

Evidence for the Recent Existence of Mammoths and Mastodons: Implications for Creation and Evolution

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Abstract

Most evolutionists believe the woolly mammoth (*Mammuthus primigenius*) was extirpated from mainland Eurasia and North America approximately 10,000 years ago, with the last individuals surviving on Wrangel Island until 3,700 years ago. Similarly, the American mastodon (*Mammot americanum*) is believed to have gone extinct circa 10,000 years ago. This paper examines the hard data conflicting with these interpretations, including an Egyptian painting of a dwarf mammoth, surviving mastodon intestinal bacteria, sedimentary ancient DNA, and datable artifacts portraying proboscideans. This evidence suggests that mammoths and mastodons survived much later than evolutionists believe, perhaps as late as 800 years ago. It is concluded that the evolutionists' estimates for the extinction dates of mammoths and mastodons are in error, which not only affects their timescale but also creates problems for their hypotheses on the causes of the end-Pleistocene extinction event.

Introduction

Mammoths were hairy, elephantlike creatures that thrived before and during the Ice Age (Figure 1). Mastodons were superficially similar to mammoths; however, differences exist that suggest mastodons and mammoths were representatives of separate created kinds (Lister and Bahn, 1994, p. 22; Dixon

et al. 1988, pp. 244–245). According to the standard evolutionary timescale, the ancestors of mammoths and elephants lived about 55 million years ago. *Mammuthus* (*M. subplanifrons*) supposedly evolved around 4 million years ago in Africa (Lister and Sher, 2001). The genus, represented by *Mammuthus primigenius*, *M. columbi*, and

M. jeffersonii, allegedly went extinct in Siberia and North America about 10,000 years ago, along with *Mammot americanum*, the American mastodon (Lister and Bahn, 1994, pp. 19, 125). The last living mammoths on Earth allegedly died out about 3,700 years ago on Wrangel Island north of Siberia (Vartanyan et al., 1993).

This paper will examine the evidence from archeology, bacteriology, ¹⁴C (carbon-14) dating, paleontology, and sedimentary ancient DNA that indicate that mammoths and mastodons did not become extinct 10,000 years ago but

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Figure 1. Artist's rendition of a herd of woolly mammoths, *Mammuthus primigenius*. Illustration by Charles R. Knight, copyright © Rhoda Steel Kalt. Used by permission.

rather survived for a significant amount of time after the Flood.

A Biblical Perspective

According to the Bible, the proboscideans were created with the rest of the land animals on Day 6 of the Creation Week, about 6,000 years ago. Proboscidean populations underwent an extreme reduction at the time of the Flood, probably about 4,400 years ago (Ussher, 2003, p. 19), but they were preserved in the ark to repopulate the earth. The so-called Pleistocene extinction, when the mammoths, mastodons, and other Ice Age megafauna supposedly became extinct, probably occurred after the Flood (Oard, 2004, pp. 189–192; Oard 2010). The mammoths and mastodons may have become extinct in the early post-Flood years, but evidence discussed in this paper suggests they persisted in small numbers long into the post-Flood era.

No proboscidean is ever mentioned in the Bible. Some believe the behemoth of Job 40 was an elephant or mammoth, but the description does not fit either of these animals (Ste. Marie, 2010, and references therein). However,

there are thirteen references to ivory in the Bible (1 Kings 10:18, 22; 22:39; 2 Chronicles 9:17, 21; Psalm 45:8; Song of Solomon 5:14; 7:4; Ezekiel 27:6, 15; Amos 3:15; 6:4; Revelation 18:12).

Results

Several types of evidences were found that indicate *Mammot* and *Mammuthus* were alive long after their supposed extinction. The evidence comes not only from Siberia and North America, but also from Egypt and South America. (Table I summarizes the evidence discussed in this paper.)

Artistic Portrayals

Several pieces of rock art have been found that seem to portray proboscideans. These petroglyphs are controversial because their intended meaning is not always indisputably clear. In addition, there is no completely reliable method for dating rock art (Barnes, 1979, p. 197; Malotki and Weaver, 2002, pp. xvi–xvii; Malotki and Wallace, 2011, pp. 143, 149). Nevertheless, the following examples are offered of portrayals of proboscideans that indicate mammoths

or mastodons were alive much later than evolutionists currently assume.

