

## Brief Note

### How the Mastodon Got Its Name: The Southwest Virginia Connection\*

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The mastodon is so-named because the protuberances on its teeth look like the nipples of a human breast.<sup>1</sup> In the *Oxford English Dictionary* we find the following entry:

Mastodon. *Palaeont.* [mod. L., f. Gr. mast-os breast · + odont-, odons tooth. The word was used in Fr. form (*mastodonte*) by [Georges] Cuvier in 1806 in *Ann. Mus. Hist. Nat. de Paris*, VIII, 270] A large extinct mammal resembling the elephant, characterized by having nipple-shaped tubercles in pairs on the crowns of the molar teeth.<sup>2</sup>

Below is a picture of a mastodon tooth on display at the Museum of the Middle Appalachians in Saltville. This specimen was recovered from the spoil piles created by a construction project in the Saltville



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valley. The tooth was reassembled from about ten pieces by the manager of the museum, Harry Haynes. It is easy to see from this specimen why Cuvier was inspired to christen the mastodon the nipple-tooth creature.

The paleontologist Georges Cuvier (1769–1832) named the mastodon. Cuvier was born in Würtemberg, educated in Stuttgart, and spent most of his life in Paris as a professor of natural history and anatomy. He rose to great prominence and, near the end of his life, was raised to the French peerage.<sup>3</sup>

In 1812 Cuvier published a collection of his articles dealing with fossil vertebrate animals that had appeared over the preceding ten years in the *Annals of the Paris Museum of Natural History*. The collection, which included added commentary, was titled *Recherches sur les ossements fossiles de quadrupèdes ou ...*<sup>4</sup> This work established beyond doubt that the remains of extinct species of animals exist in the fossil record, and introduced into history the notion that there were "...a succession of creations before the appearance of human life, culminating in a relatively recent catastrophe that gave birth to human history."<sup>5</sup> It is a magnificent work. Here are three assessments of it:

Cuvier's style is clear and concise, and he has the gift of vivid description ... In the whole literature of comparative anatomy and paleontology there is scarcely any work that can rank with this great masterpiece of Cuvier.<sup>6</sup>

[The] Inauguration of vertebrate paleontology ...<sup>7</sup>

[This] great work ... has never been surpassed as a masterpiece of the comparative method of anatomical investigation, and has furnished to the palaeontologist the indispensable implements of research.<sup>8</sup>

In an essay titled "Sur Grande Mastodonte,"<sup>9</sup> which appears in *Recherches sur les ossements fossiles de quadrupèdes ou...*, Cuvier coins and uses the word "mastodonte,"<sup>10</sup> subsequently shortened by English speakers to mastodon.

If the foregoing represented the entire story, there would be no place for this article in a journal devoted to studies of history west of the Blue Ridge. But of course there is a geographic connection which comes in the following excerpt from "Sur Grande Mastodonte"<sup>11</sup> quoted first in the original French and then in a loose English translation:

M. Jefferson, dans ses *Observations [sic] sur la Virginie* (trad. fr. p. 101), rapporte qu'un M. Stanley, emmené par les sauvages à l'ouest du *Missouri*, en vit de grands dépôts sur les bords d'un rivièrre qui coulait elle-même vers l'ouest. Suivant le même auteur, on en a trouvé sur la branche de la *Tennésie*, nommée *Nord-Holston*, derrière les *Alleghannys* de la *Caroline*, par 36° degrés de latitude Nord, aussi dans des marais salés. C'étoit, a cette époque, le lieu le plus méridional où l'on en ait eu connoissance... .

Mr. Jefferson, in his *Notes on Virginia* (French translation, p. 101), reports that Mr. Stanley, taken by natives west beyond the *Missouri [river]*, saw large deposits of them [fossil teeth and bones] on the edges of a river that flows towards the west. According to the same author [Jefferson], one can find them on the branch of *Tennessee river*, called the *North-Holston*, beyond the *Alleghenies* of the *Carolinas* at 36° degrees north latitude, also in salt marshes. This place [Saltville] being at this time, the southernmost place where there is knowledge of them... .

