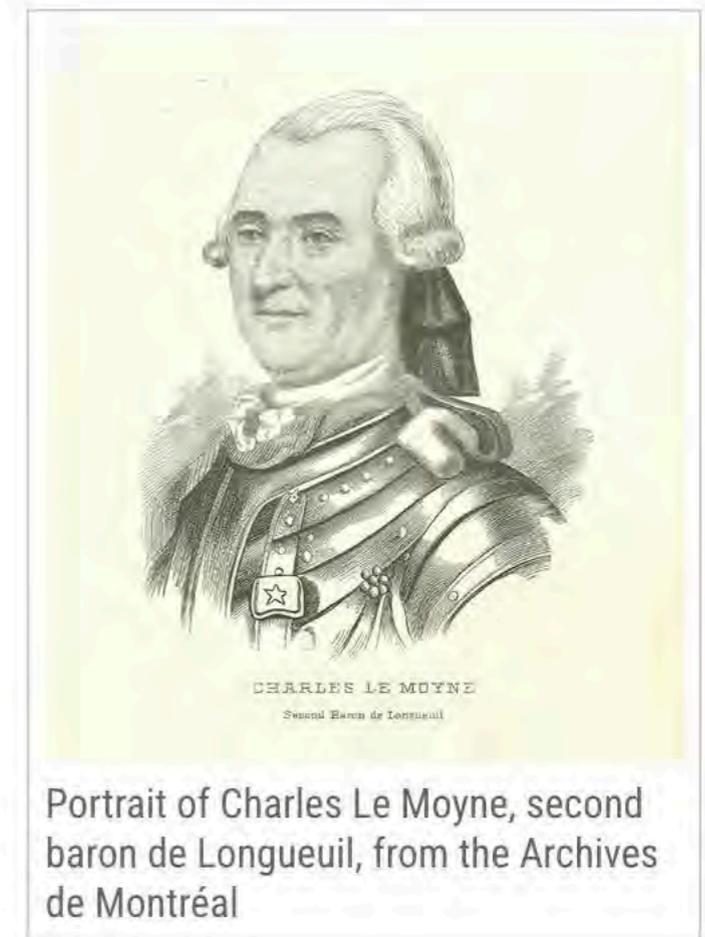


## The Birth of North American Vertebrate Paleontology

**A**drienne Mayor, in her interesting 2005 book, “Fossil Legends of the First Americans,” made a vivid description of some events that occurred in the summer of 1739 in the Ohio River, which led to the birth of American vertebrate paleontology. The protagonists were: Charles Le Moyne, second baron de Longueuil and major of Montreal, and an Indian hunting party (Algonquian-speaking Abenakis), who were part of a French military expedition traveling by lakes and rivers from Quebec to New Orleans.

The French and Indian War was one of many conflicts fought between the French and the British during the Second Hundred Years’ War that lasted from 1689 to 1815. Between 1700 and 1750, the colonial populations of Canada and Louisiana increased significantly, forcing expansion into the Ohio River Valley region. During this period, the French strengthened military ties and existing trade relationships with numerous Indian groups, sparking competition with the British for indigenous allies. The struggle for control over North America developed into the French and Indian War (1754–1763), which confronted the North American colonies of the British Empire against those of the French, each side being supported by various Native American tribes. At the beginning of the war, the French colonies were home to approximately 60,000 settlers, whereas the British colonies boasted nearly 2 million inhabitants. Outnumbered, the French relied significantly on their native allies to combat the British forces.

The French colonists were supported by the Wabanaki Confederacy members: Abenaki, Mi’kmaq, Algonquin, Lenni Lenape, Passamaquoddy, Penobscot and some others like Ojibwa, Ottawa, Shawnee and the Wendat tribe. The British colonists were supported several times by the Iroquois, Catawba, Chickasaw and Cherokee tribes. Most of the fighting took place primarily along the frontiers between New France and the British colonies, from Newfoundland in the north to the Province of Virginia in the south. It began with a dispute over control of the confluence of the Allegheny River and Monongahela River called the Forks of Ohio, and the site of the French Fort Duquesne (the hill where the famous Fort Duquesne battle was fought in 1758, is today called Grant Street, in the city of Pittsburgh).