At Flora Vista, New Mexico, among Indian ruins dated to AD 1200, two stone slabs were found on which have been carved portrayals of what appears to be a proboscidean. The depictions suggest the artist witnessed a living proboscidean in North America around AD 1200 (Figures 2 and 3; Swift, 1997a).

Possible examples of mammoth pictographs have been found near Moab, Utah, Thousand Lake Mountain, Utah, and Shay Canyon, Colorado. The pictograph near Moab shows many of the mammoth's diagnostic features. Barnes (1979, p. 203) states, "No rock art known to be older than about 1,000 years resembles the sophistication of design and technique that was used in making these mammoths." This date places these pictures in the time of the Anasazi Indians, who lived from 150 BC to AD 1200 (Figures 4 to 7; Swift, 1997a). Barnes (1979, p. 203) believes that this dating indicates that the petroglyphs were not meant to depict mammoths or mastodons but rather modern elephants. Malotki and Weaver (2002, p. 192) suggest that the Moab petroglyph may be a depiction of a bear with a fish in its

| Evidence | Identification | Date |
|--------------------------------|----------------------------------|-----------------|
| Carvings on stone slabs | Unknown Proboscidean | 800 ya |
| Petroglyphs | <i>Mammuthus</i> or both | 1000 ya |
| Urals Pictographs | <i>Mammuthus</i> | 6390–6080 ya |
| Mayan Proboscidean Sculpture | Mammoth? or Indian Elephant? | 1,000–2,000 ya |
| Mexican Proboscidean Sculpture | Mammoth? | ? |
| Codex Borgia Figure | Proboscidean? | 800–700 ya |
| Egyptian Mammoth Painting | <i>Mammuthus creticus</i> ? | 3,500 ya |
| Fossils | Unknown Mastodon | <5000 ya |
| Skeleton, Ecuador | Unknown Mastodon | ca. AD 30 |
| Skeleton/archaeological | Unknown Mastodon | 2nd-4th century |
| Cuvier's Proboscidean Foot | <i>Mammut</i> ? | ? |
| Burning Tree Mastodon | <i>Mammut americanum</i> | ? Recent |
| 14C Dates | <i>Mammuthus</i> | ca. AD 1860 |
| sedaDNA | <i>Mammuthus primigenius</i> | 7,600 ya |
| Snowmass Fossil Site | <i>Mammuthus</i> & <i>Mammut</i> | Recent |

Table I. A summary of the scientific evidence indicating a recent existence for mammoths (*Mammuthus*) and mastodons (*Mammut*). The pieces of evidence are listed here in the order they are discussed in the paper. ya = years ago.



Figure 2. The carved slab from Flora Vista, New Mexico, which includes portrayals of some type of proboscidean. Photograph copyright © Dennis Swift. Used by permission.



Figure 3. Sketch showing the figures and symbols on the carved slab in Figure 2. Illustration copyright © Dennis Swift. Used by permission.

mouth. Unfortunately, like many other petroglyphs, it has been vandalized by bullet holes in recent years, making further analysis difficult.

In Ignatievskaya Cave in the Ural Mountains of Russia are several pictographs painted on the cave walls with charcoal and other materials. Included among these pictographs are some that appear to represent Ice Age animals, including mammoths. Steelman et al. (2002) collected a small sample of charcoal from one of the mammoth depictions, and it was dated at 7370 ± 50 ^{14}C years old (6390–6080 calibrated years old). No convincing evidence existed for a significant amount of carbon contamination that would have skewed the date.

Smith (1915) discussed a sculpture of what seems to be a proboscidean found in Copan (a Mayan site in Honduras [Corliss, 1996, p. 56]). Smith (1915) disputed the notion that it represents a tapir or tortoise, and most modern archaeologists believe the sculpture



Figure 4. The Moab Mammoth Petroglyph. Photograph copyright © Dennis Swift. Used by permission.



Figure 5. Another view of the Moab Mammoth Petroglyph. Photograph copyright © Dennis Swift. Used by permission.

represents a macaw (Corliss, 1996, p. 56.). Despite the close similarity between the sculpture and a proboscidean, Smith (1915) pointed out several errors in the sculpture's representation of an

elephant. He proposed that these errors indicate that the sculpture was copied from another depiction, and the artist had not seen a living elephant. He believed it actually represents an Indian

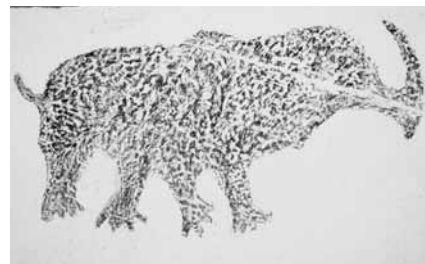


Figure 6. Rock art etching of the Moab Mammoth Petroglyph (see Figures 4–5). Illustration copyright © Dennis Swift. Used by permission.