Thomas Jefferson was keenly interested in fossil bones, particularly large ones, as well as in many other aspects of archeology. In his classic work of Virginia history, *Notes on the State of Virginia*, Jefferson described the large fossil teeth found at the salt springs on the North Fork of the Holston River.<sup>12</sup> So when Cuvier, in his historic essay, cited Jefferson as an authority, Cuvier himself was, in part, relying on evidence from the North Holston salines — located at the site of today's Saltville.

Jefferson had first learned about the presence of large fossil teeth at the North Holston salines in 1782, when he received an actual tooth, which was accompanied by a letter of transmittal<sup>13</sup> from Arthur Campbell, who was in charge of the recently opened salt works.

Thus it was via the writings of Thomas Jefferson that specimens of mastodon teeth from Southwest Virginia were known to Cuvier when he was writing his book, and they were specifically acknowledged by him. In this way, a small place in southwestern Virginia plays a tiny, but distinctive part, in a large and important scientific story.

## Acknowledgments

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the story told here. Thanks to Gary Richardson and Jackie Moore of Newman Library, Virginia Tech, who kindly provided a computer readable copy of Cuvier's book. Thanks to an anonymous referee for helpful comments.

## Endnotes

1. Mastectomy is a familiar modern use of the combining Greek form masto-, pertaining to the female breast.
2. Anonymous, Oxford: *The Compact Edition of the Oxford English Dictionary*, 1971 (reprint of 1933 edition).
3. Karl von Zittel, *History of Geology and Palaeontology*, trans. Maria M. Ogilvie-Gordon (London: Walter Scott, 1908), p. 136; hereafter cited as *History of Geology*.
4. Georges Cuvier, *Recherches sur les ossemens fossiles de quadrupèdes ou, l'on rétablit les caractères de plusieurs espèces d'animaux que les révolutions du globe paroissent avoir détruites...* (Paris: Deterville, 1812); hereafter cited as *Recherches sur les ossemens fossiles*. The title loosely translates as *Research on the fossil remains of quadrupeds or, reestablishing the characteristics of several species of animals that global revolutions have made extinct*.
5. Paul Semonin, *American Monster: How the Nation's First Prehistoric Creature Became a Symbol of National Identity* (New York: New York University Press, 2000), p. 368.
6. *History of Geology*, pp. 136–7.
7. Harrison D. Horblit, *One Hundred Books Famous in Science* (New York: Grolier Club, 1964). (The catalog of an exhibition held that year at the Grolier Club.) The quote is the sobriquet applied to Cuvier's book when it was exhibited. The frontispiece of *Recherches sur les ossemens fossiles* is plate 20a (no page number) in the Horblit catalog.
8. W. B. Scott, "The Palaeontological Record," chapter XI, pp. 184–99 in *Darwin and Modern Science — Essays in commemoration of the centenary of the birth of Charles Darwin and of the fiftieth anniversary of the publication of The Origin of Species*, ed. A. C. Seward (Cambridge: Cambridge University Press, 1909). The cited quotation comes from p. 186.
9. Georges Cuvier, "Sur le Grande Mastodonte" ("On the Large Mastodon"), pp. 1–43 in *Recherches sur les ossemens fossiles*.
10. Cuvier writes (in loose translation) on page 3 of "Sur le Grande Mastodonte": "We have coined the word *mastodonte* from two Greek words that signify teeth-mammary, and express their principal character."
11. Georges Cuvier. "Sur le Grande Mastodonte," p. 13.
12. Thomas Jefferson, *Notes on the State of Virginia* (New York: W. W. Norton Company, 1972). (Original edition London: John Stockdale, 1787.) The Holston salines, mentioned by Cuvier as a source of mastodon teeth, are discussed on pp. 43-4 of the reprint edition.
13. Julian P. Boyd, ed., *The Papers of Thomas Jefferson*, volume 6, 21 May 1781 to 1 March 1784 (Princeton, N.J.: Princeton University Press, 1952), p. 201. Letter to Thomas Jefferson from Arthur Campbell.