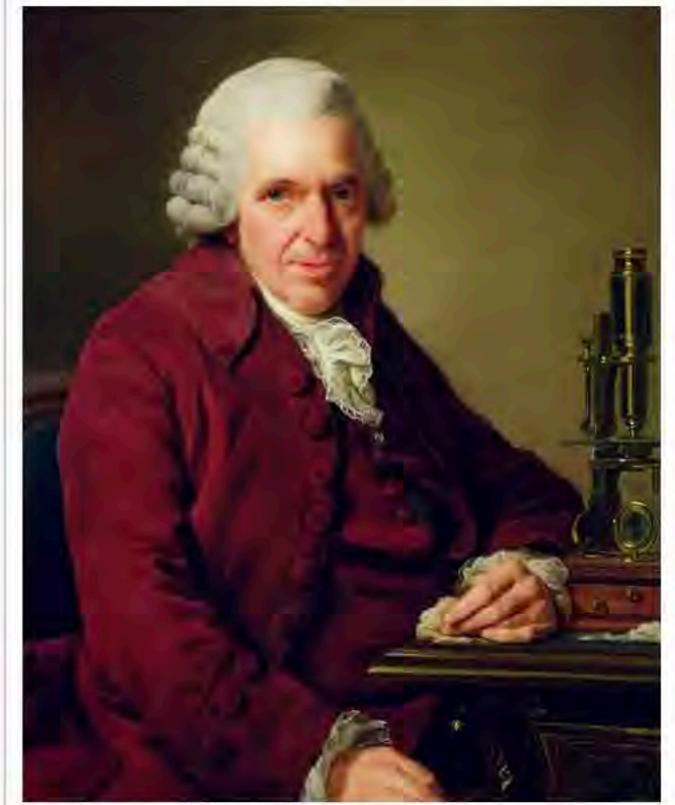
Portrait of Charles Le Moyne, second baron de Longueuil, from the Archives de Montréal

## The Expedition

In June 1739 the town major of Montreal, Charles Le Moyne, second baron de Longueuil, was sent by Governor Charles de Beauharnois to Louisiana to aid the founder and governor of that colony, Jean-Baptiste Le Moyne de Bienville, Longueuil's uncle. Le Moyne Longueuil's mission was to help repel the pro-British Chickasaw Indians who were besieging New Orleans and blockading the Mississippi. During the beginning of 1739, Longueuil spent his time recruiting Indian men for his army in southern Quebec, most probably with the assistance of Jesuit missionaries. At that time, the christianized Abenaki people were the French's strongest and most dependable allies, in opposition to the Iroquois and Hurons, who were their enemies. Given this context, if indigenous men in Le Moyne's army were recruited by the Jesuits, it is highly probable that they were predominantly Abenakis.

The expedition of 442 men, composed of 123 French soldiers and 319 Native American warriors departing from Quebec, was commanded by Charles Le Moyne de Longueuil himself. The fleet of war canoes left Montreal paddling down the St. Lawrence River, Lake Ontario, Oswego River, Lake Erie and Lake Chautauqua (which was reached late in August). Then they turned southward to the Allegheny River, followed it to the Ohio River, near the place where Fort Duquesne later stood. After that, they descended the Ohio heading for the Mississippi River. Their original target destination was the French port of New Orleans, to aid the governor of that French colony.

One night, during a stop along the lower Ohio River, a party of Indian hunters' canoes returned to feed the army of French Canadians and Indians camped along the river (in what is now the state of Kentucky). The canoes were laden with more than fresh wild meat. A bunch of curious soldiers gathered around to watch the Indians as they unloaded a strange cargo: an enormous fossilized femur nearly as tall as a man, several huge molars and a great ivory tusk. According to an early French map indicating the "place where elephant bones were found" in 1739, the Indians went hunting on the southern side of the lower Ohio River. They were in the area of the rapids, some miles east of modern-day Louisville, Ky. Le Moyne de Longueuil's fossil locality was mapped by Gaspard Joseph Chaussegros de Lery, an 18-year-old engineer who accompanied the expedition, and it was recorded on a manuscript drawn up from de Lery's data in 1740 by Philippe de Hautmesnil de Mandeville, Sieur de Larigny, a senior infantry captain with the Louisiana regiment.



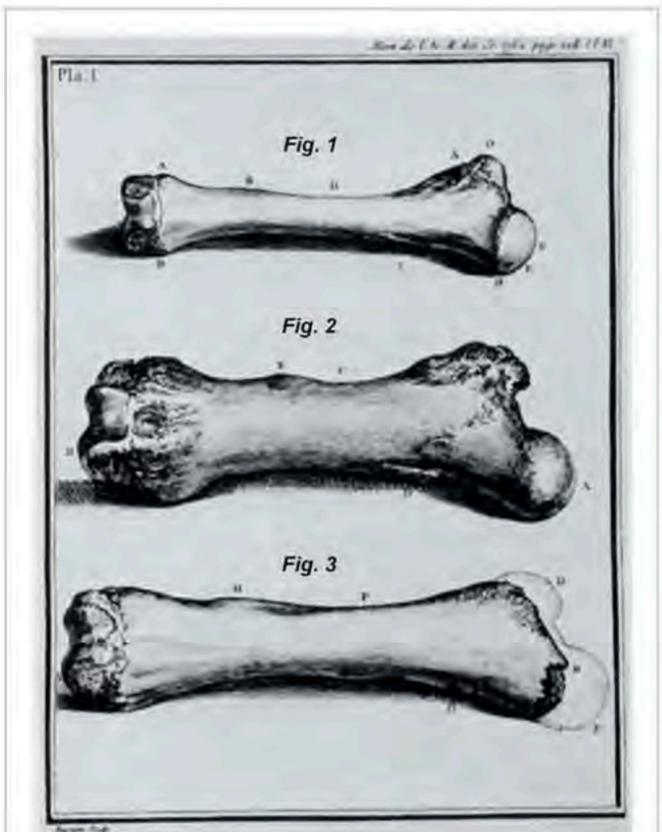
Portrait of French naturalist Louis Jean-Marie Daubenton (1716-1800) by Alexander Roslin (1791). Musée des Beaux-Arts. Orléans, France.