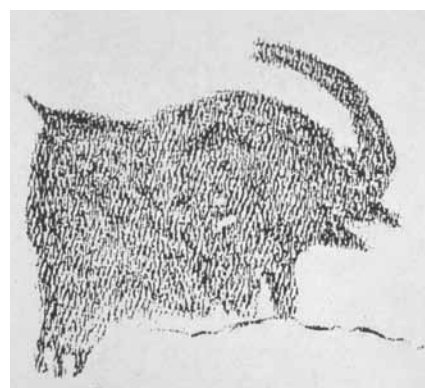


Figure 7. Rock art etching of the Thousand Lakes Mountain, Utah, mammoth petroglyph. Illustration copyright © Dennis Swift. Used by permission.

elephant and that knowledge of the creature was brought to Central America by unknown travelers from Asia.

Another example of proboscideans in Mexican art was discovered by James P. Fox in 1930, approximately 15 miles southeast of Puerto, Mexico. The object is a 37.5-inch tall statue made of very hard basalt (Nomland, 1932). The eyes, large head, trunk, and legs are discernible, but it is quite aged, and some features are unclear in Nomland's photographs. Nomland (1932, p. 591) states, "Deep pitting on the surface of the statue indicates a considerable age. At the time of manufacture it was undoubtedly smooth and clean cut, but



Figure 8. The Egyptian tomb painting portraying an elephantid similar to a mammoth. Photograph copyright © Dennis Swift. Used by permission.

long weathering has pitted the surface and blurred the outlines.” This is also evidence against the possibility of a hoax.

There are only two explanations for these examples of evidence from Central America: either they are representations of mammoths or mastodons, or they reflect a knowledge of elephants that was dispersed to Central America from Asia. The “diffusion of motifs from Asia is *vigorously denied by most archaeologists* ... Precolumbian contact with the New World by Asians is implied by many of these artifacts, and they could account for the existence of the elephant motif in this region ... the only other explanation

is that the natives of Central America knew the mammoth 1,000–2,000 years ago!” (Corliss, 1996, p. 56; emphasis added). Either of these conclusions would be distasteful to many evolutionists.

A proboscidean-like illustration was found in Codex Borgia, a manuscript dated to the twelfth or thirteenth century. It resembles a tusked elephant, and its snout is longer than the snout of a tapir (Mayor 2005, p. 96). Mayor, an evolutionist, suggests that mammoths may have survived in localized areas in the Valley of Mexico and in the southwestern United States, but he also suggests that these occurrences may be due to the

passing down of memories from when mammoths lived (according to evolutionary assumptions), or possibly they may have been exaggerations of tapirs. She also suggests that the legends could have come from observations of proboscidean bones. She concluded, “Until we have further evidence ... the origin of the elephant images in pre-Columbian art remains unknown.” Creationists, not constrained by the assumption of vast ages separating the present day from the mammoths that roamed North America, can accept such discoveries at face value; evolutionists must try to explain them away, ignore them, or show why their own timeline has failed.

A grave painting in the tomb of Rakh-Mara in the Valley of the Nobles in Egypt estimated at about 3,500 years old includes a rendition of a mammoth-like creature being brought with other animals as tribute to the Egyptians by the Syrians (Swift, 1997b; see Figure 8). Rosen (1994) states:

The ... scene painted in a pharonic tomb ... is about the ivory trade, and raises the possibility that the elephantid represents a dwarf mammoth ... Egyptian artists could reproduce in colour two-dimensional identifying marks of living biological specimens *very much like those in field-identifying manuals today*. Thus specimens such as fish ... and birds ... can be *placed into the modern frame of genus and species*. ... The figure represents tribute brought to Egypt and a parade of exotic animals. The bear is probably a sub-species of *Ursus arctos*, *U. arctos syriacos* or *U. arctos arctos* ... This picture demonstrates the artist's ability to draw a creature alien to him. (Rosen, 1994, p. 364; emphasis added; genus/species italics original. See also Swift, 1997b; Lister & Bahn, 1994, p. 137).

This painting is possibly a representation of a pygmy mammoth or even a symbolic representation of a full-sized mammoth (Swift, 1997b). However, it may instead depict a dwarf elephantid from the Mediterranean (Masseti, 2001). Several kinds of these elephantids existed, and their classification is quite confused (Naish, 2011a, 2011b). Although many are believed to have been elephants (*Elephas*) (Palombo, 2001), there seem to have been some mammoths—or at least mammothlike elephants—on the islands. Palombo (2001) describes the remains of *Mammuthus lamarmorae* found on the island of Sardinia, west of Italy in the Mediterranean Sea. *Elephas falconeri* had strongly curved tusks and a domed skull. Some evidence indicates that it descended from *Mammuthus meridi-*

onalis or *M. trogontherii* and was a true mammoth (Lister and Bahn, 1994, p. 34).

Poulakakis et al. (2006) published genetic evidence suggesting that *Elephas creticus* from the island of Crete was actually a mammoth and proposed that its name be changed to *Mammuthus creticus*. The findings, and their interpretations, were later debated by Binladen et al. (2007) and Orlando et al. (2007). (See also the rebuttal by Poulakakis et al., 2007.) Herridge and Lister (2009) supported the conclusion of Poulakakis et al. (2006) on the basis of morphological data. Various dates for the many different Mediterranean elephantids have been suggested, some quite ancient. However, some have been ¹⁴C dated to ~4,000–7,000 years old (Masseti, 2001). The panel depicts Syrians bringing tribute to Egypt, and trade between Southeast Asia and the Mediterranean is known to have occurred at about this time (Masseti, 2001).

Lister and Bahn (1994, p. 137) suggest that the painting represents a stylized African elephant (*Loxodonta africanus*). This suggestion is not at all likely for several reasons. Its large tusks indicate that it was intended to portray a mature animal. It had a domed skull, similar to a mammoth, or, as some have suggested, an Asian elephant (Rosen, 1994). Furthermore, the creature is brown in color like a mammoth and appears to have hair. The bear in the picture can be identified readily, and it is not stylized, and neither are the people; so why would the proboscidean be? Although others have suggested that the creature was an Asian elephant, unlike Asian elephants, the animal depicted has a fairly large ear. Masseti (2001, p. 404) states, “There is no fully convincing evidence for the identification with the morphology of an Asiatic elephant.”

Other Archaeological Finds

Near a lake in Managua, Nicaragua, an interesting human footprint site was dis-

covered. The footprints were originally dated at 200,000 years old by evolutionists, but because the form of the feet was perfectly modern, dating work went on until a date of about 6,000 years old was obtained. Above the level of the footprints are eleven solid-rock strata. The combined strata thickness is 16 to 24 feet. Fossils exist in the strata above the footprints, including mastodon remains. This leads us to the conclusion that the mastodons were younger than the footprints, meaning they were alive less than 6,000 years ago (von Fange, 1974, p. 20; Judkins, 2009, pp. 349–351).

A mastodon skeleton was found in 1929 in Ecuador that evidence indicates was killed by natives; a circle of fires had been built around the mastodon. The site, which included artifacts such as painted pottery, was dated at “the beginning of the Christian era” (von Fange, 1974, p. 21).

In Central America, a Mayan workshop (dated to the second to the fourth century) was uncovered in 1928. The archeologist who uncovered the shop concluded that the owner had kept a mastodon—the animal's bones were found among smashed jars and bowls in the shop (von Fange, 1974, p. 21).

Fresh Fossils

In 1821, Georges Cuvier described a proboscidean foot that was reportedly discovered in a cavern in the American West. An elephant tooth accompanied the foot, which Cuvier concluded was “fresh.” He said, “The find—if authentic—was almost enough to make one doubt that mastodons were extinct, but I could not refrain from suspecting a fraud” (cited by Mayor, 2005, p. 345). The foot had been purchased from a Mexican trader who said he had obtained it from “les sauvages” somewhere west of the Missouri River. It is possible this foot does not indicate recently living mastodons or mammoths but instead was cut from an ex-



Figure 9. Cast of the Burning Tree Mastodon on display at the Mount Blanco Fossil Museum, Crosbyton, Texas. Photograph copyright © Vincent Ste. Marie. Used by permission.

traordinarily well-preserved mastodon mummy found in a dry cave (Mayor, 2005, p. 345). Such mummies have been found in caves in the southwest (Taylor, 1999, p. 57; Mayor, 2005, p.