After the perilous journey down the Ohio and Mississippi rivers, and withstanding attacks by the Chickasaws, ultimately the fossils arrived safely to Fort Assumption on the Mississippi River, near the present site of Memphis, where Longueuil's army joined the Louisiana troops under Bienville. At the end, Le Moyne de Longueuil's expedition was considered a military failure. The Chickasaws defeated the French and Indian armies and the French ultimately surrendered to the English later in 1763. After the conclusion of the Chickasaw Campaign in the spring of 1740, Le Moyne de Longueuil went on to New Orleans, taking the fossils with him. Recognizing the importance of these fossils, they sailed crossing the Atlantic to France, reaching Paris in late 1740. The fossils were placed in Louis XV's cabinet of curiosities ("du cabinet du Roi"), under the direction of the famous French naturalist George-Louis Leclerc, count of Buffon. A few years later, the big bone, molars and tusk collected from the Ohio River by the unnamed Indian hunters in Longueuil's army made scientific history, becoming the first American fossils ever studied by scientists, marking as Mayor wisely pointed out in her book: the official birth of the American vertebrate paleontology.

## The Study of the American Fossils

In 1762, Louis Jean-Marie Daubenton a member of the French Academy of Sciences, keeper and demonstrator of the king's cabinet in the Jardin du Roi, and elected member of the American Philosophical Society, read his scientific paper on the Ohio fossils to the French Royal Academy. Dealing primarily with the femur taken to France by Le Moyne de Longueuil. Daubenton attempted to elucidate its relationships with a figure in which this femur, one from a Siberian mammoth, and one from a recent elephant, were compared. This comparative method for identifying fossils is a procedure that seems quite obvious now, but it was long in being adopted by the scientific community. It is one of the most basic principles in the rise of vertebrate paleontology, and it may fairly be dated from Daubenton.

Daubenton credited the anonymous Indians ("les Sauvages") as the finders, mentioning the events of their discovery and establishing the comparative procedure for identifying those vertebrate fossils. He also recognized the femur and tusks as elephantine, but the molars were wrongly interpreted as belonging to a species of carnivorous hippopotamus. More and more fossils from the New World were studied and compared over the next century. However, it was not until the late 18th century that it was definitively established that the large bone and the molars discovered by the Indian hunters belonged to a distinct herbivorous species related to the elephant, specifically the extinct North American mastodon (*Mammuth americanum*).



Comparison by Daubenton (1764) of femora from a recent elephant (fig. 1), American mastodon from the Longueuil's expedition (fig. 2), and a Siberian mammoth (fig. 3). Modified from Gaylord Simpson (1942).

So, the discovery made by the Indians in 1739 that led to Daubenton's publications (Daubenton 1764a, 1764b and 1764c), should be hailed in the annals of scientific history as the beginning of the American paleontology. In 1821, the great French naturalist Jean Léopold Nicolas Frédéric, baron of Cuvier, known as Georges Cuvier, also credited the Indian hunters in Le Moyne de Longueuil's army with the discovery of the first specimens of the "mammoth d'Amérique". From the beginning, Daubenton and Cuvier included the so-called "les Sauvages" as part of the discovery.

It is clear that for thousands of years, the Indians collected fossils for their own uses. For Native American cultures, "bones" often hold a significant spiritual meaning, representing the essence of life, connection to the animal world and sometimes even the afterlife, with different tribes utilizing bones for tools, ornaments and ritualistic practices due to their durability and symbolic value. Essentially, bones were seen as a tangible reminder of the life force within an animal, making them highly revered. But in this epoch, European scientists were still struggling to understand the meaning of these petrified remains of large and unknown creatures.

Unfortunately, throughout the years, the 1739 episode at what is now known as Big Bone Lick, has frequently been described from the perspective of European scientists, obliterating the importance of the Indian fossil finders during Le Moyne de Longueuil's expedition. In 1942, American paleontologist George Gaylord Simpson published a paper in Proceedings of the American Philosophical Society, Vol. 86, titled: "The Beginnings of Vertebrate Paleontology in North America." In this publication, Gaylord Simpson – perhaps the most influential paleontologist of the 20th century and a major participant in the modern evolutionary synthesis – discussed the beginnings of vertebrate paleontology in North America, and wrote in a footnote: "Indians were probably involved in the discovery of this locality, but even in that instance they cannot fairly be called the discoverers."