345). Mummies are very fragile and cannot last very long, but a mummy would hardly be evidence for living mastodons. According to Mayor, this find “led Cuvier to ask whether some

mastodons in North American bogs might be as well preserved as the frozen mammoths of Siberia” (Mayor, 2005, p. 63). Unfortunately, the foot and tooth no longer exist (Mayor, 2005, p. 345), and it is thus impossible to determine if the foot came from a recently dead animal or was simply mummified.

The Burning Tree Mastodon

The Burning Tree Mastodon (Figure 9) is a 95% complete *Mammuth americanum* skeleton that was buried in peat. It was unearthed in December 1989 while a golf course pond in Licking County, Ohio, was being enlarged (Lepper et al., 1991, p. 121; Taylor, personal correspondence, 2009). The skeletal material was very well preserved, but the preserved intestinal contents are more revealing than the skeleton.

During the excavation of some of the ribs and associated thoracic vertebrae, excavators noted an elongate mass of organic material (ca. 60 x 12 cm) distinguished from the surrounding dark brown peat by its reddish-brown color and pungent odor. Due to its location and distinctive properties this material was provisionally identified as gut contents. During sampling the material separated cleanly from the surrounding peat leaving a cylindrical impression in the matrix. Samples of this gut material and adjacent peat differ markedly in floral composition. (Lepper et al., 1991, p. 122)

Lepper et al. (1991) tested the material and found that it contained vegetation very different from, and in different proportions to, the surrounding peat material, reinforcing the conclusion that the material was from the mastodon’s gastrointestinal tract.

Lepper et al. (1991, p. 123) state that it was as an attempt to “evaluate further the properties of the material provisionally identified as gut contents”

that resulted in the discovery of living intestinal bacteria in the intestinal contents. They state,

Two colony types of gram-negative bacilli were isolated from the gut sample and identified as *Enterobacter cloacae*. *Enterobacter* species occur naturally in soil and water ... but *E. cloacae* is the most common member of the genus found in the intestinal tracts of animals. ... As a control for our observations on the gut sample, a similar series of tests was run on samples of adjacent peat. Two different strains of gram-negative bacteria were isolated from the peat samples: *Serratia fonticola*, which is found in streams and freshwater environments ... and *Citrobacter freundii*, which commonly occurs in soil and water, though it also may be found in the intestinal tract of animals ... *E. cloacae* was not isolated from the peat samples. The peat thus contains bacterial taxa that might be expected, independent of the occurrence of a large mammal carcass, whereas the presumed gut material includes a form that is absent in the surrounding peat and that is frequently encountered in animal intestinal tracts. We therefore conclude that the culture obtained from the gut sample is most likely derived from survivors or possibly descendants of the intestinal microflora of the mastodon. (Lepper et al., 1991, p. 124)

Rhodes et al. (1998) did similar testing on the intestinal contents of the Burning Tree Mastodon, with much more impressive results. Whereas Lepper et al. (1991) reported identifying only one species of bacteria—*Enterobacter cloacae*—in the intestinal contents, Rhodes et al. (1998) reported finding over twenty. Among the bacteria discovered were two species of *Enterobacter*, *Yersinia enterocolitica*, five species of *Pseudomonas*, *Bacillus*, and two species of *Micrococcus* (the results

| Source | Bacteria Species | Found in surrounding peat? |
|---------------------|--------------------------------------|----------------------------|
| Lepper et al. 1991 | <i>Enterobacter cloacae</i> | No |
| Kennedy et al. 1994 | <i>E. cloacae</i> | No |
| Ibid. | <i>E. agglomerans</i> | ? |
| Rhodes et al. 1998 | <i>E. agglomerans</i> | No |
| Ibid. | <i>E. cloacae</i> | No |
| Ibid. | <i>Hafnia alvei</i> | No |
| Ibid. | <i>Klebsiella planticola</i> | No |
| Ibid. | <i>Serratia plymuthica</i> | No |
| Ibid. | <i>Yersinia enterocolitica</i> | No |
| Ibid. | <i>Acinetobacter baumannii</i> | No |
| Ibid. | <i>Alcaligenes xylosoxydans</i> | No |
| Ibid. | <i>Bordetella bronchiseptica</i> | No |
| Ibid. | <i>Comamonas acidovorans</i> | No |
| Ibid. | <i>Pseudomonas aureofaciens</i> | No |
| Ibid. | <i>P. chlororaphis</i> | No |
| Ibid. | <i>P. coronafaciens</i> | No |
| Ibid. | <i>P. putida</i> | No |
| Ibid. | <i>P. syringae</i> | No |
| Ibid. | <i>Arthrobacter aurescens</i> | No |
| Ibid. | <i>Corynebacterium aquaticum</i> | No |
| Ibid. | <i>Curtobacterium flaccumfaciens</i> | No |
| Ibid. | <i>Bacillus coagulans</i> | No |
| Ibid. | <i>Micrococcus luteus</i> | Yes |
| Ibid. | <i>M. lylae</i> | No |

Table II. Bacteria Found in the Burning Tree Mastodon intestinal mass.

of the various bacteriological analyses performed on the Burning Tree Mastodon intestinal mass are summarized in Table II). Of the 21 bacteria species found in the intestinal contents, only one species (*Micrococcus luteus*) was also found in the surrounding peat; only seven (*Enterobacter agglomerans*, *E. cloacae*, *Serratia plymuthica*, *Yersinia enterocolitica*, *Acinetobacter baumannii*, *Comamonas acidovorans*, and *Pseudomonas aureofaciens*) were also found in the bone-associated samples. The researchers state,

There is no way of determining how many generations the surviving bacterial strains may have experienced since the death of these mastodons. Once tissue-derived substrates were metabolized, we suspect that usable carbon sources were not available to bacterial survivors, and long-term survival mechanisms drastically reduced growth rates. Thus, any available sources of energy were likely used for cell maintenance and not growth ... This study provides microbiological evidence to support

the hypothesis that the Burning Tree cylindrical mass is of intestinal origin ... To date, few other studies have systematically examined the microbiology of remains associated with extinct mammal excavations. Future excavators should keep these findings in mind as proper sample collection and preservation are essential for rigorous microbiological analyses. (Rhodes et al., 1998, p. 657)

Lepper et al. (1991, p. 123) also state, Dates of $11,660 \pm 120$ yr B.P. ... and $11,450 \pm 70$ yr B.P. ... were obtained from nonconiferous twigs and other organic matter from the presumed gut contents, and these statistically equivalent dates should provide a more accurate age of the mastodon [than the younger date obtained from dating the bone collagen].”

Rhodes et al. agree:

Deciduous twigs from the Burning Tree [intestinal] mass were dated ... at $11,660 \pm 120$ years before present (BP) ... and $11,450 \pm 70$ years BP ... and bone collagen ... was dated ... at $11,390 \pm 80$ years BP. (Rhodes et al., 1998, p. 651)

However, it seems these evolutionists are overlooking some very important basic facts. First, ^{14}C dating has been conclusively shown to be inaccurate, particularly beyond 5,000 years (Riddle, 2006). Moreover, it does not make sense that these intestinal bacteria survived for 11,600 years, even if the bacteria discovered are not the original bacteria but the descendants of the original bacteria. This mastodon simply must be much younger than the evolutionists claim.

The evolutionists' interest in the recovered intestinal bacteria seems to be focused on proving the plant material recovered to be the remains of the intestinal contents of the mastodon. Rhodes et al. (1998, p. 657) also put a happy face on the discovery, saying that this and similar yet-to-be made discoveries “may provide key insights into the

survival and evolution of bacteria in recent history.”

The discovery of the bacteria does have value as evidence that the intestinal material was correctly identified. However, this discovery is much more important because of the basic conflict with the age assumptions. Could this mastodon be only a few hundred or thousand years old? This possibility needs serious consideration and further investigation.

^{14}C Dates

^{14}C dating has been demonstrated to be inaccurate (*Dating Fossils and Rocks*, 2004; Riddle, 2006). However, ^{14}C test results are definitely useful. Firestone et al. (2006, p. 12), for example, state, “The most astounding Clovis-era site of all was at Grant Lake in Nunavut Province in northern Canada, where the long gone Ice Age Paleo-Indians had apparently been hunting mammoths during the time of the Battle of Gettysburg in the U.S. Civil War!” The authors give no further details. They say this date (as well as some others they mentioned) is clearly “impossibly wrong, although others are correct.” Perhaps this date is closer to the truth than Firestone et al. (2006) would be willing to admit.