Gaylord Simpson argued that the full credit should go to Charles Le Moyne de Longueuil alone, rejecting Daubenton's description that the Indian hunters were the only ones who actually observed the fossils in situ and that they were responsible for collecting and delivering them to Longueuil.

Gaylord Simpson also wrote: "Daubenton insisted at some length that the bones were found by savages, incapable of judging or guaranteeing their association."

Even though Gaylord Simpson was a superb paleontologist, his colossal eagerness to place Longueuil at center stage led him to distort and mask a historical event.



## Big Bone Lick

A swamp area, now called Big Bone Lick State Historic Site, is considered the place where the Abenaki guides traveling with Longueuil's army discovered the mastodon fossils in 1739. However, today at Big Bone Lick State Park in Kentucky, an official landmark reads: "Discovered in 1739 by the French Capt. Charles Le Moyne de Longueuil, this famous saline-sulfur spring was frequented for thousands of years by Indians and vast herds of buffalo, deer and other animals. The first English explorers found here scattered over the lick countless bones and teeth of the extinct Pleistocene elephants, the Mammoth and the Mastodon."

In this landmark, there is no mention that Indian hunters actually discovered the fossils and brought them back to Le Moyne de Longueuil's camp. Here too, at the "Birthplace of American Vertebrate Paleontology," Gaylord Simpson's misrepresented vision endures wrongly.

In her book, Mayor stated that, clearly, it was the Indians' choice to collect the heavy bones and carry them to their camp that day in 1739. That simple decision was the trigger that initiated paleontological inquiries by Europeans in the New World soon after. Undoubtedly the physical evidence of the fossils themselves and the French historical record that it was "les Sauvages" supplying wild meat for Le Moyne de Longueuil's army who discovered the fossils in 1739, support the idea that the Indian party deserves this long-forgotten recognition. Acknowledging this fact, the first turning point in American paleontological history has been reached.

An examination of the Philippe de Mandeville's map casts some doubt that Le Moyne de Longueuil's fossil place is located in the now-called Big Bone Lick site.

Simpson in 1942 stated: "At present it cannot be affirmed that Longueuil's locality is known or that it was, or was not, Big Bone Lick."

The problem is that the actual Ohio River does not match the map of the river drawn in 1740 by Mandeville in that area. It is believed by Simpson however, that Longueuil's fossil locality is situated on the south side of the Ohio (now Kentucky) between the present cities of Covington and Louisville.

## The Indian/Longueuil Fossil at the National Museum of Natural History in Paris

Since about 1865, guarding the entrance of the Paleontological Gallery, at the top of an iron staircase, two great mastodon femurs from the New World were held upright by iron supports. A South American bone on the left was labeled as a supposed gift from the great German geographer and naturalist Alexander von Humboldt to Cuvier (today it is labeled, “Stegomastodon from Argentina, a gift of M. Bonnement”). The North American mastodon femur to the right was labeled “A Gift of Thomas Jefferson.” Nonetheless, as Mayor mentioned in her book, an American scholar and associate professor at Princeton University studying Jefferson’s papers in Paris, Howard C. Rice, uncovered a long-dated mistake in 1951. By comparing the meticulous records kept by Thomas Jefferson of the fossils he sent to Paris, and also Cuvier’s records of the specimens received, Rice discovered a mistake and established that the North American femur perfectly matches Daubenton’s detailed drawing of the fossil brought to Paris in 1740 by Longueuil. Because of that, there is no doubt that this femur is the very same one found by the Abenaki hunters in the mentioned expedition in 1739. But as Tassy pointed out, it was not until 2001 that the label was partially corrected. Now the North American femur at the National Museum of Natural History in Paris reads: “Proboscidiens—Mastodonte americain (Mammut americanum) – Fe´mur gauche – Gisement de Big Bone Lick (Kentucky, USA). Pleistocene re´cent—Ce fe´mur, de´couvert au bord de la rivie`re Ohio par le baron de Longueuil en 1739, a e´te´ de´crit en 1764 par L.J.M. Daubenton qui en de´montra les affinite´s e´le´phantines.”

Translation: Unfortunately, the real first finders of the *Mammut americanum* are still ignored.



Original Mastodon left femur, discovered in 1739 by Indian hunters on the Ohio River, and brought to Paris by Charles Le Moyne, second baron de Longueuil in 1740. Described in 1764 by Louis Jean-Marie Daubenton, it is actually on display on the Paleontological Gallery at the National Museum of Natural History in Paris. Tag is 12 centimeters. Modified from TASSY (2002).

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