Miller et al. (2006, p. 89) reported obtaining a date of $\sim 4,980$ ^{14}C years before present on a mammoth tusk. They did not mention where the tusk was found. This date is older than those obtained for the Wrangel Island mammoth remains (Vartanyan et al., 1993; Sher et al., 1994), but for a Eurasian or American mainland find, that would be too young for the evolutionary timescale. A piece of mammoth tusk from Clute, Texas, was ^{14}C dated at $4,960 \pm 70$ years old (Vernor, 2011, p. 4). ^{14}C test results on mammoth remains from St. Paul Island, Alaska, include dates of $7,908 \pm 100$ years before present (Guthrie, 2004), just over 6,000 years before pres-

ent (Fisher et al., 2008), and 5,724 years before present (Oard, 2010).

Sedimentary Ancient DNA

Sedimentary ancient DNA (*sedaDNA*) provides another line of evidence supporting the recent existence of mammoths. Haile et al. (2009) reported finding DNA in supposedly ancient soils sampled near Stevens Village, Alaska. The soils sampled were dated by both ^{14}C and optically stimulated luminescence (OSL) and yielded congruent results. Haile et al. searched soils with a range of (evolutionary) ages from 11,000 to 8,000 years old (dates too old for the biblical young earth). Like ^{14}C , OSL dating is fundamentally flawed (Walker, n.d.).

DNA from various mammals was found in the sediments. In one of the higher (younger) layers, the DNA of both *Mammuthus primigenius* (woolly mammoth) and *Equus caballus* (horse) were found. The soil in which the mammoth and horse DNA were found was supposedly laid down sometime between 10,500 years ago and 7,600 years ago. (In North America north of the ice sheets, the youngest mammoth remains are dated at about $11,500 \pm 160$ ^{14}C years ago; south of the ice sheets, the youngest remains are dated at $10,350 \pm 130$ ^{14}C years old [Haile et al., 2009, p. 22365].) Haile et al. note that they were

confident that DNA leaching cannot explain the presence of mammoth and horse *sedaDNA* at the Stevens Village exposure. No evidence of DNA leaching been [sic] found under permafrost settings, despite several investigations ... and for mammoth and horse DNA to be recovered from sediments several millennia younger than the youngest macro-fossil remains from mainland Alaska/Yukon would require the DNA to have migrated more than 8 m [yards] upward through frozen sediments, without leaving any

traces behind in the intervening strata. (Haile et al., 2009, p. 22365).

They also believe an animal has to be physically present at a site in order to leave its DNA:

Previous studies have shown that mitochondrial DNA (mtDNA) putatively derived from the feces, urine, epidermal cells, and hair of a diverse range of vertebrates may be preserved for long periods in suitable sedimentary environments, such as those in the Arctic, even in the absence of identified macrofossils ... This so-called 'sedimentary' ancient DNA (*seDaDNA*) has been shown to be of local origin ... requiring an animal to have been physically present at the site for its DNA to be deposited ... Although leaching of DNA may occur between layers in nonfrozen depositional settings, several studies have demonstrated that this problem does not appear to affect either perennially frozen sediments ... or sediments frozen recently. ... Furthermore, in cases where strata have remained undisturbed, DNA extracted from modern surface sediments at localities in the Arctic and temperate regions has yielded the genetic signatures of extant fauna only ... which suggests that DNA is not readily reworked from older deposits and incorporated into younger deposits. (Haile et al., 2009, p. 22363)

Snowmass Fossil Site

The Snowmass Fossil Site near Snowmass, Colorado, has yielded an extraordinary amount of Ice Age animals, including bison, deer, mammoths, mastodons, and ground sloths. Because the remains had no measurable ^{14}C , the site was assigned an age of 50,000 to 150,000 years old. There is good evidence, however, that the site is extremely young. Many plant remains—both plant parts and entire plants—found with the bones

were still green. It was observed that the plants rapidly turned brown upon exposure to air. The wood from the site was not petrified, and the bones were also fresh (not petrified). Proteins and soft tissues were found in some of the mammoth bones. These observations clearly indicate a very young age for the site—including its mammoths and mastodons (Beh, n.d.).

Discussion

The information presented in this paper has important implications for both creationists and evolutionists. This information is anomalous for evolution because the extinction dates of the mastodons and mammoths are closely tied to the cause of the end-Pleistocene extinctions in the evolutionary construct. Moving the extinction dates even slightly can have disastrous effects on some of the evolutionary extinction hypotheses. For instance, *Mammuth americanum* was supposed to have become extinct around 10,395 years ago, but Woodman and Athfield (2009) reported ^{14}C dates on the Overmyer mastodon of 10,055 and 10,032 years old. They explained the results that this ~300-year adjustment has on standard models of extinction due to overkill by Clovis hunters, climate change, and the newer comet theory:

The new dates on the Overmyer mastodon clearly indicate that the species existed in northern Indiana several centuries later than the last reliably dated Clovis sites, variously reported as either $10,765 \pm 25$ ^{14}C yr BP at the Jake Bluff site, OK ... or $10,530 \pm 103$ ^{14}C yr BP for the Vail site, ME. ... Although these dates on the Overmyer mastodon do not indicate that humans were not responsible for the extinction of the American Mastodon or even that Clovis people did not impact the population, they do indicate that the species was not brought to extinction during the time of Clovis.

... The species also survived nearly to the end of the YDC [Younger Dryas Chronozone], indicating that neither the rapid climatic change that initiated this interval ... nor the hypothesized extraterrestrial trigger for the YDC ... brought about the immediate extinction of the North American Mastodon. (Woodman and Athfield, 2009, p. 361)

Similar conclusions were reached by Haile et al.:

The classical human overkill ('blitzkrieg') hypothesis for the Americas asserts that extinction took place rapidly, within 1,000 years of human arrival. ... The oldest reliable evidence of human presence in Alaska [14,000 yr BP at Swan Point, according to evolutionary dates] and the youngest macrofossil age for mammoth in this region (13,100–13,710 yr BP) are consistent with the blitzkrieg model. But the *seDaDNA* evidence for mammoth and horse persisting into the Holocene in interior Alaska is incompatible with such rapid extinction and indicates that late-surviving mammoths in the New World were not confined to islands in the Bering Sea that might have afforded protection from human hunters. ... The protracted survival of mammoth and horse is also inconsistent with the hyper-disease hypothesis ... (which requires their swift demise following human contact) and with mega-faunal extinction due to end-Pleistocene environmental changes associated with abrupt climatic events ... altered vegetation patterns ... or intense wildfires sparked by a presumed extraterrestrial impact. ... We cannot exclude the possibility that the drastic decline in the number of mammoths surviving into the Holocene was originally triggered by human overkill, hyper-disease, climate and vegetation changes, and/or an extraterrestrial impact in the late Pleistocene. But our findings

suggest that these events, if they occurred as classically conceived, did not deliver the deathblow. (Haile et al., 2009, pp. 22366–22367)

Corliss (1996, p. 51) also recognized this, stating, “Any historical observations [of mammoths or mastodons] later than ... 8,000 years ago, would contradict the entire accepted mammoth-extinction scenario and, therefore, would be anomalous in the sense the word is used in this Catalog.”

For creationists, this data gives us information to use when constructing hypotheses of mammoth and mastodon extinction. This evidence does not indicate a late survival for mastodons and mammoths but rather indicates that the time period when these animals were in their peak numbers was much more recent than is assumed by evolutionists. However, some of the information presented here clearly indicates the survival of some remnant populations of mastodons and mammoths long after their numbers were dealt a crushing blow by some sort of catastrophic happening or series of happenings after the Flood.

This information indicates that mammoths and mastodons lived and became extinct (if they did go extinct) quite recently. Furthermore, when developing models about the mammoth's extinction, we should leave enough room in the models to be able to account for the existence of living or recently surviving mammoths. In other words, when developing a new model or revisiting an old one that attempts to account for the extinction of the mammoths, we need to be able to understand how some mammoths could have escaped the fate of their relatives and continued living longer than evolutionists expect or even until today.

Conclusions

Based on the evidence summarized in this paper, we can reasonably conclude that evidence exists to demonstrate that

evolutionary dates for the extinction of the mammoths and mastodons are grossly inflated. More research is needed, but at present we can state with confidence that mammoths and mastodons did survive much later than evolutionists believe—perhaps until as recently as 800 years ago. This conclusion harmonizes perfectly with the young earth that the Bible teaches.

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